

SURFACE WATER MANAGEMENT PLAN



RSK have been commissioned by Keepmoat Homes Yorkshire to complete a Surface Water Management site inspection and update the SWMP.

RSK representative on site: Amy Middler

Contact details: amiddler@rsk.co.uk, 07471354482

Revision control sheet				
Revision ref.	Date	Reason for revision	Author	Reviewer
00	18.03.26	First draft	Amy Middler	Adam Clarke
01	02.04.26	Updated with the flocculant details	Amy Middler	Adam Clarke

SURFACE WATER MANAGEMENT PLAN

1.0 Purpose

To reduce the risk of contamination of controlled waters caused by our work activities. Specifically, this involves:

- a. Identifying sources of potential contamination (surface and silt water run-off, fuel and chemical storage, excavation pumping operations etc.)
- b. Determining the receptors (water courses, ground water and foul drains) for any potential discharge and identifying whether this site is a 'High' risk development.
- c. Developing and implementing measures for minimising risk, through control and treatment.
- d. Utilising appointed technical consultants to assist in developing appropriate and effective methods of control.
- e. Ensuring effective monitoring and maintenance of pollution prevention measures.
- f. Developing a specific and effective Surface Water Management Plan, using this template.
- g. Preparation of an associated **Spill Response Poster** for emergency situations (HSS-FO-001-Spill).
- h. Assurance of effectiveness through the implementation of inspection, monitoring and sampling measures, using the associated Surface Water Weekly Site Inspection found on EcoOnline.

2.0 Scope

Identifying sources of potential contamination (surface and silt water run-off, fuel and chemical storage, excavation pumping operations etc.)

3.0 Process

Surface Water Management Plans are developed and subsequently reviewed in two phases:

Phase A – Following successful agreement to purchase the site, the Plan will be drafted by a preferred external consultant commissioned by the Technical Team with input from Land and Partnerships and the EHS Team. It will form part of the Pre-Construction Information.

Phase B – The Plan will be finalised by the Construction Team, with the groundworks/road and sewer and remediation contractors. It will form part of all Construction Phase Plans. The Construction Team will ensure that all arrangements are:

- ▶ Suitable, practicable and effective,
- ▶ Compatible with the desired build route,
- ▶ Implemented and maintained throughout the construction lifecycle,
- ▶ Ensure that, whilst groundworkers are Principal Contractor, they agree their responsibility to implement the SWMP as Lead Partner by signing off this document,
- ▶ Any additions or alterations to the surface water management plan must be signed off by the Construction Director and agreed with the Technical Team for the plan to be updated accordingly through the Technical Team and external consultants to be re-issued in a timely manner.

SURFACE WATER MANAGEMENT PLAN

4.0 Site Details

Site Name:	Cliffe Lane, Gomersal
Address (& Postcode):	Cliffe Lane, Gomersal, Cleckheaton, BD19 4SX
Date originally drafted & drafted by:	18.03.26
Site Manager details: (name, phone, email)	TBC
Regulator Details	Environment Agency

5.0 Change Log

Version No.	Date	Details of any Changes	Reviewed By:
00	18.03.26	Initial draft	Amy Middler (RSK)
01	02.04.26	Updated with the flocculant details	Amy Middler (RSK)

6.0 Surface Water Management Plan Sign off

Phase A – Planning and Technical appraisal					
Technical		Date	Land & Partnership		Date
Commercial		Date	EHS		Date
Phase B – Construction					
Construction Director		Date	Contracts Manager		Date
Site Manager		Date	Contractor		Date
Note By signing Groundworkers and other contractors are agreeing to work in accordance with this Surface Water Management Plan and the requirements of Appendix 1.					

SURFACE WATER MANAGEMENT PLAN

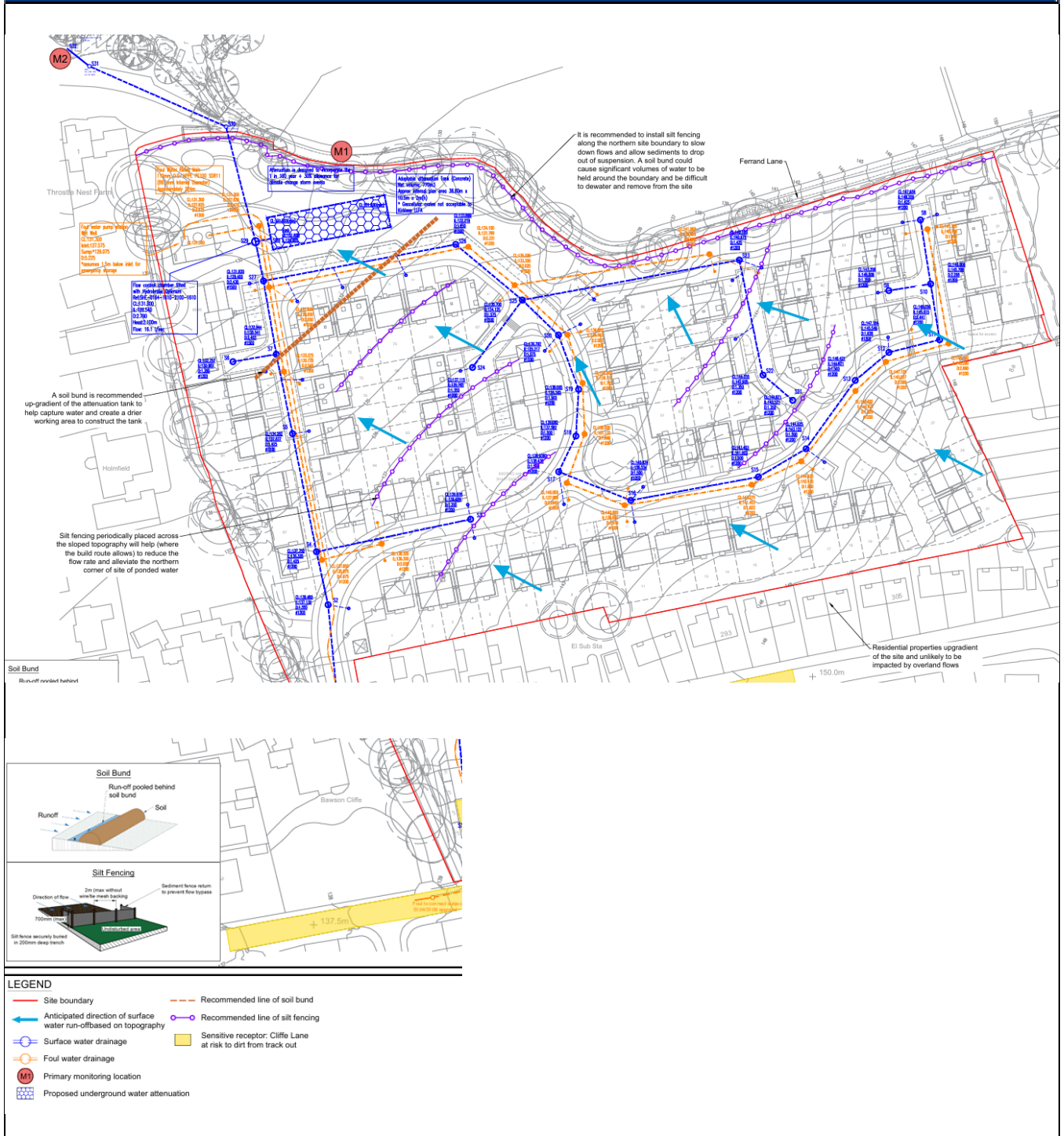
7.0 Potential Pollution Risk Rating

Factor	Present	Factor	Present												
Water course within 100 metres of site boundary	N	Protected areas (SSSI, national park etc), Source Protection Zones located on site or within 500m downstream	N												
Is the watercourse a Main River? Check here - England Wales	N	Shallow groundwater identified <1.5m below ground level	Y												
Discharge from site flows directly into a water course or surface water sewer	Y	Likely volumes of temporary discharge will exceed those designed for the final discharge consent	Y												
Water course contains visible aquatic life (fish etc.) or has been assessed as environmentally sensitive	N/A	Local water course used as local amenity (fishing, boating, swimming)	N/A												
Soils investigation identifies clay (impermeable materials)	Y	Brownfield site with contaminants above human health thresholds	N												
Site exposed, or at high altitude, or steep gradient	Y	Construction Programme identifies that final discharge point will not be available in less than 3 months	N												
Rainfall prediction in location >1600 mm/year as shown in Appendix 3	N	Treatment of water discharge is likely to be required to achieve the quality standard of acceptability	Y												
Historical evidence indicates site suffers from seasonal flooding	N	Consortium site with shared collection and discharge outlets	N												
Where the answer to any of the above points is Yes, ensure the surface water management plan specifically addresses and manages associated risks															
Count the number of ‘Y’s in the table, this will determine the site’s Potential Pollution Risk Rating as follows:															
<table><tr><th>Number of ‘Y’s</th><th>Potential Pollution Risk Rating</th><th>Recommended Review</th></tr><tr><td>0</td><td>Low</td><td>After severe weather and as site progresses</td></tr><tr><td>1-7</td><td>Medium</td><td>Annually, after severe weather and/or as site progresses</td></tr><tr><td>8+</td><td>High</td><td>Every 6 months, after severe weather and as site progresses</td></tr></table>				Number of ‘Y’s	Potential Pollution Risk Rating	Recommended Review	0	Low	After severe weather and as site progresses	1-7	Medium	Annually, after severe weather and/or as site progresses	8+	High	Every 6 months, after severe weather and as site progresses
Number of ‘Y’s	Potential Pollution Risk Rating	Recommended Review													
0	Low	After severe weather and as site progresses													
1-7	Medium	Annually, after severe weather and/or as site progresses													
8+	High	Every 6 months, after severe weather and as site progresses													
Site is classed as medium risk (6 No. ‘Y’s)															
The nearest watercourse is an unnamed tertiary river approximately 180m north west, this is the location of the proposed final outfall. The underlying geology is sandy, silty clay. It is likely that the underlying soils will require treatment. RSK collected the required samples for settlement testing to inform the use of flocculants. The results are outstanding at the time of writing.															

SURFACE WATER MANAGEMENT PLAN

8.0 Site Plan and Layout

1. Location of this land within the construction site as a whole (if the plan covers only part of the site)
2. Location of Water courses (inc. culverted watercourses, land drains etc. ponds, wetlands, springs, ditches, estuaries, and coast) on the construction site
3. Details of water sources entering the site, surface water run-off, waterway etc.
4. Locations of surface water capture and treatment measures
5. Locations of wheel wash and concrete wash outs
6. Details of existing drainage infrastructure on site



SURFACE WATER MANAGEMENT PLAN

Area of land (hectares)	3.8
Date Plan Produced	18.03.26

SURFACE WATER MANAGEMENT PLAN

9.0 Water sources and drainage infrastructure entering the site

Details of springs/pumping sources
No records of springs or pumping sources noted on site during the walkover.
Details of existing streams or ditches, road gullies etc.
Details of proposed changes to existing water sources entering the site and infrastructure
No water sources entering the site and infrastructure.

10.0 Capture Methods

Pumping
Should dewatering be required, the following options may be considered in line with RPS 261 and the Keepmoat Homes minimum standards document HSS-ST-049-MSS - Dewatering Excavations: 1. Over pumping over a large area of well vegetated surface. • The vegetated surface must be large enough for the anticipated volume of water being discharged. • Water must be pumped through a cubic settlement tank and flow-through a filter bag. The outlet should be positioned on top of a silt mat or a bed of gravel to dissipate the energy of the water flowing through the pipe. • Water must be pumped at a steady flow rate so not to erode or mobilise any silt in the area of the discharge. • The implemented measures must be frequently monitored and maintained to prevent discharge of silt into the drainage system. 2. Over pumping into the onsite stormwater sewer network; • When constructed, over-pumping into the onsite surface water drainage system may be considered (i.e., onsite stormwater sewer, attenuation basin or infiltration basin) Adequate protection measures must be implemented when over-pumping into the onsite stormwater drainage system. Minimum control measures include the use of filter bags on the pump outlet and passing water through a cubic settlement tank. The implemented measures must be frequently monitored and maintained to prevent discharge of silt into the drainage system. 3. Additional considerations; • All water discharged during the construction phase must be discharged at a legal point of discharge. • Allow silt to settle prior to pumping. • Dewatering activities will immediately cease in the event of significant sediment levels, which pose a risk to identified receptors are observed. • It may be possible to dewater to the local foul sewer network. Permission would be required from the foul network asset owner. • To prevent pumping sediment and silt through the pump system, it is recommended that a sump is created with clean gravel and a perforated pipe placed vertically to allow a suitably sized pump to be inserted. The implemented measures should be frequently monitored and maintained to prevent discharge of silt and heavily silt laden waters from entering the drainage network or flowing from on-site to off-site 3rd party land.

SURFACE WATER MANAGEMENT PLAN

Settlement Ponds

No temporary settlement ponds are designated within this SWMP.

Earth Bunds

It is recommended to construct a soil bund up gradient of the proposed attenuation tank to allow a drier working area.

Surface Water Grips / French Drains

None specified in the SWMP.

Concrete/Mortar washout

Concrete/mortar washout is not anticipated to be required within site. However, if used Concrete/mortar washout systems should be self-contained, placed on a sealed surface not near surface water drains and regularly cleaned to prevent water escaping.

Other(s)

Settlement testing for the onsite soils and water were collected by RSK and tested in March 2026.

The most effective combination of Gel Flocculants are 494 and 360, the method and design of the silt capture system has not been confirmed but is likely to comprise of a plastic impermeable base with a series of silt and floc matting. Silt wattles to be placed around the boundaries. Water will pass through a mobile pipe reactor (with flocculant Gel blocks) then discharge over the silt capture channel. Clean water will then be pumped into surface water drainage (once constructed). Water will be <40mg/l TSS and meet EA requirements.

It is recommended to install the surface water drainage at the north of the site as soon as possible to enable the discharge of water offsite.

The site strip should be carefully managed, vegetation and topsoil help infiltrate water.

SURFACE WATER MANAGEMENT PLAN

11.0 Treatment

Dirt Bags

Any surface water pumping should be done with the use of a silt sock attachment or dewatering bag, particularly for the de-watering of foundation runs. Discharged water should not flow beyond the confines of the site area.

Gulley Bags

Standard for KMH sites is that all road gullies should be fitted with gully bags to prevent blocking and limit required maintenance (sucking/jetting). Gully bags should be cleaned out regularly to ensure their effectiveness.

Manhole protection is recommended in the manholes on site around the attenuation tanks to protect the siltation.

Silt Fencing

Silt fencing is recommended along the northern site boundary to protect Ferrand Lane from silty overland flows offsite. This is recommended over a soil bund as this would cause ponded water behind it making it difficult to dewater.

It is also recommended to install silt fencing across the site topography to help to reduce the flow rate.

Settlement tanks (e.g., siltbuster)

Not required on site.

Settlement Ponds

No settlement ponds planned for site. This may be reconsidered once the results from the flocculant testing are back.

Straw Bales

Not required at this site, although having access to straw bales in the case of an emergency is ideal to act as barriers to prevent runoff.

Silt Mats

Not required at this site.

Floc mats not recommended at this stage- awaiting settlement test results.

Other – Road cleaning, chemical treatment, further assessments, contact with neighbours

Minimise the movement of plant on and off roads to prevent the tracking of excess soil onto surfaced roads (i.e. planning of the working day and work areas, utilising designated machine and dumper road crossing points).

- Regular scraping of roads to remove significant silt build-up.
- The placement of gully protection (gully bags) in all gullies during construction and for these to be inspected and replaced / cleaned on a regular basis.
- Provision of a road sweeper on site and on the adjacent road network during periods of inclement weather (frequency to be continually assessed by site management), but particularly during bulk soil movements.
- If required, construction of speed ramps to slow traffic down and to help direct surface water to collection areas.

SURFACE WATER MANAGEMENT PLAN

12.0 Discharge Points

Water Courses
The nearest watercourse to the site is approximately 180m north west. Surface water from the site (from the attenuation tank) will flow into the unnamed watercourse. An EA bespoke discharge permit is required.
Ground Water (e.g., soak away)
N/A
Surface Water Drains
The proposed drainage strategy for the site has water falling under gravity into one attenuation tank which will discharge into the offsite unnamed watercourse.
Foul Sewer / Drains
Foul water will discharge offsite into existing offsite combined drainage.
Tanker
KMH have contacts with local tanker companies and in the event of an emergency can be called upon. There may be some ponded water held on site prior to the construction and operation of the attenuation tanks.
Other(s)
N/A

SURFACE WATER MANAGEMENT PLAN

13.0 Permits, Licences and Consents

Discharge

The attenuation tank will be fitted with a hydrobrake optimum flow control chamber. Flows will discharge at a rate of 16.1l/s to the offsite unnamed watercourse which equates to 1,391.04m³ a day.

Abstraction, Flood risk activities, and other licenses

No abstraction expected to take place during the works.

14.0 Emergency Measures and Arrangements

Extreme Weather / Excessive Rainfall / Water Flow / Flood

In the event of excessive rainfall, surface water could accumulate behind the soil bund on site, this may require pumping through a silt sock to the attenuation tank once it is constructed. If this is not possible, there may be a requirement to tanker water away from a temporary lined lagoon.

RSK will update this EHS form with the recommended treatment options following the settlement testing.

Emergency Team

In the first instance, the site manager should be made aware of any silt or surface water issues on site. Photographs should be taken and information noted down referencing the location and possible source of the problem.

Key Keepmoat Homes responsible personnel to include:

Contracts Manager:

Construction Director:

Technical:

HSS:

Environmental Advisor:

RSK contacts:

Amy Middler 07471354482 amiddler@rsk.co.uk

John Harrison 01977 552255 jharrison@rsk.co.uk

The groundworker is expected to have emergency silt protection on site which could comprise straw bales, spare silt fencing, drain bungs. These can be installed around the area prior to seeking guidance from RSK.

SURFACE WATER MANAGEMENT PLAN

15.0 On-site Training (for High-Risk Sites only)

Half Day Construction Water Pollution Training (add names of appointed contractors)

n/a

GoContractor – Silt Management TBT (add names of appointed contractors)

n/a

SURFACE WATER MANAGEMENT PLAN

16.0 Monitoring Arrangements (locations – marked on plan)

What	How	When	By Whom
Excavations	Monitoring accumulations of standing water in excavations.	Daily/ weekly following inclement weather	Site manager
Culverts	N/A	N/A	N/A
Settlement Ponds	N/A	N/A	N/A
Temporary Settlement Tank (portable)	N/A	N/A	N/A
Site water entry points	N/A	N/A	N/A
Site water exit points	Visually inspect weekly or during after rainfall- refer to monitoring points in the drawing.	Weekly/When required	Site manager
Gulley inspections	Criteria for cleaning regime, ensure gully bags are installed in every gully. Replace the gully bags when inundated with silt and debris.	Weekly	Groundworker
Silt Fencing	Visually inspect weekly or during/ after rainfall.	Weekly/When required	Site manager
Straw Bales	N/A	N/A	N/A
Testing/Analysis of samples	Not required at this stage.	N/A	RSK
Upstream of site	N/A	N/A	N/A
Silt matting	N/A	N/A	N/A
Other			
EcoOnline inspection checklists must be used to ensure effective tracking of monitoring and actions			

SURFACE WATER MANAGEMENT PLAN

17.0 Reporting

What	To Whom	When
Breaches of measures to control flows (e.g., damage to filter mediums, gaps in bunds etc.)	Site Manager/ Environmental Team to advise Groundworker to repair.	Immediate
Inadequacy of implemented measures to control flows (localised flooding, new sources of water flow etc.)	Site Manager to inform Environmental Team (RSK)- SWMP to be updated	Immediate
Changes to visual water quality through the outfalls	Site Manager to inform Environmental Team (RSK)	Immediate
Changes to suspended solids in sampled water analysis	Site Manager to inform Environmental Team (RSK)	Immediate

18.0 Review Frequencies

Document	How	When	By Whom
Surface Water Management Plan	On site review of management plan to ensure it is still effective for the works currently underway on site	Minimum monthly and following/during severe weather conditions	Construction Team
Actions	Actions from EcoOnline inspections – site and HSS review of effective and timely closeout	Immediate	Construction Team

19.0 Equipment Standards

Item	Equipment	Supplier/Provider	Installer
Silt Tubes / Dewatering bags	Dirtbags / silt socks	Dirtbags	Groundworker
Silt Fence	Terrastop	Hy-Tex	Groundworker
Gulley bags	350mm or 300mm diameter gulley bag for road gully pots and yard gullies.	Forest Group UK	Groundworker
Silt Mats	N/A	TBC	Groundworker
Pumping requirements	Pumps to be used to dewater excavations		Groundworker
Rip-rap	N/A	TBC	Groundworker

SURFACE WATER MANAGEMENT PLAN

20.0 Supporting Documents

1. HSS-GN-001-Water- Surface Water Management Guidance Note
2. HSS-ST-001-Water- Surface Water Management Standard
3. HSS-FO-002-Water- Settlement Tank User Guide
4. HSS-FO-001-Spill- Spill Response Poster
5. HSS-ST-001-Spill- Spill Response Standard

SURFACE WATER MANAGEMENT PLAN

Appendix 1: Contractor SWMP Implementation Requirements

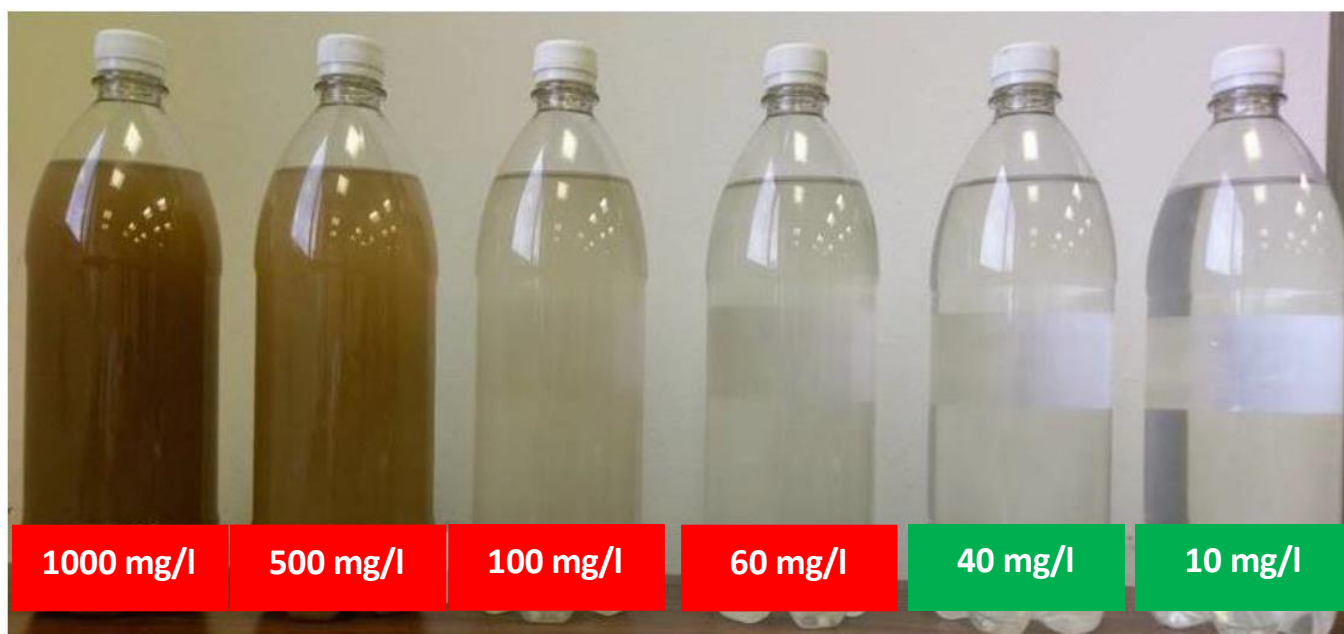
In the implementation of a SWMP for Keepmoat Homes the implementing organisation(s) and their contractors will:

- Confirm and agree to implement and work in accordance with the controls outlined in the SWMP through '*Phase B – Construction Review and Implementation*'.
- Regardless of build stage or Principal Contractor status ensure that all activities are controlled in compliance with the SWMP.
- Review Phase A to ensure the SWMP is suitable, effective, and compatible with build route, with any deviation being specifically authorised by Keepmoat Homes.
- Ensure that, through pre-start meetings, all direct and contracted staff involved in the implementation of the SWMP understand and confirm their roles and responsibilities prior to site start, including;
 - Full understanding of correct installation, maintenance and usage procedures of the measures set out in the SWMP.
 - Requirements in the site's environmental permits or consents, particularly with relation to flowrate and water quality.
- Ensure that all direct and contracted staff involved in the implementation of the SWMP are briefed and confirm their understanding and that where there are changes and updates to the SWMP as the development progresses are all direct and contracted staff are likewise briefed on changes and confirm their understanding.
- Ensure that all direct and contracted staff involved in the implementation of the SWMP, or whose activities could impact the effectiveness of the SWMP measures on site undertake relevant training where the site is deemed to be 'High-Risk'.
- Ensure monitoring arrangements are adhered to, particularly at high-risk areas such as gullies, discharge points and attenuation basins.
- Monitor the measures put in place as part of the SWMP to ensure they are operating effectively and ensure any non-conformance or ineffective measures are addressed and communicated to the Keepmoat Site Manager.
- Ensure emergency measures are in place and understood, should the measures in the SWMP be breached.
- Ensure any breaches are communicated to the Site Manager immediately.

SURFACE WATER MANAGEMENT PLAN

Appendix 2: Discharge Sampling

Below is a rough guide on what varying levels of silty water look like. EA discharge permits are usually around 40 mg/l. Anything above 40 mg/l will likely be considered unacceptable levels of pollution and you may be liable for fines.



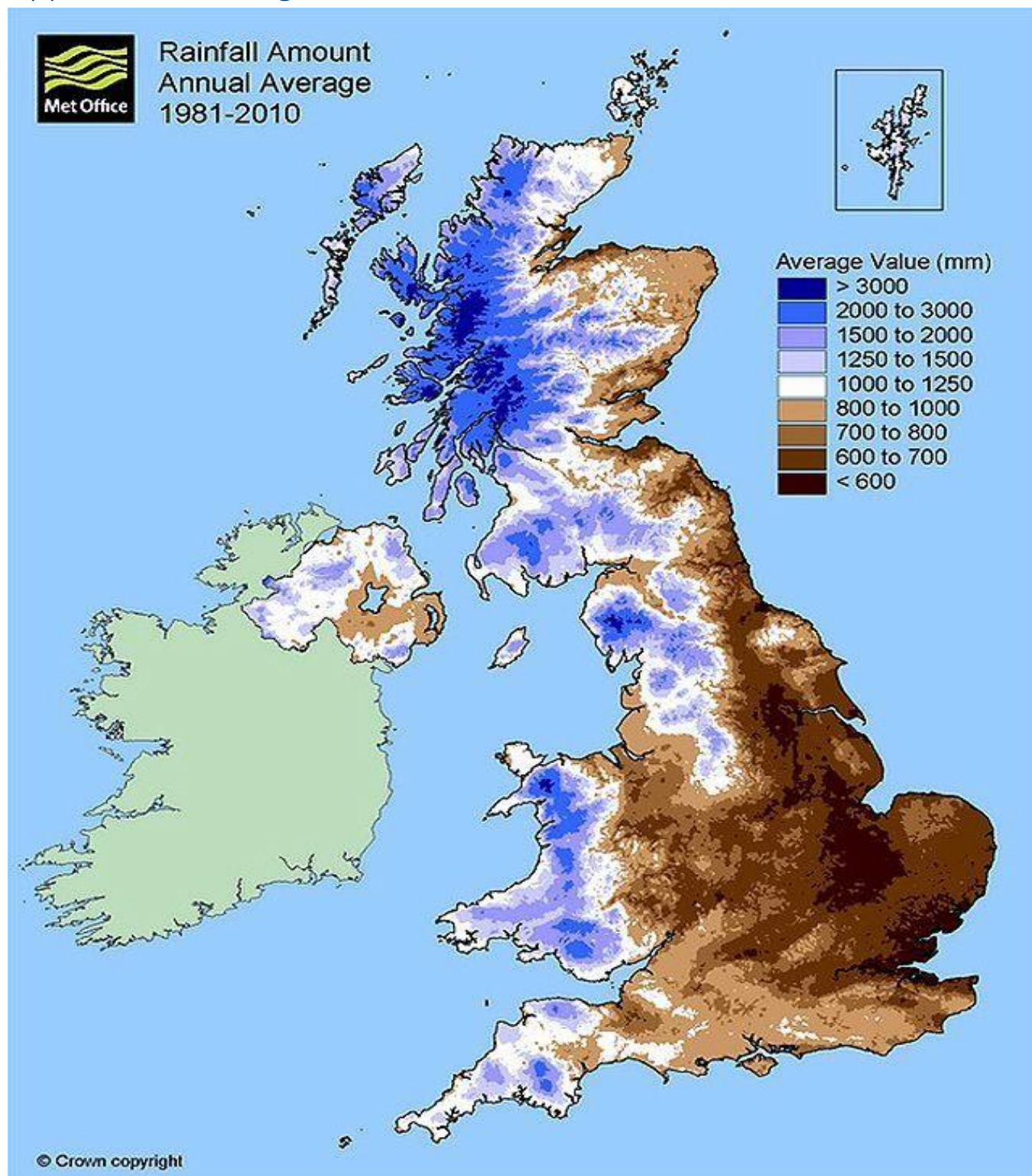
One way to test your silt levels is by collecting the discharge in a litre bottle and holding your hand behind it, as shown below. If you can see the marks and lines of your hand, then you are likely under 40mg/l.



Please note, these are rough guides ONLY, varying concentrations of silt may look different under different light, weather, or soil conditions. If you are concerned you are breaching pollution levels, inform HSS immediately.

SURFACE WATER MANAGEMENT PLAN

Appendix 3: Average UK Rainfall



SURFACE WATER MANAGEMENT PLAN

Appendix 4: Document Review Record

Site Name and Number	Cliffe Lane, Gomersal
----------------------	-----------------------

Document Name	Surface Water Management Plan
---------------	-------------------------------

I have reviewed the plan detailed above. If any changes are required, contact the relevant department

Print name	Signature	Date	Are changes required?

SURFACE WATER MANAGEMENT PLAN

Appendix 5: Monitoring Checklist

Complete the inspection and initial the corresponding box. All actions must be raised on EcoOnline. This sheet must be attached to the Site Manager's Weekly HSS Inspection

Daily Requirements

Item	Monday	Tuesday	Wednesday	Thursday	Friday	Comments/Action Required

Weekly Requirements

Item	Comments/Action Required

Post-Adverse Weather Checks

Item	Monday	Tuesday	Wednesday	Thursday	Friday	Comments/Action Required

Appendix 6: Silt Treatment Products

DirtBags



Sediment control the easy way

0113 253 3150
info@dirtbagsuk.com

Dirtbags

- » HOME
- » DIRTBAGS
- » DIRTBAGS IN SETTLEMENT TANKS
- » DIRTBOX
- » COMING UP...

 WATCH THE VIDEO

 IMAGE GALLERY

 CONTACT US NOW

phone 0113 253 3150
fax 0113 252 7394
email info@dirtbagsuk.com

• DIRTBAGS



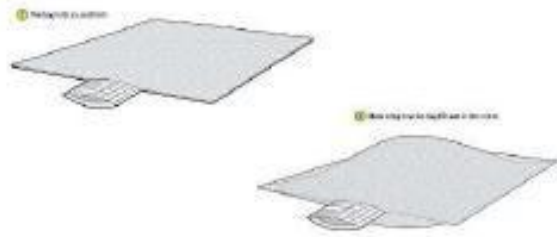
The standard size of the Dirtbag is 1.5m² giving a filtration area of 4.5m² allowing a flow rate well in excess of 4600 l/min or the pumping capacity of a 6" pump.

The Dirtbag can be used in various applications in its' raw form, as the shape & size of the bag can be determined by the end user and as Dirtbags are manufactured in the UK we can make them any shape or size to suit your exact site requirements.

Unlike other sediment control units the Dirtbags are **NOT RELIANT** on pumping speeds or settlement times and the bags will help retain solids from your pumped water.

The Dirtbag is fitted with a standard 10" elasticated collar which will fit around any size delivery hose or connector and you simply pump the water into the Dirtbag, the water runs through the bag which catches the solids in the water.

Dirtbag in its traditional 'envelope' form:



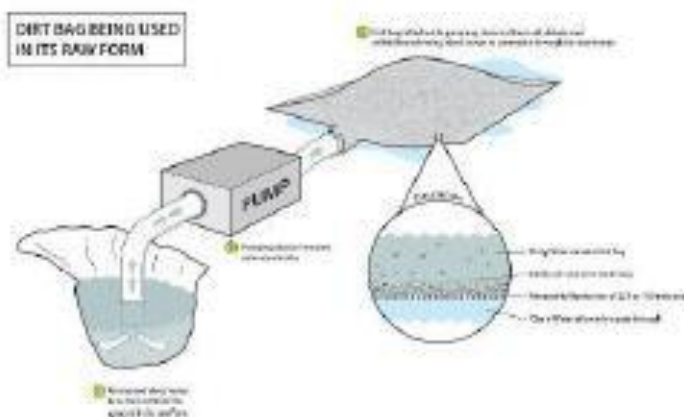
Click on image to enlarge

Dirtbags are available in 100, 200 & 500 micron filter sizes and will retain solids dependant on the filter size of Dirtbag used.

How It Works

The image below shows the Dirtbag laid on the ground whilst water is being pumped through it. This is an easy solution if your site conditions allow for site water to run away and find its own course.

The solids are retained in the Dirtbag which allows the water to flow away.



Click on image to enlarge

Once the Dirtbag has filled with solids and the Dirtbag no longer allows adequate water flow (i.e. blinded off), it is simply disposed of in accordance with your on site waste disposal guidelines and another Dirtbag is used.

"Simple"

Utility Bag

The utility bag was purpose made for small mobile street works and its simplicity has proved to be very popular with street works and utility contractors.

The Utility bag is simply laid at the kerb side, before the road gully and trench water is pumped through it which catches the solids before reaching the drainage system.

The bag can be turned inside out and re-used and is easily stored in the gang's vehicles or PPE kits until needed again.

The utility bag measures 1m x 300mm and its 10" elasticated collar means it will accept any size delivery hose.



"Dirtbags are manufactured and distributed in the UK so we can make any size bags to suit your exact requirements"

DIRTBAGS KEY ADVANTAGES:

Simple & Easy to use, light & compact for easy storage, bag can be made to any shape or size with 100, 200 or 500 micron filter sizes, 24 hour delivery if required, indefinite shelf life, no cleaning up required just dispose of the bag once it's full, simple order and delivery process, 50 micron Dirtbags are available for certain applications on request

"The Dirtbag does not rely on pumping speeds or settlement times"



Sediment control the easy way

0113 253 3150

info@dirbagsuk.com

Dirtbox

» HOME

» DIRTBAGS

» DIRTBAGS IN SETTLEMENT TANKS

» DIRTBOX

» COMING UP...



WATCH THE VIDEO



IMAGE GALLERY



CONTACT US NOW

phone 0113 253 3150
fax 0113 252 7394
email info@dirbagsuk.com

• DIRTBOX

After various trials and feedback from our customers we have designed and built:

The 'Dirtbox'

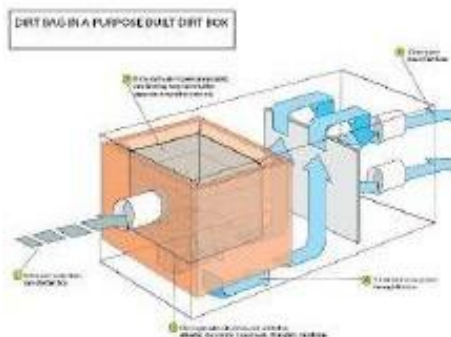
which is a purpose built tank that houses the Dirtbag and allows a much easier, safer and more controlled environment for collecting solids through the water transfer process.

For this application the Dirtbags are cube shaped and measure 1m³ giving an even bigger filtration surface area than the stand alone Dirtbag.

The Dirtbox comprises of:

- An outer tank with 1 No. 6" inlet and 2 No. 6" outlets with one blanking cap. The two outlets are situated at different heights to suit different applications and can both be used if pumping at high speeds.
- The tank measures only 1800L x 1200W X 1200H meaning it is smaller than a 1500 gallon settlement tank and takes up less room on your site.
- The inlet & outlet connectors are industry standard bauer fittings
- A removable permeable inner tank that holds the Dirtbag and is lifted out ensuring the safe & easy change and disposal of the Dirtbag
- A removable baffle plate which can be inserted to create a settlement area and catch any additional smaller silt particles if required, or removed to create an instant water flow to the outlets.

The image below shows the Dirtbag being used inside the custom built Dirtbox.



Click on image to enlarge

The Dirtbox will handle flow rates up to 280m³ per hour (1000 gallons per minute) which basically equates to a 6" pump working at full capacity.

Once the Dirtbag is full and not accepting water at the desired flow rate then simply lift out the inner tank, remove the Dirtbag and dispose as per site waste guidelines, insert a new Dirtbag and carry on pumping.

The Dirtbag contains all solids down to at least the size of the Dirtbag (100, 200 or 500 microns) and is easily disposed of leaving no mess and no cleaning up is required!

No manual lifting required as the inner tank and the Dirtbag have lifting eyes for mechanical lifting.

"The Dirtbox is available for sale or hire and really is the ideal site solution for using a Dirtbag"

Hy-Tex Terrastop™ Silt Fences for Stormwater Run-Off Control

Hy-Tex Terrastop silt fence in use on National Grid's Milford Haven to Aberdudals gas pipeline project



Hy-Tex Terrastop silt fence in use on National Grid's Felindre to Brecon gas pipeline project



News: Terrastop HighFlow trapped approx. 5 tonnes of silt per 10m fence run over 1 month on potato field trials in Scotland

Terrastop™ Premium (W1380)



1137-CPR-0613/29

Sand bags in both grades also available for no-dig solutions. Call for further details

Many construction, forestry and farming activities result in disturbed or bare ground that is vulnerable to weather erosion. The silt laden run-off, plus site debris and other pollutants, often contaminates surrounding land, watercourses, lakes and drains - resulting in significant environmental diffuse pollution and potentially costly fines.

However, due to the on-going nature of such work, it is generally not possible to protect exposed surfaces until the project is complete. So stormwater from such sites represents a major non-point source of diffuse water pollution in the UK.

Solution: Hy-Tex Terrastop™ Premium, and HighFlow silt fences, offer a proven, practical, economic and effective method to reduce stormwater run-off pollution from such locations. They are special, high quality, permeable, technical filter fabrics, that can be installed as an entrenched vertical barrier fence, and are designed to intercept and detain run-off - trapping harmful silt through settlement and filtration before it leaves the site.

Performance: The benefits of silt fences are increasingly becoming recognised in Britain: The Environment Agency/SEPA Pollution Prevention Guidelines (PPG5) now recommend the use of silt fences to reduce silt transport from exposed ground and stock piles; and research at The James Hutton Institute, using Terrastop silt fencing, demonstrated that even after post-harvest contour grubbing of potato fields an estimated 80 tonnes of soil containing 60-70 kg phosphate-P contaminants was trapped from a 17ha field [Dr Andy Vinten].

While in other countries where silt fences have been used extensively for many years, their proven performance (Intercepting up to 86% of suspended solids [Homer et al. 1990]) has made them a standard *Best Management Practice* on a diverse range of projects.

From this in-depth research, and practical experience, Hy-Tex Terrastop™ Premium and HighFlow were developed to exceed the highest standards, with many unique features for ease of use, reliability and effective results.

Key Features: General purpose non-woven and woven geotextiles are unsuitable for silt fence use as they clog, overtop and inadequately filter sediment due to poor hydraulic properties (typically less than 15 l/m²/sec) and often fail: tearing and fraying (as they are too weak to withstand the forces of stormwater/silt build-up without costly additional wire support fences) or becoming brittle quickly (due to lack of UV protection). Terrastop™ Premium and HighFlow are manufactured specifically as silt fences so have high tensile and burst strengths, premium UV stabilisation, woven structures with tear resistant non-fraying reinforced edges, that are durable and self supporting between fixing posts for reliability, as well as having a visually pleasing subtle green colour.

The CE Mark certified Terrastop Premium also has an special fibrous weft yarn, combined with a high quality weave, to enhance filtration, maintain flow and minimise clogging.

Installation Aids: Silt fences also often fail through poor installation or aftercare, therefore Terrastop™ Premium incorporates pre-marked lines for burial depth and maximum silt accumulation level to ensure correct set-up and maintenance; as well as a top ribbon strip to simplify post attachment and tensioning.

Kirsty Liddon's Edinburgh University Dissertation "Prevention of Diffuse Pollution from Active Forestry Harvesting Sites" concluded "the Hy-Tex (Terrastop Premium) material appears to be the most suitable material for use as sediment retention as it has the most consistent performance between differing soil types retaining the highest volumes of sediment for both gley and peat solutions."

Specification	Terrastop™ Premium (W1380)	Terrastop™ HighFlow
Tensile Strength	22kN/m	32kN/m
Puncture Resistance (CBR)	3,500N	3,700N
Permeability	45 l/m ² /sec	190 l/m ² /sec
Opening Size	250µm	320µm
Weight	200g/m ²	145g/m ²
Material	1000µ thick, green/black, 400kLy UV stabilised, polypropylene, tear resistant non-fraying edges.	500µ thick, green/black, 450kLy UV stabilised, polyethylene, tear resistant non-fraying edges.
Roll Size	0.75 x 100m	1.00 x 100m
Other Key Features:	Fibrillous weft yarn, burial depth and maximum silt accumulation marker lines, top tying-off and tensioning ribbon.	

Basic grade also available for less stringent applications

©2015 Hy-Tex UK Ltd. T-TERRASTOP-10 Terms and Conditions apply

Aldington Mill, Mill Lane,
Aldington, ASHFORD, Kent TN25 7AJ
sales@hy-tex.co.uk www.hy-tex.co.uk



Tel: 01233 720097

Fax: 01233 720098



Hy-Tex (UK) Limited

Committed to Quality, Value & Service

Hy-Tex Terrastop™ Silt Fences for Stormwater Run-Off Control

Installation Guidelines

SCOPE

1. This practice covers common installation requirements for temporary silt fence applications.
2. This practice is applicable to the use of silt fences as vertical permeable interceptors designed to remove suspended soil from overland, non-concentrated water flow. The function of a temporary silt fence is to trap and allow settlement of soil particles from sediment-laden water and to filter particles from water permeating through the fabric. The purpose is to greatly limit the transport of eroded soil from the construction site by water runoff.
3. The practices presented herein are intended to ensure good workmanship and quality and are not necessarily adequate for all purposes in view of the wide variety of possible sediments and performance objectives.
4. This standard does not purport to address all safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate health and safety practices and determine the applicability of regulatory limitations prior to use.

CONDITIONS WHERE PRACTICE APPLIES

1. Below disturbed areas where erosion would occur in the form of sheet and rill erosion, and where ponded run-off will not cause damage.
2. Where the size of the drainage area is no more than 0.30 hectares per 100.00m of silt fence length; the maximum slope length behind the barrier is 30.00m; and the maximum gradient behind the barrier is 50 percent (2:1).
3. In minor swales or ditch lines where the maximum contributing drainage area is no greater than 0.80 hectares.
4. Under no circumstances should silt fences be constructed in live streams or in swales or ditch lines where flows are likely to exceed 0.03m³/s.

5. Silt fence should not be used in areas where rock or hard surfaces prevents the full and uniform depth anchoring of the barrier.

DESIGN CRITERIA

1. An effort should be made to locate silt fence at least 1.50 to 2.00m beyond the base of disturbed slopes with grades greater than 7%.
2. Properly supported silt fence which stands 0.60 metres above the existing grade tends to promote more effective sediment control (higher fences are vulnerable to excessive wind resistance or may impound volumes of water sufficient to cause failure of the structure).
3. A minimum 150mm of silt fence shall be embedded.
4. Maximum post spacing shall be 1.50m.

CONTROLLING MATERIAL SPECIFICATIONS

1. The material used for temporary silt fence shall be Hy-Tex Terrastop™ Premium, or similar approved, with CE Mark certification for EN13253: erosion control works and conforming to the following specification requirements:

Grab tensile strength (ASTM D4632): minimum 0.98kN warp, 0.95kN weft. Water permeability (NBN EN ISO 11958): minimum 0.015 m/s. Opening size (EN ISO 12956): maximum 250µm. Composition: 400kly UV stabilised woven polypropylene with split tape warp and fibrillated fibre weft yarns, burial depth and maximum silt accumulation marker lines, top tying-off and tensioning ribbon, tear resistant non-fraying edges and 0.75m fabric width.

2. The contractor shall provide to the engineer all certifications required by the controlling material specification.

3. Silt fence materials shall be subject to sampling and testing in accordance with, and to verify conformance with, the controlling material specification.

4. All posts shall be a minimum length of 1.20m, have sufficient strength to resist damage during installation and to support the applied loads due to material build up behind the silt fence.

[Note 1]: Generally, for wooden posts the cross section must be minimum 30 x 30mm for hardwood and 50 x 50mm for softwood, while steel posts (standard 'U', 'T' or 'L' section) must be a minimum weight of 2kg/m.

INSTALLATION

1. Silt fence sections should be continuous and transverse to the flow. The silt fence should follow the contours of the site as closely as possible. Place the fence such that the water cannot runoff around the end of the fence, extending ends upslope enough to allow water to pond behind the fence (See figure 2).

2. A trench shall be excavated approximately 100mm wide and 100mm deep on the upslope side of the proposed silt fence location.

3. Bury bottom 150mm of silt fence (To top of RED MARKER LINE on Terrastop™ Premium) in a 'U' configuration in the trench so that no flow can pass under the silt fence. Backfill the trench and compact the soil over the geotextile so that the compacted soil completely fills the trench.

4. Compaction prior to installing posts is generally recommended. Compact the backfill soil immediately next to the silt fence geotextile. Compact the upslope side first, and then the downslope side. The soil adjacent to the buried silt fence geotextile shall be compacted to achieve no less than 50% of its original in situ strength, unless otherwise specified.

[Note 2]: Poor compaction is one of the main causes of silt fence failure. Installed posts may interfere with compaction by large equipment adjacent to the silt fence. Compaction is commonly accomplished with the front wheel of a tractor, skid steer, roller or other device, as well as with manual tamping or other manual means, taking care not to damage the silt fence.

5. When joints are unavoidable, the fabric shall be spliced together only at a support post, with a min. 300mm overlap, and securely sealed so that there are

no gaps, voids, or other loss of integrity of the barrier, ideally by wrapping the overlap around the post.

6. Place the posts tight to the downslope side of the silt fence at 1.50m spacing. Drive posts a minimum of 500mm into the ground. Increase depth to 600mm if fence is placed on a slope of 3:1 or greater.

[Note 3]: Where 500mm depth is impossible to attain, posts should be adequately secured/braced to stop overturning of the fence due to sediment loading.

7. Fasten the filter fabric securely and taut to the upslope side of the posts using top ribbon (see figure 3), wire/cable ties threaded through the silt fence, or 30mm long extra wide head galvanised clout nails (The fabric shall not be stapled to existing trees). Where required, tighten top edge of fabric by looping top ribbon over posts, and strain/brace posts to maintain fence tension and stability (See figure 1).

[Note 4]: If a silt fence is to be constructed across a ditch line or swale, the fence length must be sufficient to eliminate endflow; the plan configuration shall resemble an arc or horseshoe with the ends oriented upslope, and post spacing a maximum of 1.00m.

MAINTENANCE

1. The contractor shall inspect all temporary silt fences immediately after each rainfall, and at least daily during prolonged rainfall. The contractor shall immediately correct any deficiencies.

2. The contractor shall also make a daily review of the location of silt fences in areas where construction activities have altered the natural contour and drainage runoff to ensure that the silt fences are properly located for effectiveness. Where deficiencies exist, as determined by the engineer, additional silt fence shall be installed as directed by the engineer.

3. Repair damaged or otherwise ineffective silt fences or replace promptly.

4. Either remove sediment deposits when the accumulation reaches one third the height of the exposed fence (Top of BROAD WHITE/BLACK MARKER BAND on Terrastop™ Premium), or install a second silt fence as directed by the engineer.

5. The silt fence shall remain in place until the engineer directs it be removed. Upon removal the contractor shall remove and dispose of any excess sediment accumulations, dress the area to give it a pleasing appearance, and revegetate all bare areas in accordance with contract requirements.

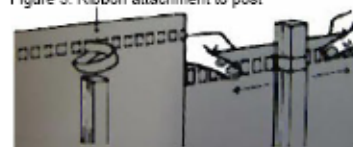
6. Removed silt fence may be used at other locations provided the geotextile and other material requirements continue to be met to the satisfaction of the engineer.

Figure 2: Silt Fence Placement

Alignments called 'U' or 'J' hooks ensure water & sediment pond behind each silt fence.

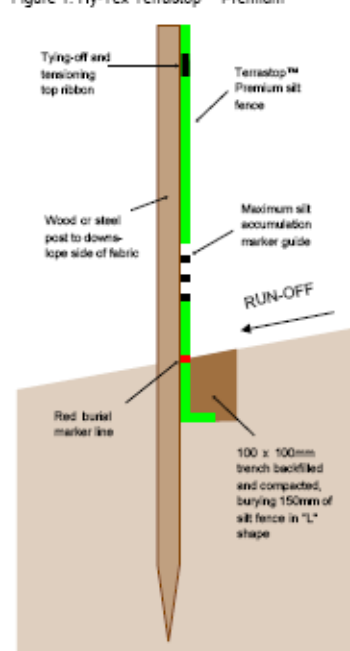


Figure 3: Ribbon attachment to post



Disclaimer: All information is provided in good faith, but without warranty. Nor does it form part of any contract, or intended contract, with the Buyer/User. Further conditions apply, details available on request.

Figure 1: Hy-Tex Terrastop™ Premium



©2015 Hy-Tex (UK) Ltd. T. TERRASTOP. All Terms and Conditions apply.

Aldington Mill, Mill Lane,
Aldington, ASHFORD, Kent TN25 7AJ
sales@hy-tex.co.uk www.hy-tex.co.uk



Tel: 01233 720097
Fax: 01233 720098



Hy-Tex (UK) Limited
Committed to Quality, Value & Service

When should I use Gully Guard™?

Infrastructure Planning

- Ideal for agricultural sites, food and drink processing and industrial plants
- Transport and utilities maintenance
- Supports health and safety requirements
- Quick to install and easy to maintain
- Reusable - reduces gully maintenance costs
- Prevents build-up of toxins and debris in the gully
- No restriction to water flow into water transport drainage systems
- Standard gully pot and bespoke sizes available



Food processing



Infrastructure maintenance



Agriculture management



Phosphate pollution - surge in algae over production

Construction

- Reduces labour and mechanical costs involved in emptying the gullies
- Protects gullies during site construction
- Prevents gullies from being blocked by silt and debris
- Visible silt and debris management system



Remedial Solutions

- Aids in containment of contaminated silt and suspended solids
- Assists in protecting the water course from pollutants found in run-off storm water. E.g. hydrocarbons, heavy metals
- Environmentally friendly

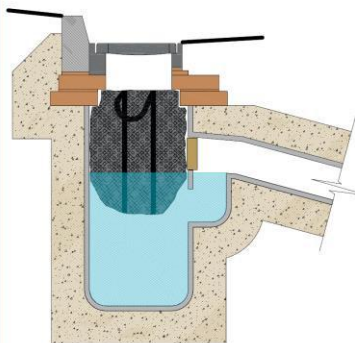
Gully Guard™ Installation Takes minutes!

Our customers reported no Gully pot clogging issues! And the cleaning process is simple - just hose down and reinstate!

1. Lever open gully grid. Gully Guard™ can fit a range of gully pot sizes.
2. Hold handles at top of the Gully Guard, work beads to top and insert base into gully pot.
3. Lower the Gully Guard into the pot. The beads will fall freely into the size void within the pot.
4. Tuck the holding handles to the side of the Gully Guard™.
5. Close and secure gully grid.

How much does Gully Guard™ filter out?

- 97.91% is trapped in the Gully Guard
- 1.92% is trapped in the Gully Pot base
- 0.17% passes through the Gully pot



- | | |
|---------------------------|----------------------|
| ■ Gully Grating and Frame | ■ Stopper |
| ■ Kerb Stone | ■ Water |
| ■ Brickwork | ■ Gully Guard |
| ■ Gully Wall | ■ Gully Guard Straps |
| ■ Concrete Surround | |



Speak to our friendly sales team to find out more:
Tel - 01531 828 960 | Email: info@forestgroupuk.co.uk

Settlement Tanks

High performance, rapidly deployable settlement tank (also known as a silt trap or a settlement unit) for hire and sale. Effective removal of suspended solids from construction wastewater using lamella clarifiers (inclined plates) providing a large settlement area within a small footprint.



Siltbuster FB50 Settlement Unit

The Siltbuster FB50 Settlement Unit is the flat-bottomed version of the popular Siltbuster HB50 Settlement Unit.



Siltbuster HB10 Settlement Unit

The Siltbuster HB10 Settlement Unit provides an effective settlement area of 10m². It is a transportable settlement trap providing effective separation of suspended particulates from water.



Siltbuster HB20 Settlement Unit

The Siltbuster HB20 Settlement Unit provides an effective settlement area of 20m². It is a transportable settlement trap providing effective separation of suspended particulates from water.



Siltbuster HB40 Settlement Unit

The Siltbuster HB40 Settlement Unit provides an effective settlement area of 40m². It is a transportable settlement trap providing effective separation of suspended particulates from water.



Siltbuster HB50E Settlement Unit

The Siltbuster HB50E has been designed for our export market. It provides an effective settlement area of 50 m² providing effective separation of suspended particulates from water.



Siltbuster HB50 Settlement Unit

The Siltbuster HB50 Settlement Unit provides an effective settlement area of 50 m². It is a transportable settlement trap providing effective separation of suspended particulates from water.



Siltbuster HB100R Settlement Unit

The HB100R unit is typically operated at flow rates of up to 100 m³/hr and comes complete with an integral rake drive which slowly rotates, keeping the settled solids (sludge) on the move.



Siltbuster HB200R Settlement Unit

The HB200R unit is typically operated at flow rates of up to 200 m³/hr and comes complete with an integral rake drive which slowly rotates, keeping the settled solids (sludge) on the move.



Siltbuster HB300R Settlement Unit

The HB300R unit is typically operated at flow rates of up to 300 m³/hr and comes complete with an integral rake drive which slowly rotates, keeping the settled solids (sludge) on the move.

Siltbuster are the UK's leading supplier of Settlement Tanks (commonly known as Silt Traps) with a hire fleet of mobile Lamella Clarifiers ready for rapid deployment onsite. These high performance settling tanks are designed to remove suspended solids from construction wastewater providing effective silt management/Total Suspended Solids (TSS) removal. Siltbuster mobile clarifiers are robust, skid-mounted, compact and lightweight making them simple to transport, install and operate. The small footprint enables units to be used in the tightest areas, including underground installations.

The Importance of Silt Management

Silt whilst technically referring to a specific grain size (see table on the right) is more often a broad term applied to fine particles of soil carried by water giving it that muddy or dirty discoloration. The most common source of silt pollution is the result of rainwater runoff from topsoil stripped areas of construction sites. When washed off into nearby watercourses, silt pollution is highly visible and easily traceable back to the site. It can travel a long way, causing significant environmental harm including suffocating fish by blocking gills and settling on river beds killing bottom dwelling organisms. There are legal limits for the concentration of suspended solids in discharged water and breaching these is a common reason for construction companies being taken to court and fined.

Grain Size	Sediment Type
< 2 μ m	Clay
2 μ m – 63 μ m	Silt
63 μ m – 2 mm	Sand
2 mm – 4 mm	Coarse Sand
4 mm – 6 cm	Pebbles
6 cm to 25 cm	Cobbles
>25cm	Boulders

Why is Particle Size Important?

Most typical soils have the same density (around 2.65 t/m³) however are made up of a variety of particle sizes hence settle at very different rates. Gravel and sand for instance settle at circa 1000m/hr (sink like a rock) yet clay (for which the particles have a very similar density) settle at circa 0.013m/hr. The settlement velocity is proportional to the size of the particle diameter squared. Therefore dependent on the geology of the material, different methods of treatment will be applicable.



How does a Lamella Clarifier work?

A lamella clarifier uses a gravity based solid/liquid separation over a series of inclined plates in parallel, providing a very large effective settling area for TSS removal. The diagram on the left shows the inlet flow through a feed channel to the base of the plates. The flow is then distributed with each flow diagonally upwards in parallel to the lamella plates. The particles settle on the plates and then accumulate at the bottom of the unit. The clarified liquid leaves over a weir.

Advantages of using a Lamella Clarifier

- Up to 20 times more efficient than conventional settlement tanks and lagoons resulting in much less space required onsite
- No energy required
- Can be used with chemical dosing to improve settling rates
- Rapidly deployable and easy to operate

Applications

Siltbuster have the UK's largest range of sizes and capabilities of lamella clarifier for both sale and rental suiting most applications. They are used on construction sites as part of the site water management, with typical applications being site runoff treatment; roads and pipelines; drilling and mining; de-silting and dredging; in-river and near-river works. For examples of recent projects see our [Case Studies](#) page.

Silt Mats



Proven in the field to reduce downstream levels of suspended solids

4 easy steps to using SiltMat

Use our reference table (overleaf) to judge optimal placement. As a rule of thumb, SiltMat is best placed in areas where stream energy is reduced and natural deposition takes place.

SiltMat is unfolded and orientated to cover the width of the channel. The edges of silt mat can be overlaid without gaps. Mats are staked in place or weighted with local material.

SiltMat will trap large amounts of sediment. Stakes or weights are removed and the mats rolled up ready for disposal.

With correct permission SiltMat can be seeded and left on site, creating an environmental enhancement and avoiding disposal costs.

SiltMat is a fully biodegradable mat that captures and prevents sediment resuspension.

The mats can be placed in natural or artificial channels, ditches or directly on land to trap suspended sediments.

SiltMat can be orientated sideways or lengthways and fits into all channel types.

SiltMats are mainly used to manage sediment release to watercourses from construction sites.

Applications

1. Drainage from construction sites
2. River restoration and maintenance operations
3. Used in artificial dispersion fields
4. Forestry and agricultural operations
5. Runoff attenuation features
6. Can be used as a planned or reactive sediment control measure