

# Keepmoat Homes Specification

## BUILDING REGULATIONS - ENGLAND

|               |              |           |   |      |          |
|---------------|--------------|-----------|---|------|----------|
| DOCUMENT REF: | DEV_SPEC_101 | REVISION: | K | DATE | 31.03.23 |
|---------------|--------------|-----------|---|------|----------|



This document to be read with, and issued with, the following documents:

| Document Title:                       | Document Ref:     |
|---------------------------------------|-------------------|
| Project Drawings and SAP Calculations | Varies by project |

The latest revision of the above (at the time of issue of this document) is to be used.

### Notes

- \* Please refer to the site-specific working drawings and details which may supersede elements of this specification.

# CONTENTS

| Section   | Contents                      | Page      |
|-----------|-------------------------------|-----------|
|           | Contents                      | 2         |
|           | Revision History              | 3         |
|           |                               |           |
| <b>1</b>  | Fabric U-Value Summary        | <b>5</b>  |
| <b>2</b>  | Substructure & DPC            | <b>6</b>  |
| <b>3</b>  | Ground Floors                 | <b>7</b>  |
| <b>4</b>  | Wall Above DPC (Traditional)  | <b>8</b>  |
| <b>5</b>  | Wall Above DPC (Timber Frame) | <b>12</b> |
| <b>6</b>  | Intermediate Floors           | <b>13</b> |
| <b>7</b>  | Roof Construction             | <b>15</b> |
| <b>8</b>  | Windows and Doors             | <b>18</b> |
| <b>9</b>  | Stairs                        | <b>20</b> |
| <b>10</b> | Statutory Services            | <b>21</b> |
| <b>11</b> | Plumbing and Heating          | <b>22</b> |
| <b>12</b> | Electrical Installations      | <b>25</b> |
| <b>13</b> | Access                        | <b>28</b> |
|           |                               |           |
|           |                               |           |
|           |                               |           |

# REVISION HISTORY

| Revision | Comments   | Date      |
|----------|--|-----------|
| K        | Section 1.1 – Changed to suit revised specification for Part L + Part S 2021. Timber frame & apartments sections removed, note added | 31.03.23  |
|          | Section 1.4 – APR rates updated and all plots to be tested   |           |
|          | Section 2.1 - updated  |           |
|          | Section 3.1 – ground bearing slab removed, beam and block spec updated. Apartment section removed                                    |           |
|          | Section 4.0 – updated to reflect revised specification for Part L 2021. Min block strength increased.                                |           |
|          | Section 4.1 – updated to reflect revised specification for Part L 2021. Min block strength increased.                                |           |
|          | Section 4.2 – Omitted  |           |
|          | Section 4.3 – Omitted  |           |
|          | Section 4.6 – updated to reflect use of proprietary product  |           |
|          | Section 4.10 – updated   |           |
|          | Section 4.11 – stud centres updated for ceramic tiling   |           |
|          | Section 4.13 – Clay note added   |           |
|          | Section 4.13 – reworded and reference to apartment removed   |           |
|          | Section 5.0 – All sections omitted   |           |
|          | Section 6.0 – Semi exposed floor insulation changed, apartment floors removed  |           |
|          | Section 6.1 – omitted  |           |
|          | Section 6.2 – reference to timber frame omitted  |           |
|          | Section 7.4 – updated to reflect trade specification   |           |
|          | Section 7.6 + 7.7 – reference to apartments and 2.5s types removed.  |           |
|          | Section 7.9 – non-cassette roof element removed and section updated  |           |
|          | Section 8.1 – Rewritten for Part L, Part F 2021 and Part O 2021  |           |
|          | Section 8.2 – Letter plate fixing height added   |           |
|          | Section 8.3-8.5 – Omitted  |           |
|          | Section 9.1 - Omitted  |           |
|          | Section 9.2 – reference to apartments removed  |           |
|          | Section 10.2 – Omitted   |           |
|          | Section 10.4 – Omitted   |           |
|          | Section 11.0 – Updated for Part L 2021   |           |
|          | Section 11.2 – reference to apartments removed, framing increased to 63x38   |           |
|          | Section 11.6 – water calculator reference removed  |           |
|          | Section 11.7 – updated re: insulation  | Continued |

# REVISION HISTORY (cont'd)

| Revision                 | Comments  | Date            |
|--------------------------|---|-----------------|
| <b>K (cont'd)</b>        | Section 11.8 – reference to apartments removed, sizing omitted.                           |                 |
|                          | Section 12.0 – updated to LD2 system and to remove reference to apartments                |                 |
|                          | Section 12.1 – updated as per Part L 2021   |                 |
|                          | Section 12.2 – updated as per Part L 2021   |                 |
|                          | Section 12.4 – updated to show continuous running fans                                    |                 |
|                          | Section 12.5. – omitted   |                 |
|                          | Section 12.6 – new clause added re: PV  |                 |
|                          | Section 12.7 – new clause added re: EV  |                 |
|                          | Section 13.2 - Omitted  |                 |
|                          | Section 13.4 updated – M4(3) flush control, basin height and pedestal requirements added. |                 |
|                          | Section 13.5 - Omitted  |                 |
|                          |   |                 |
| <b>J</b>                 | 6.3 added regarding fire stopping to 2.5 / 3 storey properties.                           | <b>05.04.19</b> |
|                          | 7.9 updated regarding VCL to RiR types.7.10 updated to add 10mm soffit vent               |                 |
|                          | Section 13 revised and updated adding the additional M4(2)+M4(3) requirements.            |                 |
|                          |   |                 |
| <b>H</b>                 | Sections 4.6 + 5.4 updated with references to fire stopping between tiling battens        | <b>31.10.18</b> |
|                          | Section 5.11 updated with reference to minimum distances for expansion joint spacing's    |                 |
|                          | Section 7.3 - Reference to Robust Details added.  |                 |
|                          | Section 11.2 - Soil Access Saddle added to 2.5/3 storey properties for rodding.           |                 |
|                          |   |                 |
| <b>Earlier Revisions</b> | Refer to previous issues of document for further revision history                         |                 |
|                          |   |                 |
|                          |   |                 |
|                          |   |                 |
|                          |   |                 |
|                          |   |                 |

# 1. FABRIC U-VALUE SUMMARY

1.0. The fabric specifications described in this document are to achieve the following elemental U-Values

| 1.1. | Element U - Values                          | Traditional   |
|------|---|---|
|      | Ground Floor                                | 0.17 W/m <sup>2</sup> k   |
|      | External Wall ( $\lambda$ 0.034 insulation) | 0.19 W/m <sup>2</sup> K   |
|      | Dormer Cheek                                | 0.26 W/m <sup>2</sup> K   |
|      | Semi Exposed Wall                           | 0.19 W/m <sup>2</sup> K   |
|      | Party Wall                                  | 0.00 W/m <sup>2</sup> K   |
|      | Roof – Insulated at ceiling level           | 0.10 W/m <sup>2</sup> K   |
|      | Roof – Insulated between / under rafters    | 0.15 W/m <sup>2</sup> K   |
|      | Roof – Dormers                              | 0.16 W/m <sup>2</sup> K   |
|      | Semi Exposed Floor                          | 0.15 W/m <sup>2</sup> K   |
|      | Entrance Door                               | 1.1 Wm <sup>2</sup> K   |
|      | French Doors                                | 1.4 W/m <sup>2</sup> K – BFRC 0.44  |
|      | Windows                                     | 1.3 W/m <sup>2</sup> K – BFRC 0.44  |
|      | Loft Hatch                                  | 0.35 W/m <sup>2</sup> K   |
|      | PV  | Required, size of array varies by plot / house type. Refer to SAP assessment. See section 12            |
|      | EV charge point                             | Required where a parking space is provided. 1 EV point to be provided per dwelling. 7Kw. See section 12 |

The above specification is to be used for all construction methods (i.e., traditional or timber frame) and for dwelling and apartments

1.2. Site Specific SAP calculations to be produced and submitted to the Building Control Body for each housetype.

1.3. Calculated psi values to be used for the purposes of SAP assessments.

1.4. **AIR PRESSURE TESTING:**

- Air Pressure testing to be carried out in accordance with an approved airtightness testing methodology i.e., CIBSE TM23.
- Results to be given to the building control body, no later than seven days after the final test is carried out.
- Keepmoat Homes SAP Calculations for houses are based on an Design **Air Permeability of 4.5m<sup>3</sup>/(h.m<sup>2</sup>)** and calculated in accordance with SAP 10 software
- All plots are to be pressure tested.
- The results of all pressure tests on dwellings, including any test failures, should be reported to the building control body

## 2 SUBSTRUCTURE & DPC

- 2.0. **FOUNDATIONS:**
- All foundations are to be of a Site-specific design to suit individual site conditions as produced and approved by the Site Engineering Consultant. Foundations are to be taken down to a level below the invert of any adjacent drainage.
  - Foundations to suit site conditions to the satisfaction of the Local Authority & NHBC.
  - Foundations to comply to Section A1/A2 Stability Section E of AD with a min cover in accordance with BS EN 1997-1:2004 and BS EN 1992-1-1:2004.
  - FOR ALTERNATIVE FOUNDATIONS TO DETAILS, SEE CONSULTANT ENGINEERS DRAWINGS AND DETAILS.
- 2.1. **WALLS BELOW DPC:**
- 'Approved' foundation grade blockwork/ facing brickwork below ground level.
  - Lean mix cavity fills up to 225mm minimum below DPC.
  - Engineering brick to be used where facings will be visible and to extend min 1Nr course below finished ground level
  - Provide a minimum clear cavity of minimum 225mm from DPC to top of cavity fill.
  - In relation to party walls a clear 225mm is required to underside of slab and trench blocks.
- 2.2. **DPC:**
- Horizontal DPC to BS 743:1970 & BS 8215:1991 to all walls positioned 150mm minimum above finished ground level.
  - Secondary horizontal DPC required in areas of level access, or where external level & matches slab level.
  - Cavity trays, weepholes and flashings provided at all abutments
    - Preformed cavity trays to be used at stepped abutments.

## 3 GROUND FLOORS

3.0. Ground floor construction to be determined by Ground Report and be in accordance with relevant standard details.

3.1. Unless otherwise noted on project details, typical build ups (assuming no gas requirements) are as follows:-

**BEAM AND BLOCK:**

- 75mm mesh reinforced topping (RC35 concrete with A142 6mm mesh) with 25mm thick rigid perimeter insulation @  $\lambda$  0.023W/m·K on 500g DPM separating layer.
- 150mm thick rigid insulation @  $\lambda$  0.036W/m·K – or equivalent to achieve required U-Value
- Insulation to be located over 1200g DPM.
- Precast concrete beams (as beam suppliers design) with block infill ( $\lambda$  0.031W/m·K).
- Min 150mm ventilated void.
- Ground below beams to be free draining.

3.2. **INTEGRAL GARAGE FLOOR:**

Garage floor to be set at the **same level as the finished floor level** of dwelling, unless specified otherwise on the working drawings.

- 100mm concrete slab (laid with 300 x 300mm toe formed at threshold).
- 1200g visqueen DPM on 50mm sand blinding on 100mm clean dry hardcore or other suitable fill.
- Floor slab laid to fall 25mm from rear to front with a further 25mm across threshold and 25mm upstand formed at toe.
- Any internal doors between garage and dwelling to have an internal step over of min 100mm.

# 4 WALLS ABOVE DPC (TRADITIONAL)

- 4.0. **MASONRY EXTERNAL WALLS - HOUSES:**
- Outerleaf:** 102.5mm “Approved” facing brick or stone facings.
- Cavity:** 150mm minimum width - fully filled with insulation.
- Insulation:** Insulation to have a  $\lambda$  of **0.034 W/m-K** or better. Cavity insulation to be taken down to top of weak mix cavity fills. Where extra external facings are required, insulation to be taken to a minimum of 225mm below DPC level.
- Innerleaf:** 100mm lightweight blockwork with a max  $\lambda$  of **0.31W/m-K** and minimum compressive strength of  $3.6/\text{mm}^2$  (min  $7\text{N}/\text{mm}^2$  to ground and substructure walls where dwelling is more the 2 storeys, or as noted otherwise on drawings).
- Finish:** 12.5mm plasterboard on dabs. Provide continuous ribbons of adhesive to fix dry lining at perimeters of external walls. Bathrooms and En-Suites to have moisture resistant plasterboard installed throughout (excluding ceilings).
- Cavity Ties:** Stainless steel cavity ties at 900mm horizontally and every 450mm vertically set in diamond pattern to give 5 no. ties per  $\text{m}^2$ . Additional ties require around cassette roof gable spandrel and at every 225mm vertically either side of openings (i.e. every block course within 150mm of jamb).
- Cavity Closers:** Insulated cavity closers to door and window openings to achieve minimum of  **$0.45\text{m}^2\text{K}/\text{W}$** .
- Psi Values:** Calculated values to be used.
- Lintels:** Thermally broken lintels to BS EN 10143:2006 & BS EN 845-2:2003 over all openings in external walls in accordance with manufacturer’s details. Lintels to be factory insulated and to provide a maximum **Psi ( $\Psi$ ) value of  $0.043 \text{ W}/\text{m.K}$** . All lintels to have minimum end bearings as specified by manufacturer
- Cavity Trays:** Cavity trays to be provided above penetrations in external walls (including over lintels) and be provided with stop ends installed to manufacturers details. Weepholes provided to all cavity trays at 450mm centres (min 2nr to be provided per opening).
- 4.1. **MASONRY PARTY WALL CONSTRUCTION - HOUSES**
- Robust Detail:** E-WM-22.
- Blockwork:** 2no. Leaves of 100mm –  **$1350 - 1600\text{kg}/\text{m}^3$  blockwork** minimum compressive strength of  $3.6/\text{mm}^2$  (min  $7\text{N}/\text{mm}^2$  to ground and substructure walls where dwelling is more the 2 storeys, or as noted otherwise on drawings).
- Cavity:** 150mm minimum width - fully filled with insulation.
- Insulation:** Superglass Party Wall Roll. To extend to top of loft insulation.
- Ties:** ‘Type A’ at 900mm horizontally and every 450mm vertically as standard as described in BS 1243:1978.
- Finish:** 12.5mm plasterboard (**nominal  $9.8\text{kg}/\text{m}^2$** ) mounted on dabs to dwelling face on both sides of wall. Bathrooms /Ensuite to have moisture resistant plasterboard (excluding ceilings).
- 4.2. Omitted

## 4 WALLS ABOVE DPC (TRADITIONAL)

4.3. Omitted

4.4. **PARTY WALL TO ROOF SPACE:**

- Where no room in roof is present, party wall to roof space to be formed with spandrel panel (see section 7).

4.5. **PARTY WALL SOUND TESTING**

- All dwellings to be registered with Robust Detail Ltd.
- Where the party wall construction does not conform to a Robust Detail then sound testing should be carried out in accordance with AD E and results submitted to the building control body prior to completion.

4.6. **PARTY WALL FIRESTOPPING:**

- Party wall to be taken to within 25mm of underside of roof and firestopped with sleeved cavity barrier/flexible closer across full width of party wall.
- A proprietary cavity barrier of wire reinforced mineral wool to be carefully cut to fully seal boxed eaves at party wall line.
- 25mm of Mineral wool (min 300mm wide) to fitted between battens and held in place by tile..

4.7. **PARTY WALL THERMAL BYPASS:**

- To eliminate thermal bypass a sleeved, flexible, mineral wool vertical cavity barrier (or similar) under 15mm minimum compression should be provided at both ends of the party wall extending full height with a 50mm min. overlap with the party wall block leaf either side.
- Party wall to achieve a u-value of 0.00 W/m<sup>2</sup>K.

4.8. **PARTY WALL STEPS AND STAGGERS**

- Where staggers occur in plan (i.e., where an adjoined plot projects beyond the front / rear of the property) ensure that the party wall blockwork continues for 300mm (min) beyond the stagger point (defined as the external corner) before reverting to inner leaf blockwork.

4.9. **LOAD BEARING MASONRY WALLS**

- 100mm blockwork finished both sides with 12.5mm plasterboard on dabs.
- Wall either taken down to a foundation or supported on floor slab dependant on the house type and relevant working drawing.
- Internal masonry walls abutting separating walls to be tied to wall using appropriate wall ties in accordance with manufactures recommendations and to ensure the acoustic performance is maintained. PC or steel lintels over openings.

## 4 WALLS ABOVE DPC (TRADITIONAL)

### 4.10. INTEGRAL GARAGE SEPERATING WALLS

- 140mm aircrete blockwork ( $\lambda$  of **0.019W/m·K**) finished with insulated plasterboard and skim finish to one side
- Where the working drawing deviates from the above, the working drawing should always take priority.
- Wall taken down to a foundation.

### 4.11. INTERNAL TIMBER STUD WALLS - NON LOADBEARING

- All internal timber walls to consist of 12.5mm plasterboard either side of 63x38mm treated timber studs @ max. 600mm ctrs with noggin at midpoint.
- Where timber wall is to receive ceramic tiling, studs centres reduced to 400mm
- Where acoustic partition is required (refer to house type working drawing) use 12.5mm plasterboard (**min. mass per unit area 10.6 kg/m<sup>2</sup>**) either side of 63x38mm treated timber studs @ max. 600 ctrs. with min. 25mm acoustic roll (**min. density 10 kg/m<sup>2</sup>**) between studs to achieve **40 dB Rw**. (i.e. British Gypsum system A026009 or similar that has been tested as part of a system to prove sound reduction)
- All plasterboard joints to be staggered and sealed.
- Use Moisture Resistant Plasterboard to wet side of bathrooms / ensuites.

### 4.12. INTERNAL TIMBER STUD WALLS - LOADBEARING

- To be in accordance with engineers details, refer to working drawings and standard details.

### 4.13. EXPANSION JOINTS AND BEDJOINT REINFORCEMENT:

Notes below are for clay brickwork only, where concrete brick is used refer to brick supplier and engineer for site:

- Vertical expansion joints to be provided at every 12m in brickwork and at min. every 6m in blockwork. Expansion joints to be in strict accordance with facework / block suppliers requirements.
- Expansion joints are to consist of sleeved (on one side only) flat bar ties at 450mm vertical ctrs. with 15mm compressible filler and coloured elastomeric sealant.
- Joint to run the full height of the superstructure masonry wall.
- Continue from any movement joints provided in the substructure to the superstructure (movement joints may be needed in the superstructure and not in the substructure, providing suitable allowance is made for relative movement).
- Where bricktor is used to increase the centres between vertical expansion joints the spacing and type of reinforcement should be as the engineers requirements

### 4.14. RENDER:

- It is strongly recommended that advice is sought from the render manufacturer as tolerances may vary dependent on the specific product.

## 4 WALLS ABOVE DPC (TRADITIONAL)

- Bed joint reinforcement is required in the first two courses of the external masonry leaf above and below any opening – to project 600mm beyond the opening. Mesh reinforce render around openings

4.15.

### STEEL BEAMS:

- For size position and fixing instructions SEE CONSULTANT ENGINEERS DRAWINGS.
- All RSJ/U Beams to be wire brushed, hand chipped and receives 2 no. coats of zinc rich oxide paint prior to fixing.
- Provide 2 no layers of 12.5mm plasterboard to give ½ hour fire resistance where exposed.
- Steelwork fabricator and erector to have necessary certification for Execution Class EXC2. On completion of the work, the steelwork contractor must provide a Declaration of Performance (DoP) and the CE marking for the fabricated steelwork.

## 5 WALLS ABOVE DPC (TIMBER FRAME)

---

|       |         |
|-------|---------|
| 5.0.  | Omitted |
| 5.1.  | Omitted |
| 5.2.  | Omitted |
| 5.3.  | Omitted |
| 5.4.  | Omitted |
| 5.5.  | Omitted |
| 5.6.  | Omitted |
| 5.7.  | Omitted |
| 5.8.  | Omitted |
| 5.9.  | Omitted |
| 5.10. | Omitted |
| 5.11. | Omitted |
| 5.12. | Omitted |
| 5.13. | Omitted |

# 6 INTERMEDIATE FLOORS

## 6.0. INTERMEDIATE FLOORS (MASONRY EXTERNAL WALLS ONLY) : HOUSES

- Floor system to be installed to manufacturer's details and recommendations.
- 300mm dp engineered joists at max 600mm centres.
- 22mm T&G C4 decking.
- Joists to be built into external / party walls with ply filler pieces fitted between the top and bottom flanges. These filler pieces must not damage the joist flanges, their depth should be slightly less than the dimension between the joist flanges to achieve a loose fit.
- The mortar joints around each joist perimeter are to be recessed or struck and the joint between the masonry and the timber are to be carefully pointed with silicone sealant.
- Ceilings to be underdrawn with 1 no. layer of 15mm plasterboard to provide half hour fire resistance and a min. 40Rw dB acoustic performance.

### LATERAL RESTRAINT AT FLOOR LEVEL:

- In party walls, where joists are built in or parallel to the party wall, and at the same level, or within 300mm (vertically) on each side of the wall, then no straps are required up to and including 3 storeys.
- Where floor levels are more than 300mm apart (vertically) on either side of the party wall, then the wall should be treated as a gable wall (see below).
- Where there is a stagger in plan between two dwellings greater than 1.25m, then the staggered section should be treated as a gable wall (see below).
- In gable walls, where joists are parallel to the separating and gable wall, then straps are required at each floor level up to and including 3 storeys, at maximum 2m centres.
- Where joists are built into the separating and gable walls with a minimum 90mm bearing then straps are only required to 3 storey properties to all floors at maximum 2m centres.
- Where joists are not hard up to the party wall, blocking should be used at not more than 2m cts. These should be in the same location on either side of the wall.

### RESTRAINT STRAPS (WHERE REQUIRED ABOVE):

- Unless otherwise specified by manufacturer, all ties should be 30 x 5mm galvanized mild steel straps turned down 100mm against inner leaf.
- Noggings should be fixed between joists (where applicable), and straps should be fixed with 2 screws or nails into each joist, or with at least 4 screws or nails, one of which is required to be fixed into the third joist or in a noggin beyond the third joist.

## 6 INTERMEDIATE FLOORS

### SEMI EXPOSED FLOORS ABOVE GARAGE/CAR PORTS AND BIN STORES ETC:

- 300mm mineral wool (**min  $\lambda$  of 0.044 W/m·K**) between joists.
- Ceilings to be underdrawn with 1 no. layer of 15mm plasterboard, and (where exposed to elements) 6mm Masterboard to provide half hour fire resistance and a min. 40Rw dB acoustic performance.

### FOG UNIT (MASONRY EXTERNAL WALLS ONLY) SEPARATING FLOOR (TO ROBUST DETAIL E-FC-1)

- 18mm moisture resistant T+G flooring board on 30mm mineral wool batt (**16kg/m<sup>2</sup>**)
- 40mm screed – cement sand or proprietary screed (**80kg/m<sup>2</sup>**).
- 150mm (min) precast concrete floor plank (**300kg/m<sup>2</sup>**).
- Ceiling treatment to be Robust Detail CT2 comprising 50x50mm battens and counter battens providing a minimum 100mm ceiling void. Underdrawn with one nominal 8kg/m<sup>2</sup> gypsum-based board.
- 20mm insulation board fitted between upper battens and 50mm insulation board fitted between lower battens to achieve a u-value of **0.23W/m<sup>2</sup>K or better**.

### LATERAL RESTRAINT AT FLOOR LEVEL:

- Walls should be strapped to floors above ground level at intervals not exceeding 1.25m by tension straps conforming to BS EN 845-1. All horizontal ties and anchorage of suspended floors to walls to be in accord with BS 5628-1:2005.
- Also refer to manufacturers specialist design for strapping of floors

6.1. Omitted

### 6.2. SERVICES WITHIN FLOOR VOIDS (MASONRY EXTERNAL WALLS)

- Any services passing along floor are to pass through web and to comply with spacings and sizings as dictated on joist supplier's information.
- In no circumstance should the top flange of joist not be notched. Any deviance from guidance to be prior approved in writing by joist supplier.
- Any service pipes passing vertically through floors are to be wrapped in min 25mm mineral wool (min 10kg/m<sup>2</sup>) and boxed in below ceiling level and above floor level with 2 layers of plaster based board with a combined nominal density of 16kg/m<sup>2</sup>.

### 6.3. FIRE STOPPING TO PENETRATIONS

- In 2.5 / 3 storey dwellings, services passing through the ceiling plaster line (i.e., extract fan) are to be provided with a proprietary fire collar to maintain 30min fire resistance to the ceiling.
- Applies to kitchens in all instances.
- Includes WC's, bathrooms and en-suite's when accessed via an habitable room i.e. access is not direct from a protected corridor.

# 7 ROOF CONSTRUCTION

## 7.0. ROOF TRUSSES:

- To BS 5268-3:1998 and designed by specialist manufacturer fixed to wallplate with truss clips.
- Provide 100 x 25 s.w. diagonal and longitudinal bracings and install in accordance with BS 5268-3:1998 and truss manufacturers details.
- 100 x 50 s.w. wallplates anchored to walls with proprietary wallplate straps at 2000mm maximum centres in situations where trussed rafters are subjected to wind uplift.

## 7.1. ROOF TILES:

- 'Approved' interlocking concrete roof tiles fixed as BS 5534 and BS 8000-6 and fixed as fixing specification (bespoke fixing specification per project) to accommodate exposure rating and to include:
- All single-lap tiles mechanically fixed.
- Perimeter roof cladding elements including verges fixed with a minimum of two fixings (subject to meeting the wind loading recommendations), one of which can be a tile clip, adhesive or dry verge capping system where appropriate.
- To avoid the use of small pieces of cut tiles, which are difficult to fix, double tiles, tile and a half or half tiles should be used, subject to availability from the manufacturer.
- Where small tile cuts of less than half-width are found, such as on a valley or hip, they should be bonded or mechanically fixed to the adjoining full width tile.

## 7.2. BATTENS:

- Tiles to be fixed to timber battens in accordance with the following:-
- Battens cannot be less than 25mm deep with a tolerance limit for the depth of a batten, which is +3mm/-0mm.
- All battens must be stamped with information identifying the origin, size, supplier and conformance to BS 5534.
- Accompanying paperwork must also include the type of preservative and method of treatment of the tile battens.
- Battens should be purchased from a reputable manufacturer (preferably with a UKAS-accredited third-party assessment). Graded battens should also go through a series of checks to ensure the knot configurations and amount of wane meet the requirements of the standard.
- Nails should offer a minimum penetration of 15mm into battens.

## 7.3. SPANDREL PANELS:

- Where no room in the roof is present, and where block plotting allows, spandrel panels to be used at party walls.
- Spandrel panels to be designed and detail to meet the requirements of the Robust Details for sound, the Building Regulations Part B for fire and NHBC Standards.

# 7 ROOF CONSTRUCTION

## 7.4. ROOF UNDERLAY / MEMBRANE:

Vapour permeable breathable roof membrane roof underlay to be in accordance with the following:-

- Should provide a continuous under-roof barrier and be installed independently over both faces of roof and secured in place so as to leave gap at ridge (as standard detail).
- Roof membrane to lap over proprietary underlay support tray / eaves guard by min 100mm (or as per manufactures recommendations) – support tray to terminate in gutter in lieu of type 5U underlay.
- All penetrations should be suitably sealed to prevent water ingress, in accordance with BS 8000-6.
- Laps should be covered by a batten and, where necessary, should be adjusted to coincide with the nearest slating or tiling batten. Laps may also be sealed using proprietary means in accordance with the manufacturer’s instructions. Where a proprietary sealant is used, its durability should meet the same recommendations as the underlay.
- A nominal 10mm drape should be provided between supports to allow a drainage path for moisture and to prevent excessive deflection under wind load (see BS 5534 Annex A).
- For additional security against water leakage through nail holes ensure the use of a suitable batten tape or sealant.
- Underlay to be suitable for use in accordance the underlay classification system referred to in BS 5534.

## 7.5. LATERAL RESTRAINT AT RAFTER AND CEILING LEVEL

- In party walls, where rafters and ceiling joists are level, or within 300mm (vertically) on either side of the wall, timber longitudinal braces (at maximum 2m centres up to and including 3 storeys) tightly abutting each side of the separating wall (braces should be in line, or nearly in line either side of the wall and fixed into at least 3 rafters and ceiling joists), will provide sufficient lateral restraint both at ceiling and rafter level.
- Alternatively, restraint straps at ceiling and rafter level can be provided to one side of the separating wall only (at maximum 2m centres).
- Where the difference in rafter levels is greater than 300mm (vertically) on either side of the wall, restraint straps should be provided to one side of the separating wall only (at maximum 2m centres) at the higher rafter and ceiling level.
- Where there is a stagger (in plan) between 2 dwellings, then the restraint requirement at rafter level, should be treated as a gable wall scenario (see below).

In gable walls, at rafter level, restraint straps of at least 1m in length should be provided at maximum 2m centres (upto and including 3 storeys).

- In gable walls, at ceiling level, tension straps at not more than 2m ctrs. will be required to provide lateral support to the wall. Where the rafter/joist is not hard up against the wall Joist blockings to be used. Noggings to be used between rafters/joists for the braces to be fixed onto. Braces to extend onto at least 3 rafters/joists.

# 7 ROOF CONSTRUCTION

## 7.6. LOFT HATCH:

- Loft access to be fully draught stripped & insulated (U-Value as Section 1).
- Loft hatch to be fire rated where located outside of protected corridor on 3 storey types.
- NOTE: loft hatch must NOT be above the stairwell.

## 7.7. CEILINGS:

- Provide 15mm plasterboard to underside of trusses.

## 7.8. COLD ROOF INSULATION (INSULATION AT CEILING LEVEL):

- Fibreglass insulation with a  $\lambda$  of **0.044 W/m·K** or better.
- 100mm of insulation to be laid between bottom chord of trusses.
- 350mm insulation cross layered over to prevent cold bridging through chords.

## 7.9. WARM ROOF INSULATION (INSULATION AT RAFTER LEVEL):

- Room in the roof types to be formed using fully insulated cassette roof systems.
- To be as suppliers details, however generally:
  - Min 200mm mineral wool insulation (**min  $\lambda$  of 0.040W/m·K**) and min. **density 30kg/m<sup>3</sup>** between cassette.
  - OSB & Vapour control layer to underside.
  - 1x layer of fireline board then Insulated plaster board below (**min.  $\lambda$  0.022 W/m·K**).

## 7.10. VENTILATION:

- In all situations, roof to be ventilated at eaves level via vented soffit board to **provide 10mm (cold roof) or 25mm (room in the roof) continuous ventilation**.
- Additional **5mm continuous ventilation** is provided at ridge level via a dry fixed ridge system which incorporates a ventilated ridge roll.
- Semi-rigid rafter ventilation roll to be fixed along trusses for the full length of the eaves to act as a spacer between top of the insulation and the underside of membrane - to maintain a min 25mm air gap (50mm when roof in the roof). Ensure that Semi-rigid rafter ventilation roll is sized in accordance with the table below and extends beyond the top and bottom of the insulation (i.e. roll should be clearly visible).

| Roof Pitch | Minimum length of semi-rigid rafter ventilation (based on 450mm insulation) |
|------------|---|
| 30°        | 1050 mm   |
| 35°        | 950 mm  |
| 40°        | 900 mm  |
| 45°        | 750 mm  |
| 50°        | 750 mm  |

# 8 WINDOWS AND DOORS

## 8.0. FRAMES:

- UPVC window and door frames to BS 7412:2007, with 150mm wide D.P.C (to BS 743:1970 & BS 8215:1991) tacked to frame prior to fixing.
- Frames should be mechanically fixed to the structure of the building in accordance with the manufactures instructions.
- Provide continuous ribbons of adhesive to fix dry lining at perimeters of openings.

## 8.1. WINDOWS / FRENCH DOORS:

- All windows to habitable rooms to have opening lights equal to 1/20th min room floor area.
- Ground floor, basement and other easily accessible windows (include easily accessible roof lights) are to be secure windows that are made to a design to satisfy the requirements of **PAS24:2012**.
- All glazing, including safety glazing requirements to be in accordance with part “K” of the building regulations and comply with BS EN 12600:2002
  - Where the windows is not required to be open for Part O - Min 800mm to opening part of window.
  - Where the window is to be open for Part O, then Min 1100mm (+0/-100mm) to opening part of window
- Provide toughened safety glazing to all entrance doors and internal doors including any side light frames.
- Any glazing in windows to upper storeys which are less than 800mm above finished floor level will need to be designed for containment in accordance with BS EN1991-1-1-1, PD 6688-1-1 and BS 6180.
- All glazing to external doors and windows to be sealed double glazed units installed in accordance with manufacturers specification & should comply with the requirements of BS EN 1279.
- Whole window G factor to be 0.44 or better
  - Glass G value to be 0.73 or lower.
- Decentralised Continuous mechanical ventilation system to be used, however background ventilators required as follows:
  - Background ventilation to be provided by trickle vents located in the window (in the opening sash) to provide not less than 5000mm<sup>2</sup> ventilation in each instance
  - Number of ventilators required in a dwelling will vary by number of bedrooms
    - Minimum total number of ventilators = number of bedrooms + 2
  - Ventilators only to be fitted to habitable rooms
    - Not to be fitted in Kitchen, Utility, Bathrooms and ensuites
- All windows above ground floor to have easy clean hinges and to be fitted with window opening restrictors.
  - Window restrictor to limit opening to max 100mm before manual override is required,
  - Escape windows to be fitted with an approved window opening restrictor to the satisfaction of Building Control

## 8 WINDOWS AND DOORS

- Escape windows to have an unobstructed area of at least 0.33m<sup>2</sup> and a minimum opening dimension of 450mm.
  - The bottom of the opening should be no more than 1100mm from the finished floor level
- Where M4(2) applies - all handles to windows to be set at 450mm – 1400mm (1200 to living room) AFL.

### 8.2. ENTRANCE DOORS: HOUSES

- GRP Entrance Doors with insulated foam core with an Ozone Depletion Potential of zero and a Global Warming Potential Classification less than five.
- All easily accessible doorsets (including garages that have an interconnected route into the dwelling and communal entrances) are to meet the security requirements of **PAS 24:2012**.
- Letter plates to have a maximum aperture of 260mm x 40mm and to be located or designed to hinder access or incorporate a cowl to hinder access to internal keys, thumbturn and handle. Letter plate to be fixed between 700 – 140mm AFL
- The main entrance door to have a door viewer and door chain

8.3. Omitted

8.4. Omitted

8.5. Omitted

# 9 STAIRS

---

## 9.0. STAIRS: HOUSES

- Pre-Fabricated standard timber staircase with closed flights designed in accordance with BS 585-1:1989 & BS 585-2:1985.
- Rise to be 203.8mm each totalling 2649mm (unless shown otherwise on the house type working drawing).
- Going to be 227mm regular treads with 50mm min to tapered treads unless design shows otherwise.
- Maximum pitch to be 42 degrees.

9.1. Omitted

## 9.2. GUARDING:

- Provide 900mm high hand rail on balustrade to stairs and 900mm high balustrade to landings.
- All balusters to be vertical, securely fixed and to be constructed to give 99mm max. gap between balusters in open balustrade

# 10 STATUTORY SERVICES

## 10.0. STATUTORY SERVICES:

- All work and installations to comply with the regulations and recommendations of the respective “BOARD” or “AUTHORITY” to the satisfaction of the “inspector”.

## 10.1. METER BOXES: HOUSES

- Install standard type Gas & Electric meter boxes to provide external meter reading facilities.
- Meter boxes are not to be stacked one above the other.
- All meter boxes are to be positioned side by side when on the same wall.
- Appropriate flat bar lintel, cavity tray and 2no. weep vents above meter box.

10.2. Omitted

## 10.3. ELECTRONIC COMMUNICATIONS (Part R): HOUSES

- Dwellings to be provided with full fibre optic service (Fibre to the property - FTTP) to provide high speed broadband internet and voice communications.
- Where a fibre service is not present then a conduit it so be provided through the external wall in the location of the intended entry point for future broadband cabling.
- Conduit is to be provided with a capping / temporary seal where the installation is not to the stage where a permanent cover plate / network termination point can be installed at time of inspection by Building Control.

# 11 PLUMBING AND HEATING

11.0.

## CENTRAL HEATING BOILER:

- Gas fired condensing combination boiler, to all properties, with a minimum ErP defined efficiency rating of not less than 92%
- Design Flow Temperature – 55oC
- 30Kw boilers to one bathroom properties 35Kw to all remaining types (types with bathroom and ensuite).
- Flue to be positioned minimum 300mm away from any opening and in accordance with manufactures instructions.
- All systems are to incorporate a Weather Compensator (Weather Compensators not to be installed on South Facing Elevations), Delayed start thermostats and Full Zone Heating Controls within the design (separate time and temperature controls in each zone).
- Boiler to have NO x emissions below 40mg/kWh and exceed Class 5 (BS EN 15502:2012)
- Heating system to be flushed and cleaned out, and suitable chemical inhibitor to be added
- Primary and secondary heating pipes to be insulated.

11.1.

## SECONDARY HEATING:

- Not applicable.

11.2.

## SOIL AND VENT PIPES:

- 100mm dia. stub stacks in all situations unless at the head of a drainage run serving 5 to 10 dwellings or at the mid and head of a drainage run serving 11 to 20 plots then soil stack should be open vented at a suitable tile/eaves vent
- Soil pipes to discharge directly into inspection chamber via 100mm diameter rest bend.
- Soil pipes to be wrapped in 25mm mineral fibre quilt and encased with 2 no. layers of 12.5mm plasterboard on 63 x 38mm s.w. framing.
- SP to be fire stopped where it passes through the first floor.
- When a AAV is provided, the valve is to be above the flood level of basin.
- AAV's to be sufficiently vented. Where the AAV is enclosed in boxing the boxing should be ventilated so as to ensure min 2500mm<sup>2</sup> of free air.
- AAV's to be accessible for maintenance and removable to give access to clear blockages.
- All soil pipes and accessories to BS 1519-1:2000
- Soil Access Saddle or equivalent for 2.5/3 storey properties for rodding.

11.3.

## WASTES:

Provide waste pipes to all sanitary ware. Unless otherwise indicated, minimum internal diameters for waste pipes are to be as follows:

# 11 PLUMBING AND HEATING

- Waste traps to be provided to all appliances discharging into stack.
- WC - 100mm.
- Baths, showers, sinks, washing machines and dishwashers - 40mm.
- Basins - 32mm.

## 11.4. HOT WATER:

- The hot water system is to be designed to avoid the risk of microbial contamination in line with best practice.
- All baths are to be fitted with a suitable device to limit the hot water temperature to a maximum of 48°C.
- Where hot and cold taps are provided on a sanitary appliance the hot tap should always be installed on the left.

## 11.5. SHOWERS

- Where a fixed shower or showerhead fixing is provided over a bath at a height that will permit persons to stand under, a screen or other suitable means of containing the water should be provided.
- Surfaces which will be subjected to water from the use of a showerhead over a bath should be tiled or have an appropriate alternative water resistant finish.

## 11.6. INTERNAL PORTABLE WATER USE:

- Wholesome water supply to be provided by the local water supply undertaker.
- Cold water system is to be designed to avoid the risk of microbial contamination in line with best practice.
- Calculations confirming the water consumption are to be provided to Building Control once the property is complete. Details of the appliances used (where applicable) and their water consumption rate are to be made available to the owner upon completion.
- A notice confirming that the hot water systems have been properly commissioned and issued by a competent person to do so is to be provided upon completion.
- Please refer to the separate water calculations for details of all sanitary appliances, flow restrictors and showers.

## 11.7. PIPEWORK

- Following pipework should be insulated
  - Primary circulation pipes for heating circuits where they pass outside the heated living space, including where pipework passes into voids.
  - All primary circulation pipes for domestic hot water.
  - All pipes that are connected to hot water storage vessels, for at least 1m from the point at which they connect to the vessel.

# 11 PLUMBING AND HEATING

---

- All secondary circulation pipework.
- Any exposed pipework (not within floor void or behind finish) to be within timber boxing on sw framing.
- All pipework in or behind wall surfaces to have a metallic tape applied to or around the pipework for detection purposes - refer to manufacturers recommendations.

11.8.

## **RAINWATER GOODS:**

- Upvc gutters and rainwater pipes discharging into trapped gullies.
- Gully positions dependant on site layout.

# 12 ELECTRICAL INSTALLATIONS

12.0.

## **FIRE SAFETY:**

- LD2 system to consist of:
  - Smoke Detector Alarms with a standby mains power supply and battery backup provide to hallway, lounges and to landings (on each floor).
  - Heat detector to be provided to kitchen areas.
  - Where PV equipment is located within roofspace, an additional smoke detector (with remote test) is to be installed.
- System to be interlinked and installed in accordance with BS 5839:2013
- FD30 rated doors to protected corridors in 2 ½ / 3 storey dwellings
- FD30S self closing (with smoke seal) to be provided between an integral garage and dwelling (houses)

12.1.

## **INTERNAL LIGHTING:**

- All (100%) internal light fittings to consist of internal low energy fixed lights or lighting units with low energy light fittings having a minimum luminous efficacy of 75 light source lumens per circuit watt.

12.2.

## **EXTERNAL LIGHTING:**

Fixed external lighting should have both of the following controls.

- Automatic controls which switch luminaires off in response to daylight.
- If luminous efficacy is 75 light source lumens per circuit-watt or less, automatic controls which switch luminaires off after the area lit becomes unoccupied. If luminous efficacy is greater than 75 light source lumens per circuit-watt, manual control is acceptable

12.3.

## **ELECTRICAL INSTALLATIONS:**

- All installations to comply with I.E.E. Regulations. All fittings to comply with British Standards. Quantity, quality and position of fittings in accordance with N.H.B.C. requirements.
- All switches & sockets for lighting and other equipment in habitable rooms at appropriate heights between 450mm and 1200mm from finished floor level.
- Where **M4(2) applies**, switches and sockets must be min. 300mm from any corners.
- Consumer units to be located at a height between 1350 and 1450mm from finished floor level.
- All electrical work to meet the requirements of Part P (Electrical Safety) and to be designed, installed, inspected and tested by a competent person. The following information should be issued to the District Surveyor prior to completion on site:
  - Evidence that work has been carried out by a person who is a member of a relevant 'Competent Person Scheme' or

# 12 ELECTRICAL INSTALLATIONS

- The requirements of Part P have been complied with and that an appropriate BS7671 electrical installation certificate has been issued by a competent person to do so.
- All sockets and switches located within Kitchen areas are to be located minimum 300mm from any adjacent sink, drainer or cooker/hob and strictly in accordance with the latest I.E.T wiring regulations.

12.4.

## MECHANICAL VENTILATION

- **Continuous Mechanical Extract Ventilation** to be installed
  - Individual Room Extract Fans (dMEV) located to wet rooms (kitchen, utility, bathroom + ensuites)
    - Additional fan to be fitted to WC's to reduce overall ventilation rate of each fan
  - Each fan to have both a 'high' and 'continuous' rate
    - High rates to be min to 13l/s to kitchens, 8l/s to utility, bathroom and ensuite and 6l/s to WC
    - The sum of all extract ventilation in the dwelling on its continuous rate should be the higher of the following:
      - Minimum rate of 0.3l/s per m<sup>2</sup> of floor area or
      - A minimum rate as determined by number of bedrooms (1 = 19l/s, 2 = 25l/s, 3 = 31l/s, 4 = 37l/s)
  - Additional background (trickle) ventilation to be provided as follows
    - Number of ventilators required in a dwelling will vary by number of bedrooms
      - Minimum total number of ventilators = number of bedrooms + 2
    - Ventilators only to be fitted to habitable rooms
      - Not to be fitted in Kitchen, Utility, Bathrooms and ensuite
    - Each trickle ventilator to be min 4000mm<sup>2</sup>
    - All internal doors to have a 10mm undercut (20mm where no finish installed) under door.
- Cooker hood to be recirculating
- Fans to be continuously running at 'continuous' rate with separate switch to activate 'high' rate.
- Isolator switches are to be provided above the door outside the appropriate room

Where additional ventilation is required withing bedroom for Part O, intermittent fans to be installed and configured to meeting the extract rates determined by the TM59 assessment

12.5.

Omitted

12.6.

## PHOTOVOLTAIC INSTALLATION (PV)

PV kWp will be determined by SAP assessor, taking into account plot type, location, orientation and shading etc

- Size of system may vary by housetype and plot

# 12 ELECTRICAL INSTALLATIONS

Actual PV system to be designed and installed by MCS accredited contractor with all works in accordance with:

- BS:7671 (latest edition)
- MCS standards

'In-Roof' type system to be used

## 12.7. ELECTRIC VEHICLE CHARGE POINT (EV)

One charge point is required per dwelling where the dwelling has an 'associated' parking space within the dwelling boundary (i.e., red line) of the dwelling - where no parking space provided, no requirement to provide a charge point

Where parking is remote from the dwelling, where a parking space(s) is conveyed to the property then a charge point will be required to one of the spaces

An exemption from providing a charge point is possible if the additional cost of reinforcement and upgrades to the local electrical distribution network would not exceed £3,600 per dwelling

- To be calculated as the additional capital cost for electrical infrastructure as compared to that which would be required without the charge points.
- Note - the costs of providing the charging point itself, or installation cannot be included in this figure

Charge points should be designed and installed in accordance with the appropriate parts of BS EN 61851;

- Have a minimum rated output of 7 kW, measured or calculated at a nominal supply voltage of 230VAC;
- Be fitted with a universal socket (known as an untethered electric vehicle chargepoint)
- Be fitted with a charging equipment status indicator using lights, LEDs or a display
- Be a minimum of Mode 3 or equivalent (i.e., Control circuitry and basic safety electronics must be contained within the charge point, rather than inline in the cable)
- Comply with the requirements of BS 7671 & IET's Code of Practice: Electric Vehicle Charging Equipment Installation

# 13 ACCESS

## 13.0. ACCESS REQUIREMENTS:- M4(1): VISITABLE DWELLINGS

- All principal entrances to have level access with level access threshold - minimum 900mm wide approach. Level access to other doors only to be provided where noted.
- Ensure a minimum corridor width of 900mm to ground floor, and adjacent W.C. door.
- Ensure a minimum unobstructed area of 650mm is maintained between any wash hand basin and wall to allow wheelchair passage with 750mm required in front of W/C.

## 13.1. ACCESS REQUIREMENTS:- FOR M4(2): ACCESSIBLE + ADAPTABLE DWELLINGS

- The approach route should be safe and convenient, step free and adopt the shallowest gradient that can be reasonably achieved.
- Any ramps should have max gradients between 1 in 12 (upto 2m) & 1 in 20 (upto 10m).
- Where a parking space is provided for the dwelling, it should comply with all of the following:-
  - Where the parking is within the private curtilage of the dwelling (but not within a carport or garage) at least one space is a standard parking bay that can be widened to 3.3m.
  - Access between the parking bay and the principal entrance or, where necessary, the alternative private entrance to the dwelling is step free.
  - The parking space is level or where unavoidable, gently sloping.
  - The gradient is as shallow as the site permits.
  - The parking space has a suitable ground surface.
- Where a drop-off point is provided for the dwelling, it should comply with all the following:-
  - It is level or, where unavoidable, gently sloping.
  - It has a suitable ground surface.
  - Where a dropped kerb is provided, it is a minimum 1000mm wide, reasonably flush with the adjoining ground and has a maximum gradient of 1:12

### Principal Private Entrances and Alternative Entrance

- The principal private entrance or the alternative private entrance where step free access cannot be achieved to the principal private entrance should comply with all of the following:-
  - There is a level external landing with a minimum width and depth of 1200mm.
  - The landing is covered for a minimum width of 900mm and a minimum depth of 600mm.
  - Lighting is provided which uses fully diffused luminaires activated automatically by a dusk to dawn timer or by detecting motion.
  - The door has a minimum clear opening width of 850mm when measured in accordance with diagram 2.2 (Approved Document M).
  - Where there are double doors, the main (or leading) leaf provides the required minimum opening width. \*

# 13 ACCESS

- A minimum 300mm nib is provided to the leading edge of the door and the extra width created by this nib is maintained for a minimum distance of 1200mm beyond it.\*
- The depth of the reveal on the leading side of the door (usually the inside) is a maximum of 200mm.\*
- The threshold is an accessible threshold.\*
- Where there is a lobby or porch, the doors are a minimum of 1500mm apart and there is at least 1500mm between door swings. \*
- All other external doors – including doors to and from a private garden, balcony, terrace, garage, carport, conservatory or storage area that is integral with, or connected to, the dwelling should comply with the points marked \* above.

## Corridor Widths

- Width of corridors to M4(2) properties must be in accordance with Approved Document Part M Vol 1, Diagram 2.3 and table 2.1.

## Bedrooms

- To enable a wide range of people to access and use them the bedrooms should comply with all of the following:-
  - Every bedroom can provide a clear access route a minimum 750mm wide from the doorway to the window.
  - At least one double bedroom (the principal bedroom) can provide a clear access zone a minimum 750mm wide to both sides and the foot of the bed.
  - Every other double bedroom can provide a clear access zone a minimum 750mm wide to one side and the foot of the bed.
  - All single and twin bedrooms can provide a clear access zone a minimum 750mm wide to one side of each bed.
  - It can be demonstrated by dimensioned layouts that the provisions above can be achieved using the furniture sizes detailed in Appendix D (Approved Document M).

## Sanitary Facilities

- All walls, ducts and boxings to the W/C cloakroom, bathroom and shower room should be strong enough to support grab rails , seats and other adaptations that could impose a load of upto 1.5N/m<sup>2</sup>. Additional sanitary facilities beyond those required to comply with this guidance need not have strengthened walls.

## WC Facilities on the Entrance Storey

- To provide step-free access to a WC that is suitable and convenient for some wheelchair users and, where reasonable, to make provision for showering, dwellings should comply with all of the following:-
  - Every dwelling has a room within the entrance storey that provides a WC and basin (which may be within a WC/ cloakroom or a bathroom).

# 13 ACCESS

- In a two or three storey dwelling with one or two bedrooms, the WC (together with its associated clear access zone) meet the provisions of Diagram 1.3 (Approved Document M). and the basin does not impede access to the WC.
- In a two or three storey dwelling with three or more bedrooms, the room with the WC and basin also provides an installed level access shower or a potential level access shower. And the shower, WC and basin (together with their associated clear access zones) meet the provisions of Diagram 2.5. Examples of compliant WC layouts are shown in Diagram 2.6 (Approved Document M).
- To comply with the paragraph above, provide a 1m square cut out of the slab to the engineers satisfaction, provide a drainage pop up within this cut out and battern out and cover with 22mm ply, flush and level with the adjacent floor.
- The door opens outwards.

## Bathrooms

- To provide convenient access to a suitable bathroom, the dwelling should comply with all of the following:-
  - Every dwelling has a bathroom that contains a WC, a basin and a bath, that is located on the same floor as the double bedroom, described as the principal bedroom in paragraph 2.25b (Approved Document M).
  - The WC, basin and bath (together with their associated clear access zones) meet the provisions of diagram 2.5. Examples of bathroom layouts shown in Diagram 2.7 (Approved Document M)..
  - Provision for a potential level access shower is made within the bathroom if not provided elsewhere within the dwelling.
  - To comply with the paragraph above, provide a separate capped off shower drainage pipe within the floor connected to the soil pipe stack.

## Services and Controls

- Glazing to the principal window of the principal living area to start at a maximum of 850mm above floor level.
- To assist people who have reduced reach, services and controls should comply with all of the following:-
- Consumer units are mounted so that the switches are between 1350mm and 1450mm above floor level.
- Switches, sockets, stopcocks and controls have their centre line between 450mm and 1200mm above floor level and a minimum of 300mm (measured horizontally) from an inside corner.
- The handle to at least one window in the principal living are is located between 450mm and 1200mm above floor level, unless the window is fitted with a remote opening device that is within this height range.
- Handles to all other windows are located between 450mm and 1400mm above floor level, unless fitted with a remote opening device that is within this height range.
- Boiler timer controls and thermostats are mounted between 900mm and 1200mm above FFL on the boiler, or Separate controllers (wired or wireless) are mounted elsewhere in an accessible location within the same height range.

# 13 ACCESS

- Controls that are part of a radiator or cooker hood are exempt from these provisions.

13.2. Omitted

13.3. Omitted

13.4. **ACCESS REQUIREMENTS FOR M4(3) : WHEELCHAIR USER DWELLINGS**

- Within the curtilage of the dwelling or of the building containing the dwelling, a wheelchair user can approach and gain step free access to every private entrance to the dwelling and to every associated private outdoor space, parking space and communal facility for occupants' use.

**Parking**

- Where a dwelling has a parking space, to enable a wheelchair user to get into and out of a car from both sides and access the boot space the parking space should comply with all of the following: -
  - Where the parking space is within the private curtilage of a dwelling (including a carport or garage) it is a standard parking bay with an additional minimum clear access zone of 1200mm to one side and to the rear.
  - Where it is within a communal parking area, it is a standard parking bay with an additional minimum clear access zone of 1200mm to both sides.
  - The parking space is level.
  - The parking space has a minimum clear headroom of 2200mm.
  - The parking space has a suitable ground surface.
  - The side access zones in communal parking areas may be shared by two bays.

**Drop-off Point**

- Where a drop off point (or setting down point) is provided for the dwelling, it should comply with all of the following: -
  - The drop-off point is located close to the principal communal entrance of the core of the building that contains the dwelling.
  - The drop-off point is level.  
The drop-off point has a suitable ground surface.
  - Where a dropped kerb is provided, it is a minimum of 1000mm wide, is reasonably flush with the adjoining ground and has a maximum gradient of 1:15.

**Principal Private Entrance**

- The principal private entrance to the individual dwelling should comply with all of the following:-

# 13 ACCESS

- There is a level external landing with a minimum width and depth of 1500mm and clear of any door swing.
- The landing area is covered for a minimum width and depth of 1200mm
- Lighting is provided which uses fully diffused luminaires activated automatically by a dusk to dawn timer or by detecting motion.
- There is a minimum 1500mm clear turning circle inside the entrance area, in front of the door when closed.
- A minimum 300mm nib is provided to the leading edge of the door and the extra width created by this nib is maintained for a minimum of 1800mm beyond it. A minimum 150mm nib is provided to the hinge side of the door (to allow for the fitting of a cage to the inside face of the letterbox).
- The door has a minimum clear opening width of 850mm, when measured in accordance with Diagram 3.2 (Approved Document M)\*
- Where there are double doors, the main (or leading) leaf provides the required minimum clear opening width. A minimum 200mm nib is provided to the following edge of the door and the extra width created by the nib is maintained for a minimum of 1500mm beyond it.\*
- The door is located reasonably centrally within the thickness of the wall while ensuring that the depth of the reveal on the leading face of the door (usually the inside) is a maximum of 200mm.\*
- The threshold is an accessible threshold.\*
- Where there is a lobby or porch, the doors are a minimum of 1500mm apart and there is a minimum of 1500mm between door swings.\*
- Door entry controls, where provided are mounted 900-1000mm above finished ground level a minimum 300mm away from any external return corner.\*
- A fused spur, suitable for the fitting of a powered door opener, is provided on the hinge side of the door.

## Other External Doors

- All other external doors – including doors to and from a private garden, balcony, terrace, garage, carport, conservatory or storage area that is integral with, or connected, the dwelling comply with provisions marked \* above and should have a minimum 300mm nib to the leading edge of the door with extra width created by this nib extending for a minimum 1800mm beyond it.

## Corridor Widths

- Width of corridors to M4(3) properties must be in accordance with Approved Document Part M Vol 1, Diagram 3.4.

## Services and Controls

- To assist wheelchair users who have reduced reach, services and controls should comply with all of the following:-

# 13 ACCESS

- Consumer units should be mounted so that the switches are between 1350mm and 1450mm above floor level.
- Switches, sockets, stopcocks and controls except controls to radiators, are located with their centre line 700-1000mm above floor level and a minimum of 700mm (measured horizontally) from an inside corner and are not positioned behind appliances.
- Kitchen appliances in wheelchair accessible dwellings have isolators located within the same height range.
- The handle to at least one window in the principal living area is 700-1000mm above floor level, unless fitted with a remote opening device that is within this height range
- Handles to all other windows are 450-1200mm above floor level, unless the window is fitted with a remote opening device that is within this height range.
- Door handles, locks, latches and catches are both:
  - Easy to grip and use, and
  - Fitted 850-1000mm above floor level.
- Light switches are on individual plates unless wide rocker or full plate fittings are provided.
- Switches to double socket outlets are located at the outer ends of the plate (rather than in the centre).
- A door entry phone with remote door release facility is provided in the main living space and the principal bedroom.
- Suitable provision is made in the principal bedroom to install bedhead controls in the future (comprising a 2-way light switch, telephone and broadband socket, TV aerial and power socket outlets, and the door entry phone provision described above, grouped adjacent to the head of the bed), for example, by providing blank sockets, conduit and draw wires.
- A main electrical power socket and telephone point are provided together in the main living space.
- Taps and bathroom controls are suitable for a person with limited grip to operate and for single handed operation.
- Boiler timer controls and thermostats are either mounted 900-1200mm above finished floor level on the boiler, or separate controllers (wired or wireless) are mounted elsewhere in an accessible location within the same height range.
- In wheelchair accessible dwellings:-
  - radiator controls are mounted 450-1000mm above floor level.
  - WC flush controls are positioned on the front of the cistern on the transfer side and are easily gripped.
  - WC pans should be a minimum of 400mm high.
  - Basins and sinks should be wall hung with the rim 770-850 above FFL.

# 13 ACCESS

- Clearance under basin services should be between 400 – 600mm or proven not to impede wheelchair access.
- Kitchen taps should be lever operated and capable of easy operation.
- Water supply to sinks to include isolation valves and flexible tails.
- Kitchen drainage can be flexible or fixed but must be easily adaptable to suit worktop heights of between 700mm and 900mm above finished floor level.

## Private Outdoor Space

- To enable a wheelchair user to use every private outdoor space that is provided, whether a private garden, balcony or roof terrace, outdoor space should comply with all of the following:-
  - Every outdoor space Has a minimum clear width of 1500mm, and Provides a minimum 1500mm level clear turning circle, free of any door swing.
  - There is a level or gently sloping path with a minimum clear width of 1050mm to every private refuse, recycling, cycle or other external store.
  - Every path terminates in a clear turning circle a minimum 1500mm in diameter.
  - Every gate (or gateway) has a minimum clear opening width of 850mm, a minimum 300mm nib to the leading edge and a minimum 200mm nib to the following edge.
  - The door to every private external store that is integral with, or connected to, the dwelling has a minimum clear opening width of 850mm.
  - All paved areas have a suitable ground surface.

13.5. Omitted