Verification Report

Client: Stonedale Construction Ltd

Lidl, Birstall

Report No: 1080.08.01

February / 2026

REMADA GEO CONSULTANTS

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Issue No	*Date*	*Prepared By*	*Technical Review*	*Authorised*
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1. INTRODUCTION

Remada Ltd was appointed by Stonedale Construction Ltd the client' to prepare a Verification Report for the implementation of remediation works for a proposed Lidl retail store on land off Bankwood Way, Birstall WF17 9TB.

It should be noted that Stonedale Construction Ltd have been contracted to implement the scope of work specified in Remada's Combined Remediation Strategy Drilling & Grouting Plan ref: 1080.07.01 whereas the latest version of the document reference 1080.07.03 also specifies the Local Authority's requirement for post remediation ground gas monitoring and assessment for which Remada has been separately appointed by Lidl Great Britain Ltd.

1.1 Objectives

The objective of this assessment is to verify that the remediation works were implemented in general accordance with the approved Remediation Statement to discharge Conditions No 18, 19, 20 & 21 of Kirklees Council's planning application 2021/62/92528/E.

1.2 Scope of Work

The scope and layout of this document has been designed in mind of the Environment Agency's Land Contamination Risk Management guidance for land contamination reports.

The scope of remediation and/or enabling works implemented by the Principal Contractor, Stonedale Construction Ltd on behalf of Lidl Great Britain comprised:

- Preparation of ground levels in advance of store construction;
- Drill and grouting of shallow mine seams;
- Grub out any remaining obstructions under proposed buildings including any remaining drainage;
- Vibro ground improvement required for Lidl store and B&M store;
- CMC's
- Reuse stockpiled crushed concrete to form capping layer and piling mat;
- Import suitable topsoil.
- Disposal of wastes.

Remada was appointed to:

- Attend site up to six occasions during regrading/groundworks and mine cavity grouting.
- Liaise with the mine grouting sub-contractor regarding primary and secondary grid and depth for grouting.
- Make a photographic record of works in progress.
- Take 3 No samples of site won/imported capping materials for grading and asbestos analysis.
- Take 3 samples of granular gas blanket for grading.
- One day of CBR tests on formation level (using a hand held falling weight deflectometer).
- Take 3 samples of landscape soils for chemical analysis.

Remada was separately appointed by Lidl to carry gas monitoring and this report will be reissued on completion of the monitoring programme.

1.3 Proposed Development

The proposed development comprises the construction of a Lidl store in the south-east of the site area and Home Bargains store in the west. The remediation and enabling works comprised the remediation and enabling works comprised site clearance, formation of proposed site levels with a cut and fill exercise, installation of an attenuation tank, construction of a retaining wall and gabion wall, probe drilling for shallow mine workings ground improvement in for the form Controlled Modulus Columns beneath proposed building footprints.

The proposed layout is presented at **Appendix A.**

1.4 Planning Condition Requirements

18. Where site remediation is recommended in the Phase II Intrusive Site Investigation Report approved pursuant to condition 17, further groundworks shall not commence until a Remediation Strategy by a suitably competent person has been submitted to and approved in writing by the Local Planning Authority. The Remediation Strategy shall include a timetable for the implementation and completion of the approved remediation measures.

***Reason:** To ensure the safe occupation of the site in accordance with Policy LP53 of the Kirklees Local Plan and guidance within the National Planning Policy Framework.*

19. Remediation of the site shall be carried out and completed in accordance with the Remediation Strategy approved pursuant to condition 18. In the event that remediation is unable to proceed in accordance with the approved Remediation Strategy or contamination not previously considered is identified or encountered on site, all groundworks in the affected area (except for site investigation works) shall cease immediately and the Local Planning Authority shall be notified in writing within two working days. Works shall not recommence until proposed revisions to the Remediation Strategy have been submitted to and approved in writing by the Local Planning Authority. Remediation of the site shall thereafter be carried out in accordance with the approved revised Remediation Strategy.

20. Following completion of any measures identified in the approved Remediation Strategy or any approved revised Remediation Strategy a Validation Report by a suitably competent person shall be submitted to the Local Planning Authority. No part of the site shall be brought into use until such time as the remediation measures have been completed for that part of the site in accordance with the approved Remediation Strategy and the approved revised Remediation Strategy and a Validation Report in respect of those remediation measures has been approved in writing by the Local Planning Authority. Where validation has been submitted and approved in stages for different areas of the whole site, a Final Validation Summary Report shall be submitted to and approved in writing by the Local Planning Authority.

21. None of the development hereby approved shall commence until:

• a scheme of further intrusive investigations has been carried out on site to establish any risks posed to the development by past coal mining activity; and

• any remediation works and/or mitigation measures to address land instability arising from coal mining legacy, as may be necessary, have been implemented on site in full in order to ensure that the site is made safe and stable for the development proposed. The intrusive site investigations and remedial works shall be carried out in accordance with relevant UK guidance.

***Reason:** To address unacceptable risks to human health and the environment arising from the legacy of coal mining activity and ground contamination, to accord with Policy LP53 of the Kirklees Local Plan and guidance within the National Planning Policy Framework.*

22. Prior to the first occupation of the development, or it being brought into beneficial use, a signed statement or declaration prepared by a suitably competent person confirming that the site is, or has been made, safe and stable for the approved development shall be submitted to the Local Planning Authority for approval in writing. This document shall confirm the methods and findings of the intrusive site investigations and the completion of any remedial works and/or mitigation necessary to address the risks posed by past coal mining activity.

Reason: *To address unacceptable risks to human health and the environment arising from the legacy of coal mining activity and ground contamination, to accord with Policy LP53 of the Kirklees Local Plan and guidance within the National Planning Policy Framework.*

1.5 Previous Reports

A summary of the available reports is tabulated below:

2018	*Geo-Environmental Assessment, by Delta-Simons, issued in July 2018.*
2019	*Project Completion Document: Asbestos Removal, Soft Stripping, Demolition of Building to Slab Level, Removal and Crushing of Slabs and Foundations, by Professional Remediation, issued in March 2019*
2020	*Combined Phase 1 & 2 Ground Investigation Report, by Curtins, issued in December 2020.* *Supplementary Report, by G B Card & Partners, issued in December 2020*
2021	*CPT Report, by Lankelma, issued in January 2021.* *Detailed Coal Mining Risk Assessment, by Sirius (ref: C8781/GH/9715/Rev B), issued in October 2021.* *Coal Mining Risk Assessment, by G B Card & Partners (ref: GB/661), issued in October 2021.* *Ground Engineering & Contamination Mitigation Philosophy, by Beam Consulting (ref: 09-148-DOC003A), issued in October 2021.*
2022	*Supplementary Coal Mining Investigation, by Sirius (ref: C8781/AW/9824), issued in March 2022.* *Hazardous Ground Gas Risk Assessment, by Sirius (ref: C8781MB9853), issued in May 2022.* *Strategy for Remedial & Preparatory Works, by Sirius, issued in May 2022.* *Geotechnical Review, by SDS Design Engineers, issued in September 2022.* *Remediation Strategy, by Remada (ref: 1080.01.01/1080.01.02) issued in October 2022. Note: Appendices were revised in February 2023 (ref: 1080.01.03).* *Drill & Grout Specification, by Remada (ref: 1080.02.01) issued in October 2022 (superseded).* *Settlement Estimates Letter Report, by Remada (ref: 1080.04.01), issued in October 2022.*
2024	*Factual Ground Investigation Report, by Remada (ref: 1080.06.01) issued in February 2024.*
2025	*Remada Letter ref 1080.09.01 in response to Local Authority comments and regarding post remediation ground gas monitoring and risk assessment.* *Combined Remediation Strategy, Drilling and Grouting Plan Remada (ref: 1080.07.03).*

1.6 Review of Previous Reports

A review of previous reports pertaining to the study site has been previously undertaken by Remada and can be found in Section 2 of Remadas' *Combined Remediation Strategy, Drilling and Grouting Plan* Report of 2025.

1.7 Limitations

The comments given in this report and the opinions expressed are based on the information reviewed and observations during site work. However, there may be conditions pertaining to the site that have not been disclosed by this assessment and therefore could not be taken into account.

2. GENERAL SITE CHARACTERISTICS

2.1 Site Description

Prior to the commencement development, the site had lain vacant for over 12 months following the above ground demolition of the former Business Centre. Following demolition of the buildings, vegetation clearance and demolition crushing occurred. The photographs below recorded the site in September 2025 shortly after the comment of works by Stonedale Construction Ltd.



View across the site during site setup and topography survey



Excavated trees



Organic material stockpiled on site



Crushing/grinding excavated organic material



Stockpile of existing crushed concrete to be graded



Graded crushed concrete

2.2 Remediation Strategy, Drilling and Grouting Plan Requirements

Environmental and geotechnical remediation requirements are summarised below:

Environmental Remediation Objectives

The principal environmental remediation objectives are to remove the identified environmental liabilities in order to discharge planning condition C3N by:

- Identify, manage and assess previously identified and unforeseen contamination;
- Assess the chemical suitability of on-site stockpiles for re-use in the proposed development;
- Provide clean cover of fill to the proposed landscaped areas; and
- Install ground gas protection measures protective of a CS4 classification.

Geotechnical Remediation Objectives

The principal geotechnical remediation objectives are to:

- Remove existing relic foundations and obstructions to 1.5m bgl across the site area, and in entirety underneath proposed buildings;
- Excavate, screen, classify and replace existing made ground material and existing demolition rubble as engineered fill across the site;
- Grout former mineworkings/voids underneath proposed buildings and adoptable roadways; and
- Enable foundation or ground improvement solutions for the proposed buildings and car park.

2.3 Pre-Remediation Conceptual Site Model

The pre-remediation Conceptual Site Model has been reproduced below:

Potential Source Areas	Potential Contaminant of Concern	Pathways	Potential Receptor	Exposure Route (Human unless otherwise stated)	Potential Identified Linkage (unmitigated)	Findings of Ground investigation	Risk (Un-mitigated)	Proposed Remediation (Mitigation) Measures	Residual Risk Estimation
<u>On-site Sources</u> **Elevated concentrations of PAHs within landfill waste** **Unidentified contaminants within landfill waste** **Hazardous ground gases generated from landfill waste and, to a lesser extent, worked coal measures** ***<u>Off-site Sources</u>*** **Migrating contaminants and ground gases from numerous landfill sites and mine workings within 250m of the site**	Asbestos / Metals As, Be, Cd, Cu, Cr (VI), Cr (III) Hg, Ni, Se, Va, Zn, *Boron, TPH /PAH/PCBs.* *Methane & Carbon Dioxide.*	Disturbance due to construction plant causing direct contact, dusts, vapours. Direct Contact with occupants of the proposed development (<u>retail & off-site residential)</u> Inhalation of fibres / vapours / gases by occupants of proposed development Permeation of water supply pipework Leachate	Occupants of the development / building fabric Ground workers during construction Adjacent residents during construction Secondary A Aquifer	Direct Soil Ingestion	Yes	PAH exceedances	Low	Hardstanding to cover retail site minimising direct contact.	Negligible
				Indoor Dust ingestion	Yes	As above	Low	As above	Negligible
				Skin Contact with Soils	Yes	As above	Low	As above	Negligible
				Skin Contact with Dust	Yes	As above	Low	As above	Negligible
				Inhalation of Outdoor Dust	Yes	As above	Low	As above	Negligible
				Inhalation of Outdoor Vapours	Yes	As above	Low	As above	Negligible
				Inhalation of Indoor Vapours	Yes	As above	Low	As above	Negligible
				Ingestion via permeated water supply pipework	Yes	As above	Low	As above	Negligible
				Inhalation of ground gas	Yes	CS4	Medium	Ground gas protection measures	Negligible
				Inhalation of radon gas	Yes	Lower Probability Radon Area	Negligible	None required	Negligible
				Leaching to Secondary A Aquifer in Bedrock	Yes	PAH exceedances	Low	Hardstanding to prevent precipitation infiltration and leaching	Negligible

Table 1: Pre-remediation Conceptual Site Model

3. REMEDIATION ACTIVITIES

3.1 Overview

Following site clearance and cut to fill exercise was implemented to form proposed site levels. On completion the shallow mine working were probed for cavities beneath proposed building footprints prior installation of ground improvement in the form of Controlled Modulus Columns. Other works included, installation of an attenuation tank and construction of perimeter retaining walls and gabion walls. The works were completed in early February 2026.

3.2 Site Clearance

The following photos of site clearance were taken in August 2025



Site won concrete rubble awaiting processing



Stockpile of remaining organic material to be removed from site

3.3 Re-use of Site Won Concrete

Crushed concrete / concrete rubble that was present on site was processed for use a capping layer/piling mat. In addition, crushed concrete was also imported to construct a piling mat/capping layer.



Above left: Crushing material



Above right: Material for filling site levels.

3.4 Site Levels

The proposed site levels necessitated a cut and fill exercise from existing ground levels to form the levelled site. Waste disposal of surplus soils is described in **Section 6** below.



Compaction of fill material



Bottom Right: Levelled site rolled and compacted.

On completion of the works, Stonedale carried Plate Bearing & CBR tests on the piling mat/capping layer.

3.5 Attenuation Tank

An attenuation tank was installed during October 2025 as per the photos below.



Excavation of attenuation tank in progress



Attenuation tank installation prior to backfill and surround

3.6 Drilling & Grouting

Probe drilling for shallow mine workings was undertaken by Soil Engineering Ltd between 23rd and 30th October 2025. The probe drilling commenced on a 6m by 6m grid to a depth of 30m as proposed in Remada's Remediation Strategy and extended over both building footprints.

Initial probe drilling focused on the extents of the building footprints to determine the presence, direction and dip of potential cavities in relation to the previously interpolated alignment of an outcrop within the underlying coal measures.

However, no cavities were identified and specific locations within the grid and beneath each building footprint were then targeted. Previous ground investigation borehole locations were also cross-referenced with the probing grid and targeted.

In total, 19 probeholes were drilled in the proposed Home Bargains store footprint and 23 probeholes were drilled in the proposed Lidl store footprint.

However, no cavities were identified were identified at any location. All probeholes were backfilled with cement.

Probehole locations are presented with Soil Engineering's Completion Report which is presented at **Appendix B.** As not all probe logs were compiled within Soil Engineering's Completion Report, Remada has presented all received logs as **Appendix C**.



Soil Engineering SM11 rig in progress



Soil Engineering SM11 rig in progress

3.7 Foundation Details

For the Lidl store, the floor slab is constructed as a 200mm thick concrete slab with thickened downstands as presented in the Structural Engineer's drawings at **Appendix D**, however the required bearing capacity for the purpose of ground improvement is not stated on the Structural Engineer's drawings,

Details of the proposed foundation design for the Home Bargains is not known.

3.8 Ground Improvement

The design and construction or installation of the Controlled Modulus Columns (CMC) Ground Improvement as was undertaken by Menard for both raft design for the Lidl store and the Home Bargains building footprint. Menard's CMC Design Report is presented at **Appendix E** and aims to 'control the settlements and provide a higher bearing capacity by creating a composite material [CMC+soil]'.

CMCs were installed between 10th November 2025 & 12th December 2025 beneath the slab of the proposed Lidl store Home bargains store and external concrete yard.

Menard state that the 'works were undertaken in a single phase and this validation report summarises the works undertaken, provides the required quality information and provides a validation statement on the success of the works. Not all columns were installed due to obstructions and columns being located within the batter on the Lidl Building.

Menard's Completion Report is presented at **Appendix F.**



Soil Engineering SM11 rig in progress



Soil Engineering SM11 rig in progress

3.9 Retaining Walls

Ground bearing retaining walls were constructed at the perimeters of the site as per the photos below:



Ground slab for construction of the retaining wall at the south of the site



Progress of gabion wall in the western corner



Retaining wall progress



Retaining wall progress

3.10 Unforeseen Contamination

There were no visible or olfactory indicators of unforeseen contamination during the works.

3.11 Gas Membrane

The Ground Investigation set out requirements for the installation of ground gas protection measures for occupants of the proposed store building to meet the requirements of Characteristic Situation 4, however, Remada installed three (3 No) gas and groundwater monitoring wells within the store footprint to the Lidl store, proposed for the south-east of the site in the area of the former landfill, and three wells within the Home Bargain, proposed for the west of the site in an area cut into natural ground.

As per the Combined Remediation Strategy, Drilling and Grouting Plan report by Remada and at the request of the local authority further gas monitoring was required.

So far, four monitoring visits have taken place with preliminary results indicating the Lidl store to be Characteristic Situation 2 (CS2) with gas protection measures required. The Home Bargains is preliminary CS1 with no gas protection measures required.

All ground gas protection measures to be installed as part of the main build.

3.12 Membrane Installation and Product

Membrane installation quality and product will be checked at the time of installation.

3.13 Unforeseen Contamination

There were no visible or olfactory indicators of unforeseen contamination during the works.

4. VERIFICATION SAMPLING & ANALYSES

4.1 Mine Drilling & Grouting

All probe hole information completed for the drill and grout exercise are presented within the Soil Engineering Completion Report at **Appendix B**.

4.2 Ground Improvement

All records for CMC installation including plate bearing tests and concrete cube results at presented within Menard's Validation Report at **Appendix F**.

4.3 Supplier's Test Results

The results of grading tests and chemical analyses of imported crushed concrete have been provided by the supplier and are presented at **Appendix G**.

4.4 CBR Tests

On completion of the CMC works and preparation of formation for the future development, four 4 No Plate Bearing / CBR tests were undertaken within each store footprint on 30th January 2026.

Within the Lidl footprint, the maximum settlement at 277 kPa = 1.41mm and minimum CBR = 39.2%.

Within the Home Bargains footprint, the maximum settlement at 277 kPa = 1.73mm and minimum CBR = 25.9%.

Plate Bearing/CBR results are presented at **Appendix I.**

4.5 Remada Sample Quality Assurance / Quality Control

Samples for chemical laboratory testing purposes were collected in amber glass jars, amber glass vials and plastic tubs and retained in a cool box for transport to the laboratory. All samples were submitted to an approved United Kingdom Accredited Laboratory (UKAS) and MCERTS laboratory under a completed chain of custody. The laboratory carried out its own QA/QC programme to ensure that the quality of the analytical data conformed to the appropriate test method protocols. Containers for volatile analysis were filled so that minimal (soil) air space remained prior to sealing the container.

Soil samples for chemical analysis were collected in plastic tubs and amber glass bottles. Groundwater samples were collected in 1 litre glass bottle and 30mm glass vials. All samples were retained in a cool box with a chain of custody for transport to the laboratory for subsequent environmental analysis.

4.6 Remada Verification Samples

Remada sampled site won and imported crushed concrete that had placed as the piling mat and/or capping layer. The results gradings and chemical analyses are not available at the time of writing.

4.7 Ground Gas

The results of the post remediation ground gas monitoring will be presented separately.

5. RISK ASSESSMENT

The upper limits for general fill produced from the excavation and processing of relict foundation and associated Made Ground were limited to the LQM/CIEH S4ULs for Commercial Land Use as presented in the Remediation Strategy and reproduced as Table 2 below.

5.1 Made Ground

The Phase 2 Ground Investigation, Remediation Strategy and Pre-Remediation Conceptual Model did not identify a need to remediate Made Ground.

5.2 Site Won Crushed Concrete

Recycled crushed concrete that was placed as either piling mat and/or capping layer did not contain asbestos and was compliant with a 6F5 grading.

5.3 Topsoil

No topsoil has been placed to date.

5.4 Ground Gas

A ground gas risk assessment will be presented separately together details for venting if appropriate and installation and verification of protective membrane.

CLEA Category	Commercial			
Contaminant	mg/kg 1% SOM	mg/kg 2.5% SOM	mg/kg 6% SOM	Reference
Antimony	7500	7500	7500	*EIC/AGS/CL:AIRE 2010*
Arsenic	640	640	640	*LQM/CIEH S4UL*
Barium	22000	22000	22000	*EIC/AGS/CL:AIRE 2010*
Beryllium	12	12	12	*LQM/CIEH S4UL*
Boron	240000	240000	240000	*LQM/CIEH S4UL*
Cadmium	190	190	190	*LQM/CIEH S4UL*
Chromium III	8600	8600	8600	*LQM/CIEH S4UL*
Chromium VI	33	33	33	*LQM/CIEH S4UL*
Copper	68000	68000	68000	*LQM/CIEH S4UL*
Mercury (Elemental Hg 4)	58[vap] (25.8)	58[vap] (25.8)	58[vap] (25.8)	*LQM/CIEH S4UL*
Mercury (Inorganic Hg 2+)	1100	1100	1100	*LQM/CIEH S4UL*
Mercury (Methyl 4+)	320	320	320	*LQM/CIEH S4UL*
Molybdenum	18000	18000	18000	*EIC/AGS/CL:AIRE 2010*
Nickel	980	980	980	*LQM/CIEH S4UL*
Lead	NC	NC	2300	*DEFRA C4SL*
Selenium	12000	12000	12000	*LQM/CIEH S4UL*
Vanadium	9000	9000	9000	*LQM/CIEH S4UL*
Zinc	730000	730000	730000	*LQM/CIEH S4UL*
BTEX				
Benzene	27	47	90	*LQM/CIEH S4UL*
Toluene	56000[vap] (869)	110000[vap] (1920)	180000[vap] (4360)	*LQM/CIEH S4UL*
Ethylbenzene	5700[vap] (518)	13000[vap] (1220)	27000[vap] (2840)	*LQM/CIEH S4UL*
O-Xylene	6600[sol] (478)	15000[sol] (1120)	33000[sol] (2620)	*LQM/CIEH S4UL*
M-Xylene	6200[vap] (625)	14000[vap] (1470)	31000[vap] (3460)	*LQM/CIEH S4UL*
P-Xylene	5900[sol] (576)	14000[sol] (1350)	30000[sol] (3170)	*LQM/CIEH S4UL*
TPH Aliphatics				
EC5-EC6	3200[sol] (304)	5900[sol] (558)	12000[sol] (1150)	*LQM/CIEH S4UL*
>EC6-EC8	7800[sol] (144)	17000[sol] (322)	40000[sol] (736)	*LQM/CIEH S4UL*
>EC8-EC10	2000[sol] (78)	4800[vap] (190)	11000[vap] (451)	*LQM/CIEH S4UL*
>EC10-EC12	9700[sol] (48)	23000[vap] (118)	47000[vap] (283)	*LQM/CIEH S4UL*
>EC12-EC16	59000[sol] (24)	82000[sol] (59)	90000[sol] (142)	*LQM/CIEH S4UL*
>EC16-EC35	1600000	1700000	1800000	*LQM/CIEH S4UL*
>EC35-EC44	1600000	1700000	1800000	*LQM/CIEH S4UL*
>EC44-EC70 (ali+aro)	28000	28000	28000	*LQM/CIEH S4UL*
TPH Aromatics				
EC5-EC7 (Benzene)	26000[sol] (1220)	46000[sol] (2260)	86000[sol] (4710)	*LQM/CIEH S4UL*
>EC7-EC8 (Toluene)	56000[vap] (869)	110000[sol] (1920)	180000[vap] (4360)	*LQM/CIEH S4UL*
>EC8-EC10	3500[vap] (613)	8100[vap] (1500)	17000[vap] (3580)	*LQM/CIEH S4UL*
>EC10-EC12	16000[sol] (364)	28000[sol] (899)	34000[sol] (2150)	*LQM/CIEH S4UL*
>EC12-EC16	36000[sol] (169)	37000	38000	*LQM/CIEH S4UL*
>EC16-EC21	28000	28000	28000	*LQM/CIEH S4UL*
>EC21-EC35	28000	28000	28000	*LQM/CIEH S4UL*
>EC35-EC44	28000	28000	28000	*LQM/CIEH S4UL*
>EC44-EC70 (ali+aro)	28000	28000	28000	*LQM/CIEH S4UL*
PAH				*LQM/CIEH S4UL*
Naphthalene	190[sol] (76.4)	460[sol] (183)	1100[sol] (432)	*LQM/CIEH S4UL*
Acenaphthylene	83000[sol] (86.1)	97000[sol] (212)	100000	*LQM/CIEH S4UL*
Acenaphthene	84000[sol] (57)	97000[sol] (141)	100000	*LQM/CIEH S4UL*
Fluorene	63000[sol] (30.9)	68000	71000	*LQM/CIEH S4UL*
Phenanthrene	22000	22000	23000	*LQM/CIEH S4UL*
Anthracene	520000	540000	540000	*LQM/CIEH S4UL*
Fluoranthene	23000	23000	23000	*LQM/CIEH S4UL*
Pyrene	54000	54000	54000	*LQM/CIEH S4UL*
Benzo(a)anthracene	170	170	180	*LQM/CIEH S4UL*
Chrysene	350	350	350	*LQM/CIEH S4UL*
Benzo(b)fluoranthene	44	45	45	*LQM/CIEH S4UL*
Benzo(k)fluoranthene	1200	1200	1200	*LQM/CIEH S4UL*
Benzo(a)pyrene[(1)]	35	35	36	*LQM/CIEH S4UL*
Indeno(1,2,3-c,d)pyrene	500	510	510	*LQM/CIEH S4UL*
Dibenzo(a,h)anthracene	3.5	3.6	3.6	*LQM/CIEH S4UL*
Benzo(g,h,i)perylene	3900	4000	4000	*LQM/CIEH S4UL*
Coal Tar[(1)]	15	15	15	*LQM/CIEH S4UL*

NC: No published criteria

vap: Screening criteria presented exceed the vapour saturation limit, which is presented in brackets.

sol: Screening criteria presented exceed the solubility saturation limit, which is presented in brackets.

dir: Screening criteria based on threshold protective of direct skin contact (guideline in brackets based on health effects following long term exposure provided for illustration only).

(1): For assessment based on the use of the surrogate marker approach the GAC for Coal Tar must be used instead of benzo(a)pyrene.

Table 2: Generic Assessment Criteria

5.4 Post Remediation Conceptual Site Model

On completion of the site remediation, enabling works and separately the verification of gas protection measures and water supply pipework the following Post Remediation Conceptual Site Model is considered appropriate.

Potential Source Areas	Potential Contaminant of Concern	Pathways	Potential Receptor	Exposure Route (Human unless otherwise stated)	Potential Identified Linkage (unmitigated)	Findings of Ground investigation	Risk (Un-mitigated)	Proposed Remediation (Mitigation) Measures	Residual Risk Estimation
On-site Sources **Elevated concentrations of PAHs within landfill waste** **Unidentified contaminants within landfill waste** **Hazardous ground gases generated from landfill waste and, to a lesser extent, worked coal measures** ***Off-site Sources*** **Migrating contaminants and ground gases from numerous landfill sites and mine workings within 250m of the site**	Asbestos / Metals As, Be, Cd, Cu, Cr (VI), Cr (III) Hg, Ni, Se, Va, Zn, *Boron, TPH /PAH/PCBs.* *Methane & Carbon Dioxide.*	Disturbance due to construction plant causing direct contact, dusts, vapours. Direct Contact with occupants of the proposed development (retail & off-site residential) Inhalation of fibres / vapours / gases by occupants of proposed development Permeation of water supply pipework Leachate	Occupants of the development / building fabric Ground workers during construction Adjacent residents during construction Secondary A Aquifer	Direct Soil Ingestion	Yes	PAH exceedances	Low	Hardstanding to cover retail site minimising direct contact.	Negligible
				Indoor Dust ingestion	Yes	As above	Low	As above	Negligible
				Skin Contact with Soils	Yes	As above	Low	As above	Negligible
				Skin Contact with Dust	Yes	As above	Low	As above	Negligible
				Inhalation of Outdoor Dust	Yes	As above	Low	As above	Negligible
				Inhalation of Outdoor Vapours	Yes	As above	Low	As above	Negligible
				Inhalation of Indoor Vapours	Yes	As above	Low	As above	Negligible
				Ingestion via permeated water supply pipework	Yes	As above	Low	As above	Negligible
				Inhalation of ground gas	Yes	Supplementary gas monitoring on going	-	-	-
				Inhalation of radon gas	Yes	Lower Probability Radon Area	Negligible	None required	Negligible
				Leaching to Secondary A Aquifer in Bedrock	Yes	PAH exceedances	Low	Hardstanding to prevent precipitation infiltration and leaching	Negligible

Table 3: Post Remediation Conceptual Site Model

6. WASTE DISPOSAL RECORDS

The following wastes were removed from site:

Approximately 25 loads of Green waste were removed from site by Yorkshire Grab Hire as per the example waste disposal note at Appendix H.

Approximately 44 loads of waste soil were removed from site Yorkshire Grab Hire as per the example waste disposal note at Appendix H.

Approximately 48 loads of recycled crushed concrete were delivered to site by Yorkshire Grab Hire as per the example waste delivery note at Appendix H.

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STUDY LIMITATIONS

IMPORTANT. This section should be read before reliance is placed on any of the information, opinions, advice, recommendations or conclusions contained in this report.

1. This report has been prepared by Remada, Ltd with all reasonable skill, care and diligence within the terms of the Appointment and with the resources and manpower agreed with (the 'Client'). Remada does not accept responsibility for any matters outside the agreed scope.

2. This report has been prepared for the sole benefit of the Client unless agreed otherwise in writing.

3. Unless stated otherwise, no consultations with authorities or funders or other interested third parties have been carried out. Remada is unable to give categorical assurance that the findings will be accepted by these third parties as such bodies may have published, more stringent objectives. Further work may be required by these parties.

4. All work carried out in preparing this report has used, and is based on, Remada' professional knowledge and understanding of current relevant legislation. Changes in legislation or regulatory guidance may cause the opinion or advice contained in this report to become inappropriate or incorrect. In giving opinions and advice pending changes in legislation, of which Remada is aware, have been considered. Following delivery of the report Remada has no obligation to advise the Client or any other party of such changes or their repercussions.

5. This report is only valid when used in its entirety. Any information or advice included in the report should not be relied upon until considered in the context of the whole report.

6. Whilst this report and the opinions made are to the best of Remada' belief, Remada cannot guarantee the accuracy or completeness of any information provided by third parties.

7. This report has been prepared based on the information reasonably available during the project programme. All information relevant to the scope may not have received

8. This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of changes in the condition of the site since the time of the investigation.

9. The content of this report represents the professional opinion of experienced environmental consultants. Remada does not provide specialist legal or other professional advice. The advice of other professionals may be required.

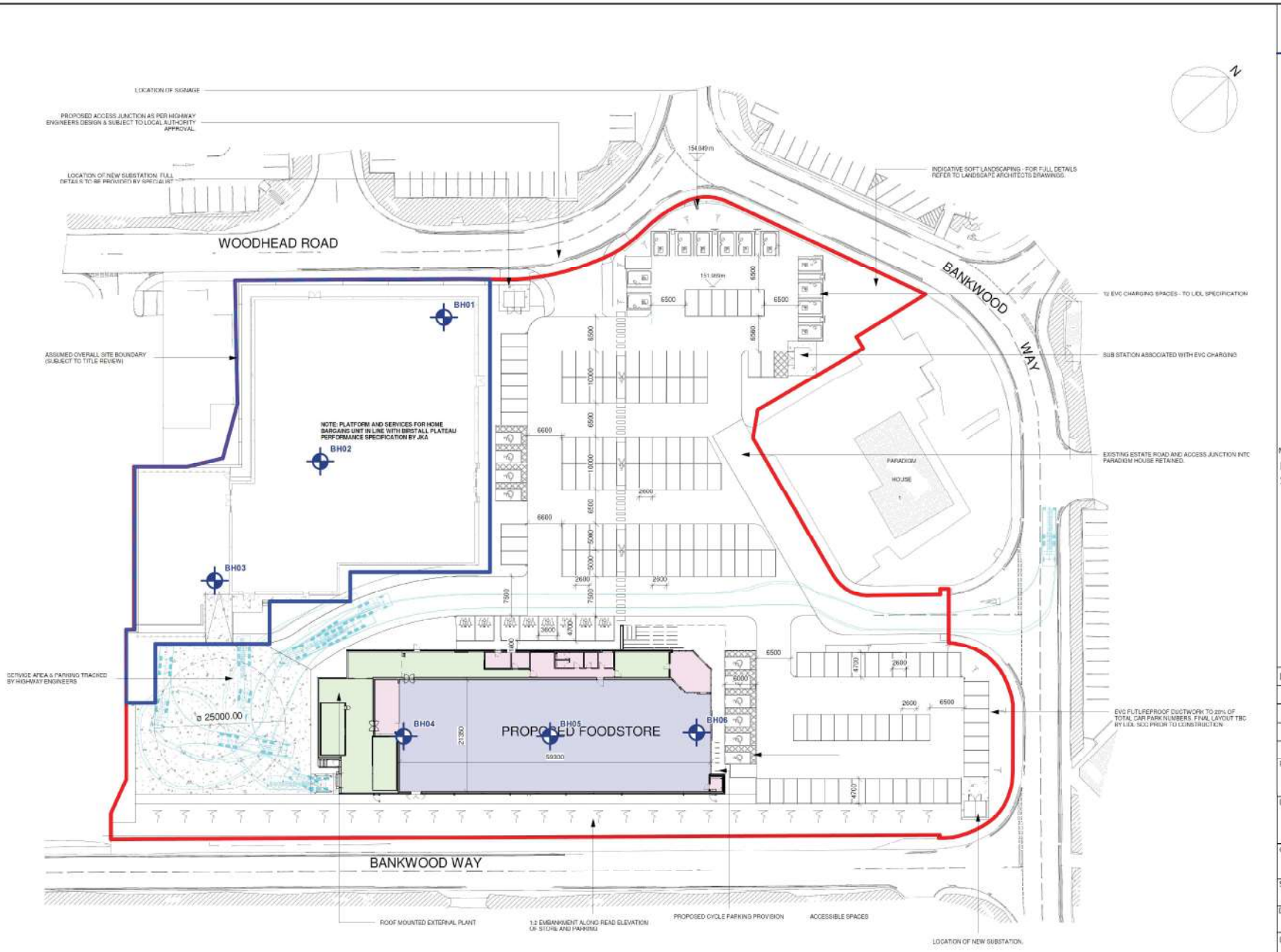
10. Where intrusive investigation techniques have been employed they have been designed to provide a reasonable level of assurance on the conditions. Given the discrete nature of sampling, no investigation technique is capable of identifying all conditions present in all areas. In some cases the investigation is further limited by site operations, underground obstructions and above ground structures. Unless otherwise stated, areas beyond the boundary of the site have not been investigated.

11. If below ground intrusive investigations have been conducted as part of the scope, service tracing for safe location of exploratory holes has been carried out. The location of underground services shown on any drawing in this report has been determined by visual observations and electromagnetic techniques. No guarantee can be given that all services have been identified. Additional services, structures or other below ground obstructions, not indicated on the drawing, may be present on site.

12. Unless otherwise stated the report provides no comment on the nature of building materials, operational integrity of the facility or on any regulatory compliance issues.

13. Unless otherwise stated, samples from the site (soil, groundwater, building fabric or other samples) have NOT been analysed or assessed for waste classification purposes.

APPENDIX A
SITE LAYOUT



Legend

BH01 Window Sample & Installation

Notes

Proposed Layout
SMR-7404-00-ZZ-DR-8027-S3-P6

Issue	Approved	Date

Project Title

Lidl Birstall

Drawing Title

Exploratory Hole Locations and Proposed Site Layout

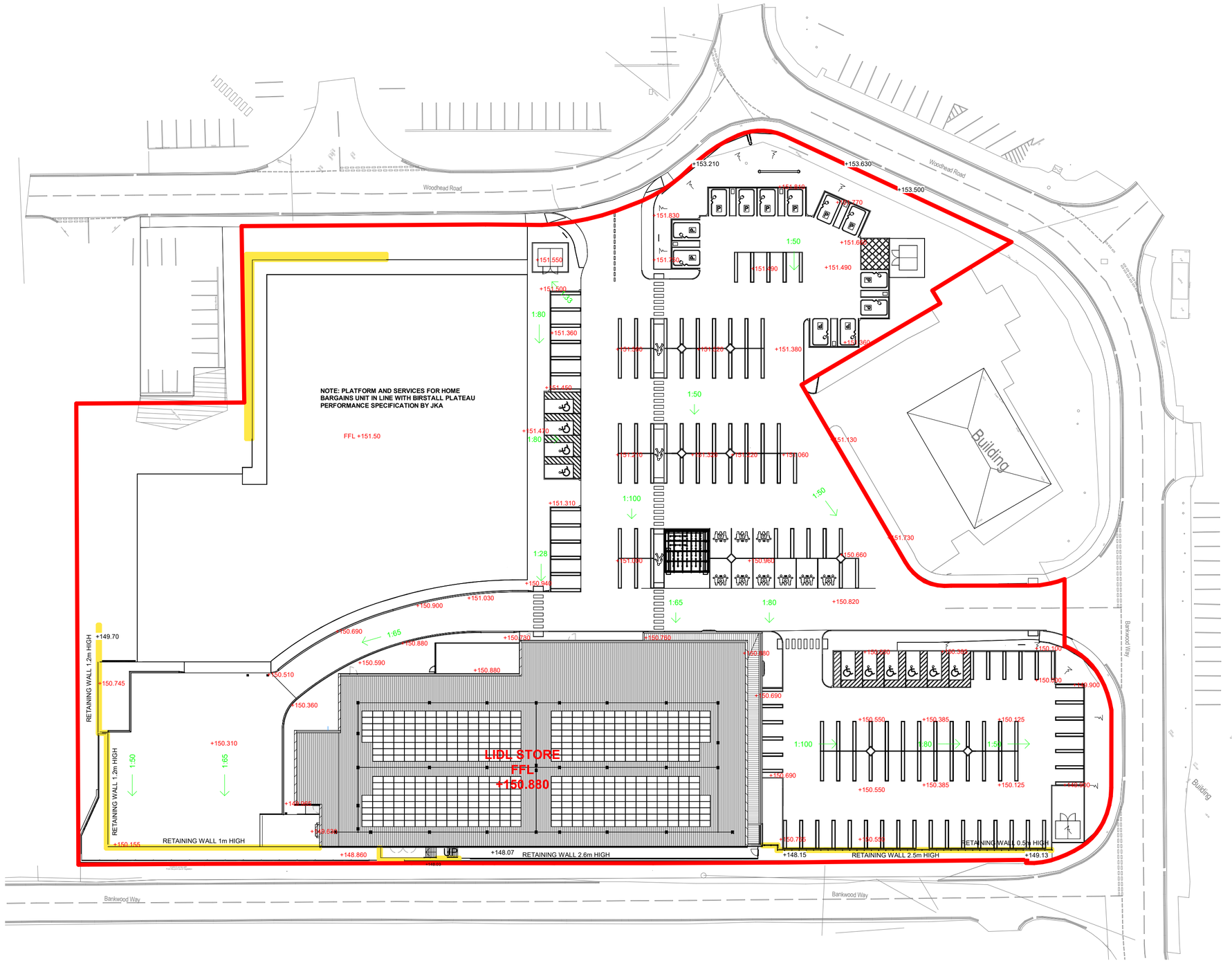
Client

Lidl Great Britain Ltd

Scale	Drawn	Size
as shown	AH	A4
Date	Job No.	Figure No.
07.01.26	1080.08	01

Drawing Reference

REMADA GEO CONSULTANTS



5 0 5 10 15 20 25

SCALE 1: 500 m

KEY:

±0.00	EXISTING LEVEL
±0.00	PROPOSED LEVEL
0:0	PROPOSED GRADINET
	RETAINING WALL
	1:3 EMBANKMENT

Do not scale this drawing.
Architects are to be notified of any discrepancies.
Contractors must check all dimensions on site.
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For other information refer to the latest revision of any cross referenced drawings.
To be read in conjunction with relevant design standards/protocols

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Rev	Description	Date	Drn	Ckd
C1	TENDER ISSUE	02.08.24	MN	NP

Status

TECHNICAL DESIGN

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Project

LIDL BIRSTALL, BANKWOOD WAY

Client

Drawing Title

INDICATIVE LEVEL STRATEGY.

Proj Ref	Origin	Zone	Level	Type	Role	Num	Status	Rev
7404	SMR	00	ZZ	DR	A	3012	A4	C1

SMR Job Ref	Sheet	Scale	Drawn
7404-00-3012	A2	1 : 500	DM

APPENDIX B
SOIL ENGINEERING REPORT

SOIL ENGINEERING

REPORT ON THE CONSOLIDATION OF MINE WORKINGS AT NEW LIDL STORE, BIRSTALL



REPORT QUALITY ASSURANCE SHEET

TITLE: REPORT ON THE CONSOLIDATION OF MINE WORKINGS AT NEW LIDL STORE, BIRSTALL

PROJECT NUMBER: TD8815

STATUS: Draft

ISSUE NUMBER: 01

ISSUE DATE: 19/11/2025

ISSUED BY: S. Wilson

CHECKED BY: R. J. McMillan-Simm 

APPROVED BY: P. A. Rodgers 

VERSION HISTORY:

Issue Number	Issue Date	Reason for Issue
01	19/11/2025	Draft for comment

This report is not to be used for contractual or engineering purposes unless this sheet is signed by the approver, and the report is designated “Final” on this report quality assurance sheet. Opinions and interpretations expressed in the report are outside the scope of UKAS accreditation. This report has been prepared for the sole internal use and reliance of the named Employer. This report should not be relied upon or transferred to any other parties without the express written authorisation of Soil Engineering. If an unauthorised third party comes into possession of the report, they rely on it at their peril and Soil Engineering owes them no duty of care and skill.

Internal Form Information: Report No. SE-RRG-F-001 Issue.Revision Number 4.00 Issue Date 05/07/2021

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- Figure 2 – Consolidation Layout – Grouting

SECTION B: DRILLING RECORDS

- Drilling Records

SECTION C: CONTRACT RECORDS

- Daily Contract Records

SECTION D: GROUTING RECORDS

- Grouting Records

SECTION E: TEST RESULTS

- Grout Cube Test Certificates

1.0 INTRODUCTION

In October 2025 Soil Engineering Geoservices Ltd were instructed by Stonedale Construction (The Employer) to carry out ground stabilisation works at New Lidl Store, Birstall. It is proposed to construct a new Lidl store on the site. The stabilisation works were focused on the northwest building corner area of the site in which the Flockton Thin Seam was to be treated.

Soil Engineering was tasked with undertaking drilling and grouting consolidation works in order to consolidate any potential abandoned mine workings and prevent any associated subsidence of the ground below the proposed construction.

This report presents the results of the contract works and laboratory testing undertaken. The works commenced on 20th October 2025 and achieved practical completion on 31st October 2025. This report presents an account of the stabilisation works which were carried out in accordance with The Employer's requirements.

2.0 PURPOSE, SCOPE AND REPORT FORMAT

2.1 Purpose

The purpose of the works was to consolidate any potential abandoned mine workings present within the vicinity of the proposed construction in order to mitigate the risk of any associated subsidence of the ground and to ensure ground stability.

It should be noted that the drilling and grouting undertaken at Lidl, Birstall provides no improvement to the engineering characteristics of the superficial deposits and rock beneath any proposed future development. Conventional consolidation works, as undertaken here, are intended to stabilise the workings only.

2.2 Scope of Work

The scope of the works was as follows:

- To form treatment holes
- To consolidate any potential abandoned mine workings with a cementitious grout
- To undertake grout flowability and bleed tests during the works
- To perform grout acceptance testing on site
- To undertake grout cube testing to confirm grout strength at specified curing intervals

During the contract works, treatment holes were drilled vertically (90 degrees).

2.3 Limitations

This report has been prepared in accordance with the project specification and with industry standard guidance[1,2,3] and best practice[4,5,6]. Soil Engineering accepts no liability for any deficiencies in the report that arise from the specification's non-compliance with either European or British Standards. This particularly applies to exploratory hole spacings and depths, the scope of proof testing and to grouting works designed by others.

[1] BS 5930: 2015: Code of Practice for Site Investigation. British Standards Institution.
[2] BS EN 1997-2: 2007: Eurocode 7 – Geotechnical Design – Part 2: Ground Investigation and Testing.
[3] BS EN 12715:2000: Execution of Special Technical Work – Grouting.
[4] Abandoned Mineworking's Manual (C758D)
[5] BRE Report 220192: 2006: Laboratory and Field Data for pfa Grouts.
[6] BRE Special publication 509: 2009: Stabilising Mine Workings with pfa Grouts – Environmental Code of Practice: BRE Building Technology Group

2.4 Report Format

This report is presented in the following format:

- Written description of contract works and results.
- Section A: Drawings - including exploratory hole location plans
- Section B: Drilling Records – driller foreman daily record sheets
- Section C: Contract Records - including details of deliveries, drilling quantities and grout injection quantities
- Section D: Grouting Records - detailing injected grout quantities into each treatment hole
- Section E: Test Results – results of in situ and laboratory testing

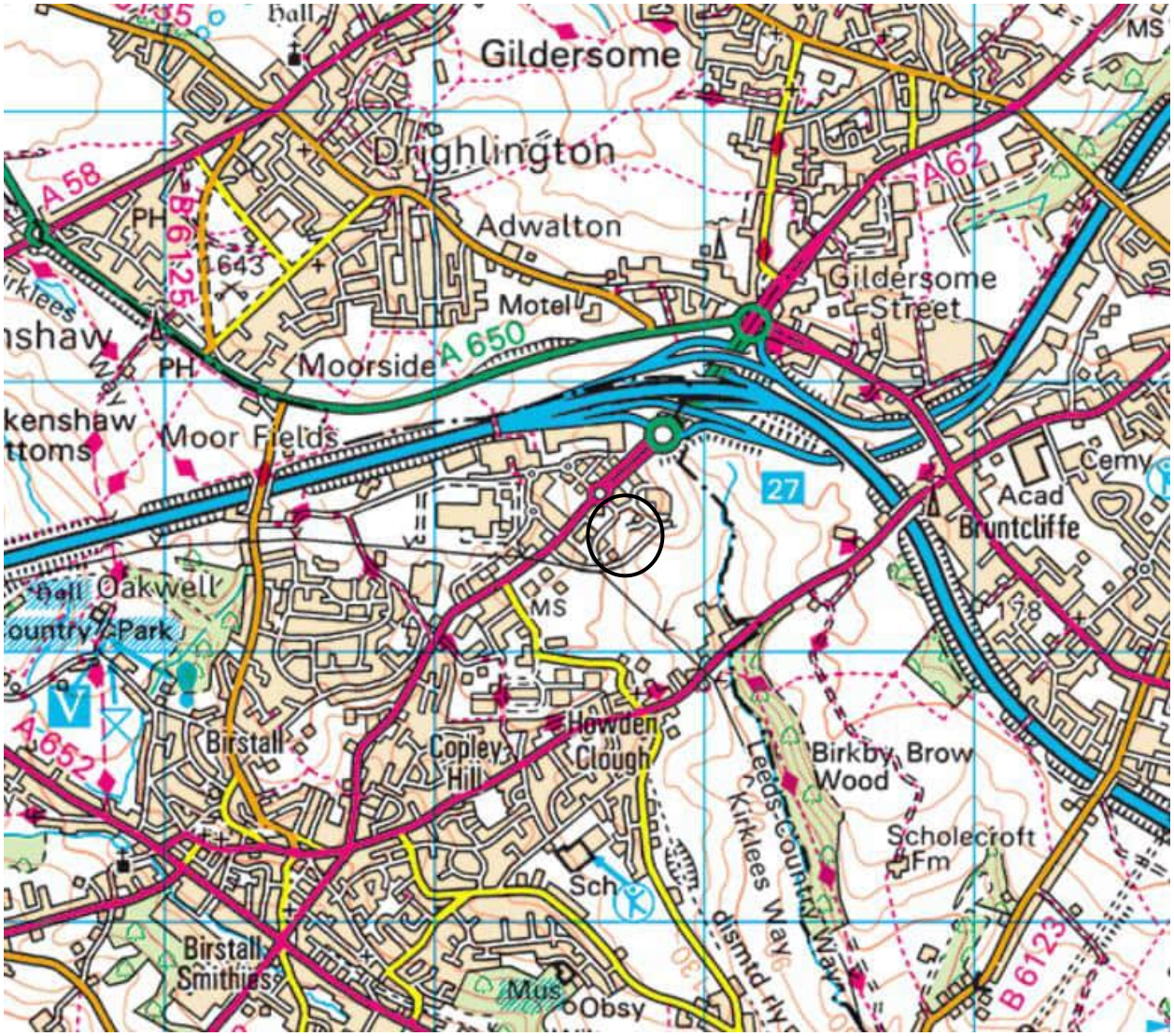
The sources of information used in the compilation of this report are detailed in the footnotes at the base of the page upon which they are first referenced.

3.0 GENERAL SITE INFORMATION

3.1 Site Location and Description

The site comprises an area of flat land as illustrated in Figure 1 below. The proposed Lild store shall be constructed on the south east side of the site with associated infrastructure constructed on the rest of the site.

FIGURE 1: SITE LOCATION PLAN



Reproduced from Ordnance Survey's 1:50,000 map number 104 © Crown copyright 2016 OS AC0000855340

TABLE 1: SITE LOCATION DETAILS

Postcode	WF17 9TD
Approximate National Grid Reference	SE 235 274
Northern Boundary	Bankwood Way / Retail units
Eastern Boundary	Retail Units / Wooded area
Southern Boundary	Wooded area
Western Boundary	Retail units

During the investigation, our engineer noted that the site was generally flat consisting a pad of demolition rubble.

3.2 Geology and Mining History

From the available information on the 1:50,000 scale Geological Survey map of the area[7] the site is shown to be underlain by Pennine Lower Coal Measures Formation and in the northwestern parts of the site by Emley Rock. The Pennine Lower Coal Measures Formation is described as interbedded grey mudstone with sandstone and siltstone. The upper part of the formation is described as having thick coal seams whereas the lower part is described as having a marine fossil content. The Emley Rock is noted to be a fine grained sandstone mudstone partings.

Several coal seams are beneath the site at varying depths. The site is within a Development High Risk Area associated with the Flockton Thin Coal seam which is recorded as last being worked in the late 19th and early 20th century.

3.3 Previous Investigations

A previous ground investigation was undertaken by Curtins[8] between 1st September 2020 and 10th September 2020. The works comprised twelve rotary boreholes, three cable percussive boreholes and nine trial pits and laboratory testing.

[7] Sheet 348: 1990, Solid and Drift edition for Plymouth

[8] Bankwood Wat, Birstall – Combined Phase 1 & Phase 2 Ground Investigation Report – Curtins Ref: 076893-CUR-00-XX-RP-GE-002-V01

4.0 CONTRACT WORKS

4.1 Scope of Contract Works

The scope of the contract works was specified by the Employer and was undertaken in general accordance with Eurocodes[9] and, where there is no conflict, also with BS 5930[10]. The consolidation work was undertaken in accordance with the Employers requirements, the Abandoned Mineworking's Manual (C758D), and with industry best practice. The treatment hole locations were set out by the Employer on a grid system. Rotary percussive infill treatment holes were formed, together with in situ grout flowability and grout bleed testing. The exploratory hole locations are shown on the site plans presented in Section A of this report. Details of the works undertaken are summarised in Table 2 below.

TABLE 2: SUMMARY OF CONTRACT WORKS

Activity	No.	Drilled (m)	Grout take (t)	Cased (m)
Rotary percussive infill treatment holes	43	1290	3.67	452
Flowability tests	2			
Bleed tests	2			
Grout cubes	4			

The treatment holes were numbered using an alpha numeric sequence indicating their position on the grouting grid (A1, B5, C12 etc).

4.2 Drilling Works

Drilling works were carried out using a hydraulic powered rotary percussive top hammer coupled to T38 drilling rods and a 63mm button bit. 89mm diameter steel Hutte casing was used to prevent the collapse of superficial deposits and fill materials in the treatment holes so that grout could be injected to the desired depths in the treatment holes. The treatment holes were drilled to a minimum of 1.00m linear depth below the pavement of the target seam. Water flush was used for the drilling of all holes.

Overall, a total of forty-three rotary percussive infill treatment holes (1290 linear metres) were formed during the site works to facilitate the treatment. The encountered ground conditions were found to be generally in agreement with the published geology.

The treatment holes identified sequences of sandstones and mudstones, and conditions potentially indicative of historical mine workings, described as 'Coal'.

The locations of the treatment holes are presented on Figure 1 – Consolidation Layout – Drilling in Section A of this report.

Drilling Records were produced to record the encountered ground conditions and are included in Section B of this report. Daily Contract Records including details of deliveries, drilling quantities and grout injection quantities were produced as a record of each day's site activities and are

[9] Eurocode 7 Part 2 (BS EN 1997-2: 2007)
[10] BS 5930: 2015 + A1 2020: Code of Practice for Site Investigation. British Standards Institution

included in Section C of this report.

4.3 Grouting Works

All treatment holes were grouted to completion in accordance with the Employers requirements. Any potential abandoned mine workings were stabilised by pressure injection grouting with a cementitious grout designed to consolidate the workings fill and any residual voids present within the workings.

The grout used to stabilise potential abandoned mine workings beneath the collapse consisted of Sulphate Resistant Portland Cement (SRPC). Grout was mixed in an electric grout mixer before being delivered to the treatment holes by an electric grout pump.

Grout was injected via tremie pipe from the base of each treatment hole to the surface at which point the hole was deemed as being complete.

A total of 3.67 tonnes of grout was injected into the infill treatment holes to achieve stabilisation. The approximate volume of grout injected into each treatment hole is indicated on Figure 2 Consolidation Layout – Grouting, presented in Section A of this report.

Grouting records detailing injected grout quantities into each treatment hole are included in Section D of this report.

5.0 LABORATORY TESTING

A total of eight grout cubes were taken during the contract works. In accordance with the contract specification the cubes were tested at curing intervals of 7, 14 and 28 days. The results of the grout cube testing meet the specified minimum of 1.0NM/m^2 at 28 days.

Test results are presented in Section E of this report.

6.0 SUMMARY

Investigative drilling and consolidation grouting has been undertaken and completed to possible abandoned mine workings located at New Lidl Store, Birstall.

A total 3.67 tonnes of grout were injected under pressure to stabilise the potential abandoned mine workings via vertical treatment holes.

The works were undertaken in accordance with the specification and to the Employer's and Engineer's requirements.

SOIL ENGINEERING

SUPPORTING FACTUAL DATA

SECTION A

DRAWINGS

NORTH

WOODHEAD ROAD

PC1 PC2 PC3 PC4

PB1 PB2 PB3

PA1 PA2 PA3 PA4

AI AG AE AC AA Y W U S Q O M K I G E C A

1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31

DRILLING KEY

- COAL
- SOFT
- BROKEN
- NON ENCOUNTERED
- VOID
- GROUT

Rev	Description	Date
0	As Built For Report	06.08.25

Title:

Consolidation Layout - Drilling

Project:

New Lidl Store, Birstall

Project No. TD8815

Client

Stonedale Construction

Consolidation of Mineworkings by

Soil Engineering Geoservices Ltd.
Parkside Lane, Dewsbury Road
Leeds LS11 5SX
Tel: 0113 2711111 Fax: 0113 2760472
email:enquiries@soil-engineering.co.uk
www.soil-engineering.co.uk

Drawn	SMc	Date	13.11.25
Checked	GM	Date	13.11.25
Approved	GM	Date	13.11.25

Scale	Size	Drawing No.	Rev.
1:250	A1	TD8815_Figure 1	0

NORTH

WOODHEAD ROAD

PC1 PC2 PC3 PC4

PB1 PB2 PB3

PA1 PA2 PA3 PA4

AI AG AE AC AA Y W U S Q O M K I G E C A

1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31

DRILLING KEY

- 0 - 1.00 TONNE
- 1.01 - 5.00 TONNES
- 5.01 - 10.00 TONNES
- 10.01 - 15.00 TONNES
- 15.00 + TONNES

Rev	Description	Date
0	As Built For Report	06.08.25

Title:

Consolidation Layout - Grouting

Project:

New Lidl Store, Birstall

Project No. TD8815

Client

Stonedale Construction

Consolidation of Mineworkings by

Soil Engineering Geoservices Ltd.
Parkside Lane, Dewsbury Road
Leeds LS11 5SX
Tel: 0113 2711111 Fax: 0113 2760472
email:enquiries@soil-engineering.co.uk
www.soil-engineering.co.uk

Drawn	SMc	Date 13.11.25
Checked	GM	Date 13.11.25
Approved	GM	Date 13.11.25

Scale	Size	Drawing No.	Rev.
1:250	A1	TD8815_Figure 2	0

SOIL ENGINEERING

SUPPORTING FACTUAL DATA

SECTION B

DRILLING RECORDS

Project Name	New Lidl Store, Birstall			**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815					Rig Type	SM11
Engineer						Rig Number	R93
Employer	Stonedale Construction			1		Date	21/10/2025
Start of shift	7:30	End of shift	17:30	Total hours	10:00	Hole Diameter (mm)	63
Casing Diameter (mm)	89	Casing Type	Steel				

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
Q11		V	0.00	8.50	Overburden		9.00	
			8.50	9.00	Coal			
			9.00	30.00	Mudstone	F		
Q17		V	0.00	12.00	Overburden		13.00	
			12.00	30.00	Mudstone	F		
AE17		V	0.00	7.00	Overburden		7.00	
			7.00	7.50	Coal			
			7.50	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller:	C Shaw	Signature:	For Client:
Assistant:	S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl Store, Birstall	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction		2	Date	21/10/2025

Start of shift	7:30	End of shift	17:30	Total hours	10:00	Hole Diameter (mm)	63	Casing Diameter (mm)	89	Casing Type	Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
W17		V	0.00	12.00	Overburden		13.00	
			12.00	30.00	Mudstone	F		
O3		V	0.00	7.00	Overburden		8.00	
			7.00	7.50	Sandstone	F		
			7.50	8.00	Coal			
			8.00	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller:	C Shaw	Signature:	For Client:
Assistant:	S Forgie		
Form No.	SE-GES-F-008	Issue No.Revision No. 2.05	Issue Date 03/05/2019

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl Store, Birstall	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction		3	Date	21/10/2025

Start of shift	7:30	End of shift	17:30	Total hours	10:00	Hole Diameter (mm)	63	Casing Diameter (mm)	89	Casing Type	Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
W5		V	0.00	1.50	Overburden		2.00	
			1.50	3.50	Sandstone			
			3.50	4.50	Coal			
			3.50	30.00	Mudstone	F		
W11		V	0.00	1.50	Overburden		2.00	
			1.50	3.50	Sandstone			
			3.50	4,5	Coal			
			4,5	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller:	C Shaw	Signature:	For Client:
Assistant:	S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl Store, Birstall			**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815					Rig Type	SM11
Engineer						Rig Number	R93
Employer	Stonedale Construction			4		Date	22/10/2025
Start of shift	7:30	End of shift	17:30	Total hours	10:00	Hole Diameter (mm)	63
Casing Diameter (mm)	89	Casing Type	Steel				

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
K15		V	0.00	13.00	Loose Fill		13.00	
			13.00	30.00	Mudstone	F		
E15		V	0.00	13.00	Loose Fill		13.00	
			13.00	30.00	Mudstone	F		
I19		V	0.00	12.50	Loose Fill		13.00	
			12.50	30.00	Mudstone	F		
K7		V	0.00	10.00	Loose Fill		10.00	
			10.00	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller:	C Shaw	Signature:	For Client:
Assistant:	S Forgie		
Form No.	SE-GES-F-008	Issue No.Revision No. 2.05	Issue Date 03/05/2019

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl Store, Birstall			**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815					Rig Type	SM11
Engineer						Rig Number	R93
Employer	Stonedale Construction			5		Date	22/10/2025
Start of shift	7:30	End of shift	17:30	Total hours	10:00	Hole Diameter (mm)	63
Casing Diameter (mm)	89	Casing Type	Steel				

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
E7		V	0.00	13.00	Loose Fill		13.00	
			13.00	30.00	Mudstone	F		
I11		V	0.00	13.00	Loose Fill		13.00	
			13.00	30.00	Mudstone	F		
G7		V	0.00	12.00	Loose Fill		12.00	
			12.00	30.00	Mudstone	F		
						F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller:	C Shaw	Signature:	For Client:
Assistant:	S Forgie		
Form No.	SE-GES-F-008	Issue No.Revision No. 2.05	Issue Date 03/05/2019

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl Store, Birstall			**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815					Rig Type	SM11
Engineer						Rig Number	R93
Employer	Stonedale Construction			6		Date	23/10/2025
Start of shift	7:30	End of shift	17:30	Total hours	10:00	Hole Diameter (mm)	63
Casing Diameter (mm)	89	Casing Type	Steel				

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
K23		V	0.00	14.00	Fill		14.00	
			14.00	30.00	Sandstone/Mudstone	F		
E23		V	0.00	14.50	Fill		15.00	
			14.50	30.00	Sandstone/Mudstone	F		
AC11		V	0.00	7.00	Overburden		7.00	
			7.00	30.00	Sandstone/Mudstone	F		
AG13		V	0.00	7.00	Overburden		7.00	
			7.00	30.00	Sandstone/Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller:	C Shaw	Signature:	For Client:
Assistant:	S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl Store, Birstall			**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815					Rig Type	SM11
Engineer						Rig Number	R93
Employer	Stonedale Construction			7		Date	23/10/2025
Start of shift	7:30	End of shift	17:30	Total hours	10:00	Hole Diameter (mm)	63
Casing Diameter (mm)	89	Casing Type	Steel				

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
W3		V	0.00	1.50	Overburden		2.00	
			1.50	3.50	Sandstone			
			3.50	4.50	Coal			
			4.50	30.00	Mudstone	F		
Q23		V	0.00	13.50	Overburden/Loose Fill		14.00	
			13.50	30.00	Sandstone/Mudstone	F		

Breakdowns	Obstructions	Standing Time
16:00 to 18:00 Breakdown due to Oil Leak		2 Hours waiting for Holes to be set out

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller:	C Shaw	Signature:	For Client:
Assistant:	S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl Store, Birstall			**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815					Rig Type	SM11
Engineer						Rig Number	R93
Employer	Stonedale Construction			8		Date	24/10/2025
Start of shift	7:30	End of shift	17:30	Total hours	10:00	Hole Diameter (mm)	63
Casing Diameter (mm)	89	Casing Type	Steel				

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
AC5		V	0.00	7.00	Overburden		7.00	
			7.00	30.00	Mudstone	F		
AG3		V	0.00	7.00	Overburden		7.00	
			7.00	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time
Down most of day-hydraulic leak fro seals. One Seal replaced allowing one hole to be drilled. Head still leaking so replacement arranged for Monday		

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller:	C Shaw	Signature:	For Client:
Assistant:	S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl Store, Birstall			**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815					Rig Type	SM11
Engineer						Rig Number	R93
Employer	Stonedale Construction			9		Date	28/10/2025
Start of shift	7:30	End of shift	17:30	Total hours	10:00	Hole Diameter (mm)	63	Casing Diameter (mm)	89	Casing Type	Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
Q1		V	0.00	7.00	Overburden		7.00	
			7.00	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller:	C Shaw	Signature:	For Client:
Assistant:	S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

SOIL ENGINEERING

SUPPORTING FACTUAL DATA

SECTION C

CONTRACT RECORDS

Project Name	New Lidl Store, Birstall	**Daily Site Record**	Date 20/10/2025
Project No.	TD8815		Report No. 001
Engineer			Seam/Location
Client	Stonedale Construction		Site

Infill

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today						
Previous						
To Date						

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today						
Previous						
To Date						

Materials Delivered (Tonnes)

Cement		PFA/Pre-mix		Sand		Gravel	
Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage
Ex. SEGL Yard	4.00						
Today	4.00	Today		Today		Today	
Previous		Previous		Previous		Previous	
To Date	4.00	To Date		To Date		To Date	

Remarks Site staff: 1x Drill and Grout Crew
Mobilising 1 Nr. Drill Rigs and Grout Plant and equipment to site
Rig R93

Signed:	G Miller	For SEGL	Signed: For Client

SOIL ENGINEERING

Project Name	New Lidl Store, Birstall	**Daily Site Record**	Date 21/10/2025
Project No.	TD8815		Report No. 002
Engineer			Seam/Location
Client	Stonedale Construction		Site

Infill

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today	54.00	210.00	7			
Previous						
To Date	54.00	210.00	7			

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today						
Previous						
To Date						

Materials Delivered (Tonnes)

Cement		PFA/Pre-mix		Sand		Gravel	
Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage
Today		Today		Today		Today	
Previous	4.00	Previous		Previous		Previous	
To Date	4.00	To Date		To Date		To Date	

Remarks Site staff: 1x Drill and Grout Crew
Drilling out probe holes as directed by StonedalE

Signed:	G Miller	For SEGL	Signed: For Client

Project Name	New Lidl Store, Birstall	**Daily Site Record**	Date 22/10/2025
Project No.	TD8815		Report No. 003
Engineer			Seam/Location
Client	Stonedale Construction		Site

Infill

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today	54.00	210.00	7			
Previous	87.00	210.00	7			
To Date	141.00	420.00	14			

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today						
Previous						
To Date						

Materials Delivered (Tonnes)

Cement		PFA/Pre-mix		Sand		Gravel	
Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage
Today		Today		Today		Today	
Previous	4.00	Previous		Previous		Previous	
To Date	4.00	To Date		To Date		To Date	

Remarks Site staff: 1x Drill and Grout Crew
Drilling out probe holes as directed by Stonedale

Signed:	G Miller	For SEGL	Signed: For Client

Project Name	New Lidl Store, Birstall	**Daily Site Record**	Date 23/10/2025
Project No.	TD8815		Report No. 004
Engineer			Seam/Location
Client	Stonedale Construction		Site

Infill

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today	59.00	180.00	6			
Previous	141.00	420.00	14			
To Date	200.00	600.00	20			

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today						
Previous						
To Date						

Materials Delivered (Tonnes)

Cement		PFA/Pre-mix		Sand		Gravel	
Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage
Today		Today		Today		Today	
Previous	4.00	Previous		Previous		Previous	
To Date	4.00	To Date		To Date		To Date	

Remarks Site staff: 1x Drill and Grout Crew
Drilling out probe holes as directed by Stonedale
2 hours waiting for holes to be set out
Rig down 16:00 to 18:00 - Oil Leak

Signed:	G Miller	For SEGL	Signed: For Client

Project Name	New Lidl Store, Birstall	**Daily Site Record**	Date 24/10/2025
Project No.	TD8815		Report No. 005
Engineer			Seam/Location
Client	Stonedale Construction		Site

Infill

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today	14.00	60.00	2	2.20	22	22
Previous	200.00	600.00	20			
To Date	214.00	660.00	22	2.20	22	22

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today						
Previous						
To Date						

Materials Delivered (Tonnes)

Cement		PFA/Pre-mix		Sand		Gravel	
Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage
Today		Today		Today		Today	
Previous	4.00	Previous		Previous		Previous	
To Date	4.00	To Date		To Date		To Date	

Remarks Site staff: 1x Drill and Grout Crew
Drilling out probe holes as directed by Stonedale
Rig down most of day due to hydraulic Oil Leak. New Seal fitted in head allowed one hole to be drilled before the issue returned. Replacement Head arranged for Monday
Holes Grouted with a neat cement grout. No ash order to avoid having large quanity left on site if we continue to encounter solid strata

Signed: G Miller	For SEGL	Signed:	For Client

Project Name	New Lidl Store, Birstall	**Daily Site Record**	Date 27/10/2025
Project No.	TD8815		Report No. 006
Engineer			Seam/Location
Client	Stonedale Construction		Site

Infill

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today						
Previous	214.00	690.00	22	2.20	22	22
To Date	214.00	690.00	22	2.20	22	22

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today						
Previous						
To Date						

Materials Delivered (Tonnes)

Cement		PFA/Pre-mix		Sand		Gravel	
Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage
Today		Today		Today		Today	
Previous	4.00	Previous		Previous		Previous	
To Date	4.00	To Date		To Date		To Date	

Remarks Site staff: 1x Drill and Grout Crew
Drilling out probe holes as directed by Stonedale
Rig down all day. New Hammer fitted but oil still leaking. Unable to drill. New motor will be fitted tomorrow.

Signed:	G Miller	For SEGL	Signed: For Client

Project Name	New Lidl Store, Birstall	**Daily Site Record**	Date 28/10/2025
Project No.	TD8815		Report No. 007
Engineer			Seam/Location
Client	Stonedale Construction		Site

Infill

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today	7.00	30.00	1			
Previous	214.00	690.00	22	2.20	22	22
To Date	221.00	720.00	23	2.20	22	22

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today						
Previous						
To Date						

Materials Delivered (Tonnes)

Cement		PFA/Pre-mix		Sand		Gravel	
Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage
Today		Today		Today		Today	
Previous	4.00	Previous		Previous		Previous	
To Date	4.00	To Date		To Date		To Date	

Remarks Site staff: 1x Drill and Grout Crew
Drilling out probe holes as directed by Stonedale
Rig most of day. New motor fitted. 1 hole drilled but leak started again. Rig will be swapped over tomorrow.

Signed:	G Miller	For SEGL	Signed: For Client

Project Name	New Lidl Store, Birstall	**Daily Site Record**	Date 29/10/2025
Project No.	TD8815		Report No. 008
Engineer			Seam/Location
Client	Stonedale Construction		Site

Infill

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today	84.00	180.00	6			
Previous	221.00	720.00	23	2.20	22	22
To Date	305.00	900.00	29	2.20	22	22

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today						
Previous						
To Date						

Materials Delivered (Tonnes)

Cement		PFA/Pre-mix		Sand		Gravel	
Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage
Today		Today		Today		Today	
Previous	4.00	Previous		Previous		Previous	
To Date	4.00	To Date		To Date		To Date	

Remarks Site staff: 1x Drill and Grout Crew
Drilling out probe holes as directed by Stonedale

Signed:	G Miller	For SEGL	Signed: For Client

Project Name	New Lidl Store, Birstall	**Daily Site Record**	Date 30/10/2025
Project No.	TD8815		Report No. 009
Engineer			Seam/Location
Client	Stonedale Construction		Site

Infill

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today	131.00	300.00	10			
Previous	305.00	870.00	29	2.20	22	22
To Date	436.00	1170.00	39	2.20	22	22

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today						
Previous						
To Date						

Materials Delivered (Tonnes)

Cement		PFA/Pre-mix		Sand		Gravel	
Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage
Today		Today		Today		Today	
Previous	4.00	Previous		Previous		Previous	
To Date	4.00	To Date		To Date		To Date	

Remarks Site staff: 1x Drill and Grout Crew
Drilling out probe holes as directed by Stonedale

Signed:	G Miller	For SEGL	Signed: For Client

Project Name	New Lidl Store, Birstall	**Daily Site Record**	Date 31/10/2025
Project No.	TD8815		Report No. 010
Engineer			Seam/Location
Client	Stonedale Construction		Site

Infill

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today	16.00	120.00	4	1.47	21	21
Previous	436.00	1170.00	39	2.20	22	22
To Date	452.00	1290.00	43	3.67	43	43

	Drilling			Grouting		
	Cased (m)	Drilled (m)	Number of Holes	Tonnes	Number of Holes	Completed Holes
Today						
Previous						
To Date						

Materials Delivered (Tonnes)

Cement		PFA/Pre-mix		Sand		Gravel	
Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage	Ticket No	Tonnage
Today		Today		Today		Today	
Previous	4.00	Previous		Previous		Previous	
To Date	4.00	To Date		To Date		To Date	

Remarks Site staff: 1x Drill and Grout Crew
Drilling out probe holes as directed by Stonedale
Drilling Complete and holes all grouted up
Works Complete

Signed:	G Miller	For SEGL	Signed: For Client

SOIL ENGINEERING

SUPPORTING FACTUAL DATA

SECTION D

GROUTING RECORDS

Project Name	New Lidl Store, Birstall	**Daily Grouting Record**	Date 24/10/2025
Project No.	TD8815		Report No. 1
Engineer			Seam/Location
Client	Stonedale Construction	**Type:** **Infill**	Infill

Start of Shift	07:30	End of Shift	17:30	Hours	10:00

Hole ID	Depth (m)	Pressure (Bar)	Material (Tonne)				Gravel (Tonne)	Remarks	Complete
			Cement	PFA	Sand	Total			
E7			0.10			0.10			Yes
E15			0.10			0.10			Yes
E23			0.10			0.10			Yes
G7			0.10			0.10			Yes
I11			0.10			0.10			Yes
I19			0.10			0.10			Yes
K7			0.10			0.10			Yes
K15			0.10			0.10			Yes
K23			0.10			0.10			Yes
O3			0.10			0.10			Yes
Q11			0.10			0.10			Yes
Q17			0.10			0.10			Yes
Q23			0.10			0.10			Yes
W3			0.10			0.10			Yes
W5			0.10			0.10			Yes
W11			0.10			0.10			Yes
W17			0.10			0.10			Yes
AC5			0.10			0.10			Yes
AC11			0.10			0.10			Yes
AE11			0.10			0.10			Yes
AE17			0.10			0.10			Yes
AG3			0.10			0.10			Yes
AG13			0.10			0.10			Yes
		Totals	2.30			2.30			

Signed	Checked	For Client	SOIL ENGINEERING
G. Miller			

Project Name	New Lidl Store, Birstall	**Daily Grouting Record**	Date 31/10/2025
Project No.	TD8815		Report No. 2
Engineer			Seam/Location
Client	Stonedale Construction	**Type:** **Infill**	Infill

Start of Shift	End of Shift	Hours

Hole ID	Depth (m)	Pressure (Bar)	Material (Tonne)				Gravel (Tonne)	Remarks	Complete
			Cement	PFA	Sand	Total			
A7			0.07			0.07			Yes
A17			0.07			0.07			Yes
A25			0.07			0.07			Yes
A31			0.07			0.07			Yes
E3			0.07			0.07			Yes
G31			0.07			0.07			Yes
I9			0.07			0.07			Yes
K31			0.07			0.07			Yes
M1			0.07			0.07			Yes
Q1			0.07			0.07			Yes
PA1			0.07			0.07			Yes
PA2			0.07			0.07			Yes
PA3			0.07			0.07			Yes
PA4			0.07			0.07			Yes
PB1			0.07			0.07			Yes
PB2			0.07			0.07			Yes
PB3			0.07			0.07			Yes
PC1			0.07			0.07			Yes
PC2			0.07			0.07			Yes
PC3			0.07			0.07			Yes
PC4			0.07			0.07			Yes
		Totals	1.47			1.47			

Signed	Checked	For Client

SOIL ENGINEERING

SUPPORTING FACTUAL DATA

SECTION E

TEST RESULTS

MATtest Limited
materials testing & consultancy

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032
Website: www.mattest.org

Soil Engineering Geoservices Ltd
Parkside Lane
Dewsbury Road
Leeds
LS11 5SX

Certificate Number 2000 14101

Determination of Compressive Strength and Density of Concrete Cube Specimens Tested in accordance with BS EN 12390 - 3 : 2019 and BS EN 12390 - 7 : 2019

Customer:	Soil Engineering Geoservices Ltd	**Date Received:**	03/11/2025
Site Name:	Lidl, Birstall	**Concrete Supplier:**	Not Supplied
Mix Type:	Neat Cement	**Ticket No:**	Not Supplied
Slump:	-	**Slump mm:**	
Location:	Infill Probing		

Lab Reference	339050	339051
Site Reference	14-01	14-02
Date Cast	24/10/2025	24/10/2025
Test Date	14/11/2025	14/11/2025
Age at Test (Days)	21	21
Nominal Size (mm)	93	92
Condition at Test	Air Cured	Air Cured
Dimensional Tolerance Met?	No	No
Mass in Air (g)	1502.1	1483.3
Density (kg/m3)	**1740**	**1760**
Load at Failure (kN)	202.3	204.8
Compressive Strength (N/mm2)	**23.5**	**24.4**
Mode of Failure	Satisfactory	Satisfactory
Remarks	3 10 4	3 10 4

Remark Codes:

1. Sampled by MATtest Limited in accordance with BS EN 12350-1
2. Sampled by MATtest Site Services in accordance with BS EN 12350-1
3. Sampled by other, no guarantee can be made on the curing history prior to receipt.
4. Cube out of dimensional tolerances, tested to Annex B Tolerances
5. Damaged/missing corners
6. Exposed Aggregate
7. Poor Compaction
8. Tested in an 'as received' condition
9. Cube honeycombed
10. Cube air cured
11. Surface Air Voids
12. Site Cured

Curing at 20 +/- 2oC, compressive strength and density carried out in accordance with BS EN 12390 unless otherwise stated
Density determined by water displacement in accordance with BS EN 12390-7 : 2019 + AC 2020
All cubes are checked for compliance to BS EN 12390 - 1 : 2021 prior to test.
Where fins are found they are removed using a carborundum stone.
The results contained in this test certificate relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This test certificate should not be reproduced without the written approval of the laboratory

Approved for Issue

Date: 18/11/2025

M Timoney (Laboratory Manager)

UKAS TESTING
2643

SOIL ENGINEERING

Leeds

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Block 6, Greenhill Industrial Estate, Coatbridge ML5 2AG
T: 01698 863 400
E: scotland@soil-engineering.co.uk

APPENDIX C
ADDITIONAL PROBE LOGS

Project Name	New Lidl, Birstall Lane		**Rotary Percussive Log Sheet**		Flush Type	Water	
Project No.	TD8815				Rig Type	SM11	
Engineer					Rig Number	R93	
Employer	Stonedale Construction		1		Date	21/10/2025	
Start of shift	End of shift	Total hours	Hole Diameter (mm) 63	Casing Diameter (mm) 89		Casing Type	Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
Q11		V	0.00	8.50	Overburden		9.00	
			8.50	9.00	Coal			
			9.00	30.00	Mudstone	F		
Q17		V	0.00	12.00	Overburden		13.00	
			12.00	30.00	Mudstone	F		
AE17		V	0.00	7.00	Overburden		7.00	
			7.00	7.50	Coal			
			7.50	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller: C Shaw	Signature:	For Client:	
Assistant: S Forgie			
Form No. SE-GES-F-008	Issue No.Revision No. 2.05	Issue Date 03/05/2019	

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl, Birstall Lane	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction	2		Date	21/10/2025

Start of shift	End of shift	Total hours	Hole Diameter (mm) 63	Casing Diameter (mm) 89	Casing Type Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
W17		V	0.00	12.00	Overburden		13.00	
			12.00	30.00	Mudstone	F		
O3		V	0.00	7.00	Overburden		8.00	
			7.00	7.50	Sandstone	F		
			7.50	8.00	Coal			
			8.00	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller: C Shaw	Signature:	For Client:
Assistant: S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl, Birstall Lane	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction	3		Date	21/10/2025

Start of shift	End of shift	Total hours	Hole Diameter (mm) 63	Casing Diameter (mm) 89	Casing Type Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
W5		V	0.00	1.50	Overburden		2.00	
			1.50	3.50	Sandstone			
			3.50	4.50	Coal			
			3.50	30.00	Mudstone	F		
W11		V	0.00	1.50	Overburden		2.00	
			1.50	3.50	Sandstone			
			3.50	4,5	Coal			
			4,5	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller: C Shaw	Signature:	For Client:
Assistant: S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl, Birstall Lane	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction	4		Date	22/10/2025

Start of shift	End of shift	Total hours	Hole Diameter (mm) 63	Casing Diameter (mm) 89	Casing Type Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
K15		V	0.00	13.00	Loose Fill		13.00	
			13.00	30.00	Mudstone	F		
E15		V	0.00	13.00	Loose Fill		13.00	
			13.00	30.00	Mudstone	F		
I19		V	0.00	12.50	Loose Fill		13.00	
			12.50	30.00	Mudstone	F		
K7		V	0.00	10.00	Loose Fill		10.00	
			10.00	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller: C Shaw	Signature:	For Client:
Assistant: S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl, Birstall Lane	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction	5		Date	21/10/2025

Start of shift	End of shift	Total hours	Hole Diameter (mm) 63	Casing Diameter (mm) 89	Casing Type Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
E7		V	0.00	13.00	Loose Fill		13.00	
			13.00	30.00	Mudstone	F		
I11		V	0.00	13.00	Loose Fill		13.00	
			13.00	30.00	Mudstone	F		
G7		V	0.00	12.00	Loose Fill		12.00	
			12.00	30.00	Mudstone	F		
						F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller: C Shaw	Signature:	For Client:
Assistant: S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl, Birstall Lane	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction	6		Date	23/10/2025

Start of shift	End of shift	Total hours	Hole Diameter (mm) 63	Casing Diameter (mm) 89	Casing Type Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
K23		V	0.00	14.00	Fill		14.00	
			14.00	30.00	Sandstone/Mudstone	F		
E23		V	0.00	14.50	Fill		15.00	
			14.50	30.00	Sandstone/Mudstone	F		
AC11		V	0.00	7.00	Overburden		7.00	
			7.00	30.00	Sandstone/Mudstone	F		
AG13		V	0.00	7.00	Overburden		7.00	
			7.00	30.00	Sandstone/Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller: C Shaw	Signature:	For Client:
Assistant: S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl, Birstall Lane	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction	7		Date	23/10/2025

Start of shift	End of shift	Total hours	Hole Diameter (mm) 63	Casing Diameter (mm) 89	Casing Type Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
W3		V	0.00	1.50	Overburden		2.00	
			1.50	3.50	Sandstone			
			3.50	4.50	Coal			
			4.50	30.00	Mudstone	F		
Q23		V	0.00	13.50	Overburden/Loose Fill		14.00	
			13.50	30.00	Sandstone/Mudstone	F		

Breakdowns	Obstructions	Standing Time
16:00 to 18:00 Breakdown due to Oil Leak		2 Hours waiting for Holes to be set out

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller: C Shaw	Signature:	For Client:
Assistant: S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl, Birstall Lane	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction	8		Date	24/10/2025

Start of shift	End of shift	Total hours	Hole Diameter (mm) 63	Casing Diameter (mm) 89	Casing Type Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
AC5		V	0.00	7.00	Overburden		7.00	
			7.00	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time
Down most of day-hydraulic leak fro seals. One Seal replaced		
allowing one hole to be drilled. Head still leaking so		
replacement arranged for Monday		

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller: C Shaw	Signature:	For Client:
Assistant: S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl, Birstall Lane	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction	9		Date	28/10/2025

Start of shift	End of shift	Total hours	Hole Diameter (mm) 63	Casing Diameter (mm) 89	Casing Type Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
Q1		V	0.00	7.00	Overburden		7.00	
			7.00	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller: C Shaw	Signature:	For Client:
Assistant: S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl, Birstall Lane	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction	10		Date	29/10/2025

Start of shift	End of shift	Total hours	Hole Diameter (mm) 63	Casing Diameter (mm) 89	Casing Type Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
M1		V	0.00	8.00	Overburden		8.00	
			8.00	30.00	Mudstone	F		
E3		V	0.00	13.00	Overburden-Loose Fill		13.00	
			13.00	30.00	Mudstone	F		
A7		V	0.00	13.50	Overburden-Loose Fill		14.00	
			13.50	30.00	Mudstone	F		
A17		V	0.00	15.00	Overburden-Loose Fill		15.00	
			15.00	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller: C Shaw	Signature:	For Client:
Assistant: S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl, Birstall Lane	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction	11		Date	29/10/2025

Start of shift	End of shift	Total hours	Hole Diameter (mm) 63	Casing Diameter (mm) 89	Casing Type Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
A25		V	0.00	16.50	Overburden-Loose Fill		17.00	
			16.50	30.00	Mudstone	F		
A31		V	0.00	16.50	Overburden-Loose Fill		17.00	
			16.50	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller: C Shaw	Signature:	For Client:
Assistant: S Forgie		

SOIL ENGINEERING

Part of the Bachy Soletanche Group

Project Name	New Lidl, Birstall Lane	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction	11		Date	30/10/2025

Start of shift	End of shift	Total hours	Hole Diameter (mm) 63	Casing Diameter (mm) 89	Casing Type Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
G31		V	0.00	16.50	Overburden		17.00	
			16.50	30.00	Mudstone	F		
K31		V	0.00	16.50	Overburden-Loose Fill		17.00	
			16.50	30.00	Mudstone	F		
PA1		V	0.00	13.50	Overburden-Loose Fill		15.00	
			13.50	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller: C Shaw	Signature:	For Client:
Assistant: S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl, Birstall Lane	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction	12		Date	30/10/2025

Start of shift	End of shift	Total hours	Hole Diameter (mm) 63	Casing Diameter (mm) 89	Casing Type Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
PA2		V	0.00	13.50	Overburden-Loose Fill		14.00	
			13.50	30.00	Mudstone	F		
PA3		V	0.00	13.50	Overburden-Loose Fill		14.00	
			13.50	30.00	Mudstone	F		
PA4		V	0.00	13.00	Overburden-Loose Fill		13.00	
			13.00	30.00	Mudstone	F		
PB1		V	0.00	8.50	OverburdeN		9.00	
			8.50	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller: C Shaw	Signature:	For Client:
Assistant: S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl, Birstall Lane	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction	13		Date	30/10/2025

Start of shift	End of shift	Total hours	Hole Diameter (mm) 63	Casing Diameter (mm) 89	Casing Type Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
PB2		V	0.00	8.50	Overburden		9.00	
			8.50	30.00	Mudstone	F		
PB3		V	0.00	8.50	Overburden		9.00	
			8.50	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller: C Shaw	Signature:	For Client:
Assistant: S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl, Birstall Lane	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction	14		Date	31/10/2025

Start of shift	End of shift	Total hours	Hole Diameter (mm) 63	Casing Diameter (mm) 89	Casing Type Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
PC1		V	0.00	3.50	Overburden		4.00	
			3.50	4.50	Mudstone			
			4.50	5.00	Coal			
			5.00	30.00	Mudstone	F		
PC2		V	0.00	3.50	Overburden		4.00	
			3.50	4.50	Mudstone			
			4.50	5.00	Coal			
			5.00	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller: C Shaw	Signature:	For Client:
Assistant: S Forgie		

SOIL ENGINEERING
Part of the Bachy Soletanche Group

Project Name	New Lidl, Birstall Lane	**Rotary Percussive Log Sheet**		Flush Type	Water
Project No.	TD8815			Rig Type	SM11
Engineer				Rig Number	R93
Employer	Stonedale Construction	15		Date	31/10/2025

Start of shift	End of shift	Total hours	Hole Diameter (mm) 63	Casing Diameter (mm) 89	Casing Type Steel

Hole ID	Launch Position	Inclination (°)	Top (m)	Base (m)	Strata	Flush Return	Casing Depth (m)	Remarks
PC3		V	0.00	3.50	Overburden		4.00	
			3.50	4.50	Mudstone			
			4.50	5.00	Coal			
			5.00	30.00	Mudstone	F		
PC4		V	0.00	3.50	Overburden		4.00	
			3.50	4.50	Mudstone			
			4.50	5.00	Coal			
			5.00	30.00	Mudstone	F		

Breakdowns	Obstructions	Standing Time

Underground Utilities	Gas Emissions	Inspection Pit Dimensions
		Length Width Depth m

Driller: C Shaw	Signature:	For Client:
Assistant: S Forgie		

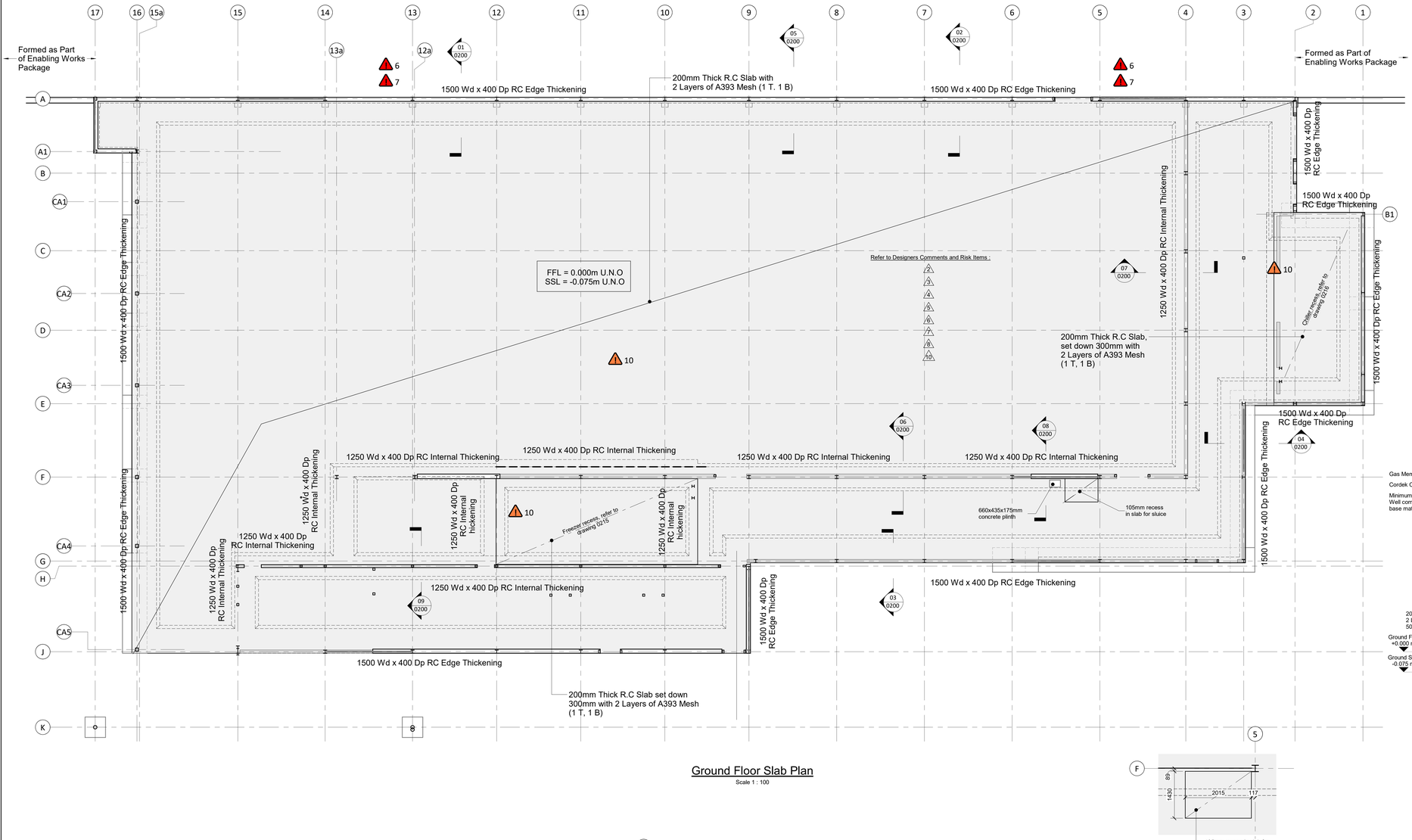
SOIL ENGINEERING
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APPENDIX D
RAFT FOUNDATION DRAWINGS

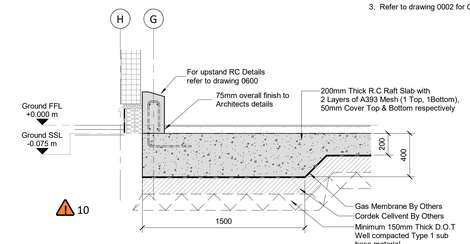
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DO NOT SCALE OFF THIS DRAWING

Notes:

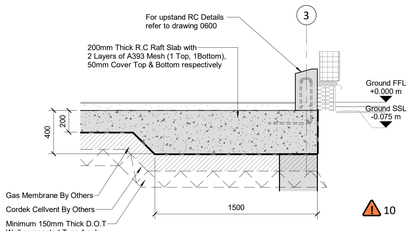
1. This drawing is to be read in conjunction with all relevant Architects and Engineers drawings.
2. It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement.
3. Refer to drawing 0002 for General Notes



Ground Floor Slab Plan
Scale 1 : 100



03 Section 3 - Edge Thickening
1 : 20



04 Section 4 Edge Thickening
1 : 20

Reinforcement :

1500 Wd x 400 Dp Edge Thickenings

H16 Bars @ 200 mm cts (Top & Bottom)

H16 'U' Bars @200 mm cts (Top & Bottom)

H16 'Z' Bars @ 200 mm cts

1250 Wd x 400 Dp Internal Thickenings

H16 Bars @ 200 mm cts (Top & Bottom)

H16 'Z' Bars @ 200 mm cts

200 mm Thick Slab

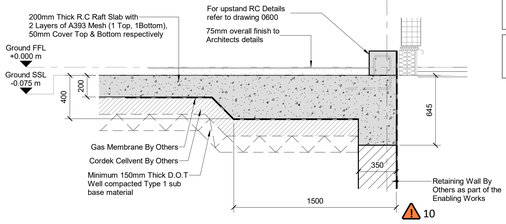
2 Layers of A393 Mesh (1 Top & 1 Bottom)

Note: Floor joint layout to be agreed with Architects to suit tiled floor layout.

Note: Location of sluice TBC by Architects. allow for slab recess. Refer to Lidl Spec

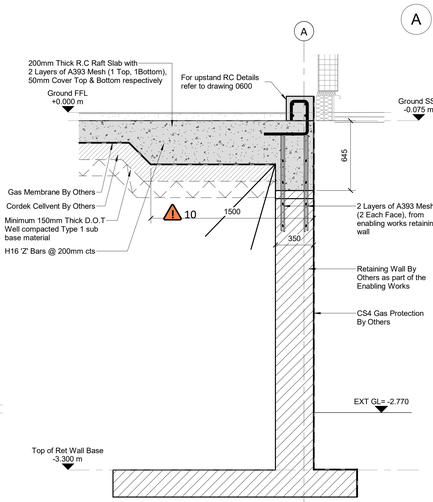
Note: Ground bearing slab requires all made ground to be removed beneath. Approx 1.0m - 1.3m in depth and back filled with suitable hardcore type fill or a geo ground improvements to specialists design and details

Note: All setting out of chiller / freezer recess to Architects details

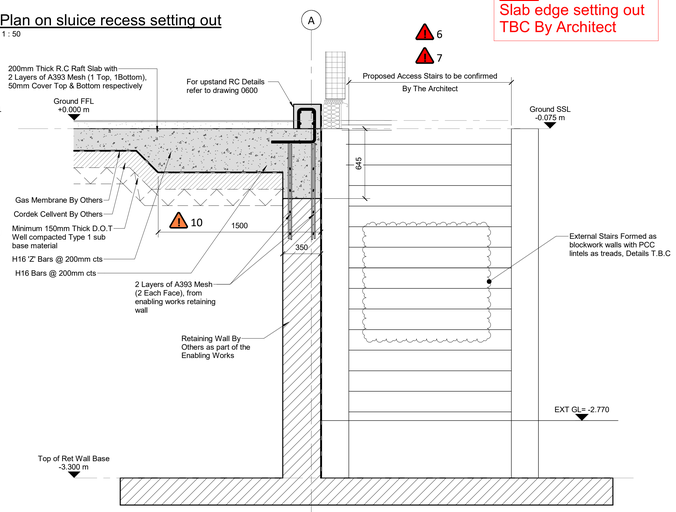


05 Section 5 Edge Thickening
1 : 20

A Plan on sluice recess setting out
1 : 50



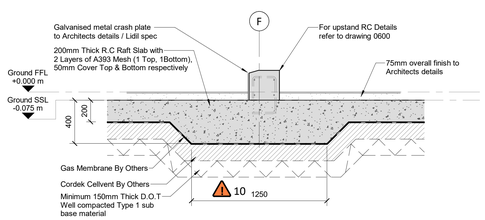
01 Section 1 Retaining Wall on GLA
1 : 20



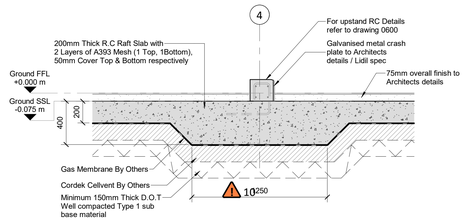
02 Section 2 on Retaining Wall On GL A
1 : 20

Note:
Slab edge setting out TBC By Architect

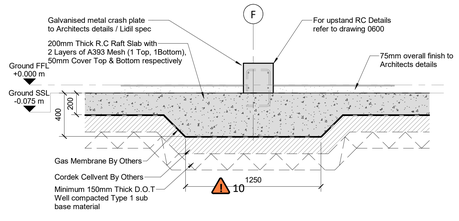
CDM HAZARDS		
It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement.		
In addition to the Hazards/Risks normally associated with the types of work detailed on this drawing, note the following:		
Ref:	Activity	Hazard
1	Excavations	Stability of Excavations
2	Existing Services	Contact with existing services
3	Demolition works	Danger of uncontrolled collapse, Experienced personnel only working to approved RAMS.



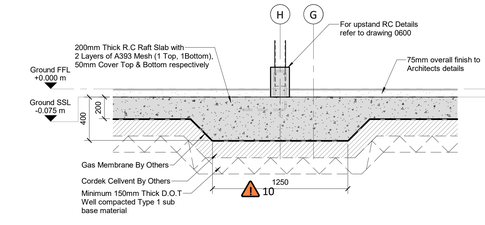
06 Section 6 Internal Slab Thickening
1 : 20



07 Section 7 Internal Slab Thickening
1 : 20



08 Section 8 Internal Slab Thickening
1 : 20



09 Section 9 Internal Slab Thickening
1 : 20

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No.	Revision	Date	Drwn	Chk
P1	Tender Issue	25.07.25	C.J.A	AB

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Project: Birstall, Leeds.

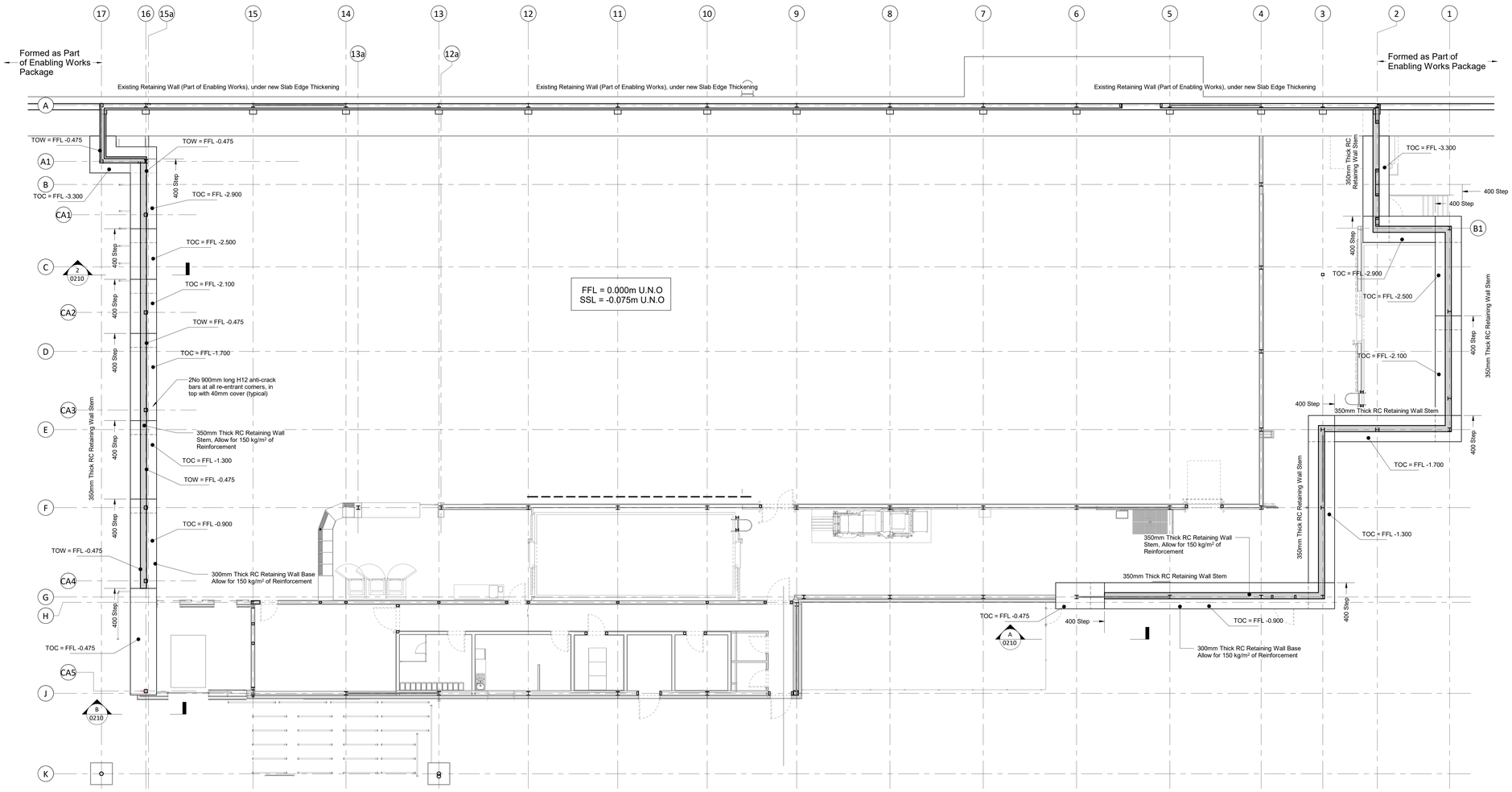
Drawing title: Raft Foundation Slab General Arrangement

Sheet Size	Drawing No.	Revision
A0	25152-DR-S-0200	P1

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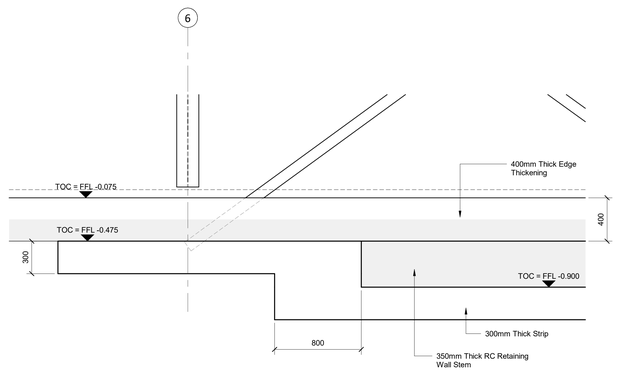
Notes:

1. This drawing is to be read in conjunction with all relevant Architects and Engineers drawings.
2. It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement.
3. Refer to drawing 0002 for General Notes



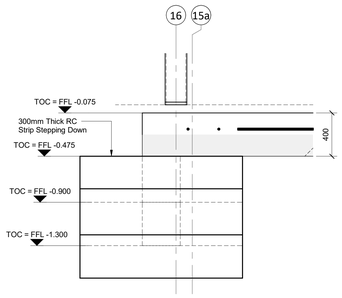
Plan on Retaining Walls

Scale 1 : 100



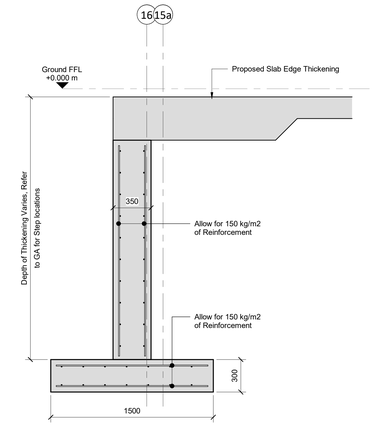
Part Elevation A - A

Scale 1 : 20



Part Elevation B - B

Scale 1 : 20



Proposed Thickening Detail

Scale 1 : 20

CDM HAZARDS		
It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement.		
In addition to the Hazards/Risks normally associated with the types of work detailed on this drawing, note the following:		
Ref:	Activity	Hazard
1	Excavations	Stability of Excavations
2	Existing Services	Contact with existing services
3	Demolition works	Danger of uncontrolled collapse, Experienced personnel only working to approved RAMS.

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P1	Tender Issue	25.07.25	C.J.A	AB

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Client: LiDL GB Ltd

Project: Birstall, Leeds.

Drawing title: Raft Slab Retaining Wall Plan and Details

Sheet Size	Drawing No.	Revision
A0	25152-DR-S-0210	P1

APPENDIX E
CMC DESIGN REPORT

LIDL STORE

BIRSTALL

Ground improvement by Controlled Modulus Columns (CMC®)

DESIGN REPORT

Reference	V28176	Pages	19

Revision	Date	Prepared by	Checked by	Detail of modifications
A	07/11/2025	JJ	FB	First issue

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1. INTRODUCTION

It is proposed to construct a new commercial development in Birstall, comprising of a Lidl store, a Home Bargain store and the associated external areas including a Retaining wall. The proposed construction footprint runs over made ground with landfill material underlain by very soft alluvial clay above dense gravels and Merica mudstone.

Due to the presence of very compressible layers, a direct construction of any type of structure without soil improvement or replacement will lead to unacceptable post construction settlements and deformations.

The concerned structures are:

- **the pad/strip footings/slab thickenings and ground bearing slab of the buildings:**
  - **Lidl store**, covering a floor area of **around 2,417 m²,**
  - **Home Bargain**, covering a floor area of **around 2,172 m²,**
  - **Retaining Wall**, covering a total length of **around 73.44 ml,**
- **the external areas:**
  - **Concrete yard slabs**, covering a floor area of **around 1,260 m²,**

These structures are highlighted in in the figure below (green for Lidl store, Red for Home Bargain store and purple for the concrete yard slab).

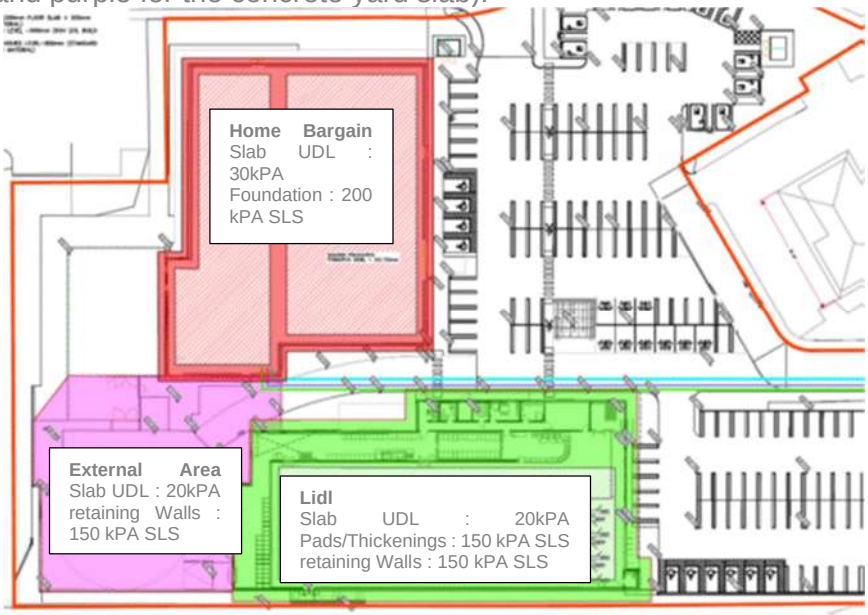


Figure 1 - Site layout with CMC treatment area in colour

The present document consists in a design report for ground improvement with **the Controlled Modulus Columns (CMC)** technique. The aim of the CMC solution is to control the settlements and provide a higher bearing capacity by creating a composite material [CMC+soil].

2. REFERENCES DOCUMENTS

This report has been established from the following documents:

[1] Menard Technical and Financial Proposal referenced FB/V26472/CMC+BMC-B dated 30/05/2025
[2] NA to BS EN 1990 2002 & 2005 (Eurocode 0)
[3] Proposed Site Plan – Option 10 No 7404-SMR-00-ZZ-DR-A-8014-S3-P2 dated 30/09/2020
[4] Proposed Site Levels No 09-148-401 Rev B dated 19/10/2020
[5] Ground Improvement Draft Specifications No 09-148 dated October 2020
[6] Combined Phase 1 & Phase 2 Ground Investigation Report No 076893-CUR-00-XX-RP-GE-002 Rev V01 from CURTINS dated 16/10/2020
[7] CPT logs from Lankelma dated 23/12/2020
[8] CPT Coordinated Setting Out, plan referenced 09-148-100 by Beam Consulting, dated 16/12/2020
[9] Detailed Coal Mining Rist Assessment for Land, report referenced C8781/GH/9715 Rev B by SIRIUS, dated 28/10/2021
[10] Site Layout – Formation Levels & Ground Improvement Plant No. 24062-SDS-00-SL-DR-C-3019 Rev T4 dated 01/08/2024
[11] Home Bargains Site – Proposed Plan and Site Sections No. 22349-3012 Rev T2 dated 05/04/2024
[12] Development Platform Specification from SDS Rev 7 dated 05/04/2024
[13] Confirmation on the loadings per areas received from Stonedale by email on 02/10/2025
[14] Lidl store Foundation plan general plan by SDS design engineers, drawing no. 25289-SDS-00-FP-DR-S-3400 revision CN1, dated 01/10/2025
[15] Concrete yard plan by SDS design engineers, drawing no 25289-SDS-00-SL-DR-C-3060 revision CN1, dated 01/10/2025
[16] Birstall ground model 2, drawing no 4115 S(50)01 by Stonedale, dated 15/10/2025
[17] Confirmation on the Working platforms levels per areas received from Stonedale by email on 28/10/2025+5/11/2025
[18] Retaining walls foundations drawing, referenced Retaining Wall Setting Out REV1 by Stonedale, dated 30/10/2025
[19] Home Bargain store foundation drawings to be received

3. PROJECT INPUT DATA

3.1. Design specifications

The specifications to be achieved with regard to the soil improvement works are as follows:

- **Total allowable long-term settlements considering quasi-permanent service loads: 25 mm**
- **Total allowable differential settlements: 1/500 (1/300 for the externals)**
- **Equivalent SLS bearing capacity under foundations: up to 200kPa**

3.2. Topography

Natural Ground level sits at roughly +149.7mAOD when finished floor level is at +150.88mAOD for Lidl store, +151.5mAOD for home bargain store and roughly +150.31mAOD for the external yard slab, with the working platform level being at 500mm underneath each respective FFL : 150.38mAOD for the Lidl store, +151mAOD for the Home Bargain store, +147.3 for the retaining wall low level, +149 for the external yard area. [17]

3.3. Slab design

Slab geometry as per the slab designer documents **Error! Reference source not found.**, **Error! Reference source not found.** & **Error! Reference source not found.**

- **Slab dimension**
  - Thickness: ranging from 160 to 175mm
- **Load Cases:**
  - Point Load: none
  - Uniform Distribution Load: 20 or 30 kPa at SLS
  - Line Load: none

4. TECHNICAL

4.1. Description of the ground improvement technique

The Controlled Modulus Columns ground improvement technique is intended to improve the soil globally and to reduce its deformability by the use of rigid concrete inclusions. It does not aim to bypass the compressive ground or to build piles that will directly support the entire load from the structure. The objective is to reduce global and differential settlement by relieving the soil from a part of the loads imposed by the structure.

These columns distribute the loads uniformly throughout the soil mass that thus behaves as a composite [concrete column + surrounding soil material]. The entire process is vibration free and operates in-the-dry without spoils, which allows for cleaner project sites.

Controlled Modulus Columns can be considered as a particular type of Rigid Inclusions that can be carried out with a various number of execution method (rotation, vibration, percussion…).

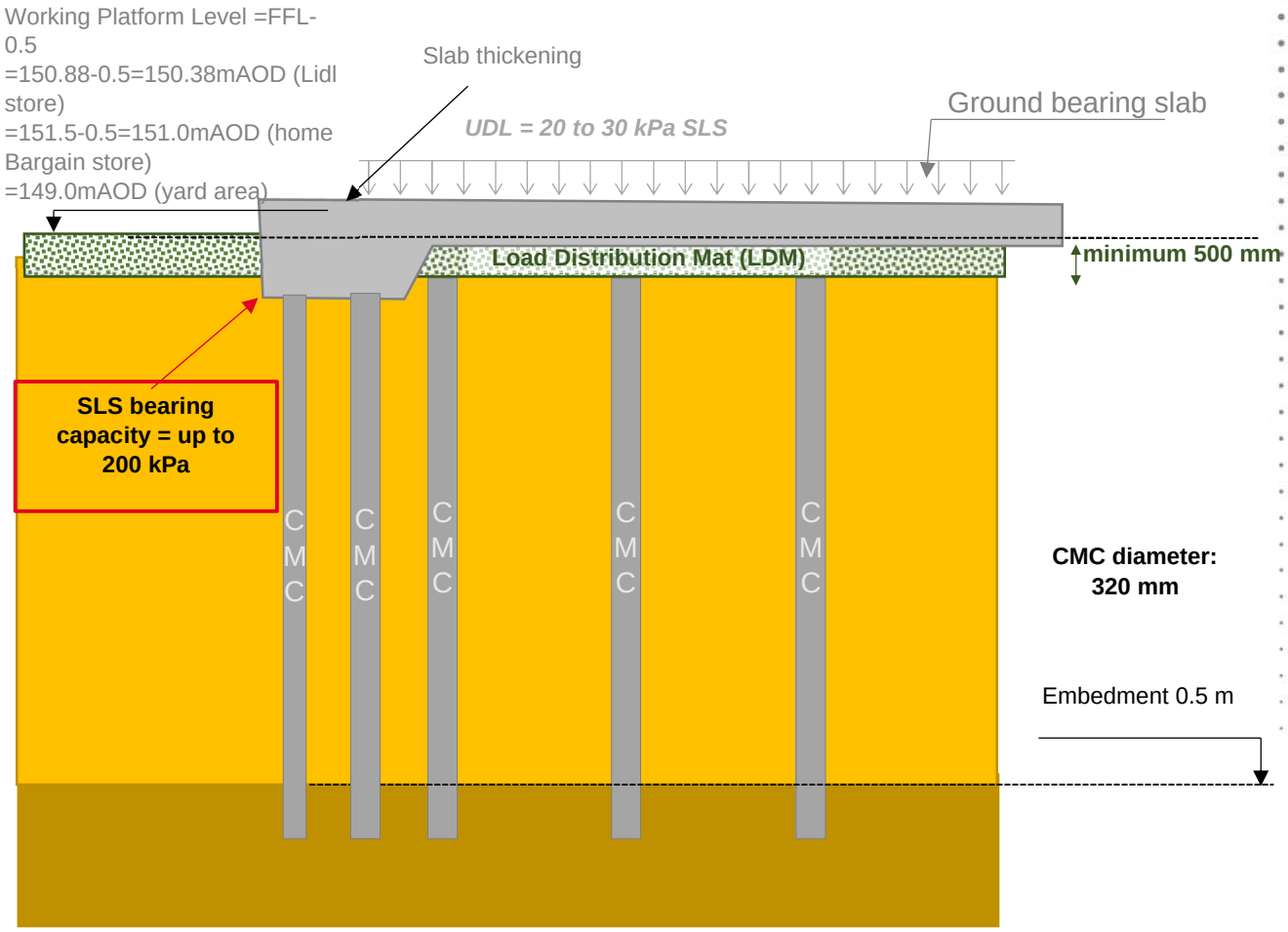


Figure 2 - Typical cross section of slab thickenings and ground bearing slab on CMC

4.2. Method of execution

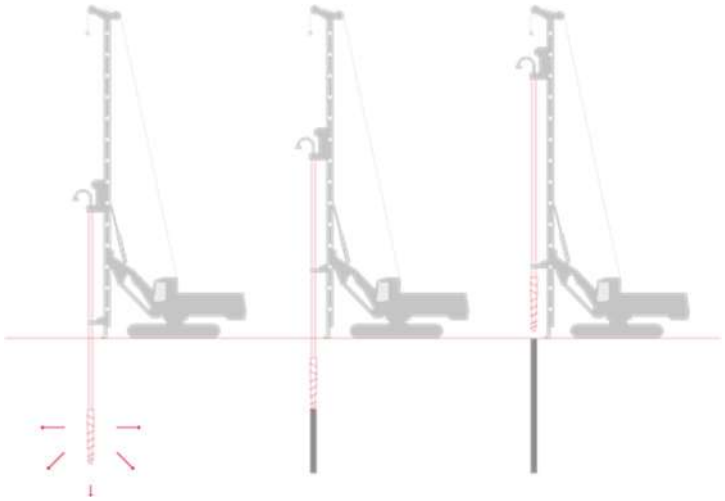


Figure 3 - CMC installation process

A specially designed auger, powered by equipment with large torque capacity and high static down thrust, displaces the soil laterally, with virtually no spoil or vibration. The displacement auger is pushed into the ground to the required depth resulting in a local increment of the density of the surrounding soils around the auger. In the case that one or several layers to drill are too compact, a regular CFA auger can be used.

During the auger extraction process, a column is developed by concreting under controlled limited pressure (less than 5 bars) through the stem of the displacement auger to achieve a predetermined stiffness ratio with the surrounding soil. The result is a composite soil/concrete ground improvement system. Current practice is to install columns with diameter varying between 280 and 450 mm.



Figure 4 - CMC setup on site

4.3. Adaptation to the project

4.3.1. Ground improvement principle

The foreseen ground reinforcement system consists in installing vertical concrete inclusions (CMC) in order to create a composite [soil + CMC] material. CMC will be installed under pad or strip footings, with the head of the CMC cut off at the base of the footing. Beneath the slab, it is required to place a compacted Load Distribution Mattress between the underside of the slab and the head of the CMC in order to homogenize the behaviour of the reinforced soil.

4.3.2. Characteristics of the CMC solution

The characteristics of the CMC for this project will be:

CMC diameter [m]	Concrete			
	Young's Modulus E_Y [MPa]	Characteristic compressive strength f_{ck28} [MPa]	Chemical Class	Slump
0.30	9,300	16	DC-2	S4

Table 1 - CMC characteristics

The design compressive strength of the concrete is given by:

$$f_{cd} = \min\left(\alpha_{cc} k_3 \frac{f_{ck}^*}{\gamma_C}; \alpha_{cc} \frac{f_{ck}}{\gamma_C}; \alpha_{cc} \frac{C_{max}}{\gamma_C}\right)$$

Where:

- α_{cc} = 0.8 for unreinforced concrete
- γ_C = 1.5 (partial factor for the concrete)
- k_3 = 1.2 in Domain 1 (CMC required for bearing capacity) and 1.5 in Domain 2 (CMC for settlement control only)
- f^*_{ck}: characteristic compressive strength of the CMC concrete determined from the following formula:

$$f_{ck}^* = inf\{C_{max}; f_{ck}\} \frac{1}{k_1 k_2}$$

- f_{ck}: characteristic compressive strength of the concrete at 28 days (measured on cylinders)
- C_{max} = 35 for CMC with soil displacement

We have:

$$k_1 = 1.3 \text{ and } k_2 = 1.35 - d/2 = 1.2$$

Hence:

$$f_{ck}^* = \inf(f_{ck}; C_{max}) \frac{1}{k_1 k_2} = 10.3\ MPa$$

In SLS conditions, the average stress in the CMC is limited to:

$$f_{cd,av,SLS} = 0.3 k_3 f_{ck}^* = \begin{cases} 3.7\ MPa \text{ in Domain 1} \\ 4.6\ MPa \text{ in Domain 2} \end{cases}$$

In ULS conditions, the average stress in the CMC is limited to:

$$f_{cd,av,ULS} = \min(f_{cd}, 7\ MPa) = \begin{cases} 6.6\ MPa \text{ in Domain 1} \\ 7\ MPa \text{ in Domain 2} \end{cases}$$

5. GROUND CONDITIONS

Our design is based on the ground conditions described in the above site investigation reports [6],[7] and [9] The ground conditions are homogeneous over the site.

5.1. Lidl Store

The typical soil profile is the following:

- Reworked made ground (Silty mixtures)
- Landfill waste made ground (Silty mixtures)
- Pennine Lower Coal Measures (stiff silts)

Geotechnical models based on CPT 9-16. The calculations were carried out for the conservative soil profile detailed in the table below. All the values of the design parameters have been derived from correlations based on CPT.

	Top	Bottom	γ	q_c	E_m	α	p_l	E_Y	ν
	(mAOD)	(mAOD)	(kN/m^3)	(MPa)	(MPa)	(-)	(MPa)	(MPa)	(-)
Working Platform (Fill class 6F)	150.38	148.88	18	-	12.5	1/4	1.2	50	0.3
Reworked Made ground - silty mixtures	148.88	140,00	18	2.5	7.5	1/2	0.7	15	0.3
Landfill waste Made ground -silty mixtures	140,00	137,00	18	2.5	7.5	1	0.7	7.5	0.3
Pennine Lower Coal Measures - Silts	137,00	132,00	18	5	15.0	1/2	1.5	30	0.3
CMC	Var	136.5	22	-	-	-	-	9,300	0.2
LDM	150.645-150.345	150.145-149.845	18	-	12.5	1/4	1.7	50	0.3

Table 2 - Soil profile and geotechnical parameters under the Lidl store

Notes:

- The Load Distribution Mat (LDM) needs to be minimum 500 mm thick and is only required under the concrete ground bearing slabs.
- CMC will be embedded 0.5 m into Pennine Lower Coal Measures layer
- To account for the presence of landfill waste, the modulus of this layer has been degraded.
- The symbols used in the table above are: γ = bulk unit weight, q_c = CPT cone resistance, E_m = Pressuremeter Modulus, α = rheological coefficient, E_Y = Young's modulus, p_l = pressure limit, ν = Poisson's ratio.
- Ground water was encountered during the site investigations at roughly 3 m below ground level
- 2 working platforms have been provided, a higher one for the Lidl store, a lower one for the retaining wall, with their elevation being at respectively + 150.38m and +147.3m

5.2. Home Bargain Store

As reported on the SIRUIS assessment [9] and shown on the CPTs results [7] a high wall of former opencast and landfill operation is likely located along the Home Bargain store area. Therefore, 2 models have been considered with the delimitation of each model as shown underneath. (in yellow the shallow model, in green the deep model)

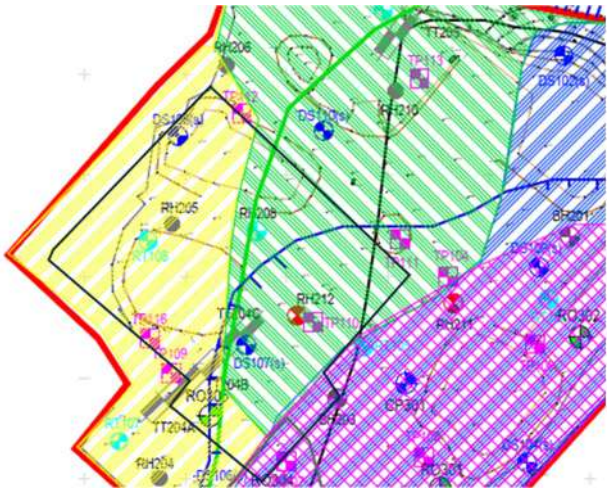


Figure 5 - Delimitations of the 2 soil models considered under the Home Bargain store

5.2.1. Model 1 – Shallow model

The typical soil profile is the following:

- Shallow reworked Made Ground (from sandy to silty to clayey)
- Pennine lower coal measures (stiff silts and dense sands)

Geotechnical models based on CPT 1&3. The calculations were carried out for the conservative soil profile detailed in the table below. All the values of the design parameters have been derived from correlations based on CPT.

		Top	Bottom	γ	q_c	E_m	α	p_l	E_Y	ν
		(mAOD)	(mAOD)	(kN/m^3)	(MPa)	(MPa)	(-)	(MPa)	(MPa)	(-)
1	Remaining Working Platform (Fill class 6F)	150.6	150.5	18	-	12.5	1/4	1.2	50	0.3
2	Reworked Made ground - sandy	150.500	150.3	18	10	17.5	1/3	1.7	52.5	
3	Reworked Made ground - silty mixtures	150.3	149.3	18	2.5	7.5	1/2	0.7	15	0.3
4	Reworked Made ground – clayey mixtures	149.3	148.2	18	1	5	2/3	0.5	7.5	0.3
5	Pennine Lower Coal Measures – stiff Silts	148.2	147	18	5	15	1/2	1.5	30	0.3

6	Pennine Lower Coal Measures – dense sands	147	145.7	18	12	21	1/3	1.2	63	0.3
7	Pennine Lower Coal Measures – stiff Silts	145.7	144	18	5	15	1/2	1.5	30	0.3
8	Pennine Lower Coal Measures – dense sands	144	143	18	12	21	1/3	2.1	63	0.3
	CMC	Var	147.7	22	-	-	-	-	9,300	0.2
	LDM	151.1	150.6	18	-	12.5	1/4	1.2	50	0.3

Table 3 - Soil profile and geotechnical parameters under the Home Bargain store – Shallow model.

Notes:

- The Load Distribution Mat (LDM) needs to be minimum 500 mm thick and is only required under the concrete ground bearing slabs.
- CMC will be embedded 0.5 m into Pennine Lower Coal Measures – stiff Silts (layer 5)
- The symbols used in the table above are: γ = bulk unit weight, q_c = CPT cone resistance, E_m = Pressuremeter Modulus, α = rheological coefficient, E_Y = Young's modulus, p_l = pressure limit, ν = Poisson's ratio.
- Ground water was encountered during the site investigations at roughly 3 m below ground level

5.2.2. Model 2 – Deep model

The typical soil profile is the following:

- deep reworked Made Ground (from sandy to silty to clayey)
- Pennine lower coal measures (stiff silts and dense sands)

Geotechnical models based on CPT 4&5. The calculations were carried out for the conservative soil profile detailed in the table below. All the values of the design parameters have been derived from correlations based on CPT.

		Top	Bottom	γ	q_c	E_m	α	p_l	E_Y	ν
		(mAOD)	(mAOD)	(kN/m^3)	(MPa)	(MPa)	(-)	(MPa)	(MPa)	(-)
1	Remaining Working Platform (Fill class 6F)	150.6	150.5	18	-	12.5	1/4	1.2	50	0.3
2	Reworked Made ground - sandy	150.500	149.1	18	10	17.5	1/3	1.7	52.5	
3	Reworked Made ground - silty mixtures	149.1	146.9	18	1	3	1/2	0.3	6	0.3
4	Reworked Made ground – clayey mixtures	146.9	144.1	18	2.5	12.5	2/3	1.2	18.8	0.3

5	Pennine Lower Coal Measures – stiff Silts	144.1	143	18	5	15	1/2	1.5	30	0.3
	CMC	Var	143.6	22	-	-	-	-	9,300	0.2
	LDM	151.1	150.6	18	-	12.5	1/4	1.2	50	0.3

Table 4 - Soil profile and geotechnical parameters under the Home Bargain store – Deep model.

Notes:

- The Load Distribution Mat (LDM) needs to be minimum 500 mm thick and is only required under the concrete ground bearing slabs.
- CMC will be embedded 0.5 m into Pennine Lower Coal Measures – stiff Silts (layer 5)
- The symbols used in the table above are: γ = bulk unit weight, q_c = CPT cone resistance, E_m = Pressuremeter Modulus, α = rheological coefficient, E_Y = Young's modulus, p_l = pressure limit, ν = Poisson's ratio.
- Ground water was encountered during the site investigations at roughly 3 m below ground level

5.3. External yard area

The typical soil profile is the following:

- Reworked made ground (Sandy to Silty mixtures)
- Landfill waste made ground (Silty mixtures)
- Pennine Lower Coal Measures (stiff silts)

Geotechnical models based on CPT 7&8. The calculations were carried out for the conservative soil profile detailed in the table below. All the values of the design parameters have been derived from correlations based on CPT.

	Top	Bottom	γ	q_c	E_m	α	p_l	E_Y	ν
	(mAOD)	(mAOD)	(kN/m^3)	(MPa)	(MPa)	(-)	(MPa)	(MPa)	(-)
Additional Fill class 6F	149.625	149	18	-	12.5	1/4	1.2	50	0.3
Working Platform (Fill class 6F)	149	148.5	18	-	12.5	1/4	1.2	50	0.3
Reworked Made ground - sandy mixtures	149.625	148.125	10	17.5	1/3	1.7	52.5		10
Reworked Made ground - silty mixtures	148.125	146.9	18	3.5	10.5	1/2	1.0	21	0.3
Landfill waste Made ground -silty mixtures	146.9	144.6	18	2	6	1	0.6	6	0.3
Pennine Lower Coal Measures – stiff Silts	144.6	143	18	5	15.0	1/2	1.5	30	0.3
CMC	Var	144.1	22	-	-	-	-	9,300	0.2

LDM	150.135	149.625	18	-	12.5	1/4	1.7	50	0.3

Table 5 - Soil profile and geotechnical parameters under the external yard area

Notes:

- The Load Distribution Mat (LDM) needs to be minimum 500 mm thick and is only required under the concrete ground bearing slabs.
- CMC will be embedded 0.5 m into Pennine Lower Coal Measures layer
- To account for the presence of landfill waste, the modulus of this layer has been degraded.
- The symbols used in the table above are: γ = bulk unit weight, q_c = CPT cone resistance, E_m = Pressuremeter Modulus, α = rheological coefficient, E_Y = Young's modulus, p_l = pressure limit, v = Poisson's ratio.
- Ground water was encountered during the site investigations at roughly 3 m below ground level
- Above the working platform, similar fill class 6F has been considered to reach the underside of the slab.
- 2 working platforms have been provided, a higher one for the external yard slanb a lower one for the retaining wall, with their elevation being at respectively + 149 and +147.3m

6. CALCULATIONS RESULTS

6.1. Footings/Slab thickenings

The calculations of the ground improvement beneath the footings/slab thickenings are carried out using the CMCLTP software, in which the deformations and the stresses are calculated by iterations according to the O. Combarieu method ("Fondations mixtes" [Mixed foundations], LCPC, 1988), taking into account the Frank and Zhao behaviour laws for the CMC-soil interactions.

The calculations are carried out for each footing type, considering the SLS bearing pressures of 150 kPa for the Lidl store foundations and retaining wall and 200 kPa for the Home Bargains foundation, as confirmed by Stonedale by email [13] The main results of the calculations are shown in the table below, and the details of the calculations are presented in Appendix 1 for some selected cases.

Building	Pad Type	Length	Width	SLS bearing pressure	SLS vertical load	No of CMC	Settlement	SLS Stress in the CMC
	(-)	(m)	(m)	(kPa)	(kN)	(-)	(mm)	(MPa)
Lidl	A3	1.5	1.5	150	337.5	2	<5	1.68
Home Bargain	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending

Table 6 - Design results for pad footings

Building	Strip/Slab thickening Type	Width	SLS bearing pressure	SLS vertical load	No of CMC	Settlement	SLS Stress in the CMC
	(-)	(m)	(kPa)	(kN/lm)	(-)	(mm)	(MPa)
Lidl	A9	1.95	150	292.5	1 every 1.0 m	<5	2.69
	A13	4.455	150	668.25	4 every 1.7m	8	3.33
	A14	2.25	150	337.5	2 every 1.7m	<5	3.11
	A22	1.50	150	225.0	1 every 1.3m	<5	2.61
External Yard	Retaining wall 1	1.0	150	150	1 every 2m	<5	2.83
	Retaining wall 2	1.4	150	210	1 every 1.4m	<5	2.97

Table 7 - Design results for slab thickenings and retaining wall strip footings

Conclusion: **The settlements under the working loads remain acceptable (< 25 mm) and the stresses in the CMC are lower than the allowable value.**

6.2. Ground bearing slab

Calculations of the ground improvement under the ground bearing slab are carried out using an axisymmetric model with the CMCAXI software.

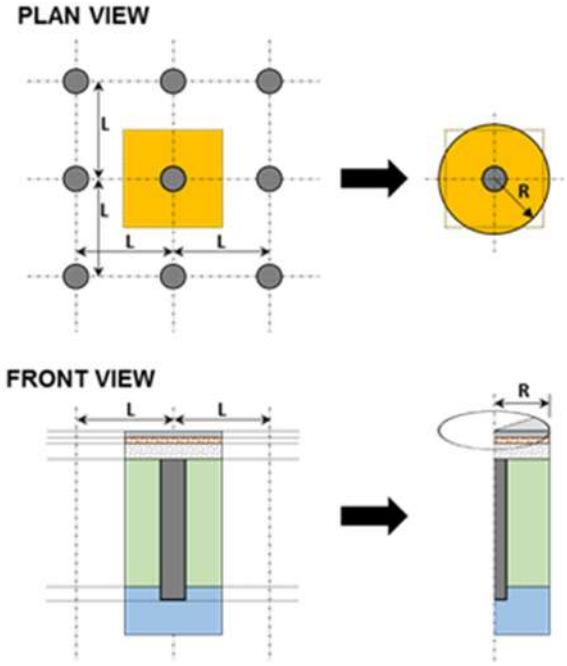


Figure 6 - Principle of axisymmetric modelling

The main results are presented below, the detailed calculations are presented in Appendix 2.

Zones	SLS UDL	CMC Grid	Settlements	SLS Stress in the CMC
(-)	(kPa)	(m x m)	(mm)	(MPa)
Lidl Store	20	3 x 3	8	1.9
External yard	20	3 x 3	6	1.6
Home Bargain	30			

Table 8 - Calculation results for ground bearing slab

Conclusion: **The long-term settlements considering quasi-permanent service loads remain lower than 25 mm and the stresses in the CMC are acceptable.**

7. QUALITY CONTROL

7.1. Monitoring and recording

- Layout drawing showing the location of each CMC will be produced by Menard.
- Calibration drilling(s) close to existing soil investigation borehole(s) to calibrate drilling parameters to each layer of the geotechnical profile and to define an “embedment” criteria will be done.
- The execution of each CMC is controlled by the operator and recorded by an on-board computer. The parameters controlled are: verticality of the mast, depth of treatment, concrete volume, continuity and integrity of each column. A special software enables the site technician to plot the profile of each CMC together with the data recorded during the drilling process.
- 1 of every 10 data recording is handed to the Engineer after the execution of the works.
- The work done is also recorded by a log of each CMC showing the CMC reference number, penetration length, concrete volume and a note of any unusual circumstances encountered during the installation (depth of predrilling, refusals, etc.). This log will be recorded on our standard Daily Record Sheet.
- 'As built' record drawings showing the execution numbers of each CMC will be provided.

7.2. Testing

- Concrete sampling for measurement of the compressive strength: 5 samples per day per rig, 2 of them are tested at 7 days, 2 of them at 28 days and 1 spare,
- Vertical load tests up to 1.5 times the nominal load of the CMC or to a maximum load of 40t whichever is the least. We have allowed for **5 plate load tests**. The load test comprises a 600 mm circular plate which is positioned centrally over a CMC on a layer of sand. The load is applied centrally to the plate by a hydraulic jack using the CMC rig as a “reaction block”. The procedure for those tests is as follows:

Load Stage	Load applied	Comparator reading times
1	20% Q_{max}	1 and 5 min
2	0% Q_{max}	1 and 5 min
3	20% Q_{max}	1, 2, 3, 4, 5, 10 and 15 min
4	40% Q_{max}	1, 2, 3, 4, 5, 10 and 15 min
5	60% Q_{max}	1, 2, 3, 4, 5, 10 and 15 min
6	80% Q_{max}	1, 2, 3, 4, 5, 10, 15, and 30 min
7	100% Q_{max}	1, 2, 3, 4, 5, 10, 15, 30 and 60 min
8	50% Q_{max}	1 and 5 min
9	0% Q_{max}	1 and 5 min

Table 9 - Loading procedure

Notes:

- The load stages are to be carried out for not less than the times specified above or until the settlement is equal or less than 0.02 mm per minute.
- The maximum stress in a CMC is 3.33 MPa corresponding to a maximum nominal load of 235 kN. As such, the maximum load applied during the load test will be Q_{max} = 353kN, for the Lidl store and external yard areas.

8. CONCLUSION

The design for CMC ground improvement below the concerned structures has been carried out using the O. Combarieu iterative method, taking into account the behaviour laws of Frank & Zhao. The calculation results show the good behaviour of the footings and ground bearing slabs in terms of settlements under working loads. They show also that the CMC structural integrity is ensured.

The CMC of diameter **300 mm** will be installed using a concrete with a minimum compressive strength of **16 MPa** and will be keyed **0.5 m into stiff silts (Pennine Lower Coal Measures).** As such, their depth is expected to be around **3 m to 16.5m from the working platform level close to 150 mAOD**. Depending on the local characteristics of the soils, CMC could be shorter or longer.

The CMC beneath the ground bearing slab will be arranged in a square grid of **3 m x 3 m**. A Load Distribution Mattress (LDM) of minimum thickness **500 mm** is required between the head of the CMC and the underside of the slab. The compaction requirements are **95% MDD, CBR > 10% or subgrade reaction coefficient K_v > 50 MPa/m.**

The slab designer can use a **subgrade reaction coefficient k_v of 50 MPa/m** for a TR34 ground bearing slab approach.

The number of CMC beneath the strip footings/slab thickening will vary **between 1 every 2m to 4 every 1.7m** , depending on the strip width. No LDM is required below the footings/slab thickenings.

The CMC configuration is summarized in the table below:

Controlled Modulus Columns (CMC)		
CMC	***Diameter***	300 mm
	Embedment	stiff silts (Pennine Lower Coal Measures)
	Concrete compressive strength	Min. f_{ck} = 16 MPa
	Design chemical class	DC-2
Beneath slab	***Load Case***	UDL up to 30kPa (SLS quasi-permanent)
	Grid	3 m x 3 m
	Slab Geometry	160 mm thick (C30/C35)
	Load Distribution Mat / Subgrade	Minimum 500 mm thick, CBR > 10% / $k_v \geq$ 50MPa/m
Beneath footings	***Allowable bearing pressure***	Up to 200 kPa SLS (Home Bargain)
	Spacing	2 CMC below pads footings 1 CMC every 2m to 4 every 1.7m below the slab thickenings
	Load Distribution Mat	None

Table 10 - Summary of CMC arrangement

APPENDIX 1: DETAILED CALCULATIONS FOR THE CMC BENEATH THE FOOTINGS

CALCULATION OF FOOTING ON CONTROLLED MODULUS COLUMNS

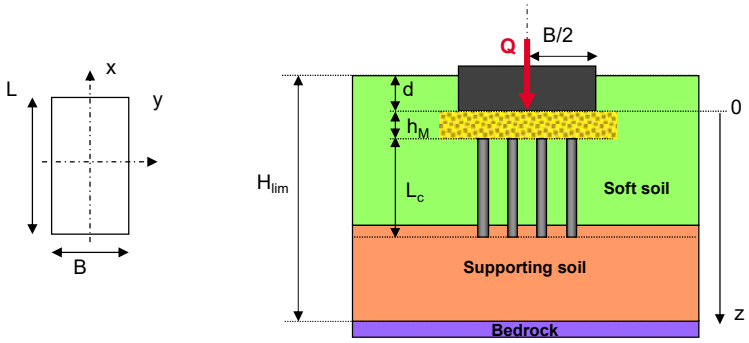
Project name : V26472-BIRSTALL-Lidl

Controlled Modulus Column (CMC®) - Strip A9

Strip **footing :** **1,00 m x 1,95 m** **embedded of 0,16 m** **loaded at 292,5 kN/ml**

Calculation according to O.Combarieu method (Fondations mixtes. LCPC 1988)
Taking into account the Frank & Zhao method for the settlement calculation of CMC

Analysis model



Soil improvement definition

Dimensions

L_c	13,72	m	*Columns length*	H	13,72	m	*Anchoring depth of CMC from the the footing base*
D_c	0,3	m	*Columns diameter*	R_c	0,15	m	*Columns radius*

Description of the columns material

E_c	9 300 000	kPa	*Young modulus*
f_{ck}	16,0	MPa	*28-day unconfined compressive strength*

Soil displ. : With
ULS : Fundamental

Type of control : Load-bearing capacity
Presence of reinf. : No

$f_{cd;avg;SLS}$	4,6	MPa	*SLS average compressive stress allowable by the material*
$f_{cd;avg;ULS}$	7,0	MPa	*ULS average compressive stress allowable by the material*

Description of bearing soil layer

q_b	1 900	kPa	*Limit soil resistance at the column bottom*
k_q	11,0		*Frank & Zhao factor for the toe (extracted from the table below)*
E_m	15 000	kPa	*Pressuremeter modulus*

k_q values (according to Frank & Zhao)

Fine-grained soils	11
Coarse-grained soils	4,8

Description of the footing

Type of footing : Strip

Dimensions of the strip footing :

L	1	m	*Length of the typical area*
B	1,95	m	*Width of the footing*

Number of CMC under the footing :

n	1	*Number of CMC under typical area*

Description of natural soil surrounding the columns

q_{net}	514	kPa	*Net soil resistance under the footing without reinforcement*

Spheric component :		**Deviatoric component :**	
λ_c	1,50	λ_d	2,65
α_c	0,25	α_d	0,37

*Terms λ are **automatically** extracted from the table below (as a function of L/B)*
(Note : for a strip footing we consider L/B= ∞)

L/B : 20,00

L/B	cercle	carré	2	3	5	20
λ_c	1,00	1,10	1,20	1,30	1,40	1,50
λ_d	1,00	1,12	1,53	1,78	2,14	2,65

Description of the Load Transfer Platform

h_M	0,00	m	*LTP thickness*

Description of natural soil

H_w 2,84 m *Depth of the groundwater table in relation to the footing underside*

Layer n°	H (m)	E_m (kPa)	α (-)	q_s (kPa)	k_τ (-)	γ (kN/m³)	Ktanδ (-)	z (m)
1	1,34	12 500	0,25	103	0,8	18	1,00	1,34
2	8,88	7 500	0,50	62	2,0	18	0,20	10,22
3	3,00	7 500	1,00	62	2,0	18	0,20	13,22
4	0,50	15 000	0,50	89	2,0	18	0,30	13,72
5	4,50	15 000	0,50	89	2,0	18	0,30	18,22

Notations

H	*Thickness of the layer*	*γ*	*Unit weight of the layer*
E_m	*Pressuremeter modulus of the layer*	*Ktanδ*	*Empirical factor related to the type of inclusion and to soil nature*
α	*Structural coefficient*		
q_s	*Ultimate skin friction in the layer (NF P 94-262)*		
K'	*Frank & Zhao factor for the friction (according to the table below)*		
z	*Depth of the layer base*		

Note : By convention, the bottom of CMC is at layer n° 4.

k_τ values (according to Frank & Zhao)	
Fine-grained soils	2
Coarse-grained soils	0,8

Results

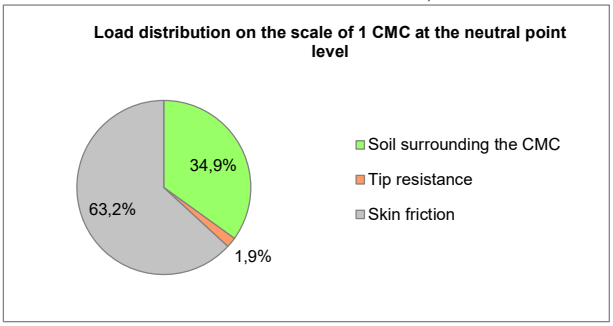
SLS load applied on the footing :
Q(-h_M) **293** kN/ml

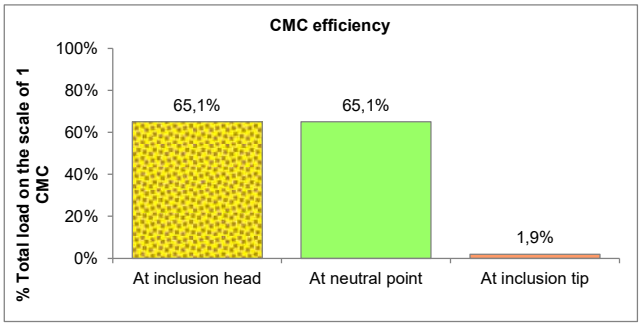
Reinforced soil settlement :
W **3** mm

Settlement distribution

Settlement of deep layers (below CMC)	1 mm
Punching at the inclusion tip	0 mm
Punching at the inclusion head	0 mm
Elastic shortening of the inclusion	2 mm

SLS load distribution	per inclusion	% total load	on all	% total load
Load applied on the inclusion head	190,4 kN	65,1%	190,4 kN	65,1%
Negative skin friction along the inclusion	0,0 kN	0,0%	0,0 kN	0,0%
Max. load in inclusion	190,4 kN	65,1%	190,4 kN	65,1%
Positive skin friction	184,7 kN	63,2%	184,7 kN	63,2%
Load applied on the inclusion tip	5,6 kN	1,9%	5,6 kN	1,9%
Neutral point depth	0,00 m			
Stress in the soil at the LTP base	54,3 kPa			
Load transferred to the soil at the LTP base	102,1 kN	34,9%	102,1 kN	34,9%

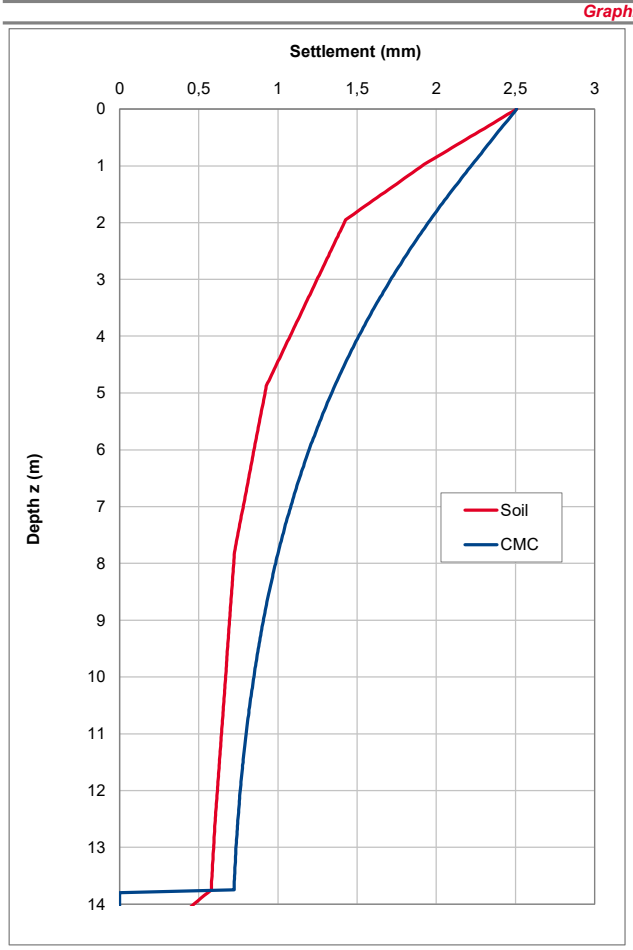


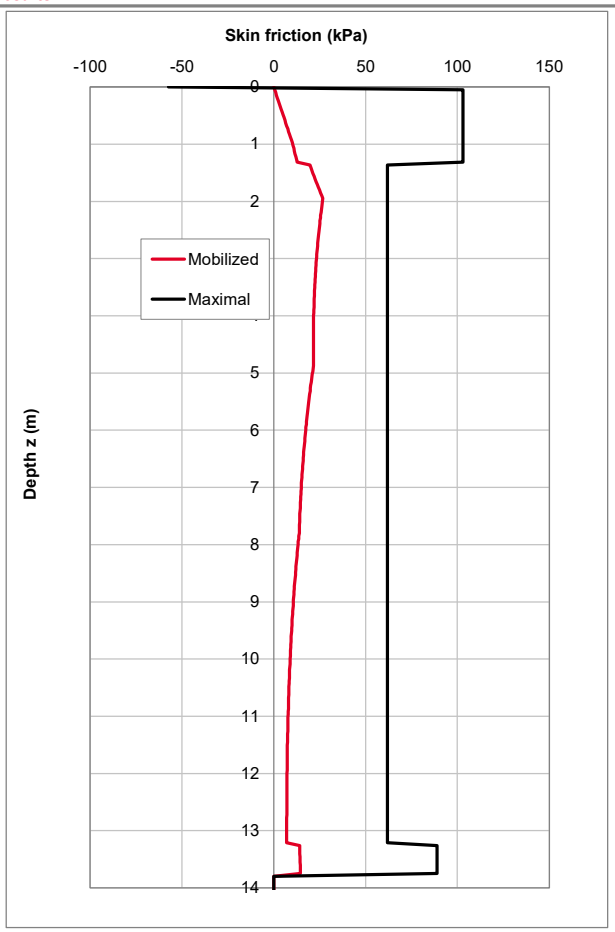


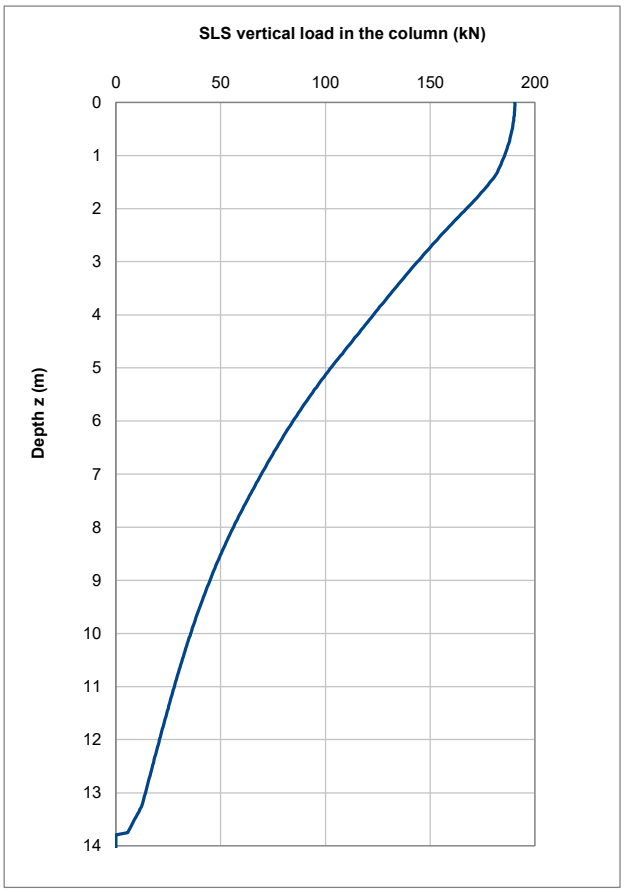
$$N_{ED} \leq R_{v;d} = \frac{q_{net} \times S}{\gamma_{R;d;v} \times \gamma_{R;v}} \rightarrow$$ **Domain : 2**

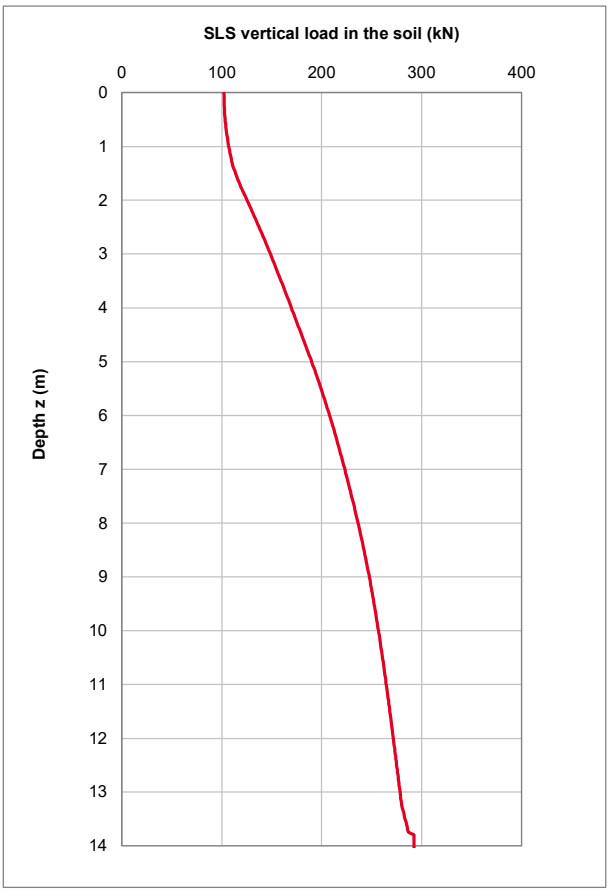
STR verifications: compressive stresses in CMC	SLS		ULS	
The material used allows an average compressive stress of	4,62 MPa	OK	7,00 MPa	OK
The average compressive stress in the columns is	**2,69 MPa**		**4,04 MPa**	

Graphic results









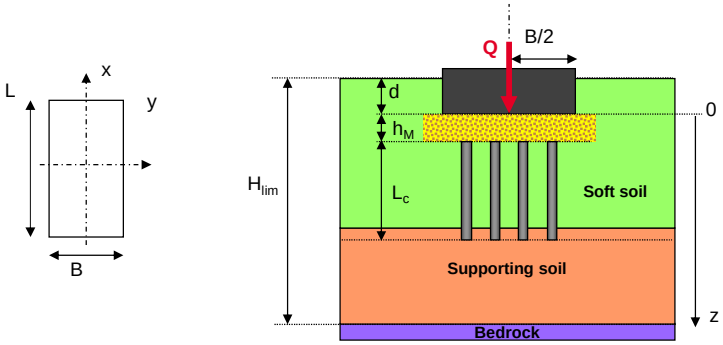
Project name : V26472-BIRSTALL-Lidl

Controlled Modulus Column (CMC®) - Strip A13

Strip footing : 1.75 m x 4.46 m **embedded of** 0.00 m **loaded at** 668.25 kN/ml

Calculation according to O.Combarieu method (Fondations mixtes. LCPC 1988)
Taking into account the Frank & Zhao method for the settlement calculation of CMC

Analysis model



Soil improvement definition

Dimensions

L_c	10.83 m	*Columns length*	H	10.83 m	*Anchoring depth of CMC from the the footing base*
D_c	0.3 m	*Columns diameter*	R_c	0.15 m	*Columns radius*

Description of the columns material

E_c	9,300,000 kPa	*Young modulus*
f_{ck}	16.0 MPa	*28-day unconfined compressive strength*

Soil displ. : With — Type of control : Load-bearing capacity
ULS : Fundamental — Presence of reinf. : No

$f_{cd;avg;SLS}$	4.6 MPa	*SLS average compressive stress allowable by the material*
$f_{cd;avg;ULS}$	7.0 MPa	*ULS average compressive stress allowable by the material*

Description of bearing soil layer

q_b	1,900 kPa	*Limit soil resistance at the column bottom*
k_q	11.0	*Frank & Zhao factor for the toe (extracted from the table below)*
E_m	15,000 kPa	*Pressuremeter modulus*

k_q values (according to Frank & Zhao)

Fine-grained soils	11
Coarse-grained soils	4.8

Description of the footing

Type of footing : Strip

Dimensions of the strip footing :

L	1.75 m	*Length of the typical area*
B	4.455 m	*Width of the footing*

Number of CMC under the footing :

n	4	*Number of CMC under typical area*

Description of natural soil surrounding the columns

q_{net}	625 kPa	*Net soil resistance under the footing without reinforcement*

Spheric component :		**Deviatoric component :**	
λ_c	1.50	λ_d	2.65
α_c	0.40	α_d	0.50

*Terms λ are **automatically** extracted from the table below (as a function of L/B)*
(Note : for a strip footing we consider L/B= ∞)

L/B : 20.00

L/B	cercle	carré	2	3	5	20
λ_c	1.00	1.10	1.23	1.30	1.40	1.50
λ_d	1.00	1.12	1.53	1.78	2.14	2.65

Description of the Load Transfer Platform

h_M	0.00 m	*LTP thickness*

Description of natural soil

H_w 0 m *Depth of the groundwater table in relation to the footing underside*

Layer n°	H (m)	E_m (kPa)	α (-)	q_s (kPa)	k_τ (-)	γ (kN/m³)	Ktanδ (-)	z (m)
1	0.50	12,500	0.25	62	0.8	20	1.00	0.50
2	6.83	7,500	0.50	62	2.0	18	0.20	7.33
3	3.00	7,500	1.00	62	2.0	18	0.20	10.33
4	0.50	15,000	0.50	89	2.0	18	0.30	10.83
5	4.50	15,000	0.50	89	2.0	18	0.30	15.33

Notations

H	*Thickness of the layer*	*γ*	*Unit weight of the layer*
E_m	*Pressuremeter modulus of the layer*	*Ktanδ*	*Empirical factor related to the type of inclusion and to soil nature*
α	*Structural coefficient*		
q_s	*Ultimate skin friction in the layer (NF P 94-262)*		
K'	*Frank & Zhao factor for the friction (according to the table below)*		
z	*Depth of the layer base*		

Note : By convention, the bottom of CMC is at layer n° 4.

k_τ values (according to Frank & Zhao)	
Fine-grained soils	2
Coarse-grained soils	0.8

Results

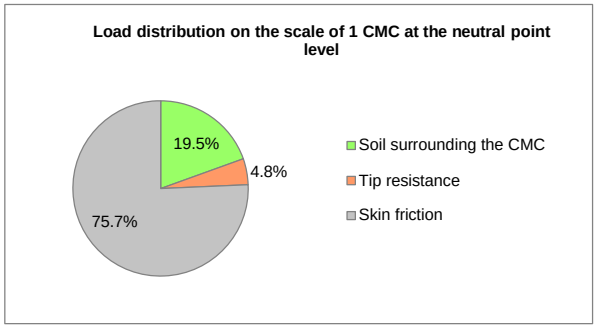
SLS load applied on the footing :
$Q(-h_M)$ **668** kN/ml

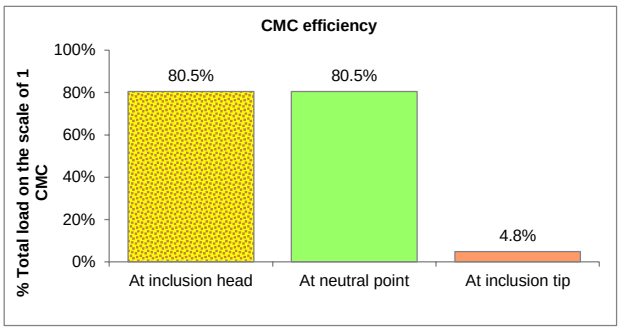
Reinforced soil settlement :
W **8** mm

Settlement distribution

Settlement of deep layers (below CMC)	6 mm
Punching at the inclusion tip	0 mm
Punching at the inclusion head	0 mm
Elastic shortening of the inclusion	2 mm

SLS load distribution	per inclusion	% total load	on all	% total load
Load applied on the inclusion head	235.3 kN	20.1%	941.1 kN	80.5%
Negative skin friction along the inclusion	0.0 kN	0.0%	0.0 kN	0.0%
Max. load in inclusion	235.3 kN	20.1%	941.1 kN	80.5%
Positive skin friction	221.2 kN	18.9%	884.9 kN	75.7%
Load applied on the inclusion tip	14.0 kN	1.2%	56.1 kN	4.8%
Neutral point depth	0.00 m			
Stress in the soil at the LTP base	30.4 kPa			
Load transferred to the soil at the LTP base	57.1 kN	4.9%	228.4 kN	19.5%

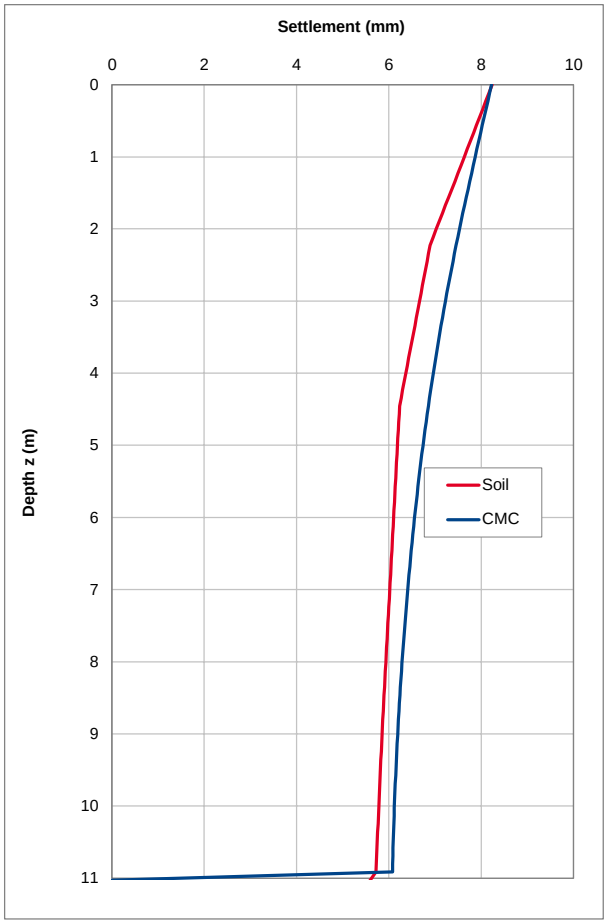


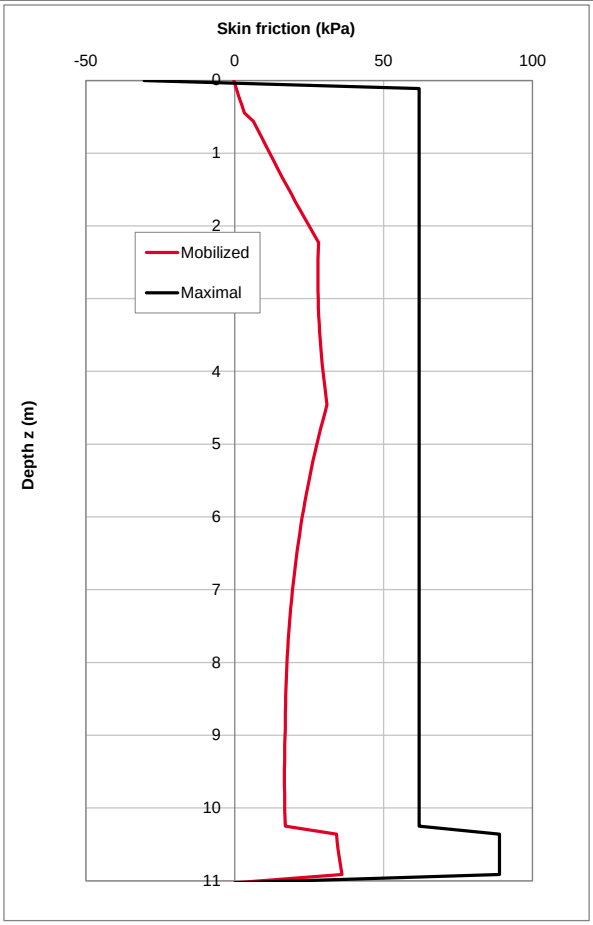


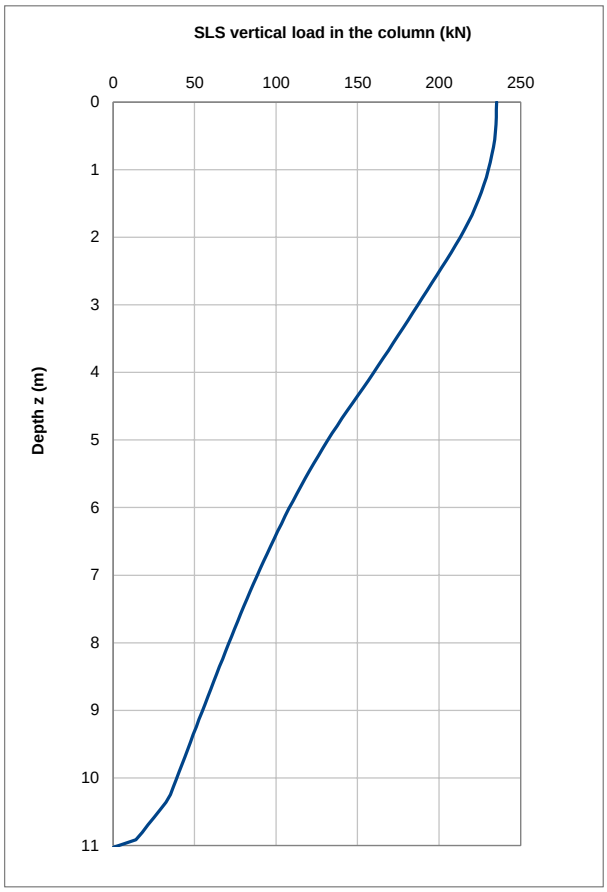
$$N_{ED} \leq R_{v;d} = \frac{q_{net} \times S}{\gamma_{R;d;v} \times \gamma_{R;v}} \rightarrow$$ **Domain :** **2**

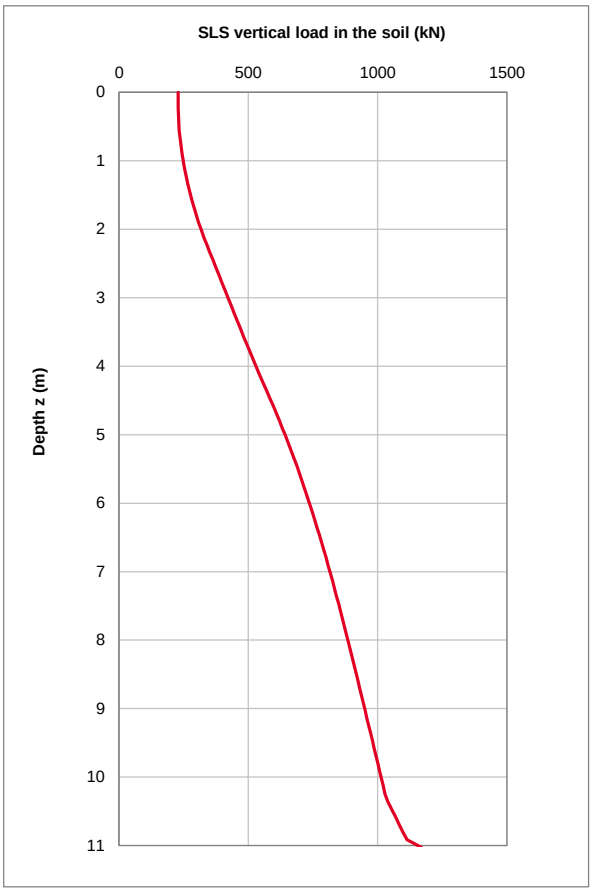
STR verifications: compressive stresses in CMC	SLS		ULS	
The material used allows an average compressive stress of	4.62 MPa	OK	7.00 MPa	OK
The average compressive stress in the columns is	**3.33 MPa**		**4.99 MPa**	

Graphic results









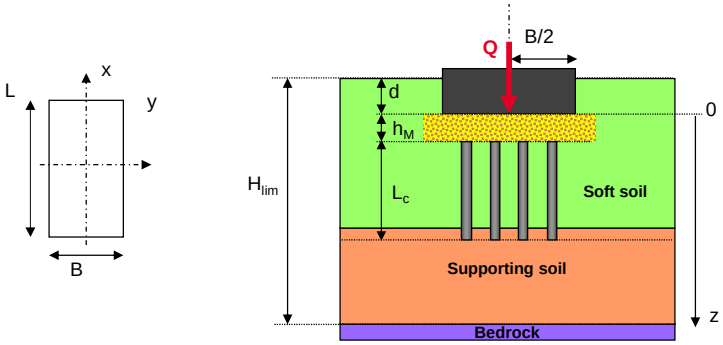
Project name : **V26472-BIRSTALL-Lidl**

Controlled Modulus Column (CMC®) - Strip A14

Strip footing : 1.75 m x 2.25 m embedded of 0.00 m loaded at 337.5 kN/ml

Calculation according to O.Combarieu method (Fondations mixtes. LCPC 1988)
Taking into account the Frank & Zhao method for the settlement calculation of CMC

Analysis model



Soil improvement definition

Dimensions

L_c	10.83 m	*Columns length*	H	10.83 m	*Anchoring depth of CMC from the the footing base*
D_c	0.3 m	*Columns diameter*	R_c	0.15 m	*Columns radius*

Description of the columns material

E_c	9,300,000 kPa	*Young modulus*
f_{ck}	16.0 MPa	*28-day unconfined compressive strength*

Soil displ. : With — Type of control : Load-bearing capacity
ULS : Fundamental — Presence of reinf. : No

$f_{cd;avg;SLS}$	4.6 MPa	*SLS average compressive stress allowable by the material*
$f_{cd;avg;ULS}$	7.0 MPa	*ULS average compressive stress allowable by the material*

Description of bearing soil layer

q_b	1,900 kPa	*Limit soil resistance at the column bottom*
k_q	11.0	*Frank & Zhao factor for the toe (extracted from the table below)*
E_m	15,000 kPa	*Pressuremeter modulus*

k_q values (according to Frank & Zhao)

Fine-grained soils	11
Coarse-grained soils	4.8

Description of the footing

Type of footing : Strip

Dimensions of the strip footing :

L	1.75 m	*Length of the typical area*
B	2.25 m	*Width of the footing*

Number of CMC under the footing :

n	2	*Number of CMC under typical area*

Description of natural soil surrounding the columns

q_{net}	625 kPa	*Net soil resistance under the footing without reinforcement*

Spheric component :		**Deviatoric component :**	
λ_c	1.50	λ_d	2.65
α_c	0.34	α_d	0.47

*Terms λ are **automatically** extracted from the table below (as a function of L/B)*
(Note : for a strip footing we consider L/B= ∞)

L/B : 20.00

L/B	cercle	carré	2	3	5	20
λ_c	1.00	1.10	1.23	1.30	1.40	1.50
λ_d	1.00	1.12	1.53	1.78	2.14	2.65

Description of the Load Transfer Platform

h_M	0.00 m	*LTP thickness*

Description of natural soil

H_w 0 m *Depth of the groundwater table in relation to the footing underside*

Layer n°	H (m)	E_m (kPa)	α (-)	q_s (kPa)	k_τ (-)	γ (kN/m³)	Ktanδ (-)	z (m)
1	0.50	12,500	0.25	62	0.8	20	1.00	0.50
2	6.83	7,500	0.50	62	2.0	18	0.20	7.33
3	3.00	7,500	1.00	62	2.0	18	0.20	10.33
4	0.50	15,000	0.50	89	2.0	18	0.30	10.83
5	4.50	15,000	0.50	89	2.0	18	0.30	15.33

Notations

H	*Thickness of the layer*	*γ*	*Unit weight of the layer*
E_m	*Pressuremeter modulus of the layer*	*Ktanδ*	*Empirical factor related to the type of inclusion and to soil nature*
α	*Structural coefficient*		
q_s	*Ultimate skin friction in the layer (NF P 94-262)*		
K'	*Frank & Zhao factor for the friction (according to the table below)*		
z	*Depth of the layer base*		

Note : By convention, the bottom of CMC is at layer n° 4.

k_τ values (according to Frank & Zhao)	
Fine-grained soils	2
Coarse-grained soils	0.8

Results

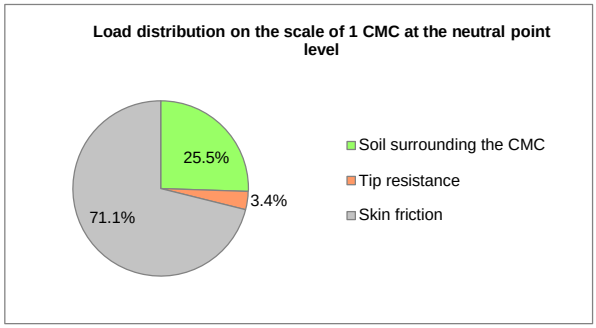
SLS load applied on the footing :
$Q(-h_M)$ **338** kN/ml

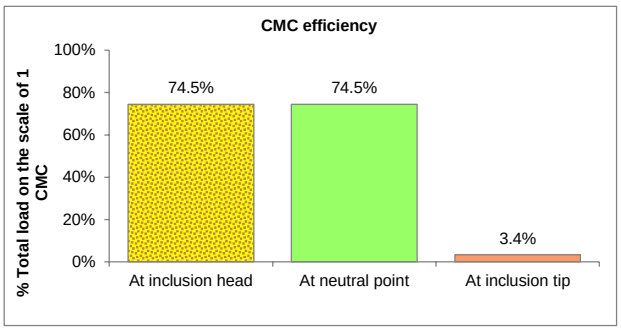
Reinforced soil settlement :
W **4** mm

Settlement distribution

Settlement of deep layers (below CMC)	2 mm
Punching at the inclusion tip	0 mm
Punching at the inclusion head	0 mm
Elastic shortening of the inclusion	2 mm

SLS load distribution	per inclusion	% total load	on all	% total load
Load applied on the inclusion head	219.9 kN	37.2%	439.9 kN	74.5%
Negative skin friction along the inclusion	0.0 kN	0.0%	0.0 kN	0.0%
Max. load in inclusion	219.9 kN	37.2%	439.9 kN	74.5%
Positive skin friction	209.9 kN	35.5%	419.9 kN	71.1%
Load applied on the inclusion tip	10.0 kN	1.7%	20.0 kN	3.4%
Neutral point depth	0.00 m			
Stress in the soil at the LTP base	39.7 kPa			
Load transferred to the soil at the LTP base	75.4 kN	12.8%	150.7 kN	25.5%

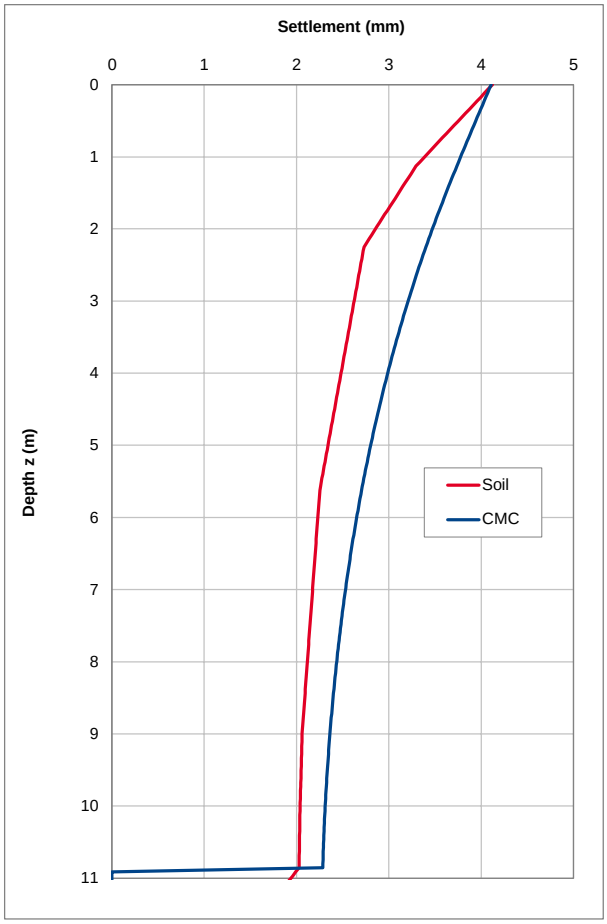


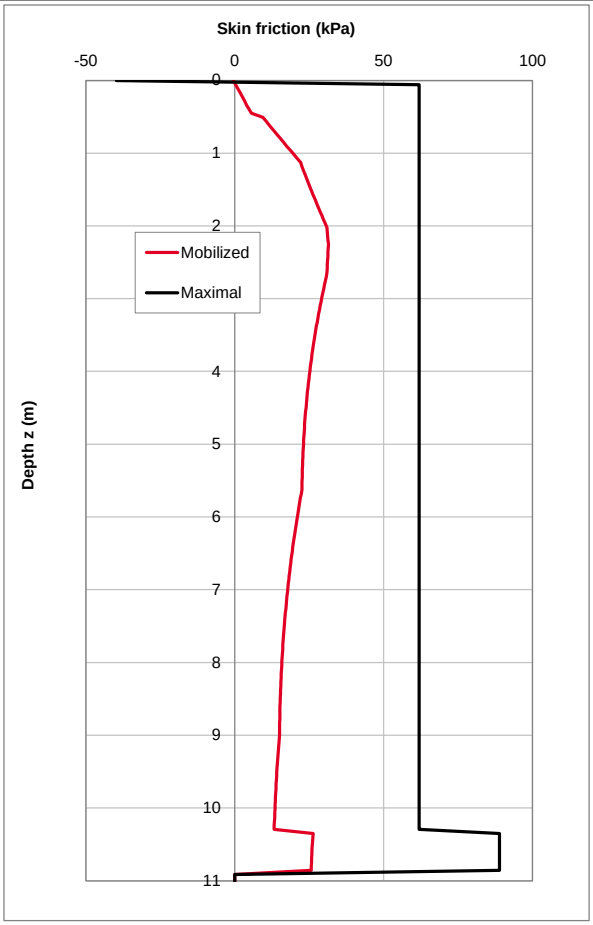


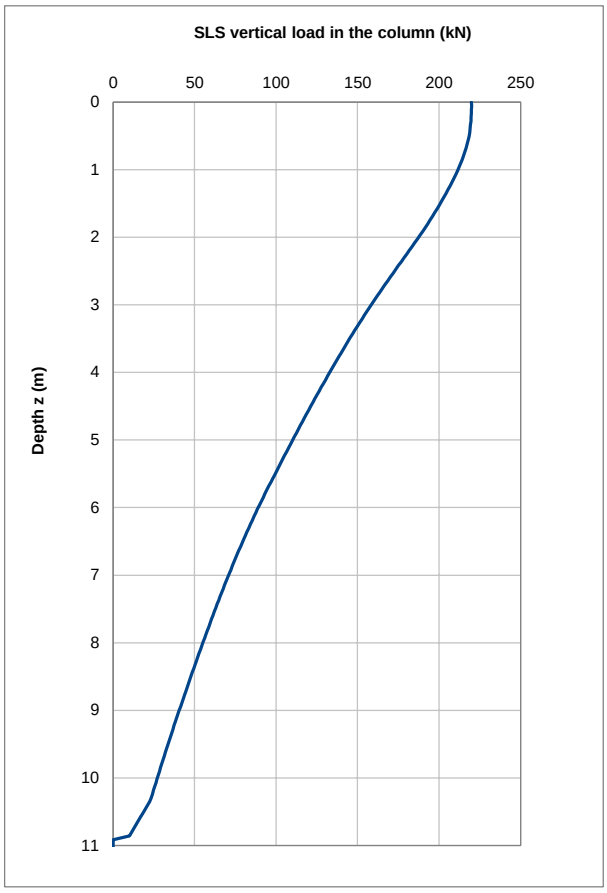
$$N_{ED} \leq R_{v;d} = \frac{q_{net} \times S}{\gamma_{R;d;v} \times \gamma_{R;v}} \rightarrow$$ **Domain :** **2**

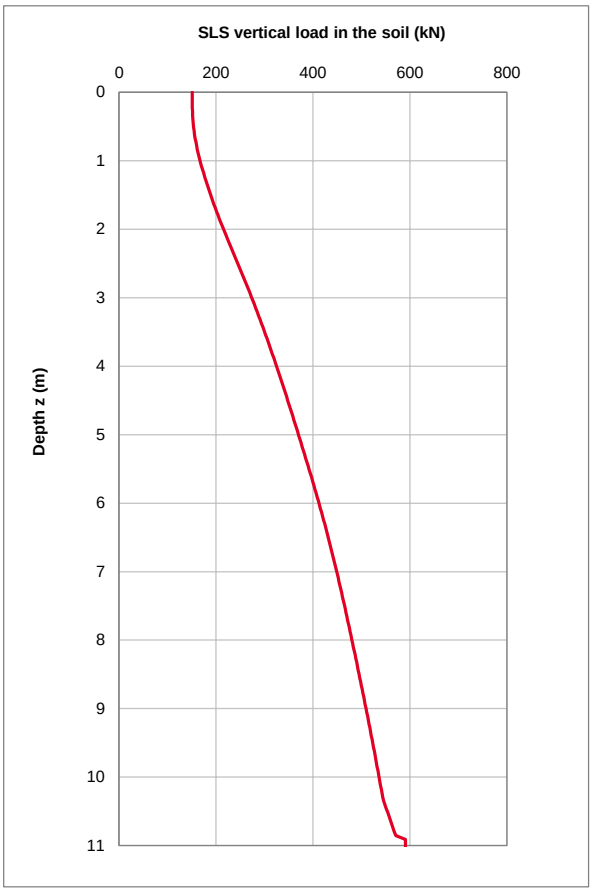
STR verifications: compressive stresses in CMC	SLS		ULS	
The material used allows an average compressive stress of	4.62 MPa	OK	7.00 MPa	OK
The average compressive stress in the columns is	**3.11 MPa**		**4.67 MPa**	

Graphic results









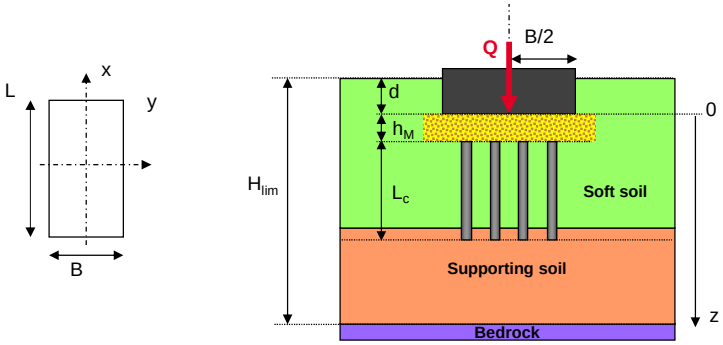
Project name : V26472-BIRSTALL-External Yard

Controlled Modulus Column (CMC®) - Retaining Wall 1.4m wide

Strip footing : 1.40 m x 1.40 m **embedded of** 0.25 m **loaded at** 210 kN/ml

Calculation according to O.Combarieu method (Fondations mixtes. LCPC 1988)
Taking into account the Frank & Zhao method for the settlement calculation of CMC

Analysis model



Soil improvement definition

Dimensions

L_c	13.63 m	*Columns length*	H	13.63 m	*Anchoring depth of CMC from the the footing base*
D_c	0.3 m	*Columns diameter*	R_c	0.15 m	*Columns radius*

Description of the columns material

E_c	9,300,000 kPa	*Young modulus*
f_{ck}	16.0 MPa	*28-day unconfined compressive strength*

Soil displ. : With — Type of control : Load-bearing capacity
ULS : Fundamental — Presence of reinf. : No

$f_{cd;avg;SLS}$	4.6 MPa	*SLS average compressive stress allowable by the material*
$f_{cd;avg;ULS}$	7.0 MPa	*ULS average compressive stress allowable by the material*

Description of bearing soil layer

q_b	1,900 kPa	*Limit soil resistance at the column bottom*
k_q	11.0	*Frank & Zhao factor for the toe (extracted from the table below)*
E_m	15,000 kPa	*Pressuremeter modulus*

k_q values (according to Frank & Zhao)

Fine-grained soils	11
Coarse-grained soils	4.8

Description of the footing

Type of footing : Strip

Dimensions of the strip footing :

L	1.4 m	*Length of the typical area*
B	1.4 m	*Width of the footing*

Number of CMC under the footing :

n	1	*Number of CMC under typical area*

Description of natural soil surrounding the columns

q_{net}	514 kPa	*Net soil resistance under the footing without reinforcement*

Spheric component :		**Deviatoric component :**	
λ_c	1.50	λ_d	2.65
α_c	0.36	α_d	0.51

*Terms λ are **automatically** extracted from the table below (as a function of L/B)*
(Note : for a strip footing we consider L/B= ∞)

L/B : 20.00

L/B	cercle	carré	2	3	5	20
λ_c	1.00	1.10	1.23	1.30	1.40	1.50
λ_d	1.00	1.12	1.53	1.78	2.14	2.65

Description of the Load Transfer Platform

h_M	0.00 m	*LTP thickness*

Description of natural soil

H_w 2.75 m *Depth of the groundwater table in relation to the footing underside*

Layer n°	H (m)	E_m (kPa)	α (-)	q_s (kPa)	k_τ (-)	γ (kN/m³)	Ktanδ (-)	z (m)
1	0.25	12,500	0.25	103	0.8	18	1.00	0.25
2	0.17	17,500	0.50	125	0.8	18	1.00	0.42
3	1.43	10,500	0.50	75	2.0	18	0.30	1.85
4	2.30	6,000	1.00	55	2.0	18	0.20	4.15
5	9.48	15,000	0.50	90	2.0	18	0.30	13.63
6	-7.88	15,000	0.50	90	2.0	18	0.30	5.75

Notations

H	*Thickness of the layer*	*γ*	*Unit weight of the layer*
E_m	*Pressuremeter modulus of the layer*	*Ktanδ*	*Empirical factor related to the type of inclusion and to soil nature*
α	*Structural coefficient*		
q_s	*Ultimate skin friction in the layer (NF P 94-262)*		
K'	*Frank & Zhao factor for the friction (according to the table below)*		
z	*Depth of the layer base*		

Note : By convention, the bottom of CMC is at layer n° 6.

k_τ values (according to Frank & Zhao)	
Fine-grained soils	2
Coarse-grained soils	0.8

Results

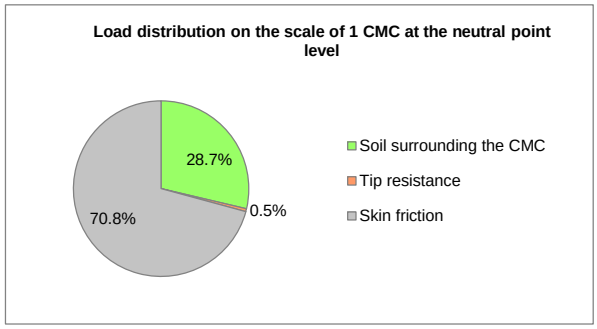
SLS load applied on the footing :
Q(-h_M) **210** kN/ml

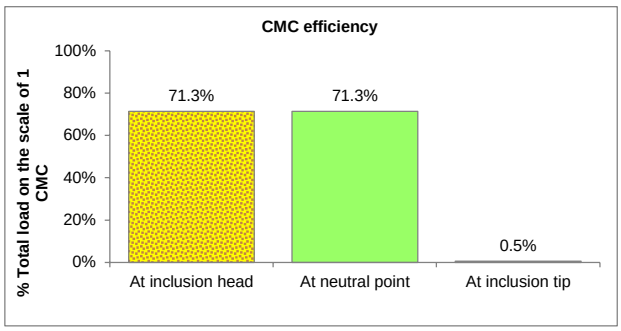
Reinforced soil settlement :
W **2** mm

Settlement distribution

Settlement of deep layers (below CMC)	0 mm
Punching at the inclusion tip	0 mm
Punching at the inclusion head	0 mm
Elastic shortening of the inclusion	2 mm

SLS load distribution	*per inclusion*	*% total load*	*on all*	*% total load*
Load applied on the inclusion head	209.7 kN	71.3%	209.7 kN	71.3%
Negative skin friction along the inclusion	0.0 kN	0.0%	0.0 kN	0.0%
Max. load in inclusion	209.7 kN	71.3%	209.7 kN	71.3%
Positive skin friction	208.2 kN	70.8%	208.2 kN	70.8%
Load applied on the inclusion tip	1.5 kN	0.5%	1.5 kN	0.5%
Neutral point depth	0.00 m			
Stress in the soil at the LTP base	44.6 kPa			
Load transferred to the soil at the LTP base	84.3 kN	28.7%	84.3 kN	28.7%

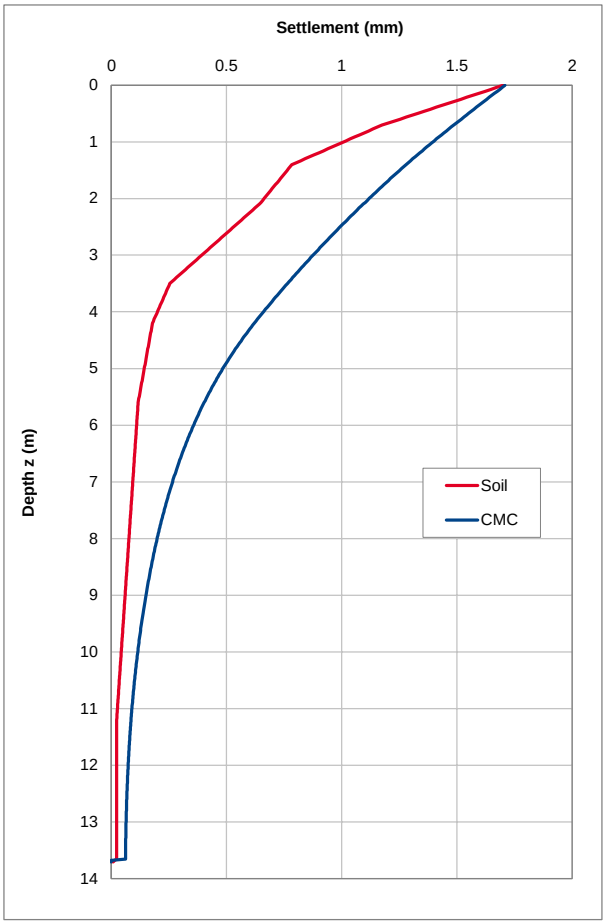


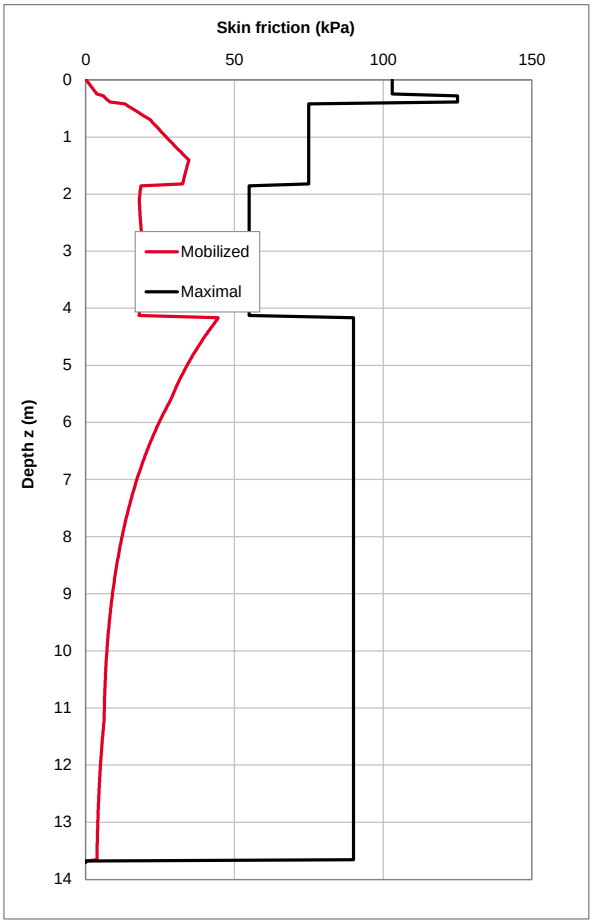


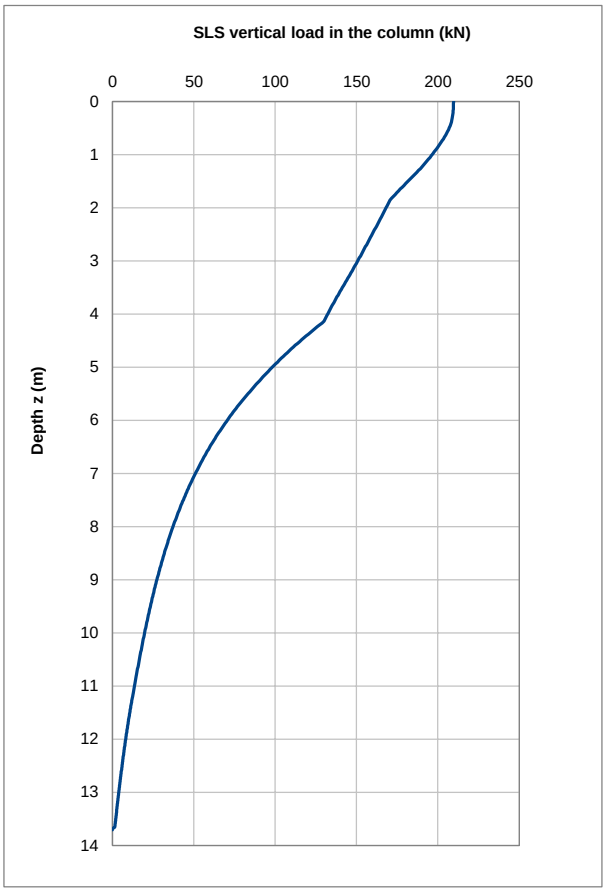
$$N_{ED} \leq R_{v;d} = \frac{q_{net} \times S}{\gamma_{R;d;v} \times \gamma_{R;v}} \rightarrow$$ **Domain :** **2**

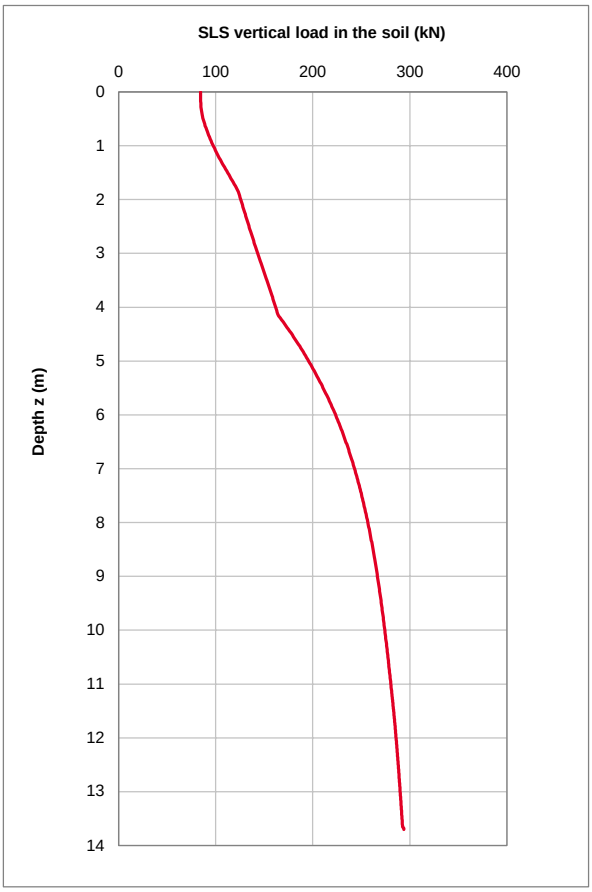
STR verifications: compressive stresses in CMC	*SLS*		*ULS*	
The material used allows an average compressive stress of	4.62 MPa	OK	7.00 MPa	OK
The average compressive stress in the columns is	**2.97 MPa**		**4.45 MPa**	

Graphic results





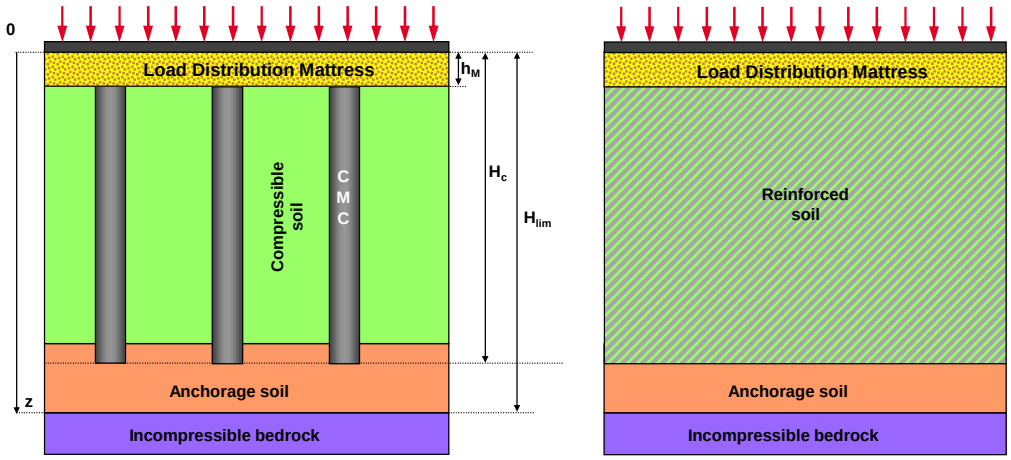




APPENDIX 2: DETAILED CALCULATIONS FOR THE CMC BENEATH GROUND BEARING SLABS

Project name: V26472-BIRSTALL-Lidl
Controlled Modulus Column (CMC®) - Slab

Analysis model



Description of reinforced soil

Dimensions

H_c	**14.15**	m	*CMC anchoring depth from LDM top*
D_c	**0.3**	m	*Columns diameter*

Description of the the column material

Verifications STR based on: ASIRI

f_{ck}	**16**	MPa	*28-day unconfined compressive strength*

Soil displ.: With Type of test: **Load-bearing capacity** Presence of steel: **No** ULS: Fundamental

Calculation of deformation modulus: **Concrete**

E_c	9,300,000	kPa	*Young's modulus*
$f_{cd;avg;SLS}$	4.6	MPa	*SLS average compressive stress allowable by the material*
$f_{cd;avg;ULS}$	7.0	MPa	*ULS average compressive stress allowable by the material*

Description of column-soil interaction laws

Concerning the columns base and shaft, the load transfer curves are based on: **Frank & Zhao (1982) / NF P 94-262 (2012)**

Description of bearing soil layer:

q_b	**1,900**	kPa	*Limit soil resistance at the column bottom*	E_M	11.0 MPa	*Pressuremeter modulus at column bottom*

Soil type: fine

Description of natural soil surrounding the columns

q_{net}	**675**	kPa	*Ultimate resistance of the soil surrounding the columns*

Grid dimensions according to: Column spacing (equivalent square mesh)

A	9.00	m²	*Grid section area*
S	**3.00**	m	*Column spacing (equivalent square mesh)*

Description of the load transfer platform

h_M	**0.5**	m	*Thickness of LDM*		
φ	**38**	°	*Internal friction angle*	State:	**Existing**
c'	**0**	kPa	*Cohesion*		

Soil profile

H_{lim}	**18.645** m		*Limit depth of model (geotechnical bedrock or seismic bedrock) from LDM top*
H_w	**3** m		*Depth of the groundwater table from LDM top*

N° Soil	Nature	z_{sup} (m)	z_{inf} (m)	Soil type	E_M (kPa)	α (-)	E_Y (kPa)	ν (-)	γ (kN/m³)	q_s (kPa)	Ktanδ -
1	Load Distribution Mattress	0.00	0.50	**coarse**	**12,500**	**0.25**	**50,000**	**0.30**	**18**		**1.00**
2	**remaining Workin Platform**	0.50	1.77	**coarse**	**12,500**	**0.25**	**50,000**	**0.30**	**18**	**103**	**1.00**
3	**MG silty mixtures**	**1.77**	10.65	**fine**	**7,500**	**0.50**	**15,000**	**0.30**	**18**	**62**	**0.20**
4	**MG silty mixtures - Landfill**	**10.65**	13.65	**fine**	**7,500**	**1.00**	**7,500**	**0.30**	**18**	**62**	**0.20**
5	**Penning Lower Coal measu**	**13.65**	18.65	**fine**	**15,000**	**0.50**	**30,000**	**0.30**	**18**	**89**	**0.30**

Notations

z_{sup}	*Depth of layer top*	γ	*Unit weight of the layer*
z_{inf}	*Depth of layer base*	q_s	*Limit skin friction for the layer*
E_Y	*Young's modulus in the layer*	E_M	*Pressuremeter modulus in the layer*
ν	*Poisson's coefficient*	α	*Structural coefficient*

Remark

According to Frank and Zhao, the following parameters are used with either as fine-grained or as coarse-grained soil:

End-bearing: k_q values	
Fine-grained soils	11 E_M / D_c
Coarse-grained soils	4.8 E_M / D_c

Skin friction: k_τ values	
Fine-grained soils	2 E_M / D_c
Coarse-grained soils	0.8 E_M / D_c

Overview of the stresses applied in the axisymmetrical calculation

	Permanent (kPa)	Variable (kPa)	TOTAL (kPa)
Uniform stress	q_0	**20**	20

Uniform factored surcharge applied at the LTP base — q_0 **20** kPa

Factored surcharge applied on the grid at the LTP base — Q **180** kN

Results

Settlement W **8** mm

Settlement distribution

Settlement of deep layers (below CMC)	2 mm
Punching at the inclusion bottom	2 mm
Punching at the inclusion head	2 mm
Elastic shortening of the inclusion	2 mm
Settlement of LTP	0 mm

SLS load distribution	per inclusion	% total load
Negative skin friction in LDM	7.3 kN	4.1%
Load applied on inclusion head	27.4 kN	15.2%
Negative skin friction along the inclusion	110.3 kN	61.3%
Max. load in inclusion	137.7 kN	76.5%
Positive skin friction	91.9 kN	51.1%
Load applied on inclusion bottom	45.8 kN	25.5%
Depth of neutral point	10.75 m	
Stress in soil at CMC top level	17.1 kPa	
Load transferred to the soil at CMC top level	152.6 kN	84.8%

Equivalent homogenized soil profile

- load distribution mat

Thickness = 0.5 m

E_{oed} = 67.3 MPa

- reinforced soil

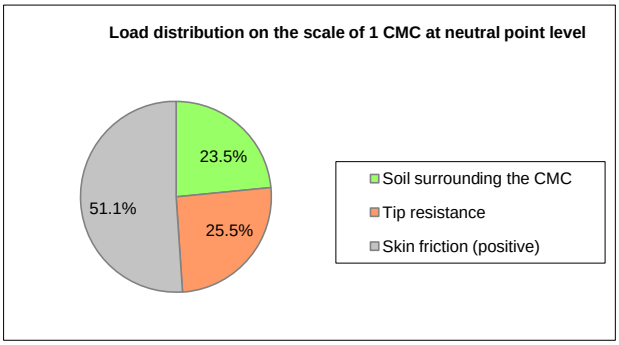
Thickness = 13.645 m

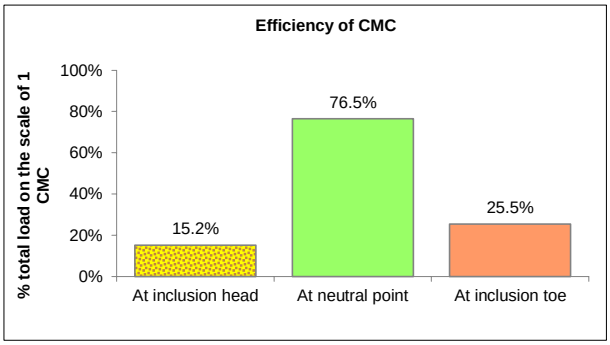
E_{oed} = 45.5 MPa

- soil underlying the reinforced soil

Thickness = 4.5 m

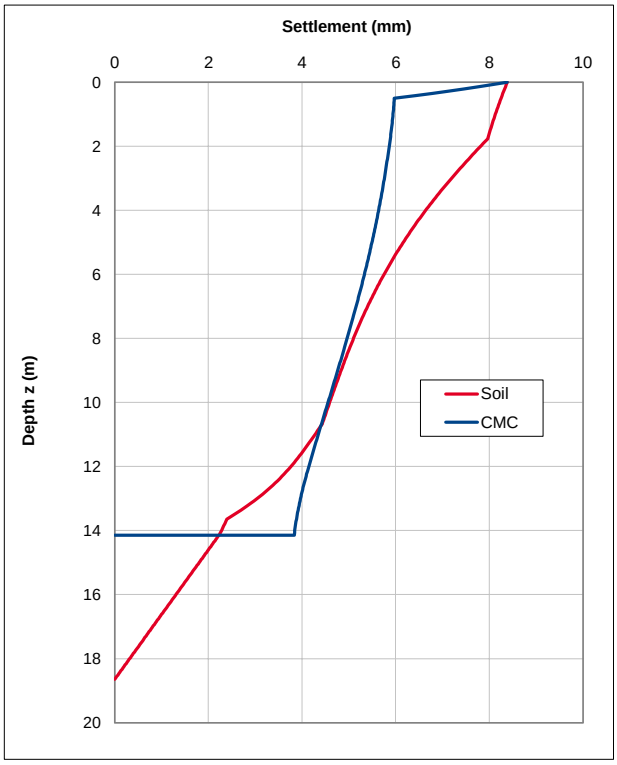
E_{oed} = 40.4 MPa

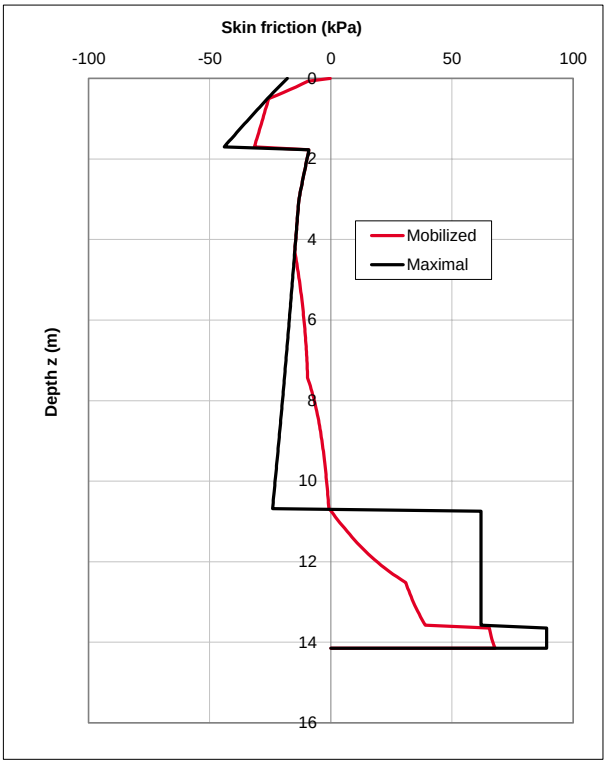


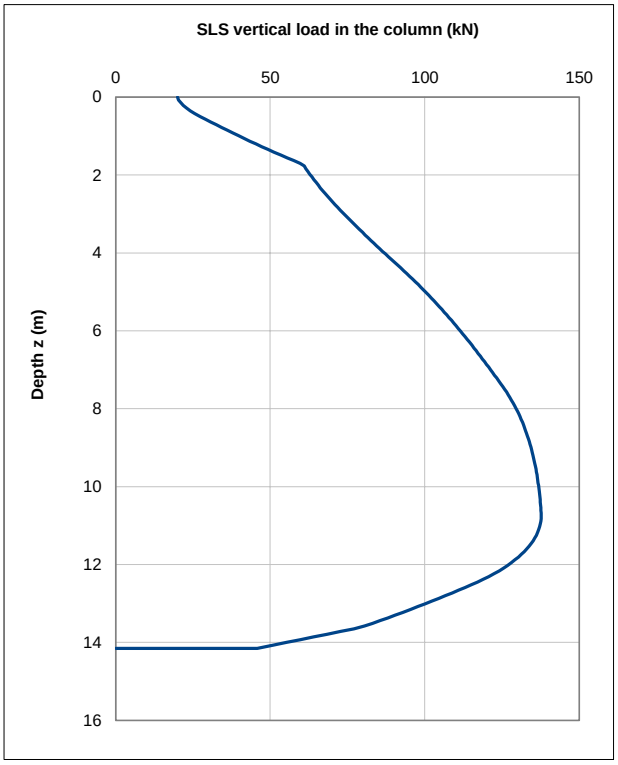


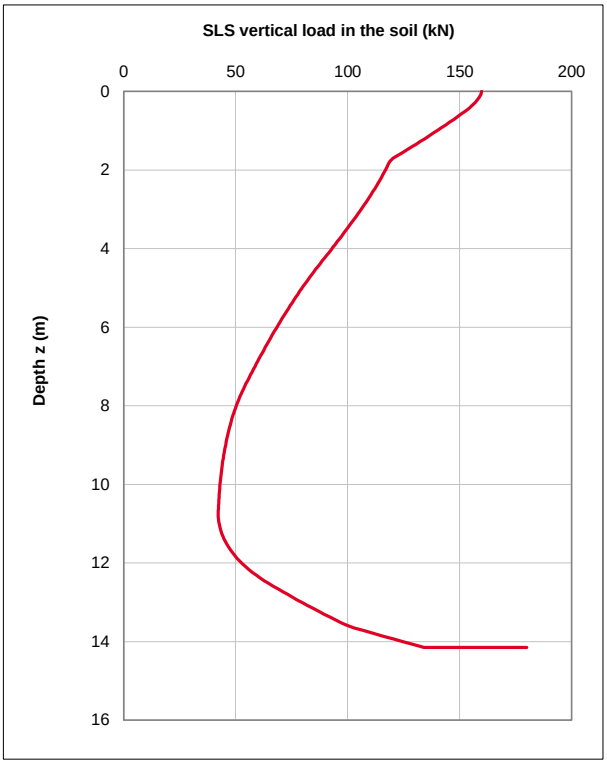
STR verifications: compressive stresses in CMC	SLS		ULS	
The material used allows an average compressive stress of	4.6 MPa	OK	7.0 MPa	OK
The average compressive stress in the columns is	**1.9 MPa**		**2.9 MPa**	

Graphic results



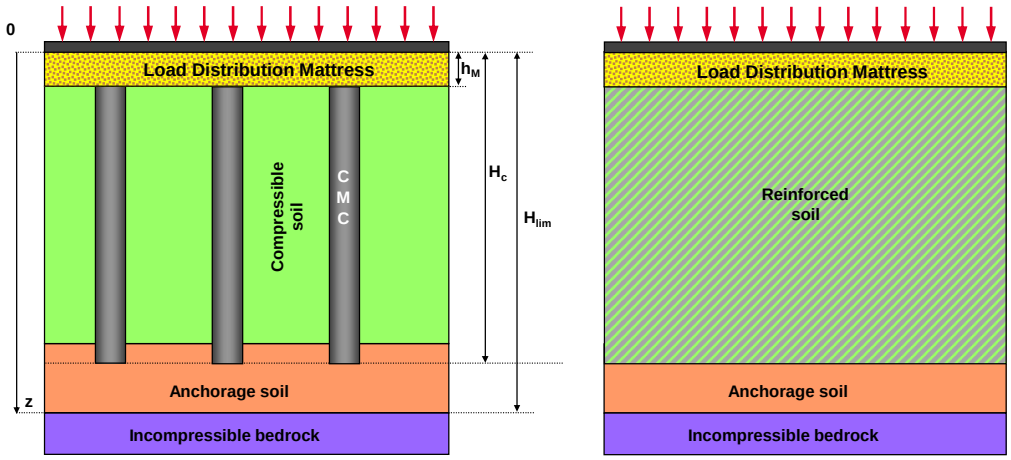






Project name: V26472-BIRSTALL-External yard area
Controlled Modulus Column (CMC®) - Slab

Analysis model



Description of reinforced soil

Dimensions

H_c	**6.24**	m	*CMC anchoring depth from LDM top*
D_c	**0.3**	m	*Columns diameter*

Description of the the column material

Verifications STR based on: ASIRI

f_{ck}	**16**	MPa	*28-day unconfined compressive strength*

Soil displ.: With Type of test: **Load-bearing capacity** Presence of steel: **No** ULS: Fundamental

Calculation of deformation modulus: **Concrete**

E_c	9,300,000	kPa	*Young's modulus*
$f_{cd;avg;SLS}$	4.8	MPa	*SLS average compressive stress allowable by the material*
$f_{cd;avg;ULS}$	7.0	MPa	*ULS average compressive stress allowable by the material*

Description of column-soil interaction laws

Concerning the columns base and shaft, the load transfer curves are based on: **Frank & Zhao (1982) / NF P 94-262 (2012)**

Description of bearing soil layer:

q_b	**2,500**	kPa	*Limit soil resistance at the column bottom*	E_M	11.0 MPa	*Pressuremeter modulus at column bottom*

Soil type: fine

Description of natural soil surrounding the columns

q_{net}	**675**	kPa	*Ultimate resistance of the soil surrounding the columns*

Grid dimensions according to: Column spacing (equivalent square mesh)

A	9.00	m²	*Grid section area*
S	**3.00**	m	*Column spacing (equivalent square mesh)*

Description of the load transfer platform

h_M	**0.5**	m	*Thickness of LDM*		
φ	**38**	°	*Internal friction angle*	State:	**Added**
c'	**0**	kPa	*Cohesion*		

Soil profile

H_{lim}	**7.335** m	*Limit depth of model (geotechnical bedrock or seismic bedrock) from LDM top*
H_w	**3** m	*Depth of the groundwater table from LDM top*

N° Soil	Nature	z_{sup} (m)	z_{inf} (m)	Soil type	E_M (kPa)	α (-)	E_Y (kPa)	ν (-)	γ (kN/m³)	q_s (kPa)	Ktanδ -
1	Load Distribution Mattress	0.00	0.50	**coarse**	**12,500**	**0.25**	**50,000**	**0.30**	**18**		**1.00**
2	**remaining Workin Platform**	0.50	1.84	**coarse**	**12,500**	**0.25**	**50,000**	**0.30**	**18**	**103**	**1.00**
3	**MG sandy mixture**	**1.84**	2.00	**coarse**	**17,500**	**0.33**	**52,500**	**0.30**	**18**	**125**	**1.00**
4	**MG silty mixtures**	**2.00**	3.44	**fine**	**10,500**	**1.00**	**10,500**	**0.30**	**18**	**75**	**0.30**
5	**MG silty mixutres - Landfill**	**3.44**	5.74	**fine**	**6,000**	**0.50**	**12,000**	**0.30**	**18**	**55**	**0.20**
6	**Penning Lower Coal measu**	**5.74**	7.34	**fine**	**15,000**	**0.50**	**30,000**	**0.30**	**18**	**90**	**0.30**

Notations

z_{sup}	*Depth of layer top*	γ	*Unit weight of the layer*
z_{inf}	*Depth of layer base*	q_s	*Limit skin friction for the layer*
E_Y	*Young's modulus in the layer*	E_M	*Pressuremeter modulus in the layer*
ν	*Poisson's coefficient*	α	*Structural coefficient*

Remark

According to Frank and Zhao, the following parameters are used with either as fine-grained or as coarse-grained soil:

End-bearing: k_q values	
Fine-grained soils	11 E_M / D_c
Coarse-grained soils	4.8 E_M / D_c

Skin friction: k_τ values	
Fine-grained soils	2 E_M / D_c
Coarse-grained soils	0.8 E_M / D_c

Overview of the stresses applied in the axisymmetrical calculation

	Permanent (kPa)	Variable (kPa)	TOTAL (kPa)
Uniform stress q_0		**20**	20

Uniform factored surcharge applied at the LTP base q_0 **29** kPa

Factored surcharge applied on the grid at the LTP base Q **261** kN

Results

Settlement W **6** mm

Settlement distribution

Settlement of deep layers (below CMC)	1 mm
Punching at the inclusion bottom	2 mm
Punching at the inclusion head	3 mm
Elastic shortening of the inclusion	1 mm
Settlement of LTP	0 mm

SLS load distribution	per inclusion	% total load
Negative skin friction in LDM	8.6 kN	3.3%
Load applied on inclusion head	34.0 kN	13.0%
Negative skin friction along the inclusion	75.5 kN	28.9%
Max. load in inclusion	109.6 kN	42.0%
Positive skin friction	62.1 kN	23.8%
Load applied on inclusion bottom	47.4 kN	18.2%
Depth of neutral point	4.27 m	
Stress in soil at CMC top level	25.4 kPa	
Load transferred to the soil at CMC top level	227.0 kN	87.0%

Equivalent homogenized soil profile

- load distribution mat

Thickness = 0.5 m

E_{oed} = 67.3 MPa

- reinforced soil

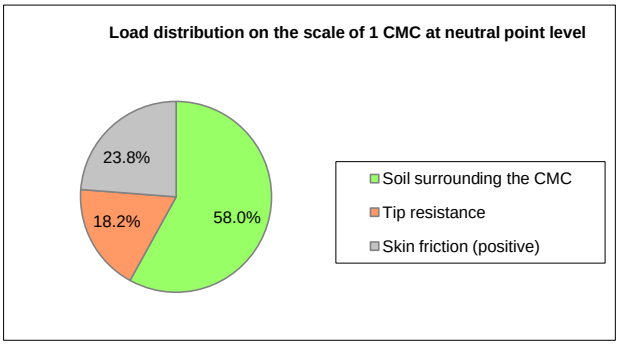
Thickness = 5.735 m

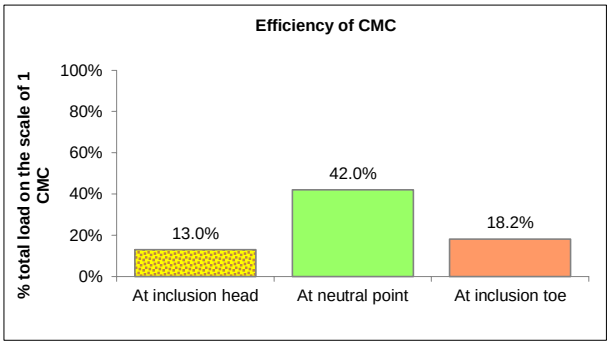
E_{oed} = 31.7 MPa

- soil underlying the reinforced soil

Thickness = 1.1 m

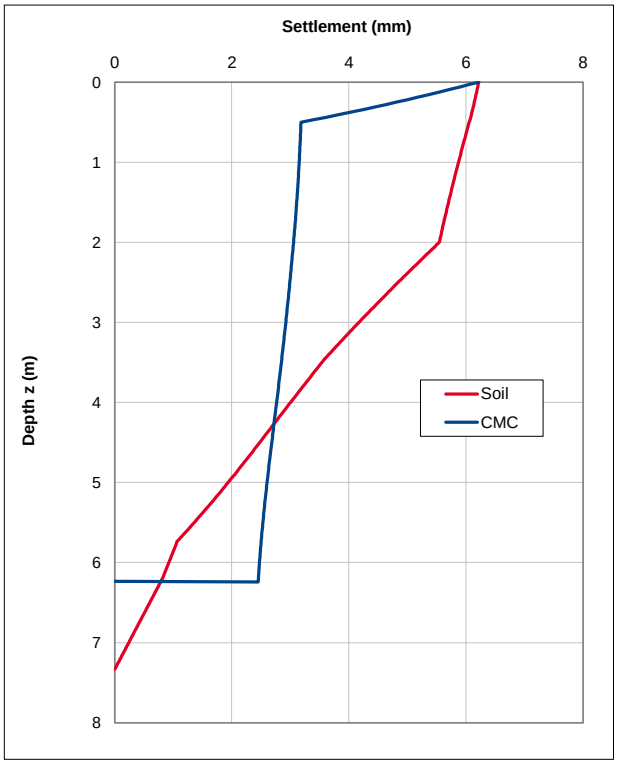
E_{oed} = 40.4 MPa

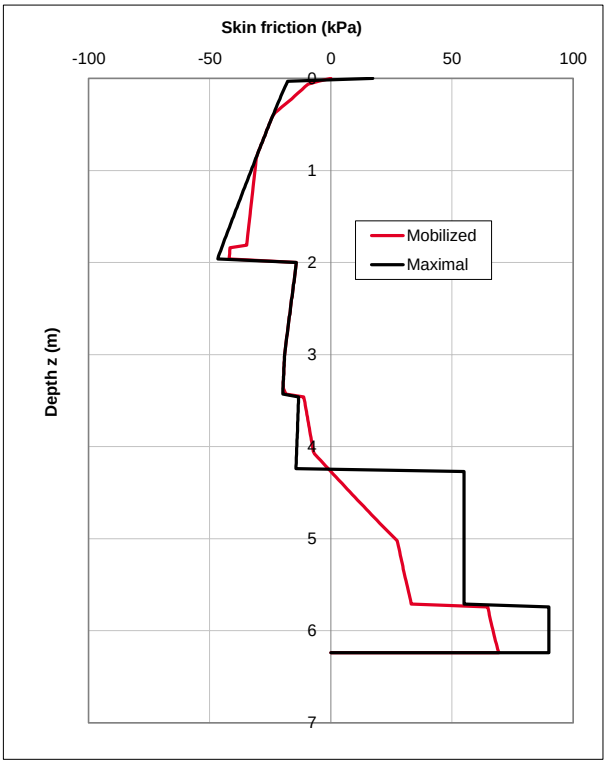


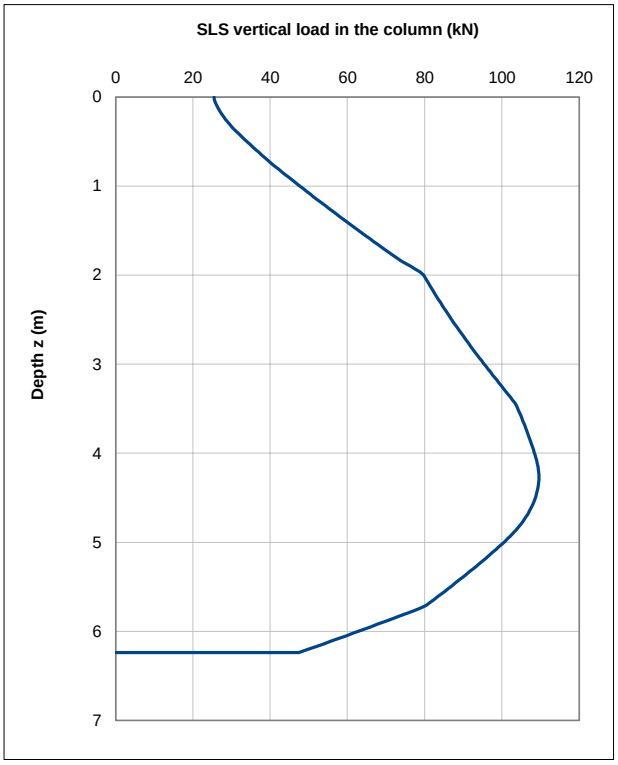


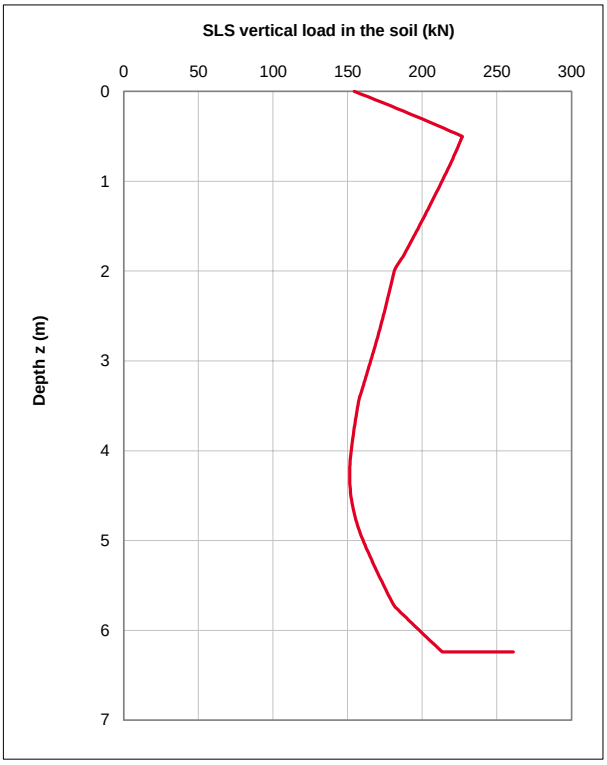
STR verifications: compressive stresses in CMC	SLS		ULS	
The material used allows an average compressive stress of	4.8 MPa	OK	7.0 MPa	OK
The average compressive stress in the columns is	**1.6 MPa**		**2.3 MPa**	

Graphic results









APPENDIX F
CMC COMPLETION REPORT

				Contract Number	6903
00	21/01/2026	AH	BK	First Issue	
Rev.	**Date**	**Author**	**Checked by**	**Details of Amendments**	

Validation Report

GROUND IMPROVEMENT WORKS BY CONTROLLED MODULUS COLUMNS

Birstall

Contractor: Stonedale Construction

Menard Ltd
Henderson House
Langley Place
Higgins lane
Burscough, L40 8JS
Tel : +44 (0)1704 891 039
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APPENDIX 5 – AS-BUILT DRAWINGS 87

Scope of Works

Between the dates of 10/11/2025 & 12/12/2025 Menard attended site to install Controlled Modulus Columns (CMCs), beneath the slab of the proposed new Lidl, Home bargains and concrete yard in Birstall for Stonedale Construction. The purpose of this ground improvement solution is to limit total and differential settlements to within acceptable levels and to achieve the bearing capacities required for the structural design

The works were undertaken in a single phase and this validation report summarises the works undertaken, provides the required quality information and provides a validation statement on the success of the works. Not all columns were installed due to obstructions and columns being located within the batter on the Lidl Building.

As part of the quality control for the Controlled Modulus Column works (CMC's), Menard have undertaken 5 no. plate load tests over individual CMCs loaded to 36t for the Lidl and concrete yard and 38t for the Home Bargains.

Concrete cube testing was also undertaken at a rate of 5no. cube samples taken per rig per day with 2nr. tested at 7 days, 2nr. tested at 28 days and 1nr. spare.

References

- V26472-BIRSTALL-Lidl-CMC+BMC tender-STONEDALE_RevB
- CMC Layout drawings:
    - V26472-1A - Birstal - Lidl store - CMC layout - rev A
    - V26472-2A - Birstal - External yard area - CMC layout - rev A
    - V26472-3A - Birstal - Home Bargain store - CMC layout - rev A
- Design Report: V26472 - Birstall Lidl - CMC and BMC design report - rev B
- R00 - P-107631-1 - Lidl Great Britain Limited CPT Report

Summary of works

Total Number of CMCs Installed – 1080 CMC's
Total Lineal Meterage of CMCs – 8953.65 lm
Plate Load Tests – 5

CMCs have been installed beneath:

- Pad/ Strip footings
- Slab
- External areas

Testing Regime

Single CMC Load Tests

Vertical load tests have been undertaken on sacrificial positions. The load test comprises a 600mm circular plate which is positioned centrally over a CMC on a thin layer of sand. The load is applied centrally to the plate by a hydraulic jack using the CMC rig as a "reaction block". The CMC load test was taken to Qmax 38t.

The loading procedure for Single CMC Load Tests is as follows:

Load Stage	Load applied	Comparator reading times
1	20% Qmax	1 and 5 min
2	0% Qmax	1 and 5 min
3	20% Qmax	1, 2, 3, 4, 5, 10 and 15 min
4	40% Qmax	1, 2, 3, 4, 5, 10 and 15 min
5	60% Qmax	1, 2, 3, 4, 5, 10 and 15 min
6	80% Qmax	1, 2, 3, 4, 5, 10, 15, and 30 min
7	100% Qmax	1, 2, 3, 4, 5, 10, 15, 30 and 60 min
8	50% Qmax	1 and 5 min
9	0% Qmax	1 and 5 min

The load stages are to be carried out for not less than the times specified above or until the settlement is equal or less than 0.02mm per minute.

Test Results

The maximum settlements achieved on tests undertaken to date are provided below along with corresponding installed CMC's and test dates;

Single Load Tests – CMC

Date	Test Number	Column number	Max deflection (mm)
26/11/2025	1	TC1	3.16
27/11/2025	2	TC2	2.44
10/12/2025	3	TC3	2.38
11/12/2025	4	TC4	2.10
11/12/2025	5	TC5	2.34

Conclusion

The ground improvement solution with Controlled Modulus columns has been successfully carried out on the columns beneath the External Yard, Lidl and Home Bargais footprint and Retaining wall.

All testing undertaken is deemed to be satisfactory and in line with Menards design, we can therefore confirm that the settlement criteria and bearing capacities will be ensured on this basis.

This document includes the following:

Appendix 1 – Daily Quality Sheets
Appendix 2 – Load test results
Appendix 3 – Concrete cube test results
Appendix 4 – As-built Drawings

As-installed drawings for the above scheme will be issued electronically.

Care & Maintenance

The loadings transmitted to the ground under the structural foundation elements (e.g. slabs, strip footings or foundation bases) must never exceed those stated in the specification.

All treated soils (at the surface or in excavations) must be protected from deterioration by trafficking, surface water, frost, acids, other pollutants, or any other cause.

Any construction works requiring dewatering / watering must be carried out in a manner so as not to disturb the improved ground.

The trimming of CMC's must be undertaken in accordance with Menard's guidance document VM/PROC/4028 'Guidance on the Trimming of CMC's.

Any excavation works carried out within or near to the soils improved by ground treatment must be carried out in a manner so as not to disturb the improved ground.

No excavation works should be carried out at all within the zone of influence of the foundations of a structure, founded upon the improved ground (see below diagram).

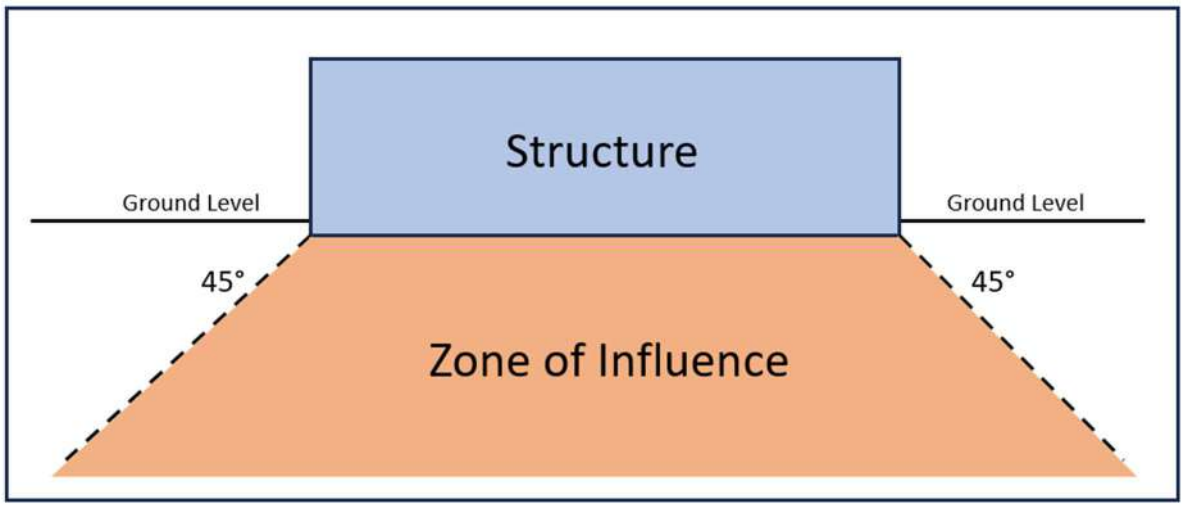


Figure 1 – Example of zone of influence beneath a basic structure.

APPENDIX 1 – DAILY QUALITY SHEETS

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	11/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Concrete Yard

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
349	320	5.06	0.49	Readymix	Yes	
120	320	4.93	0.46	Readymix	Yes	
830	320	5.02	0.46	Readymix	Yes	
778	320	5.44	0.46	Readymix	Yes	
789	320	5.14	0.46	Readymix	Yes	
769	320	5.00	0.46	Readymix	Yes	
780	320	4.97	0.46	Readymix	Yes	
790	320	5.01	0.46	Readymix	Yes	
782	320	5.00	0.46	Readymix	Yes	
762	320	5.06	0.46	Readymix	Yes	
771	320	5.06	0.46	Readymix	Yes	
756	320	4.97	0.49	Readymix	Yes	
773	320	4.69	0.49	Readymix	Yes	
763	320	5.00	0.46	Readymix	Yes	
751	320	5.01	0.49	Readymix	Yes	
765	320	5.00	0.46	Readymix	Yes	
757	320	5.01	0.49	Readymix	Yes	
747	320	5.02	0.46	Readymix	Yes	
758	320	5.01	0.46	Readymix	Yes	
752	320	5.01	0.49	Readymix	Yes	
743	320	5.01	0.46	Readymix	Yes	
746	320	4.99	0.46	Readymix	Yes	
753	320	5.00	0.49	Readymix	Yes	
748	320	5.00	0.46	Readymix	Yes	
742	320	5.04	0.42	Readymix	Yes	
749	320	5.00	0.49	Readymix	Yes	
744	320	5.02	0.46	Readymix	Yes	
741	320	4.59	0.46	Readymix	Yes	
745	320	5.01	0.46	Readymix	Yes	
TOTAL	29	145.07	13.54			
CUMUL	29	**145.07**	**13.54**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/1
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	12/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Concrete Yard

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
810	320	5.01	0.52	Readymix	Yes	
826	320	5.07	0.44	Readymix	Yes	
819	320	5.06	0.44	Readymix	Yes	
801	320	5.00	0.44	Readymix	Yes	
820	320	4.79	0.44	Readymix	Yes	
812	320	5.00	0.52	Readymix	Yes	
793	320	5.02	0.44	Readymix	Yes	
813	320	5.02	0.48	Readymix	Yes	
804	320	5.00	0.44	Readymix	Yes	
784	320	5.00	0.44	Readymix	Yes	
805	320	4.90	0.44	Readymix	Yes	
796	320	4.96	0.44	Readymix	Yes	
775	320	4.84	0.44	Readymix	Yes	
797	320	5.00	0.44	Readymix	Yes	
786	320	5.01	0.40	Readymix	Yes	
766	320	5.00	0.44	Readymix	Yes	
787	320	4.79	0.40	Readymix	Yes	
776	320	5.02	0.40	Readymix	Yes	
759	320	5.00	0.40	Readymix	Yes	
777	320	5.01	0.40	Readymix	Yes	
767	320	5.01	0.48	Readymix	Yes	
754	320	5.03	0.44	Readymix	Yes	
768	320	5.00	0.44	Readymix	Yes	
760	320	5.00	0.44	Readymix	Yes	
750	320	5.00	0.44	Readymix	Yes	
761	320	5.00	0.44	Readymix	Yes	
755	320	5.01	0.44	Readymix	Yes	
781	320	4.80	0.44	Readymix	Yes	
770	320	5.01	0.44	Readymix	Yes	
779	320	5.01	0.44	Readymix	Yes	
TOTAL	30	149.37	13.24			
CUMUL	30	**149.37**	**13.24**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/1
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	18/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
114	320	10.08	1.00	Readymix	Yes	
372	320	10.02	0.96	Readymix	Yes	
127	320	10.09	0.96	Readymix	Yes	
153	320	10.07	1.12	Readymix	Yes	
126	320	10.13	1.00	Readymix	Yes	
152	320	10.10	1.16	Readymix	Yes	
371	320	10.08	0.96	Readymix	Yes	
125	320	10.07	0.96	Readymix	Yes	
151	320	10.08	0.96	Readymix	Yes	
370	320	10.08	0.96	Readymix	Yes	
124	320	10.03	1.04	Readymix	Yes	
150	320	10.15	0.96	Readymix	Yes	
369	320	10.07	0.96	Readymix	Yes	
123	320	10.06	1.00	Readymix	Yes	
149	320	10.00	0.96	Readymix	Yes	
368	320	10.10	0.96	Readymix	Yes	
122	320	10.11	0.96	Readymix	Yes	
148	320	10.05	1.00	Readymix	Yes	
367	320	10.20	0.96	Readymix	Yes	
121	320	10.04	0.96	Readymix	Yes	
147	320	10.14	0.96	Readymix	Yes	
173	320	10.18	0.96	Readymix	Yes	
176	320	10.12	0.96	Readymix	Yes	
146	320	10.22	0.96	Readymix	Yes	
366	320	10.04	0.96	Readymix	Yes	
116a_M	320	8.19	0.80	Readymix	Yes	
401	320	10.33	0.96	Readymix	Yes	
381	320	10.39	0.96	Readymix	Yes	
400	320	12.05	1.16	Readymix	Yes	
380	320	10.51	1.00	Readymix	Yes	
TOTAL	30	303.78	28.52			
CUMUL	30	**303.78**	**28.52**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	2
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	18/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m³)			
399	320	13.04	1.24	Readymix	Yes	
379	320	10.05	0.96	Readymix	Yes	
398	320	14.12	1.32	Readymix	Yes	
378	320	10.08	0.96	Readymix	Yes	
397	320	14.06	1.32	Readymix	Yes	
377	320	10.04	0.96	Readymix	Yes	
396	320	13.46	1.28	Readymix	Yes	
376	320	9.92	0.96	Readymix	Yes	
179	320	12.06	1.16	Readymix	Yes	
188	320	11.82	1.16	Readymix	Yes	
195	320	12.33	1.20	Readymix	Yes	
423	320	12.04	1.16	Readymix	Yes	
422	320	13.70	1.36	Readymix	Yes	
444	320	12.55	1.28	Readymix	Yes	
421	320	12.17	1.16	Readymix	Yes	
443	320	12.05	1.16	Readymix	Yes	
465	320	14.25	1.44	Readymix	Yes	
TP2_M	320	14.61	1.44	Readymix	Yes	
464	320	13.63	1.32	Readymix	Yes	
442	320	11.35	1.12	Readymix	Yes	
420	320	12.12	1.16	Readymix	Yes	
419	320	14.30	1.40	Readymix	Yes	
463	320	11.66	1.12	Readymix	Yes	
TOTAL	23	285.41	26.20			
CUMUL	53	589.19	54.72			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	2/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	13/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Concrete Yard

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
TP1_M	320	5.02	0.56	Readymix	Yes	
791	320	4.93	0.52	Readymix	Yes	
792	320	5.03	0.44	Readymix	Yes	
802	320	4.60	0.40	Readymix	Yes	
788	320	5.32	0.64	Readymix	Yes	
800	320	5.00	0.60	Readymix	Yes	
811	320	5.20	0.44	Readymix	Yes	
798	320	5.00	0.48	Readymix	Yes	
809	320	5.00	0.44	Readymix	Yes	
818	320	5.01	0.44	Readymix	Yes	
807	320	4.99	0.44	Readymix	Yes	
816	320	4.91	0.44	Readymix	Yes	
822	320	5.01	0.44	Readymix	Yes	
814	320	5.06	0.44	Readymix	Yes	
823	320	5.03	0.44	Readymix	Yes	
829	320	5.01	0.44	Readymix	Yes	
821	320	5.02	0.44	Readymix	Yes	
830/2	320	5.01	0.44	Readymix	Yes	
836	320	5.11	0.44	Readymix	Yes	
828	320	5.00	0.44	Readymix	Yes	
834	320	5.00	0.44	Readymix	Yes	
838	320	5.00	0.44	Readymix	Yes	
840	320	5.00	0.44	Readymix	Yes	
843	320	5.00	0.44	Readymix	Yes	
835	320	5.00	0.44	Readymix	Yes	
TOTAL	25	125.26	11.56			
CUMUL	25	**125.26**	**11.56**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/1
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	17/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Concrete Yard

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
107	320	11.31	1.24	Readymix	Yes	
90	320	10.06	0.96	Readymix	Yes	
106	320	10.03	0.96	Readymix	Yes	
89	320	10.07	0.96	Readymix	Yes	
105	320	10.03	0.96	Readymix	Yes	
88	320	10.09	0.96	Readymix	Yes	
104	320	10.12	0.96	Readymix	Yes	
87	320	10.11	0.96	Readymix	Yes	
103	320	10.06	0.96	Readymix	Yes	
86	320	10.11	0.96	Readymix	Yes	
102	320	10.02	1.00	Readymix	Yes	
85	320	10.12	0.96	Readymix	Yes	
101	320	10.04	0.96	Readymix	Yes	
84	320	10.04	1.04	Readymix	Yes	
100	320	10.02	1.00	Readymix	Yes	
83	320	10.59	1.04	Readymix	Yes	
99	320	9.24	0.92	Readymix	Yes	
82	320	10.08	0.96	Readymix	Yes	
98	320	10.25	0.96	Readymix	Yes	
97	320	10.08	0.96	Readymix	Yes	
81a_M	320	8.04	0.80	Readymix	Yes	
81	320	10.04	0.96	Readymix	Yes	
80	320	10.03	0.96	Readymix	Yes	
193	320	10.12	0.96	Readymix	Yes	
192	320	10.09	0.96	Readymix	Yes	
187	320	10.08	0.96	Readymix	Yes	
181	320	10.12	0.96	Readymix	Yes	
102/2	320	10.01	0.96	Readymix	Yes	
178	320	10.16	0.96	Readymix	Yes	
175	320	10.09	1.00	Readymix	Yes	
TOTAL	30	301.25	29.16			
CUMUL	30	**301.25**	**29.16**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	2
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	17/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Concrete Yard

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
172	320	10.02	0.96	Readymix	Yes	
145	320	10.05	0.96	Readymix	Yes	
118	320	10.10	0.96	Readymix	Yes	
116	320	10.07	0.96	Readymix	Yes	
TOTAL	4	40.24	3.84			
CUMUL	34	341.49	33.00			

Engineer Further Comment:

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Rig ID:	Pump ID.	Page:	2/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	19/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Retaining Wall

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
320/2	320	14.34	1.32	Readymix	Yes	
276	320	13.38	1.36	Readymix	Yes	
275	320	11.98	1.16	Readymix	Yes	
319	320	11.92	1.16	Readymix	Yes	
274	320	11.93	1.16	Readymix	Yes	
318	320	11.90	1.16	Readymix	Yes	
273	320	12.02	1.16	Readymix	Yes	
317	320	12.17	1.16	Readymix	Yes	
272	320	11.84	1.12	Readymix	Yes	
316	320	10.99	1.04	Readymix	Yes	
271	320	11.94	1.16	Readymix	Yes	
315	320	10.63	1.08	Readymix	Yes	
314	320	11.95	1.20	Readymix	Yes	
270	320	10.89	1.04	Readymix	Yes	
313	320	12.04	1.16	Readymix	Yes	
269	320	11.11	1.12	Readymix	Yes	
326	320	11.62	1.12	Readymix	Yes	
282	320	11.71	1.12	Readymix	Yes	
325	320	11.89	1.16	Readymix	Yes	
281	320	12.66	1.24	Readymix	Yes	
280	320	11.29	1.08	Readymix	Yes	
324	320	14.77	1.44	Readymix	Yes	
279	320	11.71	1.12	Readymix	Yes	
323	320	12.74	1.24	Readymix	Yes	
278	320	11.75	1.16	Readymix	Yes	
322	320	13.96	1.32	Readymix	Yes	
277	320	11.87	1.20	Readymix	Yes	
321	320	15.48	1.56	Readymix	Yes	
268	320	11.79	1.16	Readymix	Yes	
312	320	10.99	1.12	Readymix	Yes	
TOTAL	30	365.26	35.60			
CUMUL	30	**365.26**	**35.60**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	2
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	19/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Retaining Wall

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
267	320	11.48	1.12	Readymix	Yes	
311	320	11.53	1.08	Readymix	Yes	
266	320	10.64	1.08	Readymix	Yes	
310	320	11.87	1.12	Readymix	Yes	
265	320	11.16	1.08	Readymix	Yes	
309	320	10.49	1.04	Readymix	Yes	
264	320	10.94	1.12	Readymix	Yes	
308	320	11.63	1.08	Readymix	Yes	
263	320	11.00	1.04	Readymix	Yes	
307	320	11.76	1.16	Readymix	Yes	
262	320	12.49	1.24	Readymix	Yes	
306	320	11.35	1.08	Readymix	Yes	
261	320	10.50	1.00	Readymix	Yes	
305	320	13.73	1.28	Readymix	Yes	
260	320	15.39	1.48	Readymix	Yes	
304	320	15.61	1.44	Readymix	Yes	
259	320	11.74	1.12	Readymix	Yes	
303	320	15.80	1.52	Readymix	Yes	
258	320	16.12	1.64	Readymix	Yes	
302	320	16.15	1.64	Readymix	Yes	
257	320	15.57	1.52	Readymix	Yes	
301	320	16.26	1.60	Readymix	Yes	
256	320	15.45	1.56	Readymix	Yes	
TOTAL	23	298.66	29.04			
CUMUL	**53**	**663.92**	**64.64**			

Engineer Further Comment:

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Rig ID:	Pump ID.	Page:	2/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	20/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Retaining Wall

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
300	320	15.92	1.48	Readymix	Yes	
299	320	16.00	1.60	Readymix	Yes	
255	320	15.53	1.48	Readymix	Yes	
254	320	16.12	1.48	Readymix	Yes	
298	320	16.05	1.48	Readymix	Yes	
297	320	16.02	1.48	Readymix	Yes	
253	320	15.67	1.48	Readymix	Yes	
252	320	15.18	1.44	Readymix	Yes	
296	320	15.06	1.44	Readymix	Yes	
251	320	12.66	1.18	Readymix	Yes	
295	320	15.09	1.44	Readymix	Yes	
250	320	14.53	1.41	Readymix	Yes	
294	320	15.23	1.41	Readymix	Yes	
338	320	16.04	1.48	Readymix	Yes	
344	320	16.05	1.52	Readymix	Yes	
343	320	16.03	1.48	Readymix	Yes	
337	320	14.93	1.41	Readymix	Yes	
293	320	16.06	1.52	Readymix	Yes	
249	320	14.49	1.44	Readymix	Yes	
342	320	15.09	1.41	Readymix	Yes	
336	320	15.04	1.44	Readymix	Yes	
292	320	14.59	1.44	Readymix	Yes	
248	320	14.71	1.41	Readymix	Yes	
341	320	15.35	1.44	Readymix	Yes	
335	320	14.63	1.41	Readymix	Yes	
291	320	14.29	1.37	Readymix	Yes	
247	320	14.06	1.33	Readymix	Yes	
246	320	14.59	1.37	Readymix	Yes	
290	320	14.52	1.37	Readymix	Yes	
334	320	14.65	1.37	Readymix	Yes	
TOTAL	30	454.18	43.01			
CUMUL	30	**454.18**	**43.01**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	2
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	20/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Retaining Wall

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
340	320	14.54	1.37	Readymix	Yes	
339	320	14.68	1.37	Readymix	Yes	
333	320	14.53	1.37	Readymix	Yes	
289	320	14.36	1.33	Readymix	Yes	
245	320	13.74	1.33	Readymix	Yes	
332	320	14.32	1.29	Readymix	Yes	
288	320	14.35	1.33	Readymix	Yes	
287	320	13.81	1.29	Readymix	Yes	
331	320	14.22	1.29	Readymix	Yes	
286	320	13.73	1.25	Readymix	Yes	
330	320	13.74	1.29	Readymix	Yes	
329	320	13.04	1.22	Readymix	Yes	
285	320	13.76	1.29	Readymix	Yes	
TOTAL	13	182.82	17.02			
CUMUL	**43**	**637.00**	**60.03**			

Engineer Further Comment:

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Rig ID:	Pump ID.	Page:	2/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	21/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Retaining Wall

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
284	320	14.28	1.33	Readymix	Yes	
328	320	14.20	1.37	Readymix	Yes	
283	320	14.21	1.33	Readymix	Yes	
327	320	14.16	1.33	Readymix	Yes	
417	320	12.90	1.22	Readymix	Yes	
462	320	14.76	1.44	Readymix	Yes	
440	320	15.04	1.37	Readymix	Yes	
418/2	320	14.15	1.37	Readymix	Yes	
441	320	14.96	1.41	Readymix	Yes	
446	320	16.00	1.52	Readymix	Yes	
447	320	15.83	1.52	Readymix	Yes	
448	320	12.98	1.22	Readymix	Yes	
426	320	10.30	0.99	Readymix	Yes	
425	320	12.52	1.22	Readymix	Yes	
424	320	14.79	1.44	Readymix	Yes	
TOTAL	15	211.08	20.08			
CUMUL	15	**211.08**	**20.08**			

Engineer Further Comment:

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Rig ID:	Pump ID.	Page:	1/1
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	24/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
404	320	9.76	1.03	Readymix	Yes	
402	320	13.32	1.33	Readymix	Yes	
403	320	12.50	1.22	Readymix	Yes	
382	320	14.53	1.44	Readymix	Yes	
384	320	10.41	0.99	Readymix	Yes	
383	320	12.75	1.18	Readymix	Yes	
154	320	12.44	1.18	Readymix	Yes	
128	320	14.01	1.33	Readymix	Yes	
155	320	15.59	1.52	Readymix	Yes	
129	320	15.05	1.41	Readymix	Yes	
157	320	9.75	0.91	Readymix	Yes	
156	320	9.78	1.03	Readymix	Yes	
130	320	10.27	1.52	Readymix	Yes	
374	320	9.89	0.95	Readymix	Yes	
373	320	9.58	0.91	Readymix	Yes	
110	320	15.01	0.91	Readymix	Yes	
TOTAL	16	194.64	18.86			
CUMUL	16	**194.64**	**18.86**			

Engineer Further Comment:

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Rig ID:	Pump ID.	Page:	1/1
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	25/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
111	320	11.40	1.14	Readymix	Yes	
94	320	15.24	1.48	Readymix	Yes	
109	320	14.94	1.44	Readymix	Yes	
108	320	9.07	0.87	Readymix	Yes	
93	320	10.02	0.99	Readymix	Yes	
92/2	320	14.98	1.44	Readymix	Yes	
91	320	13.40	1.29	Readymix	Yes	
112	320	9.31	0.87	Readymix	Yes	
95	320	10.16	0.95	Readymix	Yes	
65	320	9.27	0.87	Readymix	Yes	
50	320	7.89	0.76	Readymix	Yes	
47	320	10.00	0.99	Readymix	Yes	
31	320	13.88	1.33	Readymix	Yes	
44	320	10.87	1.03	Readymix	Yes	
9	320	8.32	0.80	Readymix	Yes	
483/2	320	15.75	1.63	Readymix	Yes	
462/2	320	14.94	1.44	Readymix	Yes	
228	320	15.23	1.41	Readymix	Yes	
222	320	14.95	1.41	Readymix	Yes	
482	320	14.86	1.44	Readymix	Yes	
217	320	14.73	1.33	Readymix	Yes	
461	320	14.26	1.33	Readymix	Yes	
440/2	320	14.61	1.41	Readymix	Yes	
213	320	13.44	1.22	Readymix	Yes	
209	320	10.22	0.95	Readymix	Yes	
439	320	13.48	1.25	Readymix	Yes	
206	320	11.43	1.04	Readymix	Yes	
418/3	320	14.04	1.36	Readymix	Yes	
203	320	10.01	0.96	Readymix	Yes	
417/2	320	12.96	1.28	Readymix	Yes	
TOTAL	30	373.66	35.71			
CUMUL	30	**373.66**	**35.71**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	2
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	25/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m³)			
198	320	10.14	0.92	Readymix	Yes	
224	320	12.76	1.20	Readymix	Yes	
225	320	14.14	1.32	Readymix	Yes	
230	320	14.50	1.28	Readymix	Yes	
227	320	14.64	1.36	Readymix	Yes	
226/3	320	14.36	1.40	Readymix	Yes	
221	320	13.58	1.24	Readymix	Yes	
218	320	10.05	0.92	Readymix	Yes	
219	320	11.86	1.12	Readymix	Yes	
216	320	13.26	1.18	Readymix	Yes	
214	320	13.68	1.28	Readymix	Yes	
211	320	13.50	1.24	Readymix	Yes	
460	320	13.68	1.24	Readymix	Yes	
438	320	13.27	1.28	Readymix	Yes	
208	320	13.83	1.40	Readymix	Yes	
TOTAL	15	197.25	18.38			
CUMUL	45	570.91	54.09			

Engineer Further Comment:

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Rig ID:	Pump ID.	Page:	2/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	26/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m³)			
205	320	13.81	1.30	Readymix	Yes	
202	320	13.64	1.30	Readymix	Yes	
200	320	13.25	1.22	Readymix	Yes	
197	320	13.01	1.22	Readymix	Yes	
416	320	13.23	1.26	Readymix	Yes	
183	320	9.42	0.87	Readymix	Yes	
194	320	9.90	0.91	Readymix	Yes	
190	320	12.79	1.26	Readymix	Yes	
191	320	12.57	1.22	Readymix	Yes	
186	320	12.14	1.19	Readymix	Yes	
185	320	12.43	1.19	Readymix	Yes	
184	320	12.71	1.22	Readymix	Yes	
449	320	12.52	1.22	Readymix	Yes	
450	320	9.96	0.95	Readymix	Yes	
451	320	10.20	0.95	Readymix	Yes	
429	320	10.30	0.95	Readymix	Yes	
428	320	9.73	0.95	Readymix	Yes	
427	320	9.39	0.87	Readymix	Yes	
405	320	16.06	1.54	Readymix	Yes	
406	320	11.10	1.03	Readymix	Yes	
407	320	10.60	0.95	Readymix	Yes	
387	320	9.10	0.87	Readymix	Yes	
386	320	8.73	0.91	Readymix	Yes	
385	320	8.21	0.79	Readymix	Yes	
161	320	9.21	0.87	Readymix	Yes	
134	320	9.89	0.91	Readymix	Yes	
160	320	9.46	0.91	Readymix	Yes	
133	320	10.02	0.91	Readymix	Yes	
357	320	9.78	0.91	Readymix	Yes	
159	320	8.62	0.79	Readymix	Yes	
TOTAL	30	331.78	31.44			
CUMUL	30	**331.78**	**31.44**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	2
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	26/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m³)			
158	320	7.79	0.75	Readymix	Yes	
131	320	7.41	0.71	Readymix	Yes	
132	320	8.27	0.75	Readymix	Yes	
355	320	9.78	0.91	Readymix	Yes	
356	320	9.52	0.91	Readymix	Yes	
375	320	9.15	0.95	Readymix	Yes	
68	320	9.58	0.91	Readymix	Yes	
71	320	9.83	0.91	Readymix	Yes	
56	320	9.48	0.87	Readymix	Yes	
70	320	9.29	0.83	Readymix	Yes	
55	320	8.96	0.83	Readymix	Yes	
69	320	9.60	0.91	Readymix	Yes	
454	320	9.70	0.91	Readymix	Yes	
453	320	9.99	0.95	Readymix	Yes	
452	320	10.19	0.99	Readymix	Yes	
430	320	10.92	1.03	Readymix	Yes	
431	320	11.03	1.03	Readymix	Yes	
432	320	9.95	0.95	Readymix	Yes	
410	320	16.70	1.82	Readymix	Yes	
409	320	13.16	1.74	Readymix	Yes	
TOTAL	20	200.30	19.66			
CUMUL	50	532.08	51.10			

Engineer Further Comment:

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Rig ID:	Pump ID.	Page:	2/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	27/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
408	320	11.58	1.10	Readymix	Yes	
388	320	10.98	1.10	Readymix	Yes	
389	320	16.43	1.60	Readymix	Yes	
390	320	10.70	1.03	Readymix	Yes	
135	320	10.46	0.99	Readymix	Yes	
162	320	9.84	0.91	Readymix	Yes	
163	320	8.86	0.84	Readymix	Yes	
164	320	9.04	0.84	Readymix	Yes	
137	320	8.72	0.80	Readymix	Yes	
136	320	16.07	1.71	Readymix	Yes	
360	320	8.90	0.87	Readymix	Yes	
358	320	9.69	0.95	Readymix	Yes	
359	320	7.56	0.72	Readymix	Yes	
57	320	8.65	0.80	Readymix	Yes	
72	320	9.12	0.87	Readymix	Yes	
74	320	9.97	0.95	Readymix	Yes	
73	320	15.77	1.56	Readymix	Yes	
59	320	9.59	0.87	Readymix	Yes	
58	320	16.03	1.60	Readymix	Yes	
350	320	9.17	0.82	Readymix	Yes	
36	320	8.19	0.76	Readymix	Yes	
17	320	8.58	0.86	Readymix	Yes	
30	320	8.62	0.90	Readymix	Yes	
29	320	8.78	0.82	Readymix	Yes	
175	320	8.82	0.86	Readymix	Yes	
16	320	10.35	1.01	Readymix	Yes	
15	320	8.53	0.86	Readymix	Yes	
54	320	9.67	1.25	Readymix	Yes	
10	320	8.51	0.78	Readymix	Yes	
32	320	8.39	0.78	Readymix	Yes	
TOTAL	30	305.57	29.81			
CUMUL	30	**305.57**	**29.81**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	2
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	27/11/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
11	320	7.86	0.74	Readymix	Yes	
33	320	9.87	0.97	Readymix	Yes	
12	320	9.69	0.94	Readymix	Yes	
34	320	8.92	0.90	Readymix	Yes	
13	320	8.01	0.82	Readymix	Yes	
28	320	9.24	0.90	Readymix	Yes	
348	320	10.47	0.97	Readymix	Yes	
35	320	10.00	0.97	Readymix	Yes	
14	320	7.57	0.70	Readymix	Yes	
455	320	10.63	0.97	Readymix	Yes	
456	320	8.80	0.82	Readymix	Yes	
457	320	9.13	0.82	Readymix	Yes	
435	320	9.57	0.90	Readymix	Yes	
434	320	9.50	0.86	Readymix	Yes	
433	320	10.43	0.97	Readymix	Yes	
411	320	16.94	1.72	Readymix	Yes	
412	320	17.34	1.72	Readymix	Yes	
413	320	17.93	1.79	Readymix	Yes	
393	320	9.83	0.90	Readymix	Yes	
TOTAL	19	201.73	19.38			
CUMUL	**49**	**507.30**	**49.19**			

Engineer Further Comment:

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Rig ID:	Pump ID.	Page:	2/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	01/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
391	320	16.44	1.68	Readymix	Yes	
392/2	320	16.27	1.72	Readymix	Yes	
138	320	9.89	0.90	Readymix	Yes	
165	320	11.36	1.05	Readymix	Yes	
141	320	9.01	0.94	Readymix	Yes	
167	320	9.88	0.90	Readymix	Yes	
166	320	11.42	1.09	Readymix	Yes	
139	320	12.81	1.25	Readymix	Yes	
140	320	9.82	0.90	Readymix	Yes	
363	320	9.41	0.90	Readymix	Yes	
361	320	11.71	1.09	Readymix	Yes	
362	320	9.65	0.90	Readymix	Yes	
60	320	10.27	0.94	Readymix	Yes	
75	320	9.65	0.90	Readymix	Yes	
76	320	8.56	0.78	Readymix	Yes	
77	320	8.60	0.78	Readymix	Yes	
63	320	8.13	0.78	Readymix	Yes	
62	320	8.58	0.78	Readymix	Yes	
61	320	10.66	1.01	Readymix	Yes	
351	320	9.81	0.94	Readymix	Yes	
352	320	8.70	0.78	Readymix	Yes	
353	320	8.64	0.90	Readymix	Yes	
18	320	9.92	0.90	Readymix	Yes	
37	320	8.85	0.82	Readymix	Yes	
19	320	8.63	0.82	Readymix	Yes	
38	320	9.07	0.82	Readymix	Yes	
20	320	8.75	0.82	Readymix	Yes	
39	320	9.12	0.82	Readymix	Yes	
40	320	8.32	0.78	Readymix	Yes	
3	320	8.25	0.78	Readymix	Yes	
TOTAL	30	300.18	28.47			
CUMUL	30	**300.18**	**28.47**			

Engineer Further Comment:

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Rig ID:	Pump ID.	Page:	1/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	2
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	01/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m³)			
1	320	8.75	0.82	Readymix	Yes	
212	320	9.83	0.92	Readymix	Yes	
210	320	8.06	0.77	Readymix	Yes	
459	320	9.56	0.85	Readymix	Yes	
458	320	9.70	0.96	Readymix	Yes	
207	320	9.37	0.85	Readymix	Yes	
204	320	8.61	0.81	Readymix	Yes	
201	320	7.45	0.70	Readymix	Yes	
199	320	8.54	0.81	Readymix	Yes	
436	320	9.61	0.90	Readymix	Yes	
437	320	8.57	0.77	Readymix	Yes	
196	320	17.49	1.77	Readymix	Yes	
189	320	9.95	0.92	Readymix	Yes	
182	320	8.28	0.77	Readymix	Yes	
415	320	17.48	1.81	Readymix	Yes	
414	320	18.46	1.73	Readymix	Yes	
180	320	10.82	1.23	Readymix	Yes	
394	320	11.55	1.16	Readymix	Yes	
395	320	10.65	1.31	Readymix	Yes	
177	320	10.53	1.04	Readymix	Yes	
174	320	10.90	1.08	Readymix	Yes	
171	320	10.65	1.08	Readymix	Yes	
144	320	8.51	0.85	Readymix	Yes	
119	320	10.17	0.96	Readymix	Yes	
117	320	10.24	1.00	Readymix	Yes	
170	320	10.46	1.00	Readymix	Yes	
168	320	10.12	1.00	Readymix	Yes	
142	320	10.22	1.27	Readymix	Yes	
TOTAL	28	294.53	29.14			
CUMUL	**58**	**594.71**	**57.61**			

Engineer Further Comment:

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Rig ID:	Pump ID.	Page:	2/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	02/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
364	320	8.21	0.84	Readymix	Yes	
115	320	8.33	0.76	Readymix	Yes	
113	320	8.59	0.84	Readymix	Yes	
365	320	9.22	0.87	Readymix	Yes	
96	320	9.50	0.91	Readymix	Yes	
66	320	8.96	0.87	Readymix	Yes	
51	320	9.19	0.91	Readymix	Yes	
78	320	9.12	0.91	Readymix	Yes	
64	320	10.02	0.99	Readymix	Yes	
67	320	9.66	0.91	Readymix	Yes	
347	320	11.54	1.10	Readymix	Yes	
346	320	10.65	0.99	Readymix	Yes	
1044	320	6.27	0.65	Readymix	Yes	
1045	320	5.06	0.49	Readymix	Yes	
1168	320	4.92	0.57	Readymix	Yes	
1250	320	3.12	0.27	Readymix	Yes	
1034	320	3.08	0.27	Readymix	Yes	
1035	320	3.05	0.27	Readymix	Yes	
1038	320	3.08	0.27	Readymix	Yes	
1039	320	3.07	0.27	Readymix	Yes	
1040	320	3.12	0.27	Readymix	Yes	
1237	320	3.13	0.27	Readymix	Yes	
1251	320	3.05	0.27	Readymix	Yes	
1170	320	3.03	0.27	Readymix	Yes	
1050	320	3.09	0.27	Readymix	Yes	
1054	320	3.07	0.27	Readymix	Yes	
1264	320	3.13	0.27	Readymix	Yes	
1265	320	3.04	0.27	Readymix	Yes	
1052	320	3.04	0.27	Readymix	Yes	
1172	320	4.92	0.42	Readymix	Yes	
TOTAL	30	177.26	16.81			
CUMUL	30	**177.26**	**16.81**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/4
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	2
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	02/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
1276	320	6.04	0.72	Readymix	Yes	
1277	320	3.07	0.27	Readymix	Yes	
1291	320	3.24	0.30	Readymix	Yes	
1290	320	5.57	0.61	Readymix	Yes	
1174	320	3.10	0.27	Readymix	Yes	
1058	320	3.18	0.30	Readymix	Yes	
1060	320	3.25	0.30	Readymix	Yes	
1062	320	3.21	0.30	Readymix	Yes	
1176	320	6.08	0.53	Readymix	Yes	
1305	320	6.18	0.61	Readymix	Yes	
1304	320	6.62	0.61	Readymix	Yes	
1178	320	3.56	0.30	Readymix	Yes	
1066	320	5.78	0.49	Readymix	Yes	
1070	320	3.57	0.27	Readymix	Yes	
1068	320	3.34	0.30	Readymix	Yes	
1318	320	5.78	0.49	Readymix	Yes	
1319	320	7.30	0.80	Readymix	Yes	
1331	320	7.45	1.18	Readymix	Yes	
1330	320	3.19	0.49	Readymix	Yes	
1180	320	6.85	0.72	Readymix	Yes	
1182	320	3.30	0.30	Readymix	Yes	
1344	320	7.21	0.68	Readymix	Yes	
1345	320	3.42	0.30	Readymix	Yes	
1074	320	3.18	0.30	Readymix	Yes	
1078	320	6.97	0.61	Readymix	Yes	
1076	320	6.94	0.99	Readymix	Yes	
1185	320	6.89	0.76	Readymix	Yes	
1358	320	3.50	0.38	Readymix	Yes	
1359	320	3.60	0.34	Readymix	Yes	
1080	320	7.27	0.68	Readymix	Yes	
TOTAL	30	148.64	15.20			
CUMUL	**60**	**325.90**	**32.01**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	2/4
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	3
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	02/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m³)			
1082	320	7.30	1.06	Readymix	Yes	
1374	320	7.73	1.06	Readymix	Yes	
1373	320	7.46	0.82	Readymix	Yes	
1189	320	4.69	0.43	Readymix	Yes	
1087	320	3.66	0.31	Readymix	Yes	
1089	320	3.81	0.35	Readymix	Yes	
1091	320	3.72	0.35	Readymix	Yes	
1386	320	4.50	0.39	Readymix	Yes	
1387	320	4.54	0.39	Readymix	Yes	
1400	320	5.29	0.62	Readymix	Yes	
1399	320	4.57	0.39	Readymix	Yes	
1193	320	4.60	0.39	Readymix	Yes	
1099	320	5.89	0.51	Readymix	Yes	
1106	320	6.81	0.58	Readymix	Yes	
1101	320	6.70	0.62	Readymix	Yes	
1414	320	7.50	0.66	Readymix	Yes	
1415	320	5.37	0.47	Readymix	Yes	
1196	320	6.90	0.62	Readymix	Yes	
1199	320	7.46	0.66	Readymix	Yes	
1428/2	320	8.64	0.74	Readymix	Yes	
1429	320	5.29	0.47	Readymix	Yes	
1119	320	4.93	0.43	Readymix	Yes	
1125	320	4.90	0.43	Readymix	Yes	
1202	320	4.60	0.39	Readymix	Yes	
1201	320	5.02	0.43	Readymix	Yes	
1117	320	6.23	0.55	Readymix	Yes	
1127	320	7.92	0.70	Readymix	Yes	
1128	320	6.57	0.57	Readymix	Yes	
1128/2	320	8.56	0.78	Readymix	Yes	
1442	320	5.34	0.47	Readymix	Yes	
TOTAL	30	176.50	16.64			
CUMUL	**90**	**502.40**	**48.65**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	3/4
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	4
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	02/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
1443	320	4.49	0.39	Readymix	Yes	
1445	320	4.54	0.39	Readymix	Yes	
1141	320	4.43	0.39	Readymix	Yes	
1144	320	4.53	0.39	Readymix	Yes	
1151	320	4.52	0.39	Readymix	Yes	
1152	320	4.51	0.39	Readymix	Yes	
1218	320	4.55	0.39	Readymix	Yes	
1219	320	4.69	0.43	Readymix	Yes	
1143	320	4.90	0.43	Readymix	Yes	
1140	320	5.11	0.43	Readymix	Yes	
1150	320	4.82	0.39	Readymix	Yes	
1149	320	5.11	0.43	Readymix	Yes	
5	320	11.01	1.01	Readymix	Yes	
45	320	7.69	0.78	Readymix	Yes	
48	320	7.10	0.70	Readymix	Yes	
27	320	7.63	0.74	Readymix	Yes	
8	320	8.32	0.82	Readymix	Yes	
52	320	9.78	0.97	Readymix	Yes	
345	320	8.29	0.78	Readymix	Yes	
26	320	7.93	0.78	Readymix	Yes	
7	320	7.49	0.70	Readymix	Yes	
25	320	6.96	0.66	Readymix	Yes	
43	320	9.15	1.11	Readymix	Yes	
TOTAL	23	147.55	13.89			
CUMUL	**113**	**649.95**	**62.54**			

Engineer Further Comment:

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Rig ID:	Pump ID.	Page:	4/4
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	03/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
6	320	7.56	0.74	Readymix	Yes	
53	320	7.91	0.74	Readymix	Yes	
79	320	7.66	0.70	Readymix	Yes	
49	320	7.91	0.74	Readymix	Yes	
46	320	7.07	0.66	Readymix	Yes	
24	320	7.46	0.70	Readymix	Yes	
42	320	9.00	0.82	Readymix	Yes	
23	320	9.22	0.90	Readymix	Yes	
354	320	8.06	0.78	Readymix	Yes	
41	320	8.68	0.78	Readymix	Yes	
1239	320	3.99	0.43	Readymix	Yes	
1238	320	3.07	0.27	Readymix	Yes	
1240	320	3.09	0.27	Readymix	Yes	
1254	320	3.30	0.31	Readymix	Yes	
1253	320	3.24	0.51	Readymix	Yes	
1252	320	3.14	0.27	Readymix	Yes	
1266	320	3.14	0.27	Readymix	Yes	
1267	320	3.22	0.27	Readymix	Yes	
1280	320	4.35	0.58	Readymix	Yes	
1278	320	4.24	0.39	Readymix	Yes	
1279	320	4.67	0.51	Readymix	Yes	
1292	320	5.93	0.55	Readymix	Yes	
1294	320	4.03	0.55	Readymix	Yes	
1293	320	3.71	0.35	Readymix	Yes	
1306	320	4.74	0.43	Readymix	Yes	
1308	320	3.84	0.35	Readymix	Yes	
1307	320	3.70	0.35	Readymix	Yes	
1322	320	4.48	0.58	Readymix	Yes	
1320	320	3.66	0.31	Readymix	Yes	
1321	320	3.72	0.35	Readymix	Yes	
TOTAL	30	157.79	15.46			
CUMUL	30	**157.79**	**15.46**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/4
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	2
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	03/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m³)			
1334	320	4.45	0.39	Readymix	Yes	
1332	320	4.60	0.78	Readymix	No	Void found
1333	320	3.99	0.35	Readymix	No	Void found
1348	320	4.65	0.43	Readymix	Yes	
1346	320	3.99	0.35	Readymix	Yes	
1347	320	4.16	0.39	Readymix	Yes	
1360	320	4.09	0.35	Readymix	Yes	
1362	320	4.42	0.39	Readymix	Yes	
1361	320	4.55	0.39	Readymix	Yes	
1376	320	4.55	0.39	Readymix	Yes	
1372	320	4.55	0.39	Readymix	Yes	
1375	320	4.88	0.47	Readymix	Yes	
1385	320	4.75	0.43	Readymix	Yes	
1389	320	8.10	0.78	Readymix	Yes	
T4_M	320	5.30	0.47	Readymix	Yes	
1388	320	7.05	0.62	Readymix	Yes	
1402	320	4.67	0.51	Readymix	Yes	
1398	320	4.73	0.43	Readymix	Yes	
1401	320	4.73	0.43	Readymix	Yes	
1417	320	4.57	0.39	Readymix	Yes	
1416	320	4.71	0.43	Readymix	Yes	
1413	320	6.44	0.58	Readymix	Yes	
1221	320	4.75	0.43	Readymix	Yes	
1222	320	4.98	0.43	Readymix	Yes	
1146	320	5.12	0.47	Readymix	Yes	
1145	320	5.06	0.43	Readymix	Yes	
1217	320	4.87	0.39	Readymix	Yes	
1446	320	4.46	0.39	Readymix	Yes	
1215	320	4.82	0.39	Readymix	Yes	
1200	320	4.40	0.39	Readymix	Yes	
TOTAL	30	146.39	13.46			
CUMUL	**60**	**304.18**	**28.92**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	2/4
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	3
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	03/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
1120	320	4.48	0.39	Readymix	Yes	
1126	320	4.51	0.39	Readymix	Yes	
1203	320	4.70	0.43	Readymix	Yes	
1204	320	4.52	0.43	Readymix	Yes	
1430	320	4.69	0.43	Readymix	Yes	
1431	320	4.79	0.43	Readymix	Yes	
1432/2	320	4.92	0.43	Readymix	Yes	
1423	320	4.40	0.39	Readymix	Yes	
1422	320	4.32	0.39	Readymix	Yes	
1408	320	4.39	0.39	Readymix	Yes	
1394	320	4.98	0.43	Readymix	Yes	
1393/2	320	4.89	0.43	Readymix	Yes	
t5_M	320	4.47	0.39	Readymix	Yes	
1421	320	4.38	0.39	Readymix	Yes	
1407	320	3.87	0.35	Readymix	Yes	
1392	320	4.83	0.47	Readymix	Yes	
1391	320	4.74	0.43	Readymix	Yes	
1406	320	4.37	0.39	Readymix	Yes	
1420	320	4.46	0.39	Readymix	Yes	
1405	320	4.58	0.39	Readymix	Yes	
1419	320	4.28	0.39	Readymix	Yes	
1404/2	320	8.62	0.90	Readymix	Yes	
1418	320	4.93	0.43	Readymix	Yes	
1390	320	8.03	0.78	Readymix	Yes	
1390/2	320	8.92	0.82	Readymix	Yes	
1403	320	5.02	0.43	Readymix	Yes	
1135	320	4.80	0.47	Readymix	Yes	
1111	320	4.67	0.43	Readymix	Yes	
1122	320	4.62	0.43	Readymix	Yes	
1134	320	4.56	0.43	Readymix	Yes	
TOTAL	30	149.74	13.67			
CUMUL	**90**	**453.92**	**42.59**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	3/4
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	4
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	03/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
1110	320	4.51	0.39	Readymix	Yes	
1438	320	4.45	0.39	Readymix	Yes	
1121	320	4.53	0.39	Readymix	Yes	
1133	320	4.65	0.43	Readymix	Yes	
1109	320	4.53	0.39	Readymix	Yes	
1214	320	4.24	0.35	Readymix	Yes	
1437	320	4.29	0.39	Readymix	Yes	
1211	320	4.30	0.39	Readymix	Yes	
1210	320	4.35	0.39	Readymix	Yes	
1436	320	4.21	0.39	Readymix	Yes	
1435	320	4.26	0.39	Readymix	Yes	
1208	320	4.59	0.39	Readymix	Yes	
1130	320	4.34	0.39	Readymix	Yes	
1129	320	4.28	0.39	Readymix	Yes	
1118	320	4.26	0.39	Readymix	Yes	
1434	320	4.31	0.39	Readymix	Yes	
1207	320	4.40	0.39	Readymix	Yes	
TOTAL	17	74.50	6.63			
CUMUL	107	528.42	49.22			

Engineer Further Comment:

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Rig ID:	Pump ID.	Page:	4/4
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	04/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m³)			
2	320	6.66	0.66	Readymix	Yes	
4	320	8.57	0.78	Readymix	Yes	
22	320	7.43	0.70	Readymix	Yes	
21	320	7.48	0.70	Readymix	Yes	
143	320	10.50	1.01	Readymix	Yes	
169	320	8.52	0.90	Readymix	Yes	
1331/2	320	7.34	0.74	Readymix	No	Void Found
1332/2	320	7.55	0.66	Readymix	No	Void Found
1243	320	8.01	0.74	Readymix	No	Void Found
1242	320	4.45	0.62	Readymix	Yes	
1241	320	3.85	0.35	Readymix	Yes	
1255	320	7.92	0.82	Readymix	No	Void Found
1257	320	5.04	0.43	Readymix	Yes	
1256	320	8.30	0.78	Readymix	No	Void Found
1268	320	6.68	0.74	Readymix	Yes	
1269	320	4.72	0.74	Readymix	Yes	
1281	320	6.85	0.78	Readymix	Yes	
1289	320	5.04	0.43	Readymix	Yes	
1288	320	4.67	0.39	Readymix	Yes	
1295	320	4.54	0.39	Readymix	Yes	
1303/2	320	7.80	0.82	Readymix	Yes	
1302	320	4.90	0.51	Readymix	Yes	
1309	320	4.71	0.43	Readymix	Yes	
1317	320	4.64	0.43	Readymix	Yes	
1316	320	4.54	0.39	Readymix	Yes	
1323	320	4.74	0.66	Readymix	Yes	
1335	320	4.84	0.43	Readymix	Yes	
1343	320	4.64	0.43	Readymix	Yes	
1342	320	4.89	0.43	Readymix	Yes	
1349	320	4.55	0.39	Readymix	Yes	
TOTAL	30	184.37	18.28			
CUMUL	30	**184.37**	**18.28**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/3
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	2
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	04/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
1357	320	4.61	0.39	Readymix	Yes	
1356	320	4.78	0.43	Readymix	Yes	
1363	320	4.74	0.43	Readymix	Yes	
1371	320	4.69	0.43	Readymix	Yes	
1370	320	4.76	0.43	Readymix	Yes	
1377	320	7.70	0.71	Readymix	Yes	
1433	320	4.59	0.39	Readymix	Yes	
1206	320	4.32	0.39	Readymix	Yes	
1205	320	4.36	0.39	Readymix	Yes	
1270	320	5.53	0.47	Readymix	Yes	
1272	320	5.27	0.47	Readymix	Yes	
1271	320	4.37	0.39	Readymix	Yes	
1284	320	4.51	0.39	Readymix	Yes	
1282	320	4.59	0.39	Readymix	Yes	
1283	320	4.54	0.39	Readymix	Yes	
1296	320	4.46	0.39	Readymix	Yes	
1298	320	4.79	0.39	Readymix	Yes	
1297	320	4.78	0.43	Readymix	Yes	
1312	320	6.67	0.58	Readymix	Yes	
1311	320	8.45	0.86	Readymix	Yes	
1310	320	4.69	0.58	Readymix	Yes	
1324	320	4.48	0.39	Readymix	Yes	
1326	320	4.91	0.43	Readymix	Yes	
1325	320	4.99	0.43	Readymix	Yes	
1336	320	4.34	0.39	Readymix	Yes	
1338	320	4.72	0.43	Readymix	Yes	
1337	320	4.48	0.39	Readymix	Yes	
1350	320	4.45	0.39	Readymix	Yes	
1352	320	4.49	0.43	Readymix	Yes	
1351	320	4.37	0.39	Readymix	Yes	
TOTAL	30	148.43	13.39			
CUMUL	**60**	**332.80**	**31.67**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	2/3
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	3
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	04/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
1364	320	4.44	0.39	Readymix	Yes	
1366	320	4.56	0.39	Readymix	Yes	
1365	320	7.41	0.74	Readymix	Yes	
1380	320	4.81	0.43	Readymix	Yes	
1379	320	4.76	0.43	Readymix	Yes	
1378	320	8.41	0.78	Readymix	Yes	
1263	320	4.47	0.39	Readymix	Yes	
1262	320	4.51	0.39	Readymix	Yes	
1261	320	4.91	0.43	Readymix	Yes	
1285	320	4.50	0.39	Readymix	Yes	
1287	320	4.74	0.51	Readymix	Yes	
1286	320	7.07	0.62	Readymix	Yes	
1301	320	5.06	0.43	Readymix	Yes	
1300	320	6.84	0.58	Readymix	Yes	
1299	320	4.64	0.43	Readymix	Yes	
1327	320	5.56	0.51	Readymix	Yes	
1328	320	5.04	0.43	Readymix	Yes	
1329	320	5.32	0.47	Readymix	Yes	
TOTAL	18	97.05	8.74			
CUMUL	78	429.85	40.41			

Engineer Further Comment:

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Rig ID:	Pump ID.	Page:	3/3
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	05/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
1331/3	320	7.51	0.78	Readymix	Yes	
1332/3	320	6.19	0.55	Readymix	Yes	
1323/2	320	7.80	1.09	Readymix	Yes	
1311/2	320	8.36	1.05	Readymix	Yes	
1255/2	320	8.03	1.10	Readymix	Yes	
1256/2	320	8.35	1.41	Readymix	Yes	
1341	320	8.54	0.78	Readymix	No	
1339	320	6.21	0.55	Readymix	No	
1340	320	5.11	0.47	Readymix	No	
1355	320	4.39	0.39	Readymix	Yes	
1353	320	4.50	0.39	Readymix	Yes	
1354	320	4.60	0.39	Readymix	No	
1369	320	4.24	0.39	Readymix	Yes	
1367	320	4.28	0.39	Readymix	No	
1368	320	4.26	0.39	Readymix	Yes	
1383	320	4.65	0.43	Readymix	Yes	
1381	320	4.36	0.39	Readymix	Yes	
1382	320	4.21	0.39	Readymix	Yes	
1396	320	4.24	0.39	Readymix	Yes	
1395	320	4.23	0.39	Readymix	Yes	
1411	320	4.21	0.35	Readymix	Yes	
1409	320	4.26	0.39	Readymix	Yes	
1410	320	4.25	0.39	Readymix	Yes	
1425	320	4.16	0.39	Readymix	Yes	
1424	320	4.20	0.39	Readymix	Yes	
1439	320	4.20	0.39	Readymix	Yes	
1427	320	4.22	0.39	Readymix	Yes	
1440	320	4.16	0.39	Readymix	Yes	
TOTAL	28	147.72	15.19			
CUMUL	28	**147.72**	**15.19**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/1
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	08/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
1147	320	3.89	0.35	Readymix	Yes	
1139	320	3.93	0.35	Readymix	Yes	
1148	320	3.68	0.31	Readymix	Yes	
1142	320	3.73	0.35	Readymix	Yes	
1220	320	3.58	0.31	Readymix	Yes	
1216	320	4.68	0.43	Readymix	Yes	
1444	320	5.23	0.47	Readymix	Yes	
1131	320	7.08	0.62	Readymix	Yes	
1115	320	6.57	0.58	Readymix	Yes	
1132	320	7.02	0.62	Readymix	Yes	
1116	320	6.86	0.58	Readymix	Yes	
1441	320	5.25	0.47	Readymix	Yes	
1198	320	5.21	0.47	Readymix	Yes	
1195	320	4.58	0.39	Readymix	Yes	
1426	320	4.90	0.43	Readymix	Yes	
1105	320	4.38	0.39	Readymix	Yes	
1100	320	4.47	0.39	Readymix	Yes	
1194	320	4.37	0.39	Readymix	Yes	
1412	320	5.49	0.47	Readymix	Yes	
1096	320	4.41	0.39	Readymix	Yes	
1095	320	4.30	0.39	Readymix	Yes	
1397	320	4.32	0.39	Readymix	Yes	
1191	320	4.29	0.39	Readymix	Yes	
1084	320	4.28	0.39	Readymix	Yes	
1384	320	4.48	0.39	Readymix	Yes	
1083	320	6.49	0.58	Readymix	Yes	
1081	320	6.99	0.70	Readymix	Yes	
1186	320	7.24	0.70	Readymix	Yes	
1187	320	7.10	0.70	Readymix	Yes	
1104	320	4.60	0.39	Readymix	Yes	
TOTAL	30	153.40	13.78			
CUMUL	30	**153.40**	**13.78**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/4
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	2
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	08/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
1108	320	4.34	0.39	Readymix	Yes	
1098	320	4.63	0.43	Readymix	No	
1107	320	4.62	0.39	Readymix	No	
1103	320	4.52	0.39	Readymix	Yes	
1102	320	4.54	0.43	Readymix	Yes	
1097	320	4.46	0.35	Readymix	Yes	
1197	320	4.57	0.39	Readymix	Yes	
1112	320	4.24	0.39	Readymix	Yes	
1123	320	4.22	0.39	Readymix	Yes	
1136	320	4.37	0.39	Readymix	Yes	
1113	320	4.22	0.39	Readymix	Yes	
1137	320	4.25	0.39	Readymix	Yes	
1124	320	4.21	0.39	Readymix	Yes	
1114	320	4.37	0.43	Readymix	Yes	
1138	320	4.83	0.39	Readymix	Yes	
1213	320	4.23	0.39	Readymix	Yes	
1212	320	4.24	0.39	Readymix	Yes	
1209	320	4.20	0.39	Readymix	Yes	
1192	320	4.27	0.39	Readymix	Yes	
1092	320	4.18	0.39	Readymix	Yes	
1088	320	4.12	0.35	Readymix	Yes	
1090	320	4.23	0.39	Readymix	Yes	
1190	320	4.21	0.39	Readymix	Yes	
1188	320	4.67	0.43	Readymix	Yes	
1184	320	4.21	0.39	Readymix	Yes	
1077	320	4.21	0.55	Readymix	Yes	
1079	320	4.21	0.39	Readymix	Yes	
1075	320	4.18	0.39	Readymix	Yes	
1183	320	4.19	0.39	Readymix	Yes	
1181	320	4.19	0.39	Readymix	Yes	
TOTAL	30	129.93	11.94			
CUMUL	**60**	**283.33**	**25.72**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	2/4
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	3
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	08/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
1071	320	4.35	0.39	Readymix	Yes	
1179	320	4.57	0.39	Readymix	Yes	
1177	320	5.56	0.51	Readymix	Yes	
1061	320	5.44	0.47	Readymix	Yes	
1063	320	4.92	0.43	Readymix	Yes	
1059	320	4.92	0.43	Readymix	Yes	
1033	320	4.10	0.35	Readymix	Yes	
1032	320	4.08	0.35	Readymix	Yes	
1021	320	4.05	0.39	Readymix	Yes	
1022	320	4.12	0.35	Readymix	Yes	
1023	320	4.16	0.39	Readymix	Yes	
1008	320	4.25	0.39	Readymix	Yes	
1007	320	4.15	0.35	Readymix	Yes	
1165	320	3.79	0.35	Readymix	Yes	
1164	320	4.06	0.35	Readymix	Yes	
1163	320	4.12	0.35	Readymix	Yes	
1233	320	4.08	0.35	Readymix	Yes	
1167	320	4.11	0.35	Readymix	Yes	
1236	320	4.70	0.39	Readymix	Yes	
1234	320	4.08	0.35	Readymix	Yes	
1047	320	4.18	0.39	Readymix	Yes	
1046	320	4.61	0.39	Readymix	Yes	
1043	320	4.46	0.39	Readymix	Yes	
1042	320	4.52	0.39	Readymix	Yes	
1041	320	4.67	0.39	Readymix	Yes	
1037	320	4.69	0.39	Readymix	Yes	
1036	320	4.71	0.43	Readymix	Yes	
1249	320	4.75	0.43	Readymix	Yes	
1169	320	4.86	0.55	Readymix	Yes	
1315	320	4.91	0.43	Readymix	Yes	
TOTAL	30	133.97	11.86			
CUMUL	**90**	**417.30**	**37.58**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	3/4
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	4
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	08/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
1314	320	4.12	0.35	Readymix	Yes	
1313	320	4.86	0.43	Readymix	Yes	
1171	320	4.82	0.43	Readymix	Yes	
1051	320	4.62	0.39	Readymix	Yes	
1055	320	4.57	0.39	Readymix	Yes	
1053	320	4.88	0.43	Readymix	Yes	
1275	320	4.55	0.39	Readymix	Yes	
1173	320	5.03	0.97	Readymix	Yes	
TOTAL	8	37.45	3.78			
CUMUL	98	454.75	41.36			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	4/4
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	09/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
502	320	9.10	0.90	Readymix	Yes	
501	320	9.42	0.94	Readymix	Yes	
500	320	9.83	0.94	Readymix	Yes	
481	320	9.32	0.94	Readymix	Yes	
480	320	10.56	0.97	Readymix	Yes	
479	320	9.80	0.94	Readymix	Yes	
499	320	9.70	0.94	Readymix	Yes	
497	320	8.90	0.86	Readymix	Yes	
498	320	9.12	0.86	Readymix	Yes	
476	320	10.80	1.21	Readymix	Yes	
478	320	9.52	0.90	Readymix	Yes	
477	320	9.53	1.13	Readymix	Yes	
495	320	10.57	1.09	Readymix	Yes	
496	320	10.94	1.09	Readymix	Yes	
474	320	9.73	0.94	Readymix	Yes	
475	320	9.76	0.94	Readymix	Yes	
494	320	10.65	1.01	Readymix	Yes	
493	320	10.70	1.09	Readymix	Yes	
492	320	17.79	1.87	Readymix	Yes	
473	320	10.49	1.01	Readymix	Yes	
472	320	11.65	1.09	Readymix	Yes	
471	320	11.82	1.13	Readymix	Yes	
491	320	17.78	1.75	Readymix	Yes	
490	320	17.22	1.75	Readymix	Yes	
489	320	16.68	1.75	Readymix	Yes	
470	320	15.94	1.44	Readymix	Yes	
469	320	16.26	1.60	Readymix	Yes	
468	320	16.18	1.60	Readymix	Yes	
487	320	16.37	1.75	Readymix	Yes	
488	320	16.11	1.72	Readymix	Yes	
TOTAL	30	362.24	36.15			
CUMUL	30	**362.24**	**36.15**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/3
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	2
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	09/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
466	320	12.39	1.17	Readymix	Yes	
467	320	16.06	1.48	Readymix	No	
445	320	12.61	1.17	Readymix	No	
486	320	16.01	1.72	Readymix	Yes	
485	320	12.57	1.25	Readymix	Yes	
484	320	12.18	1.17	Readymix	Yes	
1093	320	5.30	0.66	Readymix	Yes	
1094	320	4.87	0.43	Readymix	Yes	
1086	320	4.50	0.39	Readymix	Yes	
1085	320	4.74	0.43	Readymix	Yes	
1064	320	4.66	0.43	Readymix	Yes	
1072	320	4.59	0.39	Readymix	Yes	
1065	320	4.54	0.39	Readymix	Yes	
1073	320	4.74	0.43	Readymix	Yes	
1049	320	4.26	0.39	Readymix	Yes	
1048	320	4.21	0.39	Readymix	Yes	
1056	320	4.22	0.39	Readymix	Yes	
1057	320	4.22	0.39	Readymix	Yes	
1158	320	4.19	0.39	Readymix	Yes	
1009	320	4.16	0.35	Readymix	Yes	
1010	320	4.19	0.39	Readymix	Yes	
1025	320	4.02	0.39	Readymix	Yes	
1159	320	4.16	0.39	Readymix	Yes	
1160	320	4.12	0.35	Readymix	Yes	
1230	320	4.26	0.39	Readymix	Yes	
1229	320	4.21	0.35	Readymix	Yes	
1228	320	4.23	0.58	Readymix	Yes	
1244	320	4.28	0.39	Readymix	Yes	
1258	320	4.22	0.39	Readymix	Yes	
1161	320	4.24	0.39	Readymix	Yes	
TOTAL	30	186.95	17.82			
CUMUL	**60**	**549.19**	**53.97**			

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Engineer Further Comment:

Rig ID:	Pump ID.	Page:	2/3
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	3
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	09/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
1162	320	4.21	0.35	Readymix	Yes	
1031	320	4.14	0.35	Readymix	Yes	
1030	320	4.21	0.39	Readymix	Yes	
1018	320	3.73	0.35	Readymix	Yes	
1019	320	3.81	0.35	Readymix	Yes	
1005	320	3.97	0.35	Readymix	Yes	
1232	320	3.68	0.31	Readymix	Yes	
1231	320	3.83	0.35	Readymix	Yes	
1245	320	3.93	0.35	Readymix	Yes	
1006	320	3.75	0.35	Readymix	Yes	
1020	320	3.59	0.35	Readymix	Yes	
1261/2	320	4.69	0.70	Readymix	Yes	
1246	320	3.77	0.35	Readymix	Yes	
TOTAL	13	51.31	4.90			
CUMUL	**73**	**600.50**	**58.87**			

Engineer Further Comment:

Rig ID:	Pump ID.	Page:	3/3
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	10/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
1162/2	320	4.27	0.39	Readymix	Yes	
1005/2	320	3.81	0.35	Readymix	Yes	
1248	320	3.78	0.31	Readymix	Yes	
1247	320	3.74	0.35	Readymix	Yes	
1260	320	3.86	0.35	Readymix	Yes	
1259	320	4.11	0.35	Readymix	Yes	
1274	320	8.05	0.78	Readymix	Yes	
1273	320	4.28	0.39	Readymix	Yes	
1175	320	4.44	0.39	Readymix	Yes	
1071/2	320	7.60	0.74	Readymix	Yes	
1069	320	7.24	0.74	Readymix	Yes	
1067	320	7.03	0.82	Readymix	Yes	
239	320	12.34	1.17	Readymix	Yes	
238	320	12.55	1.21	Readymix	Yes	
234	320	11.69	1.05	Readymix	Yes	
231	320	12.58	1.48	Readymix	Yes	
223	320	11.71	1.09	Readymix	Yes	
229	320	12.63	1.21	Readymix	Yes	
215	320	11.04	1.09	Readymix	Yes	
220	320	11.86	1.13	Readymix	Yes	
233	320	11.78	1.13	Readymix	Yes	
503	320	11.81	1.05	Readymix	Yes	
232	320	14.77	1.44	Readymix	Yes	
764	320	14.61	1.44	Readymix	Yes	
774	320	14.10	1.36	Readymix	Yes	
785	320	14.00	1.29	Readymix	Yes	
794	320	13.28	1.25	Readymix	Yes	
799	320	12.60	1.17	Readymix	Yes	
772/2	320	14.43	1.44	Readymix	Yes	
701	320	11.36	1.05	Readymix	Yes	
TOTAL	30	291.35	28.01			
CUMUL	30	**291.35**	**28.01**			

Engineer Further Comment:

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Rig ID:	Pump ID.	Page:	1/3
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	2
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	10/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
783	320	14.20	1.29	Readymix	Yes	
703	320	13.50	1.29	Readymix	No	
705	320	14.25	1.29	Readymix	No	
795	320	14.03	1.33	Readymix	Yes	
TOTAL	4	55.98	5.20			
CUMUL	**34**	**347.33**	**33.21**			

Engineer Further Comment:

Rig ID:	Pump ID.	Page:	2/2
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	1
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	11/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
708	320	10.76	1.01	Readymix	Yes	
803	320	11.55	1.09	Readymix	Yes	
711	320	12.37	1.17	Readymix	Yes	
806	320	11.62	1.09	Readymix	Yes	
808	320	11.77	1.09	Readymix	Yes	
808/2	320	12.94	1.25	Readymix	Yes	
827	320	7.10	0.66	Readymix	Yes	
723	320	7.71	0.74	Readymix	Yes	
725	320	7.13	0.74	Readymix	Yes	
832	320	7.75	0.74	Readymix	Yes	
839	320	8.89	0.86	Readymix	Yes	
842	320	7.46	0.70	Readymix	Yes	
733	320	9.77	0.94	Readymix	Yes	
735	320	9.96	0.94	Readymix	Yes	
845	320	10.06	0.94	Readymix	Yes	
737	320	10.30	0.97	Readymix	Yes	
738	320	10.95	1.01	Readymix	Yes	
740	320	11.21	1.05	Readymix	Yes	
847	320	10.68	1.01	Readymix	Yes	
736	320	8.73	0.78	Readymix	Yes	
739	320	5.37	0.47	Readymix	Yes	
846	320	8.73	0.78	Readymix	Yes	
734	320	5.80	0.55	Readymix	Yes	
732	320	8.04	0.74	Readymix	Yes	
730	320	6.79	0.74	Readymix	Yes	
728	320	9.62	0.97	Readymix	Yes	
726	320	10.02	0.94	Readymix	Yes	
837	320	11.39	1.05	Readymix	Yes	
724	320	10.21	0.94	Readymix	Yes	
831	320	9.46	0.90	Readymix	Yes	
TOTAL	30	284.14	26.86			
CUMUL	30	**284.14**	**26.86**			

menard

Engineer Further Comment:

Rig ID:	Pump ID.	Page:	1/3
Enteco UK3	LP4	Quality Sheet	

Project Name:	Birstall	Form	2
Project Engineer:	Adam Harrison	Contract No.	6903
Technique:	CMC	Date	11/12/2025
Site Supervisor:	Wayne Talbot	Plot/Unit	Lidl

CMC	Tool Diameter	Depth	Material volume	Concrete delivery	Compliant	Comments
Ref. No.	(mm)	(m)	(m^3)			
844	320	11.82	1.13	Readymix	Yes	
841	320	11.89	1.13	Readymix	Yes	
833	320	12.03	1.17	Readymix	Yes	
825	320	11.95	1.13	Readymix	Yes	
721	320	10.59	1.01	Readymix	Yes	
718	320	9.63	0.90	Readymix	Yes	
824	320	9.72	0.94	Readymix	Yes	
716	320	9.28	0.94	Readymix	Yes	
815	320	12.11	1.29	Readymix	Yes	
713	320	8.55	0.86	Readymix	Yes	
817	320	12.55	1.33	Readymix	Yes	
TOTAL	11	120.12	11.83			
CUMUL	41	404.26	38.69			

Engineer Further Comment:

menard

Rig ID:	Pump ID.	Page:	2/2
Enteco UK3	LP4	Quality Sheet	

APPENDIX 2 – LOAD TEST RESULTS

STATIC PLATELOAD TEST ON ONE CMC

Project Number	6903	**N° test (and/or n° CMC)**	1 - TC 1
Project Name	Birtsall	**Date**	26/11/2025
Test type	Quality	**Contract engineer**	Adam Harrison
Load test Qtest	36.0 t	**Person(s) during the test**	Wayne Talbot
Jack type	RC 756	**Benkelman Beam**	yes
Jack section	0.01026 m²		

Jack pressure (bars)	Load Q (t)	Q/Qtest (%)	Time (mn)	Sensor (mm)	Settlement (mm)
70	7.2	20%	1	0.71	0.54
			5	0.72	0.56
0	0.0	0%	1	0.44	0.00
			5	0.44	0.00
70	7.2	20%	1	0.80	0.72
			2	0.80	0.72
			3	0.81	0.74
			4	0.81	0.74
			5	0.82	0.76
			10	0.83	0.78
			15	0.83	0.78
140	14.4	40%	1	1.01	1.14
			2	1.02	1.16
			3	1.02	1.16
			4	1.03	1.18
			5	1.03	1.18
			10	1.04	1.20
			15	1.04	1.20
211	21.6	60%	1	1.32	1.76
			2	1.33	1.78
			3	1.33	1.78
			4	1.34	1.80
			5	1.34	1.80
			10	1.35	1.82
			15	1.35	1.82

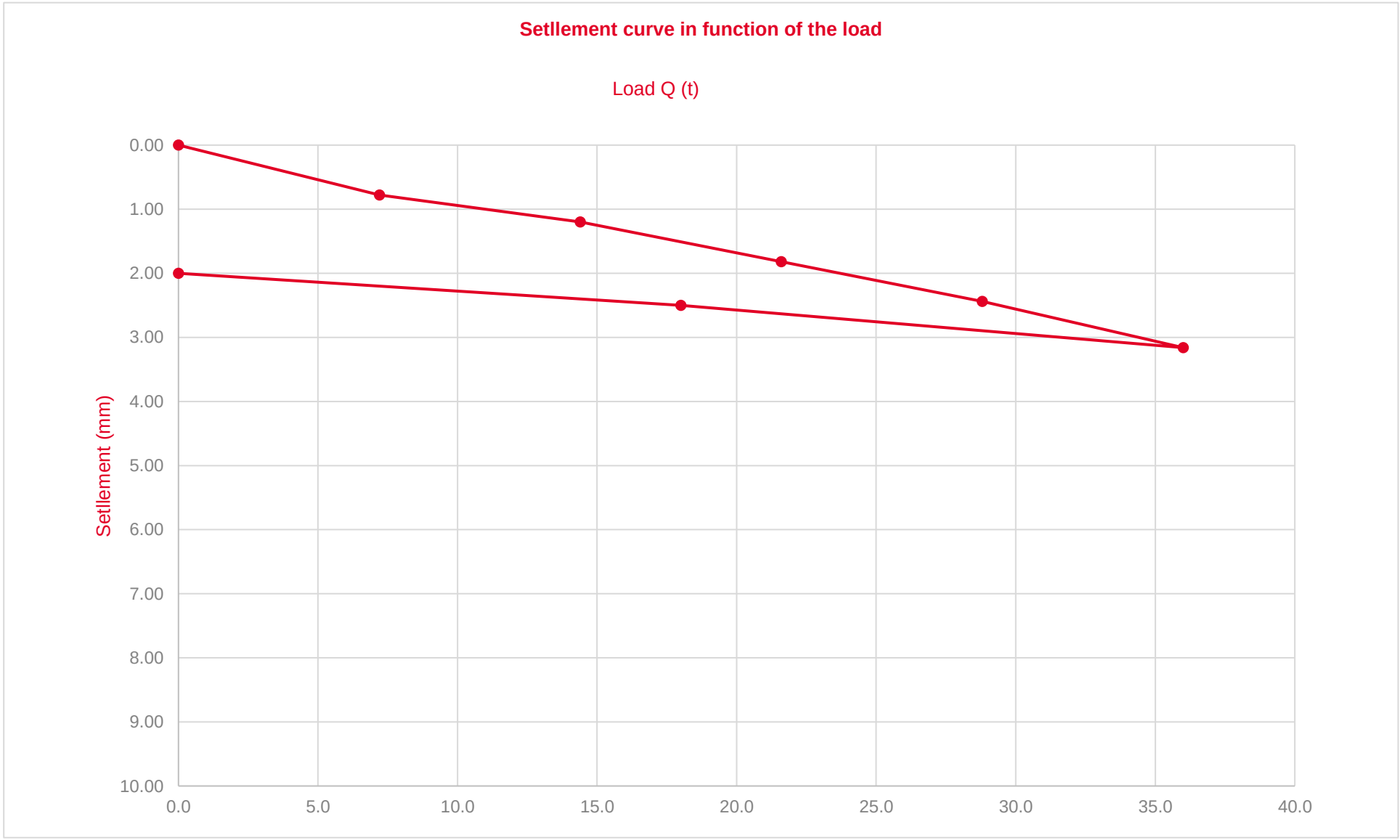
Jack pressure (bars)	Load Q (t)	Q/Qtest (%)	Time (mn)	Sensor (mm)	Settlement (mm)
281	28.8	80%	1	1.62	2.36
			2	1.62	2.36
			3	1.63	2.38
			4	1.63	2.38
			5	1.64	2.40
			10	1.65	2.42
			15	1.66	2.44
			30	1.66	2.44
351	36.0	100%	1	1.93	2.98
			2	1.94	3.00
			3	1.95	3.02
			4	1.96	3.04
			5	1.96	3.04
			10	1.98	3.08
			15	1.99	3.10
			30	2.00	3.12
			60	2.02	3.16
175	18.0	50%	1	1.69	2.50
			5	1.69	2.50
0	0.0	0%	1	1.44	2.00
			5	1.44	2.00

Comment

Remark : Over the course of the loading stages, it is authorized to proceed to the next stage provided displacement remains less than 0.02 mm/min on at least two consecutive measurements, with a minimum 15-minute interval.

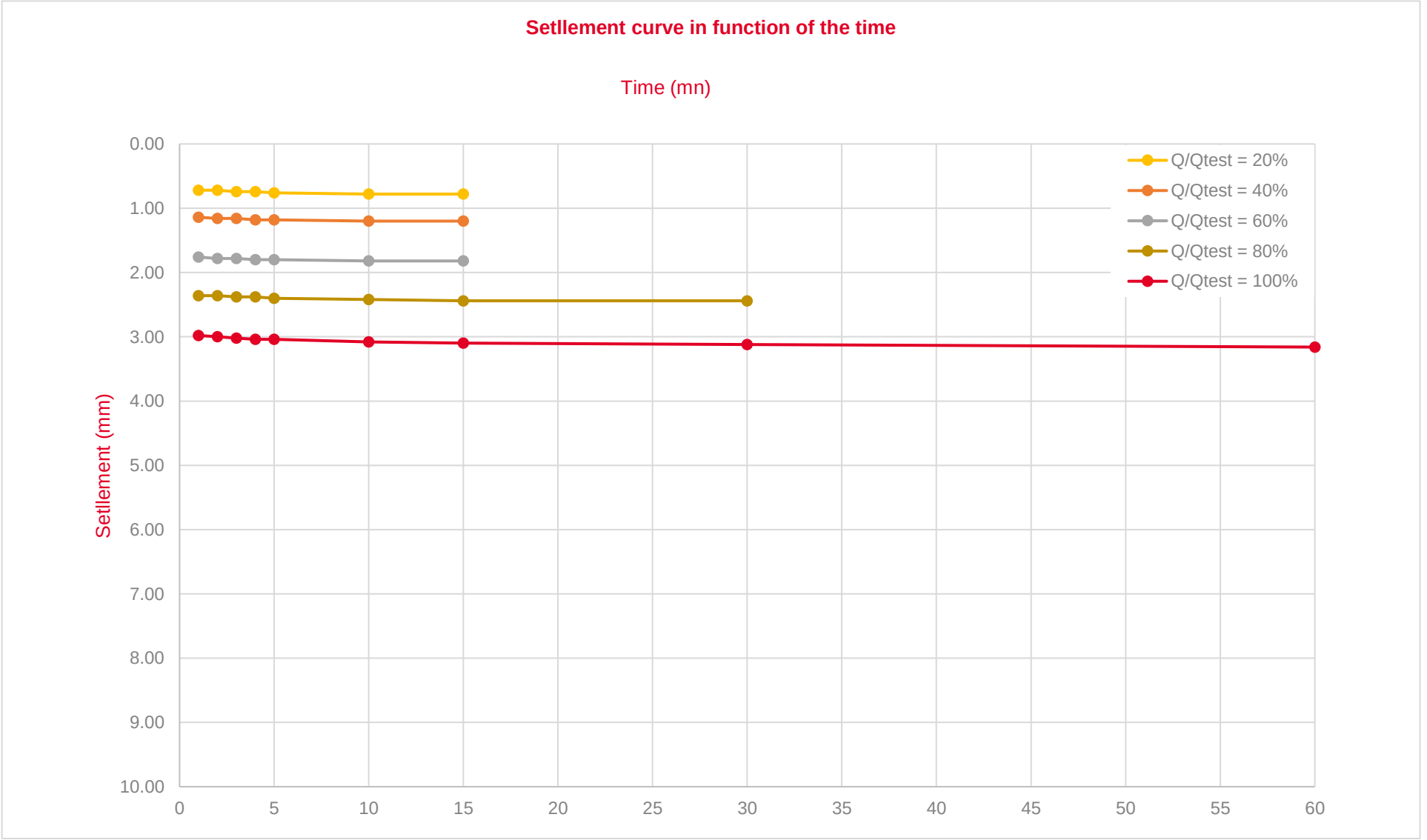
STATIC PLATELOAD TEST ON ONE CMC

Project Number	**6903**	***N° test (and/or n° CMC)***	**1 - TC 1**
Project Name	**Birtsall**	***Date***	**26/11/2025**



STATIC PLATELOAD TEST ON ONE CMC

Project Number	**6903**	***N° test (and/or n° CMC)***	**1 - TC 1**
Project Name	**Birtsall**	***Date***	**26/11/2025**



STATIC PLATELOAD TEST ON ONE CMC

Project Number	6903	**N° test (and/or n° CMC)**	2 - TC 2
Project Name	Birtsall	**Date**	27/11/2025
Test type	Quality	**Contract engineer**	Adam Harrison
Load test Qtest	36.0 t	**Person(s) during the test**	Wayne Talbot
Jack type	RC 756	**Benkelman Beam**	yes
Jack section	0.01026 m²		

Jack pressure (bars)	Load Q (t)	Q/Qtest (%)	Time (mn)	Sensor (mm)	Settlement (mm)
70	7.2	20%	1	0.44	0.14
			5	0.46	0.18
0	0.0	0%	1	0.37	0.00
			5	0.37	0.00
70	7.2	20%	1	0.52	0.30
			2	0.53	0.32
			3	0.54	0.34
			4	0.54	0.34
			5	0.55	0.36
			10	0.56	0.38
			15	0.57	0.40
140	14.4	40%	1	0.79	0.84
			2	0.80	0.86
			3	0.82	0.90
			4	0.83	0.92
			5	0.83	0.92
			10	0.84	0.94
			15	0.84	0.94
211	21.6	60%	1	1.02	1.30
			2	1.03	1.32
			3	1.03	1.32
			4	1.04	1.34
			5	1.04	1.34
			10	1.04	1.34
			15	1.04	1.34

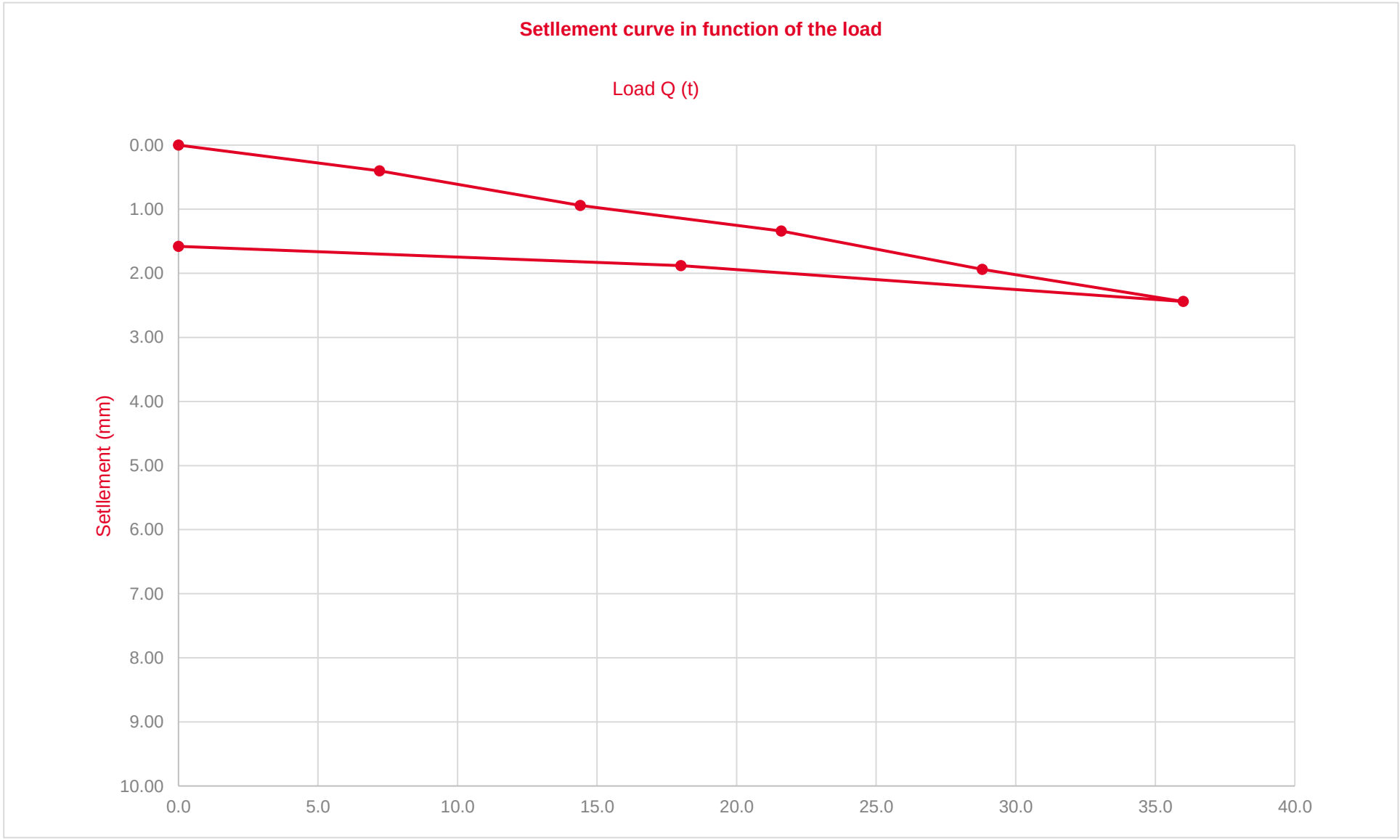
Jack pressure (bars)	Load Q (t)	Q/Qtest (%)	Time (mn)	Sensor (mm)	Settlement (mm)
281	28.8	80%	1	1.31	1.88
			2	1.32	1.90
			3	1.32	1.90
			4	1.33	1.92
			5	1.33	1.92
			10	1.34	1.94
			15	1.34	1.94
			30	1.34	1.94
351	36.0	100%	1	1.54	2.34
			2	1.55	2.36
			3	1.56	2.38
			4	1.57	2.40
			5	1.58	2.42
			10	1.59	2.44
			15	1.59	2.44
			30	1.59	2.44
			60	1.59	2.44
175	18.0	50%	1	1.31	1.88
			5	1.31	1.88
0	0.0	0%	1	1.16	1.58
			5	1.16	1.58

Comment

Remark : Over the course of the loading stages, it is authorized to proceed to the next stage provided displacement remains less than 0.02 mm/min on at least two consecutive measurements, with a minimum 15-minute interval.

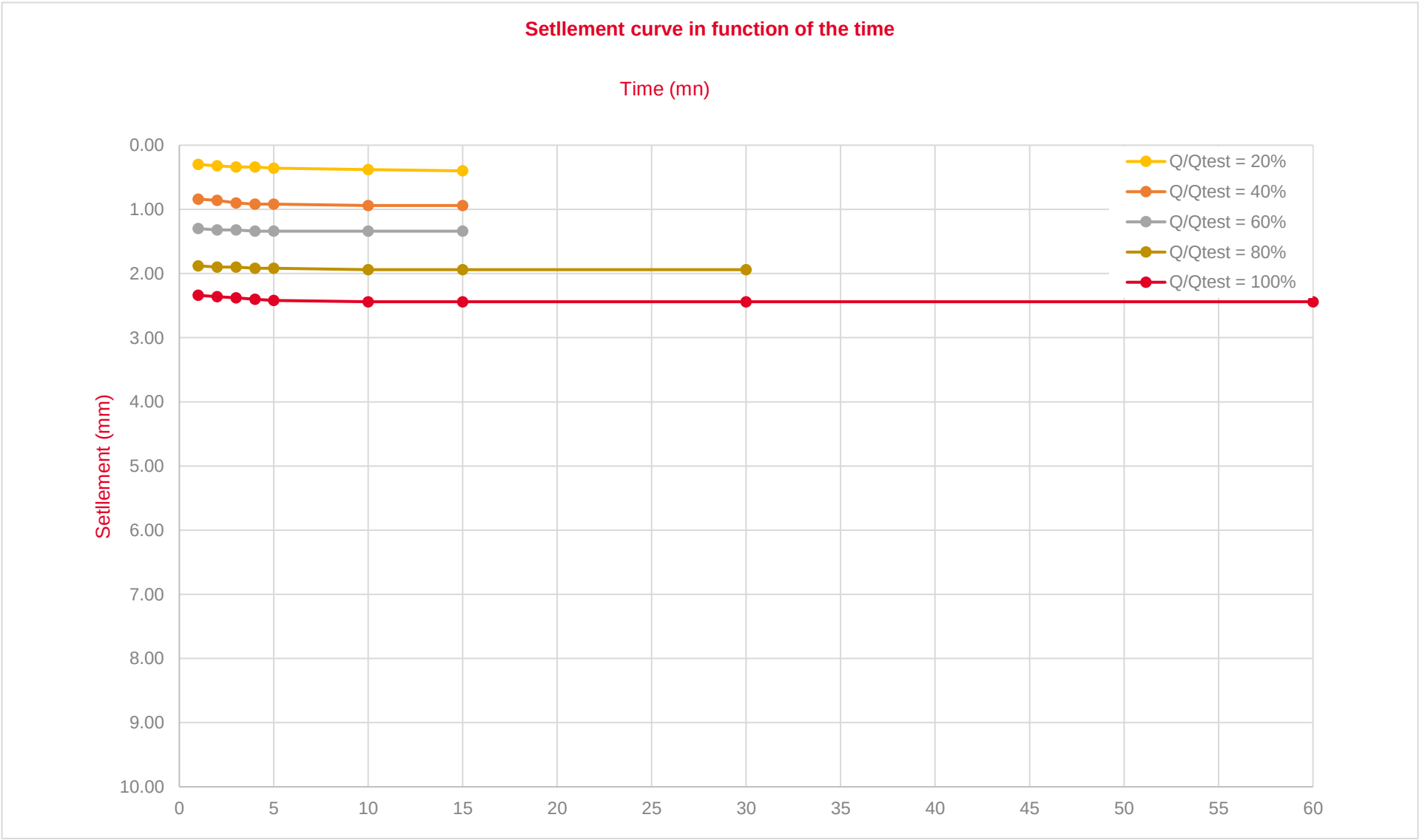
STATIC PLATELOAD TEST ON ONE CMC

Project Number	6903	***N° test (and/or n° CMC)***	2 - TC 2
Project Name	Birtsall	***Date***	27/11/2025



STATIC PLATELOAD TEST ON ONE CMC

Project Number	6903	***N° test (and/or n° CMC)***	2 - TC 2
Project Name	Birtsall	***Date***	27/11/2025



STATIC PLATELOAD TEST ON ONE CMC

Project Number	6903	**N° test (and/or n° CMC)**	3 - TC3
Project Name	Birtsall	**Date**	10/12/2025
Test type	Quality	**Contract engineer**	Adam Harrison
Load test Qtest	36.0 t	**Person(s) during the test**	Wayne Talbot
Jack type	RC 756	**Benkelman Beam**	yes
Jack section	0.01026 m²		

Jack pressure (bars)	Load Q (t)	Q/Qtest (%)	Time (mn)	Sensor (mm)	Settlement (mm)
70	7.2	20%	1	0.46	0.48
			5	0.47	0.50
0	0.0	0%	1	0.22	0.00
			5	0.22	0.00
70	7.2	20%	1	0.51	0.58
			2	0.51	0.58
			3	0.52	0.60
			4	0.52	0.60
			5	0.53	0.62
			10	0.54	0.64
			15	0.54	0.64
140	14.4	40%	1	0.71	0.98
			2	0.71	0.98
			3	0.72	1.00
			4	0.73	1.02
			5	0.74	1.04
			10	0.75	1.06
			15	0.75	1.06
211	21.6	60%	1	0.93	1.42
			2	0.93	1.42
			3	0.94	1.44
			4	0.94	1.44
			5	0.95	1.46
			10	0.96	1.48
			15	0.97	1.50

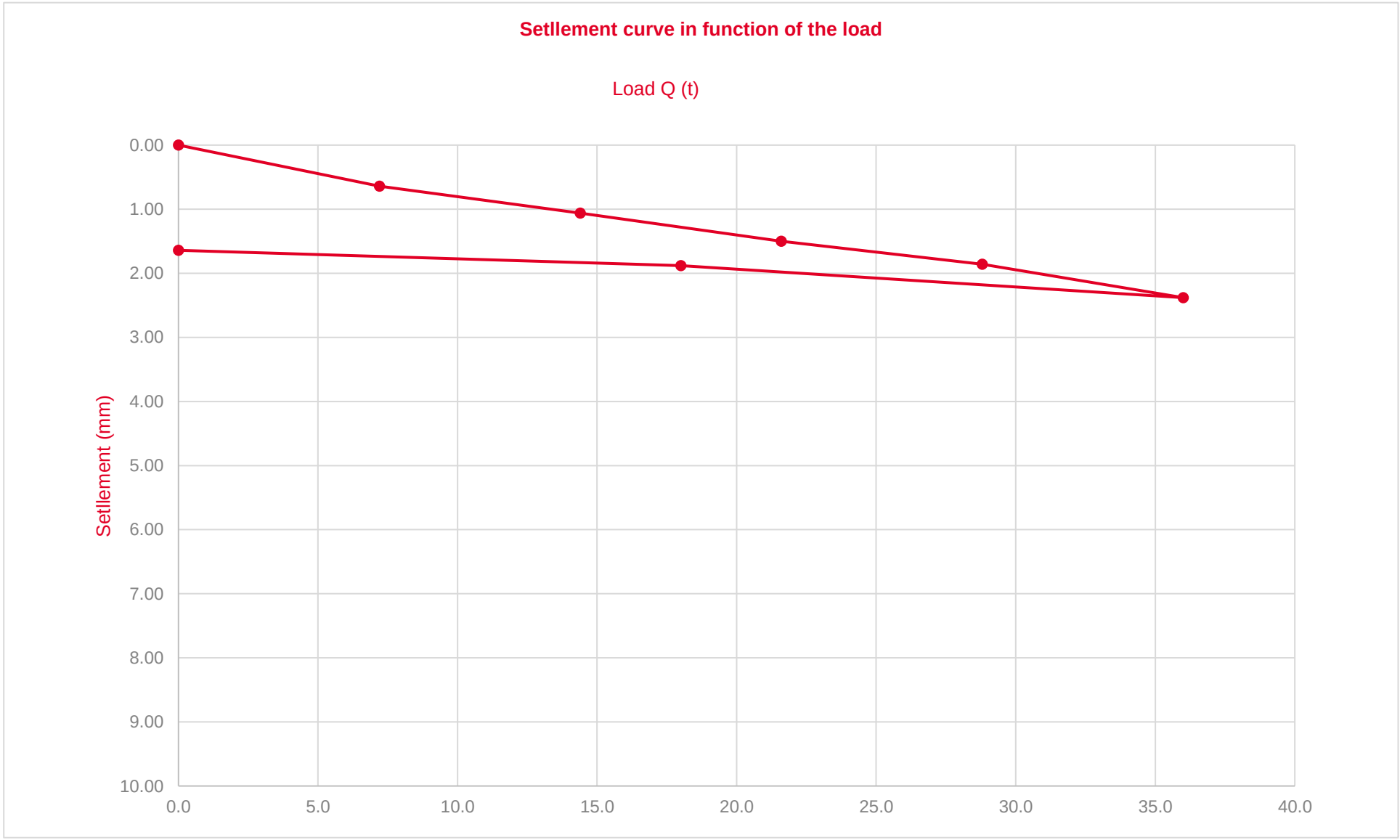
Jack pressure (bars)	Load Q (t)	Q/Qtest (%)	Time (mn)	Sensor (mm)	Settlement (mm)
281	28.8	80%	1	1.11	1.78
			2	1.11	1.78
			3	1.12	1.80
			4	1.13	1.82
			5	1.13	1.82
			10	1.14	1.84
			15	1.15	1.86
			30	1.15	1.86
351	36.0	100%	1	1.31	2.18
			2	1.32	2.20
			3	1.33	2.22
			4	1.34	2.24
			5	1.36	2.28
			10	1.37	2.30
			15	1.39	2.34
			30	1.40	2.36
			60	1.41	2.38
175	18.0	50%	1	1.16	1.88
			5	1.16	1.88
0	0.0	0%	1	1.04	1.64
			5	1.04	1.64

Comment

Remark : Over the course of the loading stages, it is authorized to proceed to the next stage provided displacement remains less than 0.02 mm/min on at least two consecutive measurements, with a minimum 15-minute interval.

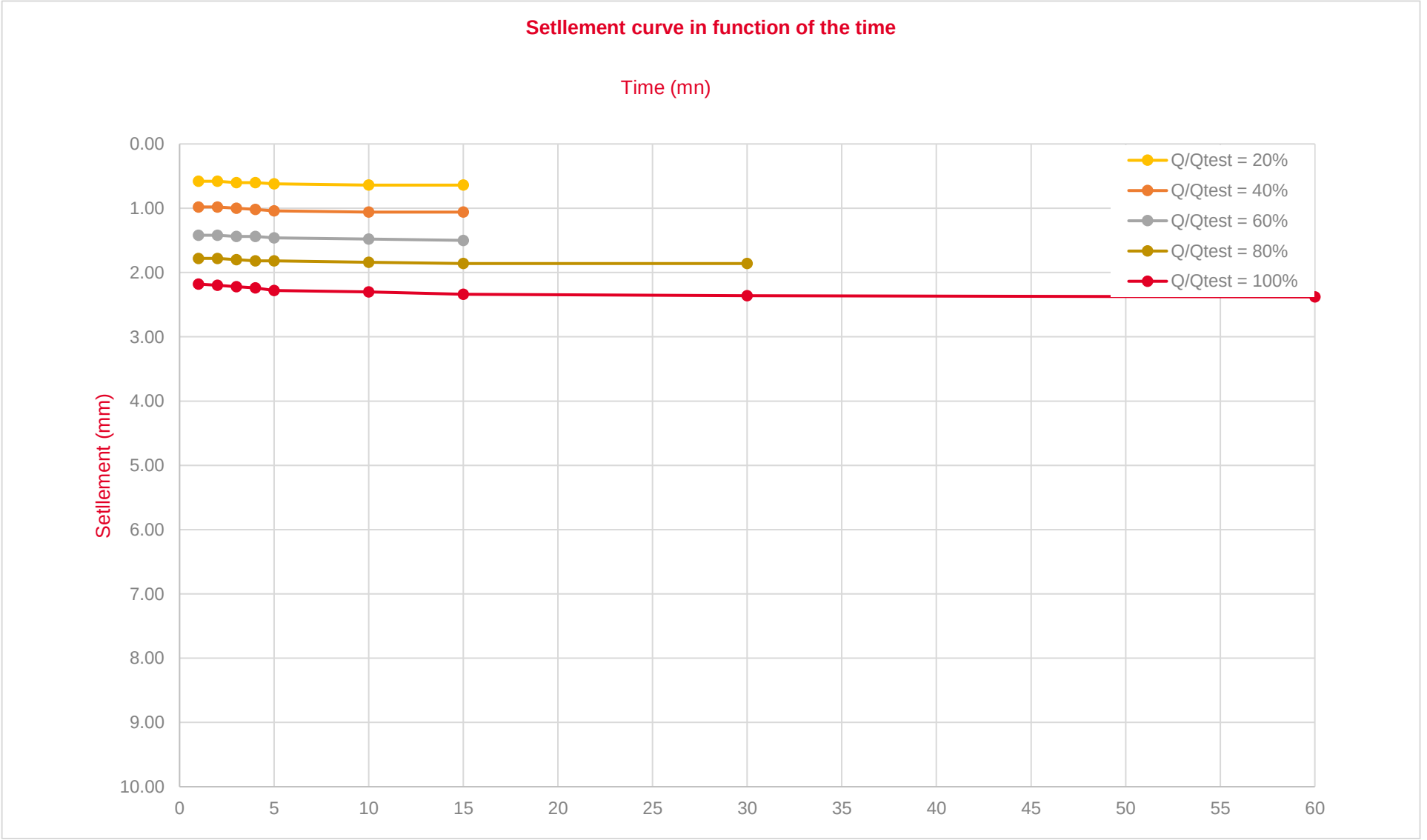
STATIC PLATELOAD TEST ON ONE CMC

Project Number	**6903**	***N° test (and/or n° CMC)***	**3 - TC3**
Project Name	**Birtsall**	***Date***	**10/12/2025**



STATIC PLATELOAD TEST ON ONE CMC

Project Number	**6903**	***N° test (and/or n° CMC)***	**3 - TC3**
Project Name	**Birtsall**	***Date***	**10/12/2025**



STATIC PLATELOAD TEST ON ONE CMC

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Project Number	6903	**N° test (and/or n° CMC)**	4 - TC4
Project Name	Birtsall	**Date**	11/12/2025
Test type	Quality	**Contract engineer**	Adam Harrison
Load test Qtest	36.0 t	**Person(s) during the test**	Wayne Talbot
Jack type	RC 756	**Benkelman Beam**	yes
Jack section	0.01026 m²		

Jack pressure (bars)	Load Q (t)	Q/Qtest (%)	Time (mn)	Sensor (mm)	Settlement (mm)
70	7.2	20%	1	0.21	0.24
			5	0.22	0.26
0	0.0	0%	1	0.09	0.00
			5	0.09	0.00
70	7.2	20%	1	0.26	0.34
			2	0.27	0.36
			3	0.27	0.36
			4	0.28	0.38
			5	0.28	0.38
			10	0.028	-0.12
			15	0.28	0.38
140	14.4	40%	1	0.56	0.94
			2	0.56	0.94
			3	0.57	0.96
			4	0.58	0.98
			5	0.59	1.00
			10	0.60	1.02
			15	0.60	1.02
211	21.6	60%	1	0.76	1.34
			2	0.77	1.36
			3	0.77	1.36
			4	0.77	1.36
			5	0.78	1.38
			10	0.79	1.40
			15	0.79	1.40

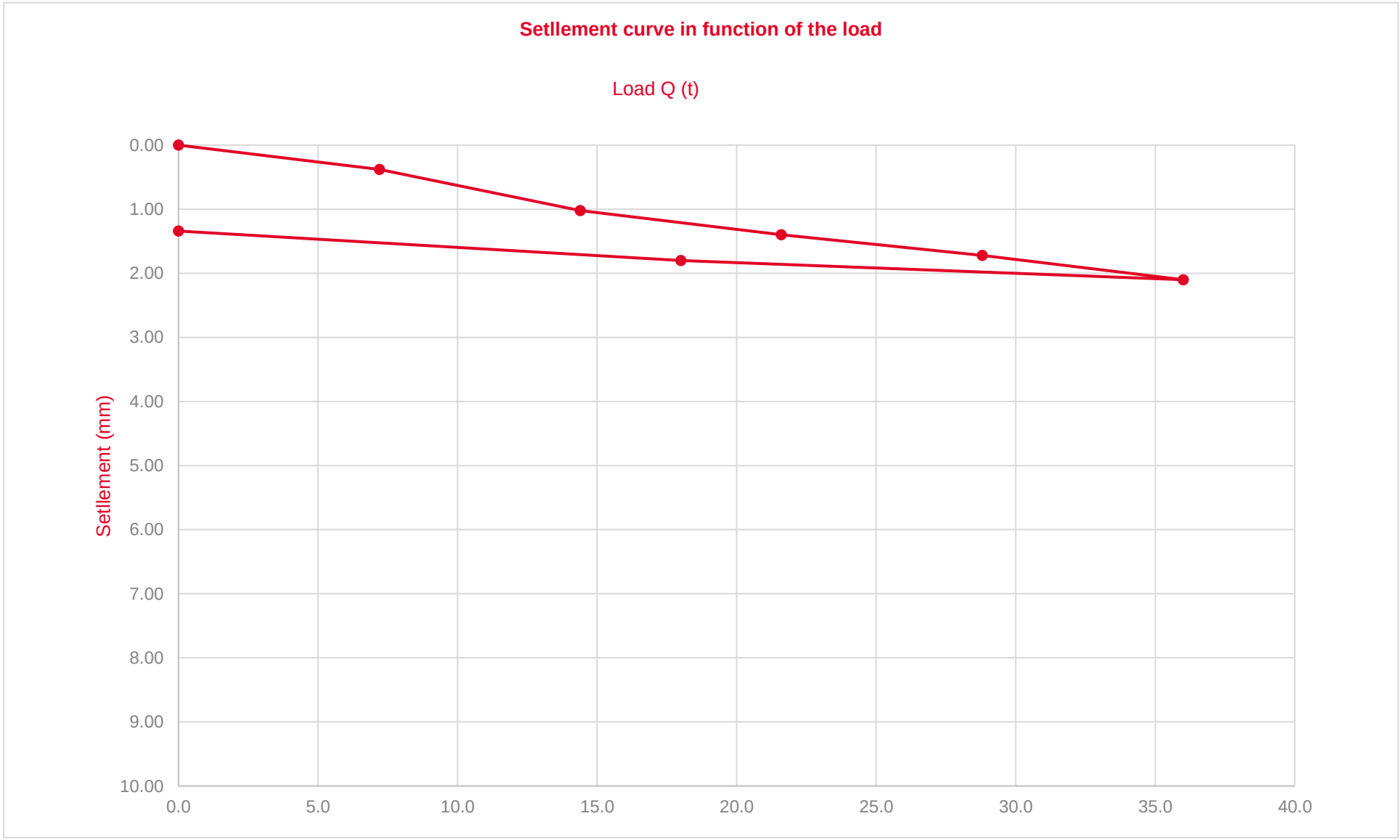
Jack pressure (bars)	Load Q (t)	Q/Qtest (%)	Time (mn)	Sensor (mm)	Settlement (mm)
281	28.8	80%	1	0.93	1.68
			2	0.93	1.68
			3	0.94	1.70
			4	0.94	1.70
			5	0.95	1.72
			10	0.95	1.72
			15	0.95	1.72
			30	0.95	1.72
351	36.0	100%	1	1.07	1.96
			2	1.08	1.98
			3	1.08	1.98
			4	1.09	2.00
			5	1.11	2.04
			10	1.12	2.06
			15	1.13	2.08
			30	1.14	2.10
			60	1.14	2.10
175	18.0	50%	1	0.99	1.80
			5	0.99	1.80
0	0.0	0%	1	0.76	1.34
			5	0.76	1.34

Comment

Remark : Over the course of the loading stages, it is authorized to proceed to the next stage provided displacement remains less than 0.02 mm/min on at least two consecutive measurements, with a minimum 15-minute interval.

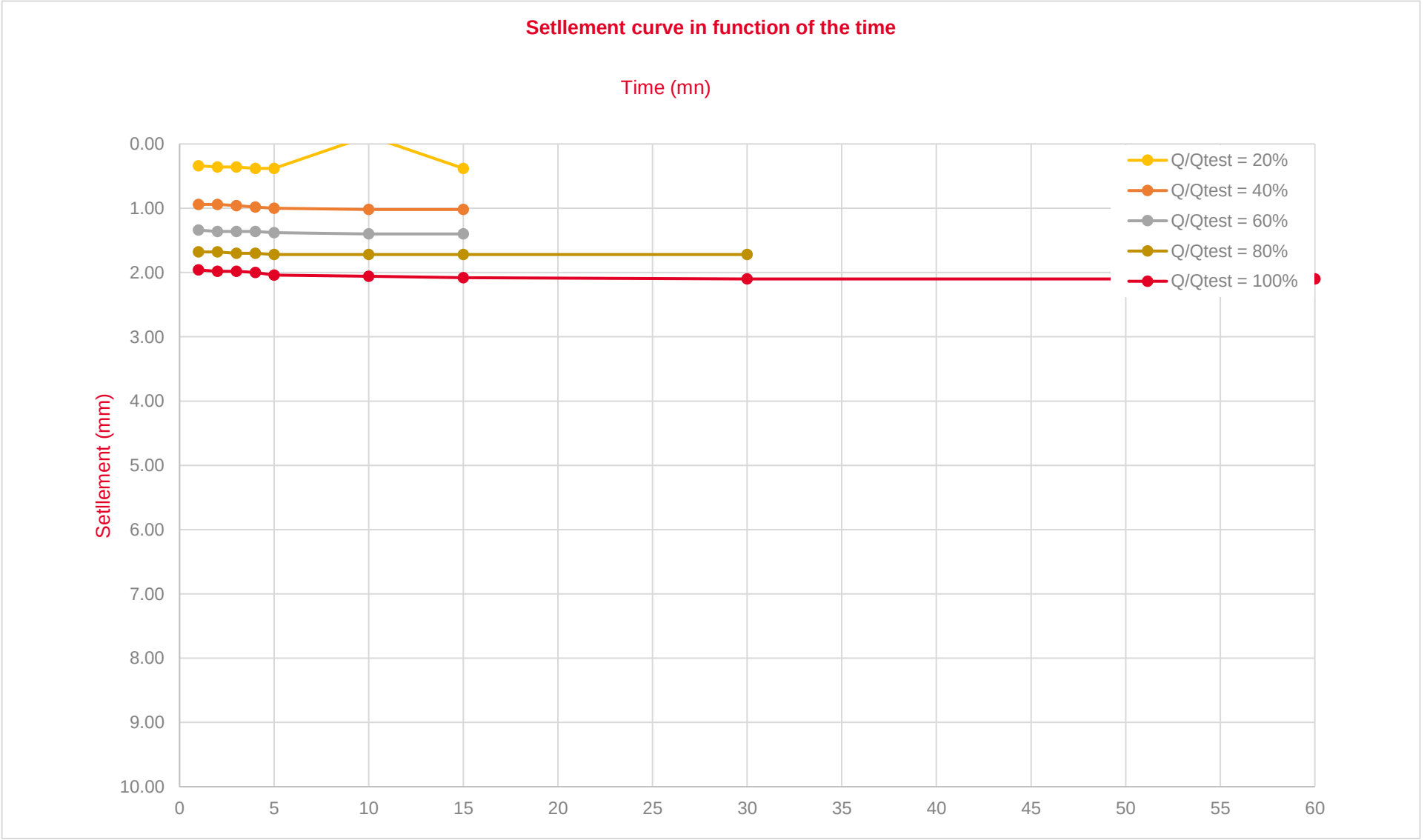
STATIC PLATELOAD TEST ON ONE CMC

Project Number	6903	***N° test (and/or n° CMC)***	4 - TC4
Project Name	Birtsall	***Date***	11/12/2025



STATIC PLATELOAD TEST ON ONE CMC

Project Number	**6903**	***N° test (and/or n° CMC)***	**4 - TC4**
Project Name	**Birtsall**	***Date***	**11/12/2025**



STATIC PLATELOAD TEST ON ONE CMC

Project Number	6903	**N° test (and/or n° CMC)**	5 - TC5
Project Name	Birtsall	**Date**	11/12/2025
Test type	Quality	**Contract engineer**	Adam Harrison
Load test Qtest	36.0 t	**Person(s) during the test**	Wayne Talbot
Jack type	RC 756	**Benkelman Beam**	yes
Jack section	0.01026 m²		

Jack pressure (bars)	Load Q (t)	Q/Qtest (%)	Time (mn)	Sensor (mm)	Settlement (mm)
70	7.2	20%	1	0.51	0.40
			5	0.53	0.44
0	0.0	0%	1	0.31	0.00
			5	0.31	0.00
70	7.2	20%	1	0.59	0.56
			2	0.61	0.60
			3	0.61	0.60
			4	0.62	0.62
			5	0.62	0.62
			10	0.63	0.64
			15	0.63	0.64
140	14.4	40%	1	0.76	0.90
			2	0.77	0.92
			3	0.77	0.92
			4	0.78	0.94
			5	0.78	0.94
			10	0.79	0.96
			15	0.80	0.98
211	21.6	60%	1	1.06	1.50
			2	1.06	1.50
			3	1.07	1.52
			4	1.07	1.52
			5	1.08	1.54
			10	1.08	1.54
			15	1.08	1.54

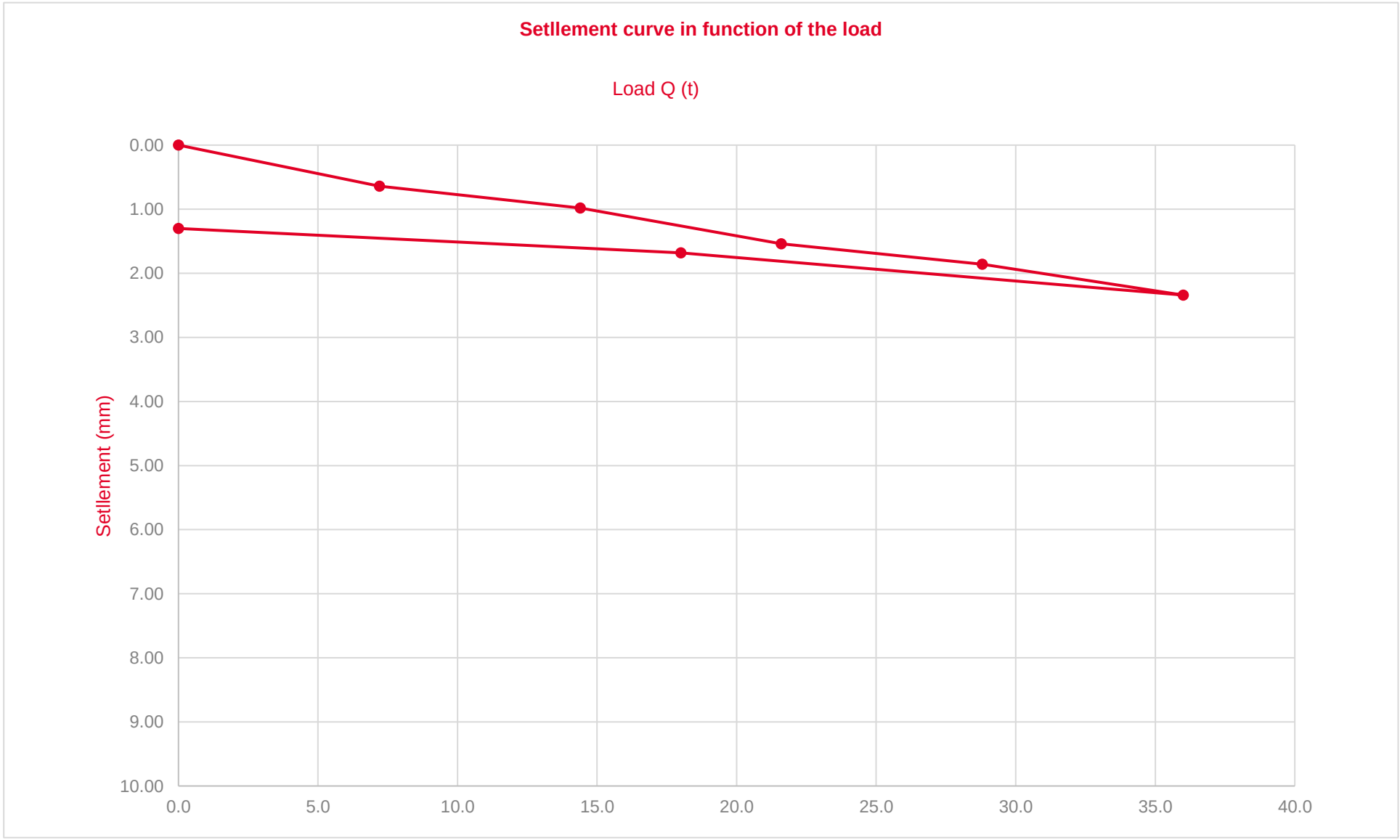
Jack pressure (bars)	Load Q (t)	Q/Qtest (%)	Time (mn)	Sensor (mm)	Settlement (mm)
281	28.8	80%	1	1.22	1.82
			2	1.22	1.82
			3	1.23	1.84
			4	1.23	1.84
			5	1.23	1.84
			10	1.24	1.86
			15	1.24	1.86
			30	1.24	1.86
351	36.0	100%	1	1.44	2.26
			2	1.45	2.28
			3	1.46	2.30
			4	1.46	2.30
			5	1.46	2.30
			10	1.47	2.32
			15	1.47	2.32
			30	1.48	2.34
			60	1.48	2.34
175	18.0	50%	1	1.15	1.68
			5	1.15	1.68
0	0.0	0%	1	0.96	1.30
			5	0.96	1.30

Comment

Remark : Over the course of the loading stages, it is authorized to proceed to the next stage provided displacement remains less than 0.02 mm/min on at least two consecutive measurements, with a minimum 15-minute interval.

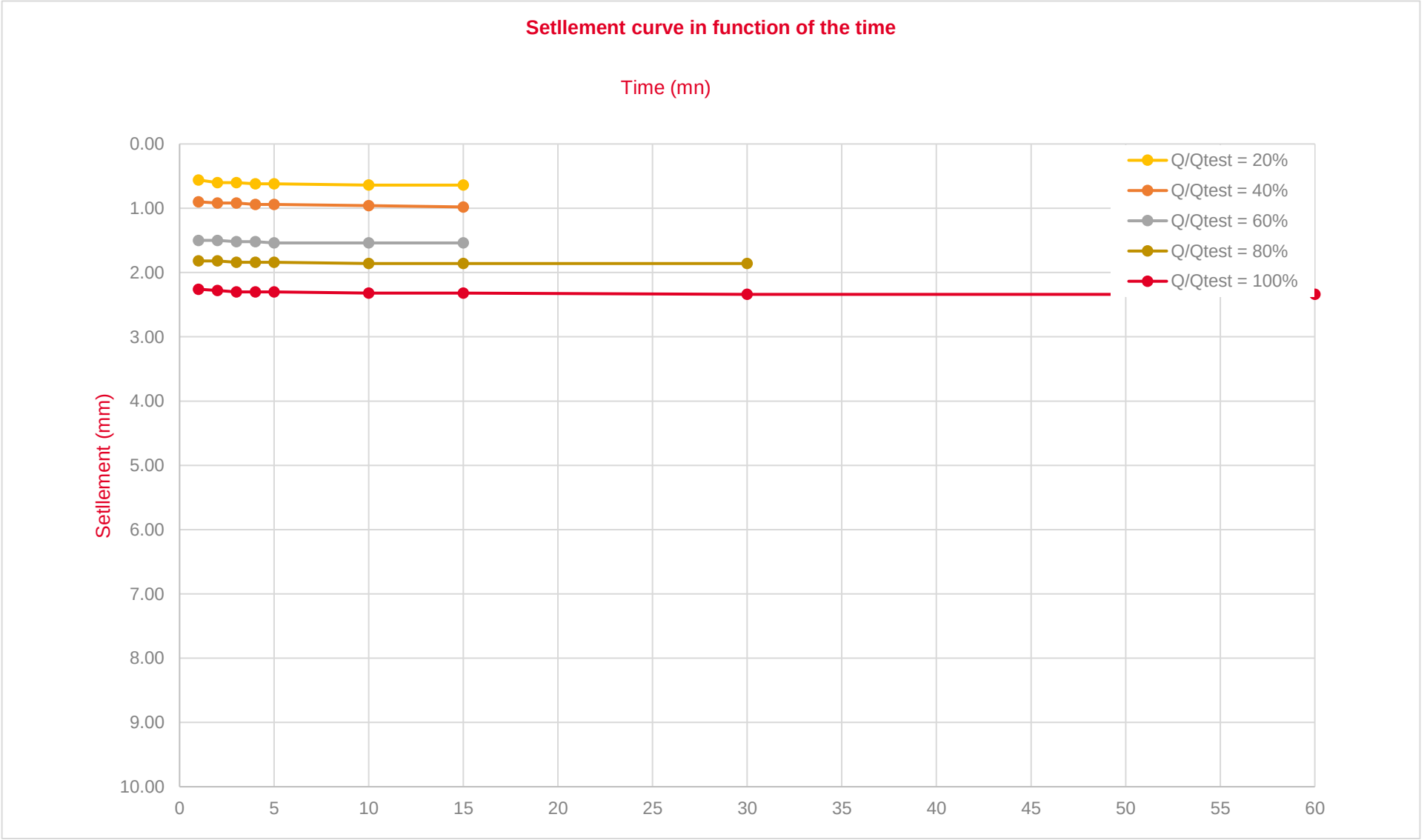
STATIC PLATELOAD TEST ON ONE CMC

Project Number	**6903**	***N° test (and/or n° CMC)***	**5 - TC5**
Project Name	**Birtsall**	***Date***	**11/12/2025**



STATIC PLATELOAD TEST ON ONE CMC

Project Number	**6903**	***N° test (and/or n° CMC)***	**5 - TC5**
Project Name	**Birtsall**	***Date***	**11/12/2025**



APPENDIX 3 – CONCRETE CUBE TEST RESULTS

SOCOTEC UK Limited
Unit E Broadheath Network Centre
Atlantic Street, Broadheath
Altrincham
WA14 5EW, United Kingdom
Telephone: 01925 286220

Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-12227-C0001
Report Date:	09/12/2025
Issue No.:	3
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: YARD AREA **Mix:** C16/20 S4

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-12227-C0001 **Client Sample ID:** NOR070671

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date Made: 11/11/2025 **Date and Time Received:** 12/11/2025 16:17

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
016675\A	A	7	18/11/2025	100/100/100	2350	199.3	19.9	
016675\B	B	8	19/11/2025	100/100/100	2300	228.2	22.8	
016675\C	C	28	09/12/2025	100/100/100	2350	315.4	31.5	≥20
016675\D	D	28	09/12/2025	100/100/100	2330	320.3	32.0	≥20
016675\E	E	Spare/56	06/01/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Signed Date: 09/12/2025

Paul Haddock - Project Manager

For and on behalf of SOCOTEC UK Limited
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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-12393-C0001
Report Date:	10/12/2025
Issue No.:	2
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: YARD AREA **Mix:** C16/20

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-12393-C0001 **Client Sample ID:** NOR070672

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date Made: 12/11/2025 **Date and Time Received:** 17/11/2025 10:48

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
016928\A	A	9	21/11/2025	100/100/100	2300	241.3	24.1	
016928\B	B	9	21/11/2025	100/100/100	2410	237.2	23.7	
016928\C	C	28	10/12/2025	100/100/100	2350	357.0	35.7	≥20
016928\D	D	28	10/12/2025	100/100/100	2400	377.6	37.8	≥20
016928\E	E	Spare/56	07/01/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Signed Date: 10/12/2025

Paul Haddock - Project Manager

For and on behalf of SOCOTEC UK Limited
Certified that testing was carried out in accordance with the test methods identified herein. This test report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-12393-C0002
Report Date:	12/12/2025
Issue No.:	2
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: YARD AREA **Mix:** C16/20

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-12393-C0002 **Client Sample ID:** NOR070673

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date Made: 13/11/2025 **Date and Time Received:** 17/11/2025 10:49

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
016929\A	A	8	21/11/2025	100/100/100	2340	161.4	16.1	
016929\B	B	8	21/11/2025	100/100/100	2420	176.7	17.7	
016929\C	C	28	11/12/2025	100/100/100	2480	301.3	30.1	≥20
016929\D	D	28	11/12/2025	100/100/100	2370	294.5	29.4	≥20
016929\E	E	Spare/56	08/01/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Signed Date: 12/12/2025

Paul Haddock - Project Manager

For and on behalf of SOCOTEC UK Limited
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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-12655-C0001
Report Date:	16/12/2025
Issue No.:	2
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: P107 **Mix:** C16/20 S4

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-12655-C0001 **Client Sample ID:** NOR070674

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date Made: 17/11/2025 **Date and Time Received:** 24/11/2025 12:17

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
017246\A	A	10	27/11/2025	100/100/100	2320	279.6	28.0	
Mass Determination: As Received.								
017246\B	B	10	27/11/2025	100/100/100	2230	277.0	27.7	
Mass Determination: As Received.								
017246\C	C	28	15/12/2025	100/100/100	2460	343.7	34.4	≥20
017246\D	D	28	15/12/2025	100/100/100	2510	351.6	35.2	≥20
017246\E	E	Spare/56	12/01/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Signed Date: 16/12/2025

Paul Haddock - Project Manager

For and on behalf of SOCOTEC UK Limited
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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-12655-C0002
Report Date:	16/12/2025
Issue No.:	2
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: P372 **Mix:** C16/20 S4

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-12655-C0002 **Client Sample ID:** NOR070675

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date Made: 18/11/2025 **Date and Time Received:** 24/11/2025 12:17

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
017247\A	A	9	27/11/2025	100/100/100	2260	300.4	30.0	
Mass Determination: As Received.								
017247\B	B	9	27/11/2025	100/100/100	2280	288.1	28.8	
Mass Determination: As Received.								
017247\C	C	28	16/12/2025	100/100/100	2320	410.8	41.1	≥20
017247\D	D	28	16/12/2025	100/100/100	2270	393.1	39.3	≥20
017247\E	E	Spare/56	13/01/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Paul Haddock - Project Manager

For and on behalf of SOCOTEC UK Limited
Certified that testing was carried out in accordance with the test methods identified herein. This test report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Signed Date: 16/12/2025

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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-12655-C0003
Report Date:	17/12/2025
Issue No.:	2
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: P320 **Mix:** C16/20 S4

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-12655-C0003 **Client Sample ID:** NOR070680

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date Made: 19/11/2025 **Date and Time Received:** 24/11/2025 12:18

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
017248\A	A	8	27/11/2025	100/100/100	2410	298.1	29.8	
Mass Determination: As Received.								
017248\B	B	8	27/11/2025	100/100/100	2400	274.3	27.4	
Mass Determination: As Received.								
017248\C	C	28	17/12/2025	100/100/100	2350	502.0	50.2	≥20
Failure Description: 2.								
017248\D	D	28	17/12/2025	100/100/100	2470	477.4	47.7	≥20
Failure Description: 1.								
017248\E	E	Spare/56	14/01/2026					

Notes

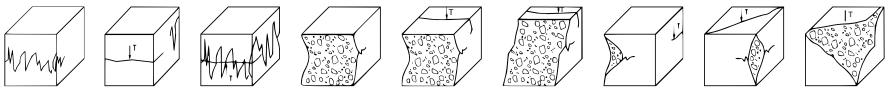
The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.

BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Unsatisfactory cube specimen failure types per BS EN 12390-3:



Signed:

Paul Haddock - Project Manager

For and on behalf of SOCOTEC UK Limited

Signed Date: 17/12/2025

Certified that testing was carried out in accordance with the test methods identified herein. This test report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-12830-C0001
Report Date:	19/12/2025
Issue No.:	2
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: P283 **Mix:** C16/20

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-12830-C0001 **Client Sample ID:** NOR070682

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date and Time Made: 21/11/2025 12:00 **Date and Time Received:** 26/11/2025 11:03

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
017563\A	A	12	03/12/2025	100/100/100	2360	377.1	37.7	
Mass Determination: As Received.								
017563\B	B	12	03/12/2025	100/100/100	2350	388.4	38.8	
Mass Determination: As Received.								
017563\C	C	28	19/12/2025	100/100/100	2320	381.5	38.2	≥20
017563\D	D	28	19/12/2025	100/100/100	2310	467.8	46.8	≥20
017563\E	E	Spare/56	16/01/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Signed Date: 19/12/2025

Paul Haddock - Project Manager

For and on behalf of SOCOTEC UK Limited
Certified that testing was carried out in accordance with the test methods identified herein. This test report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-12830-C0002
Report Date:	22/12/2025
Issue No.:	2
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: P402 **Mix:** C16/20

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-12830-C0002 **Client Sample ID:** NOR070683

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date and Time Made: 24/11/2025 14:00 **Date and Time Received:** 26/11/2025 11:04

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
017564\A	A	9	03/12/2025	100/100/100	2350	248.6	24.9	
Mass Determination: As Received.								
017564\B	B	9	03/12/2025	100/100/100	2270	272.7	27.3	
Mass Determination: As Received.								
017564\C	C	28	22/12/2025	100/100/100	2360	348.6	34.9	≥20
017564\D	D	28	22/12/2025	100/100/100	2350	354.0	35.4	≥20
017564\E	E	Spare/56	19/01/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Signed Date: 22/12/2025

Paul Haddock - Project Manager

For and on behalf of SOCOTEC UK Limited
Certified that testing was carried out in accordance with the test methods identified herein. This test report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-12830-C0003
Report Date:	23/12/2025
Issue No.:	2
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: P112 **Mix:** C16/20

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-12830-C0003 **Client Sample ID:** NOR070684

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date and Time Made: 25/11/2025 08:45 **Date and Time Received:** 26/11/2025 11:05

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
017565\A	A	8	03/12/2025	100/100/100	2310	256.4	25.6	
Mass Determination: As Received.								
017565\B	B	8	03/12/2025	100/100/100	2310	259.5	26.0	
Mass Determination: As Received.								
017565\C	C	28	23/12/2025	100/100/100	2310	350.4	35.0	≥20
017565\D	D	28	23/12/2025	100/100/100	2420	371.5	37.2	≥20
017565\E	E	Spare/56	20/01/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Signed Date: 23/12/2025

Paul Haddock - Project Manager

For and on behalf of SOCOTEC UK Limited
Certified that testing was carried out in accordance with the test methods identified herein. This test report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-12932-C0001
Report Date:	24/12/2025
Issue No.:	2
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: P205 **Mix:** C16/20

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-12932-C0001 **Client Sample ID:** NOR070685

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date Made: 26/11/2025 **Date and Time Received:** 01/12/2025 16:00

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
017647\A	A	8	04/12/2025	100/100/100	2320	236.2	23.6	
017647\B	2	8	04/12/2025	100/100/100	2380	232.0	23.2	
017647\C	3	28	24/12/2025	100/100/100	2330	356.3	35.6	≥20
017647\D	4	28	24/12/2025	100/100/100	2350	364.4	36.4	≥20
017647\E	5	Spare/56	21/01/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Signed Date: 24/12/2025

Paul Haddock - Project Manager

For and on behalf of SOCOTEC UK Limited
Certified that testing was carried out in accordance with the test methods identified herein. This test report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-12932-C0002
Report Date:	02/01/2026
Issue No.:	2
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: P455 **Mix:** C16/20

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-12932-C0002 **Client Sample ID:** NOR070686

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date Made: 27/11/2025 **Date and Time Received:** 01/12/2025 16:00

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
017648\A	A	7	04/12/2025	100/100/100	2330	253.2	25.3	
017648\B	B	7	04/12/2025	100/100/100	2410	250.1	25.0	
017648\C	C	34	31/12/2025	100/100/100	2380	402.7	40.3	≥20
017648\D	D	34	31/12/2025	100/100/100	2420	380.3	38.0	≥20
017648\E	E	Spare/56	22/01/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Signed Date: 02/01/2026

Paul Haddock - Project Manager

For and on behalf of SOCOTEC UK Limited
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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-12974-C0001
Report Date:	31/12/2025
Issue No.:	2
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: P391 **Mix:** C16/20

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-12974-C0001 **Client Sample ID:** NOR070687

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date and Time Made: 01/12/2025 15:06 **Date and Time Received:** 03/12/2025 15:06

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
017746\A	A	7	08/12/2025	100/100/100	2410	284.3	28.4	
017746\B	B	7	08/12/2025	100/100/100	2380	277.0	27.7	
017746\C	C	28	29/12/2025	100/100/100	2420	432.2	43.2	≥20
017746\D	D	28	29/12/2025	100/100/100	2440	398.4	39.8	≥20
017746\E	E	Spare/56	26/01/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Signed Date: 31/12/2025

Paul Haddock - Project Manager

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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-13202-C0001
Report Date:	02/01/2026
Issue No.:	2
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: P96 **Mix:** C16/20

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-13202-C0001 **Client Sample ID:** NOR070688

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date and Time Made: 02/12/2025 12:36 **Date and Time Received:** 08/12/2025 10:35

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
018023\A	A	12	14/12/2025	100/100/100	2330	241.7	24.2	
Mass Determination: As Received.								
018023\B	B	12	14/12/2025	100/100/100	2340	305.4	30.5	
Mass Determination: As Received.								
018023\C	C	28	30/12/2025	100/100/100	2360	357.0	35.7	≥20
018023\D	D	28	30/12/2025	—	—	—	—	≥20
018023\E	E	Spare/56	27/01/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Signed Date: 02/01/2026

Paul Haddock - Project Manager

For and on behalf of SOCOTEC UK Limited
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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-13202-C0002
Report Date:	05/01/2026
Issue No.:	2
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: P53 **Mix:** C16/20

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-13202-C0002 **Client Sample ID:** NOR070689

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date and Time Made: 03/12/2025 12:36 **Date and Time Received:** 08/12/2025 10:36

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
018024\A	A	11	14/12/2025	100/100/100	2400	430.8	43.1	
Mass Determination: As Received.								
018024\B	B	11	14/12/2025	100/100/100	2460	436.4	43.6	
Mass Determination: As Received.								
018024\C	C	33	05/01/2026	100/100/100	2420	516.0	51.6	≥20
018024\D	D	33	05/01/2026	100/100/100	2460	510.1	51.0	≥20
018024\E	E	Spare/56	28/01/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Signed Date: 05/01/2026

Paul Haddock - Project Manager

For and on behalf of SOCOTEC UK Limited
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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-13202-C0003
Report Date:	16/12/2025
Issue No.:	1
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: P4 **Mix:** C16/20

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-13202-C0003 **Client Sample ID:** NOR070690

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date and Time Made: 04/12/2025 12:37 **Date and Time Received:** 08/12/2025 10:37

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
018025\A	A	11	15/12/2025	100/100/100	2410	337.7	33.8	
Mass Determination: As Received.								
018025\B	B	11	15/12/2025	100/100/100	2500	371.5	37.2	
Mass Determination: As Received.								
018025\C	C	28	01/01/2026	–	–	–	–	≥20
018025\D	D	28	01/01/2026	–	–	–	–	≥20
018025\E	E	Spare/56	29/01/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Signed Date: 16/12/2025

Paul Haddock - Project Manager

For and on behalf of SOCOTEC UK Limited
Certified that testing was carried out in accordance with the test methods identified herein. This test report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-13202-C0004
Report Date:	05/01/2026
Issue No.:	2
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: P1341 **Mix:** C16/20

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-13202-C0004 **Client Sample ID:** NOR070691

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date and Time Made: 05/12/2025 12:38 **Date and Time Received:** 08/12/2025 10:38

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
018026\A	A	10	15/12/2025	100/100/100	2410	360.9	36.1	
Mass Determination: As Received.								
018026\B	B	10	15/12/2025	100/100/100	2470	350.8	35.1	
Mass Determination: As Received.								
018026\C	C	31	05/01/2026	100/100/100	2410	412.3	41.2	≥20
018026\D	D	31	05/01/2026	100/100/100	2420	455.3	45.5	≥20
018026\E	E	Spare/56	30/01/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Signed Date: 05/01/2026

Paul Haddock - Project Manager

For and on behalf of SOCOTEC UK Limited
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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-13220-C0001
Report Date:	06/01/2026
Issue No.:	2
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: P1275 **Mix:** C16/20

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-13220-C0001 **Client Sample ID:** NOR070692

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date and Time Made: 08/12/2025 14:03 **Date and Time Received:** 10/12/2025 14:03

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
018113\A	A	7	15/12/2025	100/100/100	2400	317.9	31.8	
Mass Determination: As Received.								
018113\B	B	7	15/12/2025	100/100/100	2410	313.4	31.3	
Mass Determination: As Received.								
018113\C	C	29	06/01/2026	100/100/100	2430	442.3	44.2	≥20
018113\D	D	29	06/01/2026	100/100/100	2410	339.8	34.0	≥20
018113\E	E	Spare/56	02/02/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Signed Date: 06/01/2026

Paul Haddock - Project Manager

For and on behalf of SOCOTEC UK Limited
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Concrete Test Report

TEST REPORT

UKAS TESTING 0001

Project Details

Client:	**MENARD LTD**
Client Address:	HENDERSON HOUSE LANGLEY PLACE BURSCOUGH LANCASHIRE L40 8JS
Project:	**P255094 - BR - Lidl Bankwood Way, Birstall WF17 9TB**

Report Details

Report No.:	CONC:NOR25-13220-C0002
Report Date:	06/01/2026
Issue No.:	2
Recipients:	Adam Harrison Cube Test Results David Rickson

Field Details and Results

Location in Works: P481 **Mix:** C16/20

Fresh Concrete Sampling performed by third party and not covered under this laboratory's accreditation

Sample ID: NOR25-13220-C0002 **Client Sample ID:** NOR070693

Compressive Strength of test specimens (100 mm Cube)

Making and initial curing of specimens for strength tests performed by third party and not covered under this laboratory's accreditation

Date and Time Made: 09/12/2025 14:04 **Date and Time Received:** 10/12/2025 14:04

Laboratory Test Methods: BS EN 12390-7 - 2019, BS EN 12390-1 - 2021, BS EN 12390-3 - 2019

Specimen ID	Client ID	Age at Test (Days)	Test Date	Width/Depth/ Height (mm)	Density (kg/m³)	Failure Load (kN)	Compressive Strength (N/mm²)	Specified Strength (N/mm²)
018114\A	A	7	16/12/2025	100/100/100	2420	216.6	21.7	
Mass Determination: As Received.								
018114\B	B	7	16/12/2025	100/100/100	2370	233.2	23.3	
Mass Determination: As Received.								
018114\C	C	28	06/01/2026	100/100/100	2400	276.0	27.6	≥20
018114\D	D	28	06/01/2026	100/100/100	2450	335.3	33.5	≥20
018114\E	E	Spare/56	03/02/2026					

Notes

The following apply unless otherwise stated in specimen notes:

Laboratory curing tank temperature range (°C): 18 to 22.
Specimen appearance as received satisfactory.
Specimens transported within 16 hours of making are classified as deviating from the standard requirements.

BS EN 12390-7 - 2019
Hardened concrete density test carried out in saturated condition.
Volume determined by measurement or designated size. Any fins removed by abrasive stone.
BS EN 12390-3 - 2019
Specimen failure normal, specimen appearance normal.

Signed:

Signed Date: 06/01/2026

Paul Haddock - Project Manager

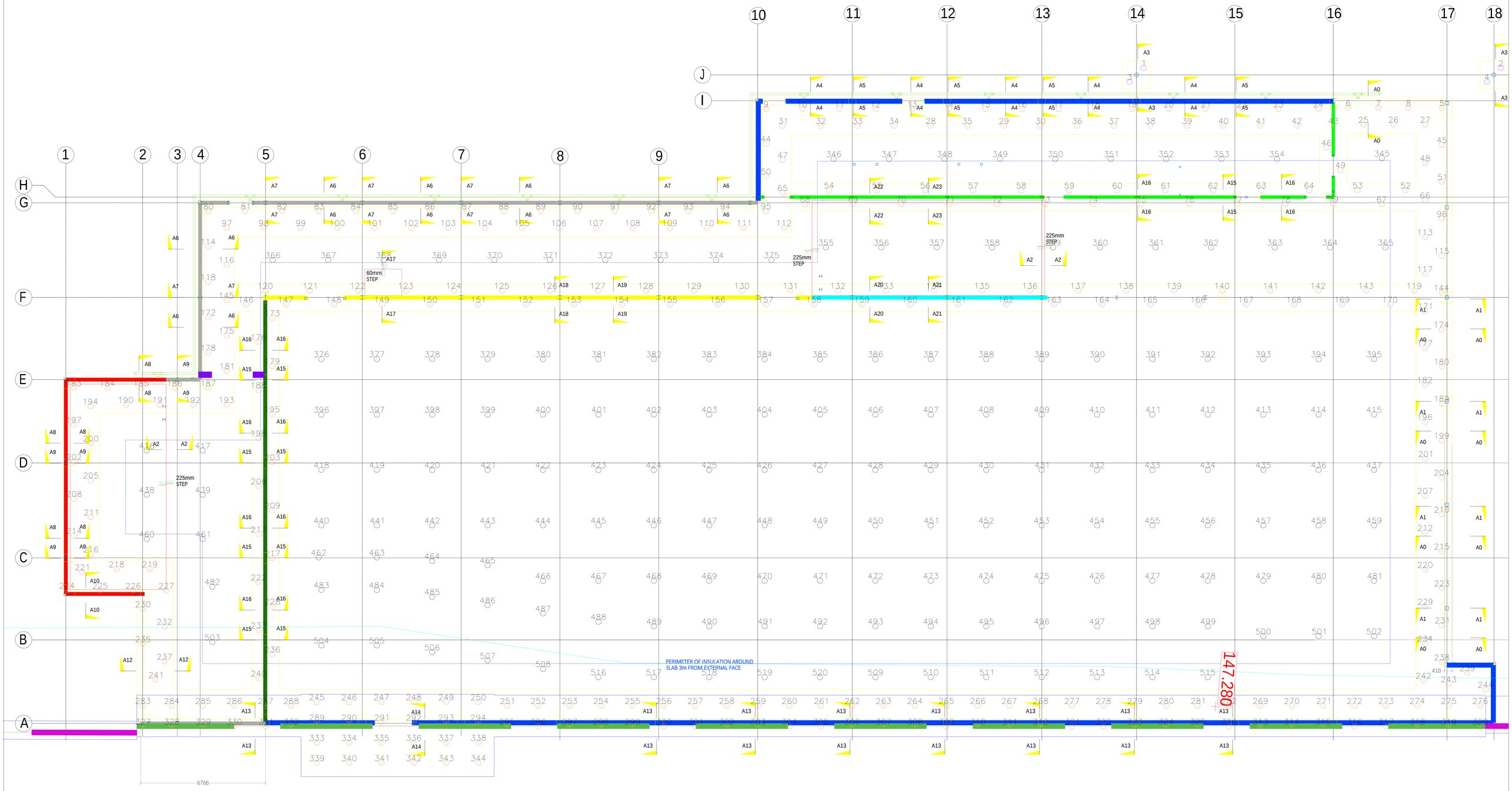
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APPENDIX 4 – AS-BUILT DRAWINGS

(Issued Electronically)



MENARD KEY

OUTLINE OF THE TOP OF BATTER BETWEEN THE HIGH AND LOW WORKING PLATFFORMS

Rev	Date	Description	By	Approved
A	07/11/25	FIRST ISSUE	JJ	FB

Drawings used to produce layout

25289-SDS-00-FP-DR-S-3400 rev CN1, dated 01/10/25
Retaining Wall Setting Out rev2, dated 05/11/25

Total No. of Points: Pad - 4; Strip - 340; Slab - 176; Other -

Bearing Pressures kN/m²: Pad - 150; Strip - 150; Slab - 20; Other -

menard

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Tel: +44(0)1704 891 039 Web: www.menard.co.uk

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Setting out of Centre Line of Foundations, Back Markers, Handing and Orientation Checked by: Signed: For:

Drawn	Drawing Status				
J JIANG	Approval [Y]	Construction [ ]	As Installed [ ]		
Approved	**Scale**	**Size**	**Date**	**Total No. of Points**	**Tender Ref**
FB	29:2000	A0	07/11/2025	520	V30991

Project Title: NEW COMMERCIAL DEVELOPMENT, BIRSTALL, LIDL STORE

Drawing Title: Controlled Modulus Columns (CMC) LAYOUT

Drawing No.: V26472-1A

RETAINING WALL 1.2m HIGH

RETAINING WALL 1.2m HIGH

RETAINING WALL 1m HIGH

OUTLINE OF THE PROPOSED YARD SLAB

CONCRETE YARD - 175 mm RC SLAB
WITH A 193 MESH TOP AND BOTTOM.
CONCRETE REQUIRED TO BE PAV 2 - C35

OUTLINE OF THE PROPOSED YARD SLAB

Ø25000

5400

LL-A

LL-A

LL-A

LL-A

G

MENARD KEY

OUTLINE OF THE TOP OF BATTER BETWEEN THE HIGH AND LOW WORKING PLATFFORMS

Rev	Date	Description	By	Approved
A	06/11/25	FIRST ISSUE	JJ	FB

Drawings used to produce layout
25289-SDS-00-SL-DR-C-3060 rev CN1, dated 01/10/25
Retaining Wall Setting Out REV2, dated 05/11/25

Total No. of Points
Pad -
Strip - 40
Slab - 107
Other -

Bearing Pressures kN/m²
Pad -
Strip - 150
Slab - 20
Other -

menard

Henderson House, Langley Place, Burscough, Lancashire, L40 8JS
Tel: +44(0)1704 891 039 Web: www.menard.co.uk

Follow us on LinkedIn

Setting out of Centre Line of Foundations, Back Markers, Handing and Orientation Checked by:
Signed: For:

Drawn	Drawing Status				
J JIANG	Approval Y	Construction	As Installed		
Approved	Scale	Size	Date	Total No. of Points	Tender Ref
FB	1:50	A0	06/11/2025	147	V30991

Project Title
NEW COMMERCIAL DEVELOPMENT, BIRSTALL, LIDL STORE, EXTERNAL CONCRETE YARD

Drawing Title
Controlled Modulus Columns (CMC) LAYOUT

Drawing No.
V26472-2A

APPENDIX G
IMPORTED MATERIAL SUPPLIER RESULTS

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LABORATORY REPORT

job number C/5507/25/L/8508	client ref Competent Asphaul
site address Station Road Huddersfield, West Yorkshire, HD2 1UW	client address Station Road Huddersfield, West Yorkshire, HD2 1UW
consultant	
date scheduled 11/09/2025	date issued 26/09/2025
issued by H J Letch	job title Technical Manager

Rogers Geotechnical Services Ltd **Telephone 01484 607 977**
Email jude.norcliffe@rogersgeotech.co.uk www.rogersgeotech.co.uk
Unit 4, Barncliffe Business Park, Near Bank, Shelley,
Huddersfield, West Yorkshire HD8 8LU.

Constructionline
QMS ISO 9001 REGISTERED
QMS ISO 14001 REGISTERED
QMS OHSAS 18001 REGISTERED

GEOTECHNICAL ENVIRONMENTAL

8948

Schedule of UKAS Accredited Laboratory Tests

1. CLASSIFICATION OF SOIL	BS 1377-2:1990	BS EN 150 17892	Accredited (A)	Unaccredited (U)
1.1 Moisture / Water content determination				
i. Oven drying	Pt 2 : 3.2	Pt 1 : 2014 Pt 12 : 2018 : 5.3 / 5.5		U
ii. Saturation m/c of chalk	Pt 2 : 3.3			U
1.2 Index Properties				
i. Liquid limit – cone penetrometer	Pt 2 : 4.3			U
ii. Plastic limit	Pt 2 : 5.3			U
iii. Shrinkage limit	Pt 2 : 6.3			U
iv. Linear shrinkage	Pt 2 : 6.5			U
1.3 Particle Density				
i. Gas jar	Pt 2 : 8.2			U
ii. Large pyknometer	Pt 2 : 8.3			U
iii. Small pyknometer	Pt 2 : 8.4	Pt 3 : 2015 : 5.1		U
1.4 Density Tests				
i. Linear measurement	Pt 2 : 7.2	Pt 2 : 2014 : 5.1		U
ii. Immersion in water	Pt 2 : 7.3	Pt 2 : 2014 : 5.2		U
iii. Fluid / Water displacement	Pt 2 : 7.4	Pt 2 : 2014 : 5.3		U
iv. Sand replacement	Pt 9 : 2.1, 2.2			U
v. Core cutter	Pt 9 : 2.4			U
1.5 Particle Size Distribution				
i. Dry Sieve	Pt 2 : 9.2	Pt 4 : 2016 : 5.2		U
ii. Wet Sieve	Pt 2 : 9.3	Pt 4 : 2016 : 5.2		U
iii. Sedimentation by pipette	Pt 2 : 9.4	Pt 4 : 2016 : 5.3 / 5.4		U
iv. Sedimentation by hydrometer	Pt 2 : 9.5			U
2. CHEMICAL TESTS	**BS 1377-3:2018**			
ii. Mass loss on ignition	Pt 3 : 4			U
3. COMPACTION RELATED TESTS	**BS 1377-4:1990**			
3.1 Dry density/moisture relationship				
i. 2.5kg rammer – 1 litre mould	Pt 4 : 3			U
- CBR mould	Pt 4 : 3			U
ii. 4.5kg rammer – 1 litre mould	Pt 4 : 3			U
- CBR mould	Pt 4 : 3			U
3.2 Moisture Condition Value				
i. Single point test	Pt 4 : 5.4			U
ii. MCV/moisture content relationship	Pt 4 : 5.5			U
3.3 California Bearing Ratio				
i. Undisturbed sample	Pt 5 : 7			U
ii. Recompacted sample	Pt 5 : 7			U
iii. Soaked, inc measurement of swell	Pt 5 : 7			U
4. COMPRESSIBILITY OF SOIL	**BS 1377-5:1990**			
i. One dimensional consolidation	Pt 5 : 3			U
ii. Swelling pressure test	Pt 5 : 3			U
5. SHEAR STRENGTH OF SOIL	**BS 1377-7:1990**			
i. Hand shear vane	Makers instructions			U
ii. Shear box (100mm square sample)	BS 1377 : Pt 7 : 4			U
iii. Triaxial – quick undrained	BS 1377 : Pt 7 : 8, 9			U
6. PERMEABILITY				
i. Falling head	K. H. Head Vol 2			U
ii. Constant head	BS 1377 : Pt 6 : 6			U
iii Triaxial cell	BS 1377 : Pt 6 : 6			U
7. ROCK TESTS				
7.1 Classification Tests				
i. Natural moisture content	-			U
ii. Saturated moisture content	-			U
iii. Natural density	-			U
iv. Porosity	-			U
7.2 Strength Tests				
i. Point load index	ISRM '85			U
ii. Uniaxial compression test	ISRM '81			U

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Geotechnical
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RGS

GEOTECHNICAL
LAB RESULTS

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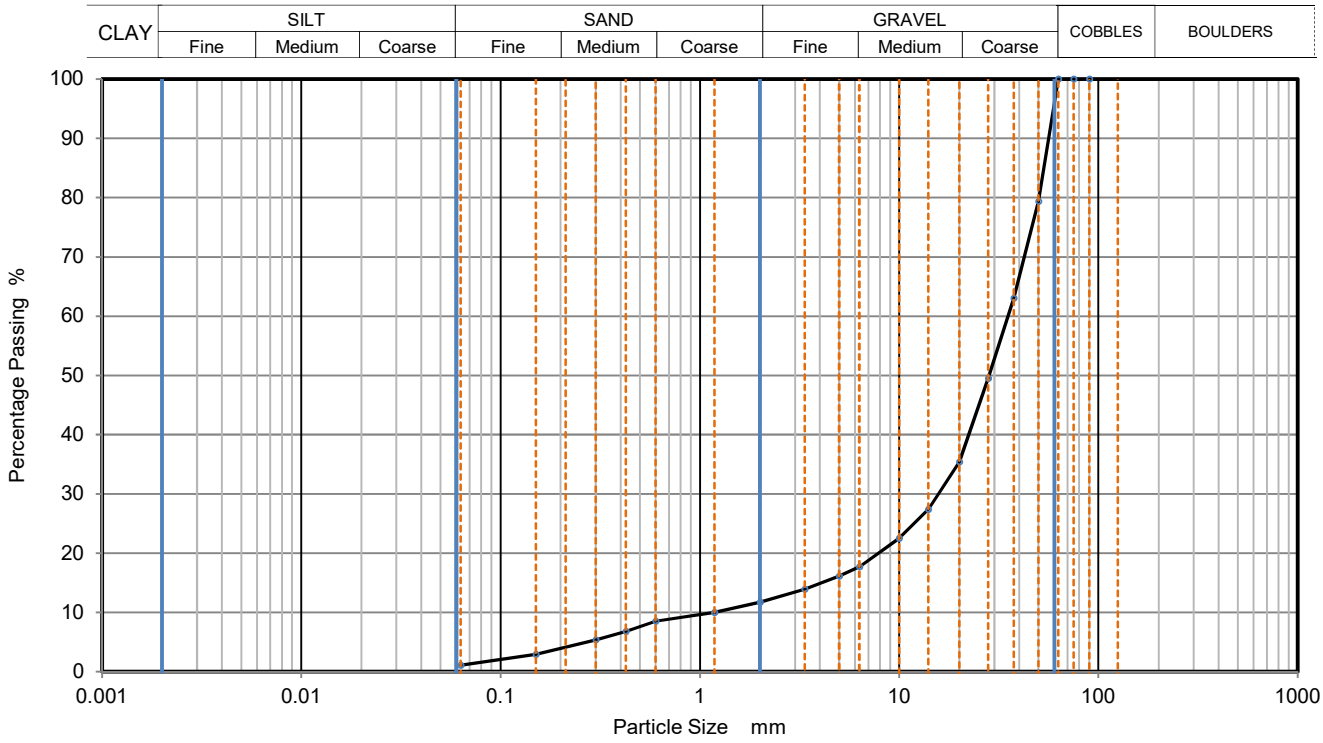
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Rogers Geotechnical Services Ltd
Office 1 & 2 Barncliffe Business Park,
Near Bank, Shelley, Huddersfield, HD8 8LU

Telephone 01484 607977
Company No: 5130864

RGS	**PARTICLE SIZE DISTRIBUTION**			Job Ref	**C/5507/25/L/8508**
				Borehole/Pit No.	Stockpile 1
Site Name	Station Road			Sample No.	1
Soil Description	Greyish brown slightly sandy GRAVEL.			Depth, m	0.00
Specimen Reference	1	Specimen Depth	0 m	Sample Type	B
Test Method	ISO 17892 -4, by sieving on pre-dried or dry sample			KeyLAB ID	RGS_202509180



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	79		
37.5	63		
28	50		
20	35		
14	27		
10	23		
6.3	18		
5	16		
3.35	14		
2	12		
1.18	10		
0.6	9		
0.425	7		
0.3	5		
0.15	3		
0.063	1		

Dry Mass of sample, g	13122

Sample Proportions	% dry mass
Very coarse	0
Gravel	88
Sand	11
Fines <0.063mm	1

Grading Analysis		
D100	mm	63
D60	mm	35.1
D30	mm	15.7
D10	mm	1.19

Remarks

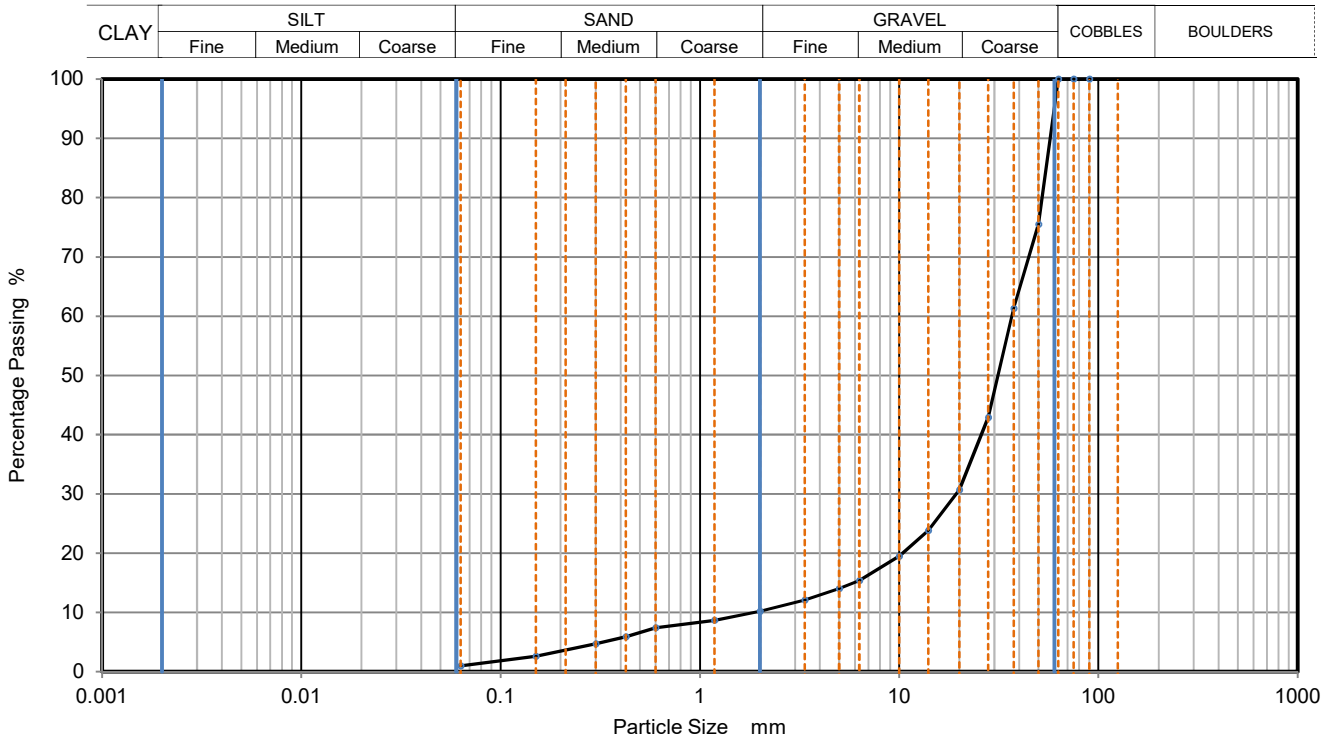
Preparation and testing in accordance with BS EN ISO 17892 - 4, unless noted below

Test performance date: 26/09/2025

Operator	Checked	Approved	Sheet printed	Fig 1
HJL	Harry	Harry	26/09/2025	Sheet 1

PARTICLE SIZE DISTRIBUTION

Job Ref	C/5507/25/L/8508				
Borehole/Pit No.	Stockpile 2				
Site Name	Station Road			Sample No.	1
Soil Description	Greyish brown slightly sandy GRAVEL.			Depth, m	0.00
Specimen Reference	1	Specimen Depth	0 m	Sample Type	B
Test Method	ISO 17892 -4, by sieving on pre-dried or dry sample			KeyLAB ID	RGS_202509181



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	76		
37.5	61		
28	43		
20	31		
14	24		
10	20		
6.3	15		
5	14		
3.35	12		
2	10		
1.18	9		
0.6	7		
0.425	6		
0.3	5		
0.15	3		
0.063	1		

Dry Mass of sample, g: 15122

Sample Proportions	% dry mass
Very coarse	0
Gravel	90
Sand	9
Fines <0.063mm	1

Grading Analysis		
D100	mm	63
D60	mm	36.7
D30	mm	19.3
D10	mm	1.89

Remarks

Preparation and testing in accordance with BS EN ISO 17892 - 4, unless noted below

Test performance date: 26/09/2025

Operator	Checked	Approved	Sheet printed	Fig 1
HJL	Harry	Harry	26/09/2025	Sheet 2

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ENVIRONMENTAL LAB RESULTS

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Rogers Geotechnical Services Ltd
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Telephone 01484 607977
Company No: 5130864

UKAS TESTING
4041

Normec i2 Analytical

Rogers Geotechnical Services Ltd
Offices 1&2 Barncliffe Business Pk
Near Bank, Shelley
Huddersfield
West Yorkshire
HD8 8LU

t: 01484 604354

e: harry.letch@rogersgeotech.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: info-i2analytical@normecgroup.com

Analytical Report Number : 25-050380

Project / Site name:	Station Road	**Samples received on:**	18/09/2025
Your job number:	C5507 2025 L 8508	**Samples instructed on/ Analysis started on:**	18/09/2025
Your order number:	PO-3541	**Analysis completed by:**	23/09/2025
Report Issue Number:	1	**Report issued on:**	23/09/2025
Samples Analysed:	2 soil samples		

Signed:

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

Excel copies of reports are only valid when accompanied by this PDF certificate.

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

UKAS TESTING
4041

Normec i2 Analytical

Analytical Report Number: 25-050380
Project / Site name: Station Road
Your Order No: PO-3541

Lab Sample Number				686377	686378
Sample Reference				STP01	STP02
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.00	0.00
Date Sampled				17/09/2025	17/09/2025
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**		

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	OGR	OGR
Analysis completed	N/A	N/A	N/A	23/09/2025	23/09/2025

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 25-050380
Project / Site name: Station Road

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

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End of Report

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Near Bank, Shelley, Huddersfield, HD8 8LU

Telephone 01484 607977
Company No: 5130864

APPENDIX H
EXAMPLE 6F2/5 DOCKETS & WASTE DISPOSAL NOTES



YORKSHIRE GRAB HIRE

EXCAVATIONS | AGGREGATES | TOPSOIL

No. 15597

Competent Asphalt Co. Ltd.

Registered Office: Harrison House, Station Road, Bradley, Huddersfield, HD2 1UW

Tel: 01924 480992 • Mobile: 0777 880 9295 • Email: info@yorkshiregrabhire.co.uk

DUTY OF CARE / CONTROLLED WASTE TRANSER NOTE

Carrier's Licence No. CBDU146223 • Transfer Note

Customer	Site Address
STONEDALE	BIRKTALL (TIPPED MARFIELD)

Spoil / Stones	17.05.04		
Grab Collection			

Date 13-10-25	Vehicle No. PN23 HHK

Note

1 LOAD GREEN WASTE AWAY

Customer Signature	Driver Signature
Print Name Owen Dennis	Print Name D ASKIN
Representing	Representing Yorkshire Grab Hire

NOTICE: IT IS THE CUSTOMER'S RESPONSIBILITY TO PROVIDE ADEQUATE ACCESS, NEITHER THE COMPANY NOR THE DRIVER CAN BE HELD RESPONSIBLE FOR DAMAGE WHILST UNDER INSTRUCTION FROM THE CUSTOMER.



YORKSHIRE GRAB HIRE

EXCAVATIONS | AGGREGATES | TOPSOIL

No. 15516

Competent Asphalt Co. Ltd.

Registered Office: Harrison House, Station Road, Bradley, Huddersfield, HD2 1UW

Tel: 01924 480992 • Mobile: 0777 880 9295 • Email: info@yorkshiregrabhire.co.uk

DUTY OF CARE / CONTROLLED WASTE TRANSER NOTE

Carrier's Licence No. CBDU146223 • Transfer Note

Customer	Site Address
Stone Dale Construction	New Lidl Birstall

Spoil / Stones	17.05.04		
Grab Collection			

Date 10.10.25 Vehicle No. SB18 DUG

Note

1 Load 6f2 in

1 green Load out

Customer Signature	Driver Signature
Print Name G. SINGH	Print Name Dale
Representing	Representing Yorkshire Grab Hire

NOTICE: IT IS THE CUSTOMER'S RESPONSIBILITY TO PROVIDE ADEQUATE ACCESS, NEITHER THE COMPANY NOR THE DRIVER CAN BE HELD RESPONSIBLE FOR DAMAGE WHILST UNDER INSTRUCTION FROM THE CUSTOMER.

APPENDIX I
PLATE BEARING /CBR TEST RESULTS

GROUND TESTING SERVICES LTD

Test Report No: 02253 **Date of Report: 30/01/26**

Client: Stonedale Construction Ltd

Address: Woodhead Rd, Birstall, WF17 9TB

Contact: Ben Iveson 07398 409 258

Site: Woodhead Road

Test Required: 8 x Plate load bearing test (to determine CBR %)

Material: 6f2

Supplier/Source: Unknown

Location: CBR 1 – 4 (Pile Matt Area 1) CBR 5 – 8 (Pile Matt Area 2)

Depth/Level: Existing Ground Level

Plate Size: 450mm

Date Tested: 30/01/26

Weather Conditions: overcast

Operator: J Hall

Kentledge: 360 excavator

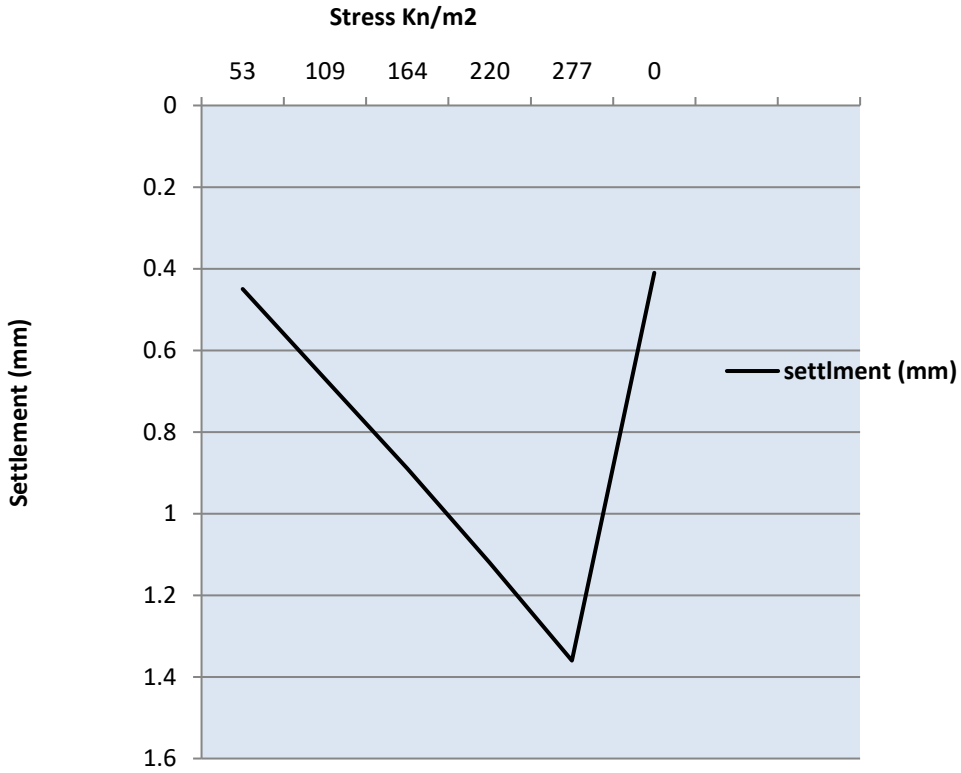
All testing is in accordance with BS EN 1996-2 / BS 1377-9

Report valid on (30/01/26)

Site readings.

Increment	stress kn/m2	settlment (mm)
1	53	0.45
2	109	0.67
3	164	0.89
4	220	1.12
5	277	1.36
6	0	0.41
7		
8		

Visual report.



CBR (1)

Max settlement: 1.36 mm

Estimated CBR Value: 42.5 %

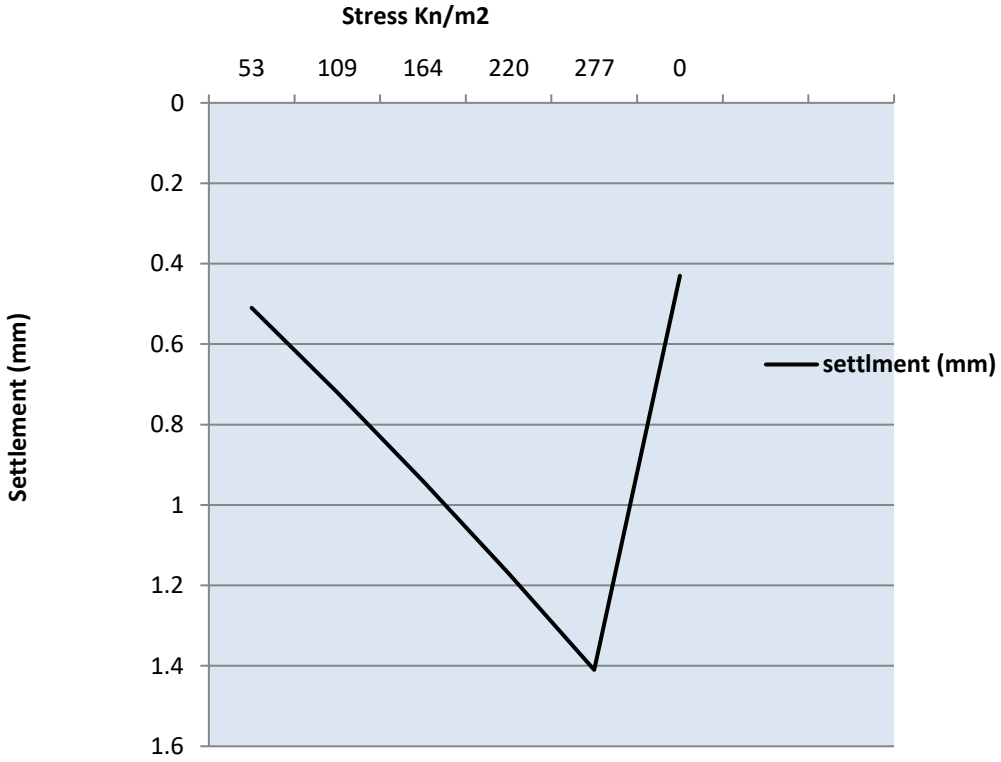
Signature:

Date: 30/01/26

Site readings.

Increment	stress kn/m2	settlment (mm)
1	53	0.51
2	109	0.72
3	164	0.94
4	220	1.17
5	277	1.41
6	0	0.43
7		
8		

Visual report.



CBR (2)

Max settlement: 1.41 mm

Estimated CBR Value: 39.2 %

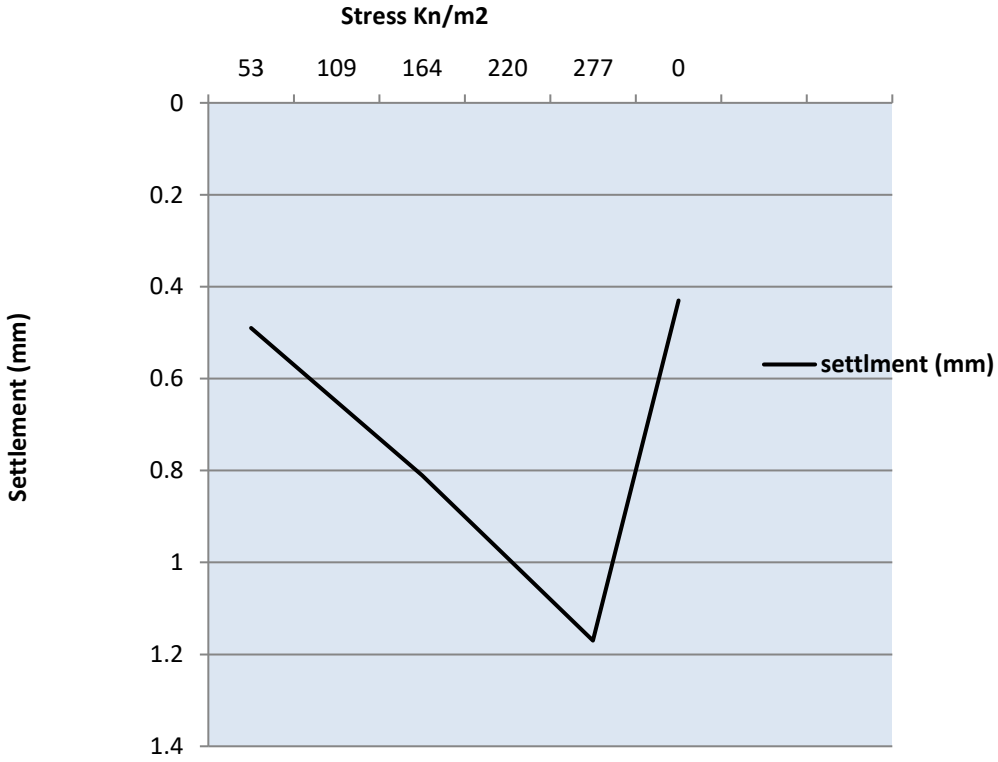
Signature:

Date: 30/01/26

Site readings.

Increment	stress kn/m2	settlment (mm)
1	53	0.49
2	109	0.65
3	164	0.81
4	220	0.99
5	277	1.17
6	0	0.43
7		
8		

Visual report.



CBR (3)

Max settlement: 1.17 mm

Estimated CBR Value: + 50 %

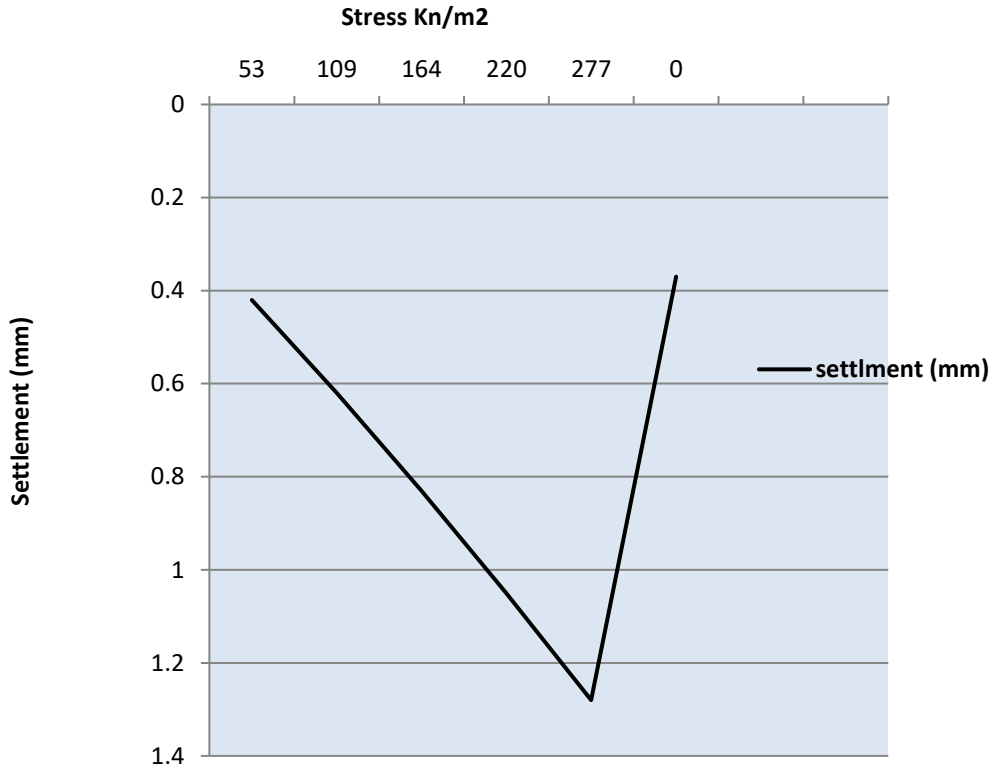
Signature:

Date: 30/01/26

Site readings.

Increment	stress kn/m2	settlment (mm)
1	53	0.42
2	109	0.62
3	164	0.83
4	220	1.05
5	277	1.28
6	0	0.37
7		
8		

Visual report.



CBR (4)

Max settlement: 1.28 mm

Estimated CBR Value: 47.9 %

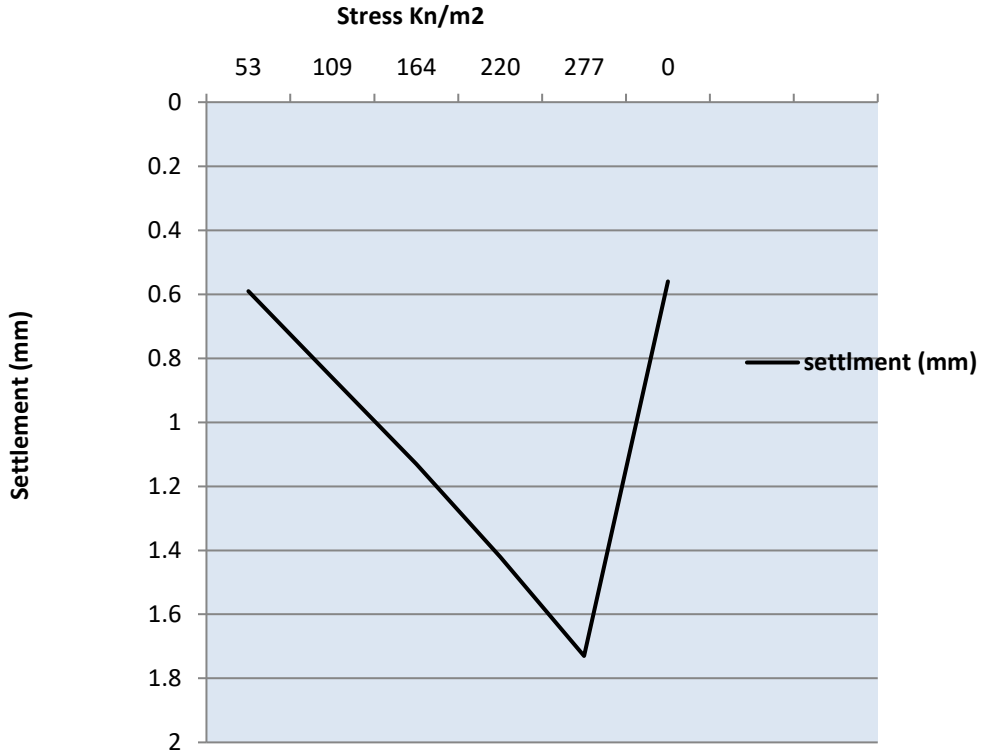
Signature:

Date: 30/01/26

Site readings.

Increment	stress kn/m2	settlment (mm)
1	53	0.59
2	109	0.86
3	164	1.13
4	220	1.42
5	277	1.73
6	0	0.56
7		
8		

Visual report.



CBR (5)

Max settlement: 1.73 mm

Estimated CBR Value: 25.9 %

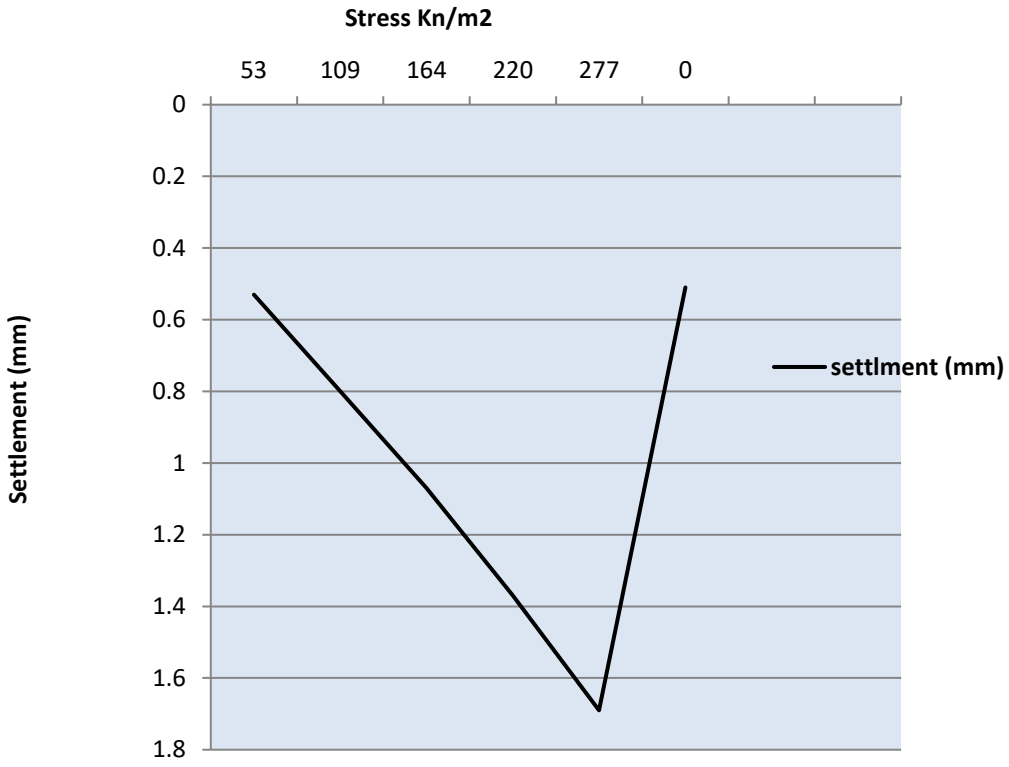
Signature:

Date: 30/01/26

Site readings.

Increment	stress kn/m2	settlment (mm)
1	53	0.53
2	109	0.8
3	164	1.07
4	220	1.37
5	277	1.69
6	0	0.51
7		
8		

Visual report.



CBR (6)

Max settlement: 1.69 mm

Estimated CBR Value: 28.4 %

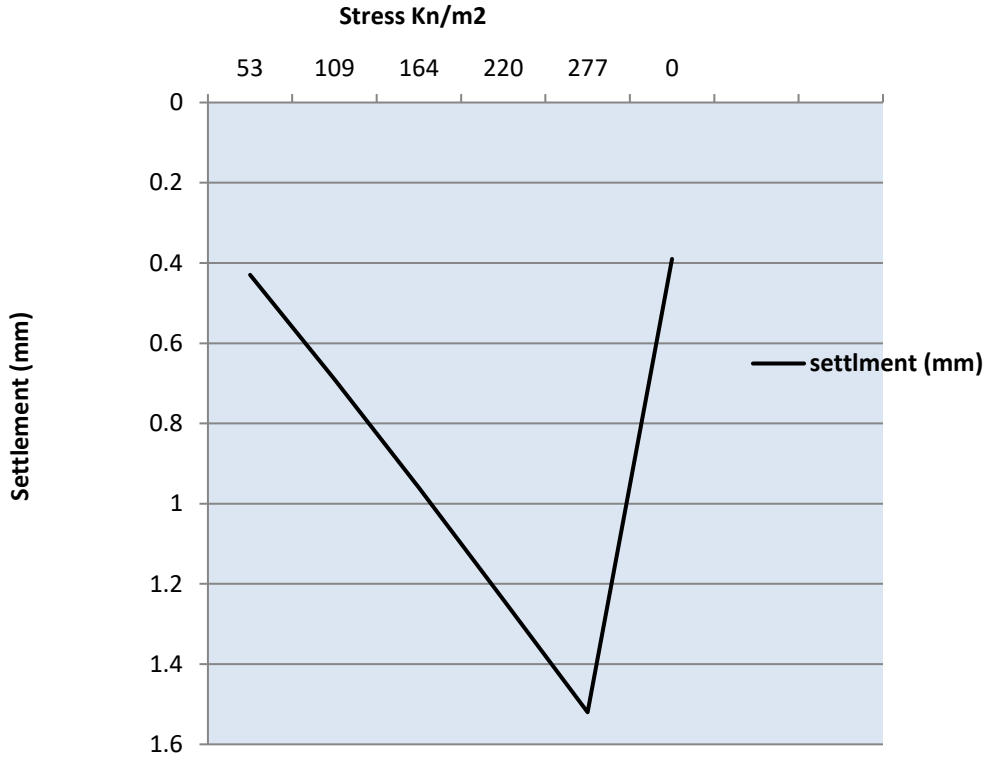
Signature:

Date: 30/01/26

Site readings.

Increment	stress kn/m2	settlment (mm)
1	53	0.43
2	109	0.69
3	164	0.96
4	220	1.24
5	277	1.52
6	0	0.39
7		
8		

Visual report.



CBR (7)

Max settlement: 1.52 mm

Estimated CBR Value: 34.1 %

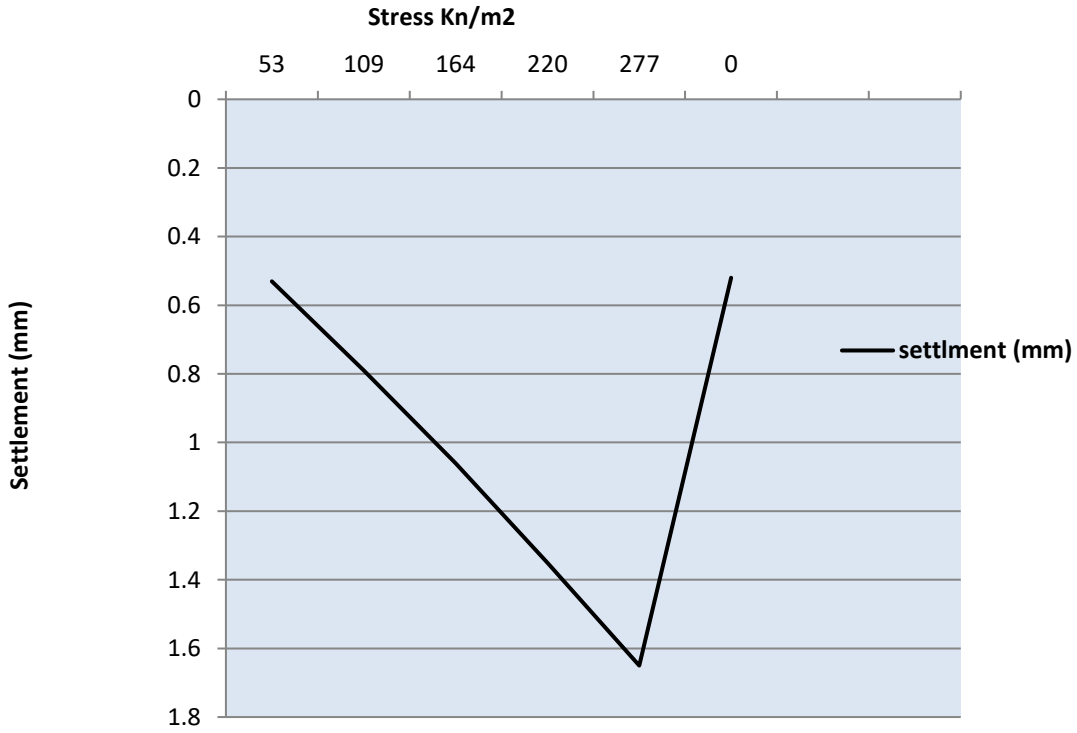
Signature:

Date: 30/01/26

Site readings.

Increment	stress kn/m2	settlment (mm)
1	53	0.53
2	109	0.79
3	164	1.06
4	220	1.35
5	277	1.65
6	0	0.52
7		
8		

Visual report.



CBR (8)

Max settlement: 1.65 mm

Estimated CBR Value: 29.2 %

Signature:

Date: 30/01/26



JOB NAME
BIRSTALL LIDL

DRAWING TITLE
CBR TEST LOCATIONS

STATUS
INFORMATION

SCALE @ SIZE
DO NOT SCALE

DATE
JAN 26

SHEET BY
TG

CHECKED BY
BI

JOB NO.
314

DRAWING NO.
CBR-01

REV
A

Stonedale Construction
Unit 1,
Scandinavia Court
Chain Bar Road
Cleckheaton
BD19 3QW

01274 053958
www.stonedaleconstruction.co.uk

STONEDALE
CONSTRUCTION LTD