GypWall™ EXTREME

GypWall EXTREME is an ultimate impact resistant partition system for use where even 'severe duty' will not suffice. The system provides a lightweight, cost-effective, non-loadbearing partition suitable for areas subject to intensive traffic.

Using only a minimum number of components, GypWall EXTREME consists of Gyproc Rigidur boards screw fixed to a lightweight Gypframe stud framework. The durability and impact resistance of the boards is provided through the unique combination of recycled cellulose fibres and dense gypsum.

Key facts

- Range of stud options to match performance requirements
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- Acoustic stud option for enhanced acoustic performance
- Can achieve high levels of sound insulation
- Can achieve up to 60 minutes fire resistance
- Exceeds BS 5234 strength and robustness requirements for Severe Duty
- Easily accommodates services within stud cavity
- Can allow for deflection at the head
- Gypframe metal framework will not twist, warp or rot
- Loads of up to 55kg can be supported directly from the Gyproc Rigidur board without the need for additional grounds

GypWall EXTREME is fully compatible with GypWall robust and other Gyproc partition systems. In addition, in double layer board linings, Gyproc Rigidur is specified as the outer face layer only. Allowing significant savings on both material and installation cost.

Sector Guide


Gypframe Deep Flange (DC) or Extra Deep Flange (EDC) Floor & Ceiling Channel
Gypframe studs (Acoustuds or minimum 0.6mm gauge 'C' studs)
COMPONENTS

Gyproc board products

<table>
<thead>
<tr>
<th>Product</th>
<th>Thickness</th>
<th>Width</th>
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</thead>
<tbody>
<tr>
<td>Gyproc Rigidur</td>
<td>12.5, 15mm</td>
<td>1200mm</td>
</tr>
<tr>
<td>Gyproc WallBoard</td>
<td>12.5mm</td>
<td>1200mm</td>
</tr>
<tr>
<td>Gyproc SoundBloc</td>
<td>12.5mm</td>
<td>1200mm</td>
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Gyproc metal products

<table>
<thead>
<tr>
<th>Product</th>
<th>Codes</th>
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<tbody>
<tr>
<td>Gypframe 'C' Studs</td>
<td>70 S 60</td>
</tr>
<tr>
<td>Gypframe AcouStud</td>
<td>70 AS 50 and 146 AS 50</td>
</tr>
<tr>
<td>Gypframe Deep Flange Floor &amp; Ceiling Channels</td>
<td>72 DC 60, 148 DC 60</td>
</tr>
<tr>
<td>Gypframe Extra Deep Flange Floor &amp; Ceiling Channels</td>
<td>72 EDC 80, 148 EDC 80</td>
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Fixing and finishing products

<table>
<thead>
<tr>
<th>Product</th>
<th>Code</th>
<th>Tub contents</th>
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</thead>
<tbody>
<tr>
<td>Gyproc Rigidur Screws</td>
<td>10 litre</td>
<td></td>
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<tr>
<td>Gyproc Jack-Point Screws</td>
<td>10 litre</td>
<td></td>
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<tr>
<td>Gyproc Wafer Head Drywall Screws</td>
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<td></td>
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<tr>
<td>Gyproc Sealant</td>
<td>10 litre</td>
<td></td>
</tr>
<tr>
<td>Gyproc edge beads</td>
<td>10 litre</td>
<td></td>
</tr>
<tr>
<td>Gyproc Control Joint</td>
<td>10 litre</td>
<td></td>
</tr>
<tr>
<td>Gyproc FireStrip</td>
<td>10 litre</td>
<td></td>
</tr>
<tr>
<td>Gyproc jointing materials</td>
<td>10 litre</td>
<td></td>
</tr>
<tr>
<td>Gyproc Drywall Primer</td>
<td>10 litre</td>
<td></td>
</tr>
<tr>
<td>Gyproc Drywall Sealer</td>
<td>10 litre</td>
<td></td>
</tr>
</tbody>
</table>

For specific performance requirements.

Safety Data Sheets for all Gypsum Industries' products are available to download from our website: www.gypsum.ie, or from the Technical Sales Department.
Gypframe Floor & Ceiling Channel is fixed to the floor and soffit. Gypframe studs are fitted vertically to a friction-fit at 600mm centres within the channel sections, and to abutments, to form the framework. This allows for adjustment during boarding.

Gypframe ‘C’ Studs or Gypframe AcouStuds are fitted so as to all face the same way. Additional framing is installed as required to support heavy fixtures.

Inner layer
In double layer systems, inner layers of Gyproc plasterboards should be fixed with 25mm Gyproc Drywall Screws around the perimeter of the board at 300mm centres, and at the intermediate stud at 600mm centres. In single layer systems, Rigidur boards are fixed using 40mm Rigidur Screws at 300mm centres around the perimeter of the board, and at the intermediate stud positions, at least 13mm from the edge of the board. When using Rigidur boards, always fix from the bottom of the partition upwards, as per best practice.

Outer layer
Rigidur boards are fixed using 40mm Glasroc Rigidur Screws at 300mm centres around the perimeter of the board, and at the intermediate stud positions, at least 13mm from the edge of the board.

For full installation details, refer to the Installation Guide at www.gypsum.ie
PERFORMANCE

Environmental
GypWall partitions are unsuitable for use in areas subject to continuously damp or humid conditions.

Plasterboards are not suitable for use in temperatures above 49ºC but can be subjected to freezing conditions without risk of damage.

Fire resistance
Gyproc Rigidur achieves an A1 Euroclass reaction to fire classification and Class O in accordance with Technical Guidance Document 13 (Fire).

The fire resistances given in Table 2 and 3 are for imperforate partitions. Note that the insulation in detail is required for fire resistance as well as sound insulation claims.

Sound insulation
The mass and sound insulating qualities of Gyproc Rigidur enable high acoustic performances to be achieved.

The sound insulation performance of GypWall EXTREME partitions can be further increased with the inclusion of Isover Acoustic Roll, or Isover Ultimate Piano Plus in the cavity (see Table 2 and 3). Airtightness is essential for optimum sound insulation.

Partition duty – strength and robustness
The duty ratings given in Table 2 and 3 have been calculated in accordance with BS 5234: Parts 1 & 2: 1992.

The rating is a measure of the ability of the wall to meet the requirements of four strength and robustness tests: door slam, soft body impact, hard body impact, and stiffness. Grades, e.g. Medium Duty, relate to the level of activity in adjacent areas and the degree of care likely to be exercised in them. The requirements are for walls complete with their surface finishes where these are part of the wall specification. Other optional tests may also apply.

Using the duty of a particular wall the designer can select a wall for its area of use (with due consideration for fire, sound, or thermal requirements).

EXTREME duty
The robustness of GypWall EXTREME is higher than most severe duty criteria set out in BS5234: Part 2: 1992.

Additional structural performance and durability tests above and beyond Severe Duty have been carried out to reflect better the actual use in high traffic areas.

These tests include:
- Resistance to Deliberate Attack
  Tests carried out included hard body impact to destruction and a test designed to simulate an adult kicking the partition.
- Resistance to Accidental Impact
  A glancing blow test was developed to represent the partition being hit at an angle by hospital trolleys etc.
- Resistance to Accidental Abrasion
  In schools, hospitals etc abrasion can be caused deliberately by keys, pens etc and accidentally by chair backs rubbing against the wall causing scratch marks to appear due to long term wear and tear. A scratch test and a hardness test were developed to simulate abrasion.

In all the above tests, the impressive strength and surface hardness of Gyproc Rigidur and the GypWall EXTREME system were demonstrated.
**Table 2 Performance of GypWall extreme partitions, 70mm Gypframe studs**

<table>
<thead>
<tr>
<th>Detail</th>
<th>Board type</th>
<th>Lining thickness</th>
<th>Partition thickness</th>
<th>Maximum partition height</th>
<th>fire resistance</th>
<th>Lab. sound insulation</th>
<th>Duty rating</th>
<th>Performance substantiation report</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rigidur</td>
<td>1 x 12.5</td>
<td>97</td>
<td>3800</td>
<td>30</td>
<td>44</td>
<td>Severe</td>
<td>X6006009</td>
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<tr>
<td>2</td>
<td>Rigidur</td>
<td>1 x 15</td>
<td>102</td>
<td>4000</td>
<td>30</td>
<td>45</td>
<td>Severe</td>
<td>X6006001</td>
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<tr>
<td>3</td>
<td>Rigidur</td>
<td>1 x 12.5</td>
<td>97</td>
<td>3800</td>
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<td>X6006010</td>
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<tr>
<td>4</td>
<td>Rigidur</td>
<td>1 x 15</td>
<td>102</td>
<td>4000</td>
<td>30</td>
<td>51</td>
<td>Severe</td>
<td>X6006002</td>
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<tr>
<td>5</td>
<td>Rigidur</td>
<td>1 x 12.5</td>
<td>97</td>
<td>3800</td>
<td>30</td>
<td>49</td>
<td>Severe</td>
<td>X6006011</td>
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<tr>
<td>6</td>
<td>Rigidur</td>
<td>1 x 15</td>
<td>102</td>
<td>4000</td>
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<td>7</td>
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<td>8</td>
<td>Rigidur</td>
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<td>4000</td>
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<tr>
<td>9</td>
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<tr>
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<tr>
<td>11</td>
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<td>4700</td>
<td>60</td>
<td>58</td>
<td>Severe</td>
<td>X6006007</td>
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</table>

1. Based on a limiting deflection of L/240 at 200Pa with studs at 600mm centres.
2. Board joints must be reinforced with Gyproc Paper Joint Tape for the quoted fire resistance periods to be achieved. Please refer to section 22.
3. "Severe" Duty is the highest classification available under BS 5234 : Part 2 : 1992. Additional structural performance tests above and beyond Severe Duty have been carried out. Please also refer to the general notes relating to all GypWall tables.
Table 3 Performance of GypWall extreme partitions, 146mm Gypframe AcouStuds

<table>
<thead>
<tr>
<th>Detail</th>
<th>Board type</th>
<th>Lining thickness</th>
<th>Partition thickness</th>
<th>Maximum partition height</th>
<th>Fire resistance</th>
<th>Lab. sound insulation</th>
<th>Duty rating</th>
<th>Performance substantiation report</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SoundBloc + Rigidur</td>
<td>15 + 12.5</td>
<td>203</td>
<td>7800</td>
<td>60</td>
<td>60</td>
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<tr>
<td>2</td>
<td>SoundBloc + Rigidur</td>
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<td>7800</td>
<td>60</td>
<td>62</td>
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<td>X606A014</td>
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* Based on a limiting deflection of L/240 at 200Pa with studs at 600mm centres.
* Board joints must be reinforced with Gyproc Paper Joint Tape for the quoted fire resistance periods to be achieved.
* Please refer to section 2E for full details.
* "Severe" Duty is the highest classification available under BS 5234 : Part 2 : 1992. Additional structural performance tests above and beyond Severe Duty have been carried out.
* Please also refer to the general notes relating to all GypWall tables.
4.5 DESIGN

Planning - key factors
Loads of up to 55kg can be hung directly from Gyproc Rigidur. The position of some services and heavy fixtures should be pre-determined, and their installation planned into the frame erection stage. All penetrations will need to be adequately fire-stopped if integrity is to be maintained.

Electrical
The installation of electrical services should be carried out in accordance with all relevant legislation, regulations and guidance. The cut-outs in the studs can be used for routing electrical and other small services. Where Gypframe AcouStuds are used, services are routed through 50mm x 28mm 'H' shaped push-outs. Cables should be protected by conduit, or other suitable precautions taken to prevent abrasion when they pass through the metal frame.

Service penetrations
Penetrations of fire resistant constructions for services need careful consideration to ensure that the integrity of the element is not impaired, and also that the services themselves do not act as a mechanism of fire spread. It is important to use only those services and their installations which have been shown by fire test to be able to maintain the integrity of the construction.

Wind loading
GypWall partitions are non-loadbearing but can accept a degree of wind loading, for example when used in buildings with large or multiple external doors. The maximum recommended heights in Tables 2 and 3 are based on a limiting deflection of L/240 at a pressure of 200Pa. Information can be provided on specifications to suit individual requirements. Contact the Technical Sales Department for guidance.

Deflection heads
Deflection heads, by definition, must be able to move and, therefore, achieving an airtight seal is difficult. Irrevocably, this will have a detrimental effect on the acoustic performance of any wall which incorporates deflection at the head. The approach shown in section 2.5 - GypWall staggered, could be considered to minimise loss of performance. In most cases, a suspended ceiling will also assist in minimising loss of performance.

Fixing floor and ceiling channels
Floor and ceiling channels must be securely fixed with a row of fixings at 600mm maximum centres (148mm channels require two rows of staggered fittings at 600mm centres in each row). If the floor is uneven, a 38mm thick timber sole plate equal to the width of the channel should be used.

If the concrete or screeded floor is new, consideration should be given to the installation of a damp proof membrane between the floor surface and the channel or sole plate.

Door openings
The designer should consider the thickness tolerances of the partition types in relation to the proposed door frame detail. To satisfy BS5234 requirements for heavy and severe duty, door framing should be specified in accordance with Figure 5 or 6.

Exceptionally heavy doorsets may require additional provision. Contact the Technical Sales Department if further guidance is required.

Control joints
Control joints may be required in the partition to relieve stresses induced by expansion and contraction of the structure. The location of control joints is at the discretion of the specifier. It is recommended that they coincide with movement joints within the surrounding structure.

Fixtures
Due to the inherent strength of Gyproc Rigidur, some fixtures can be applied directly to the board. Please refer to the relevant Data Sheet for more information.

Ceramic tiles
Ceramic tiles up to 12.5mm thick with a maximum weight of 32kg/m2 can be applied using thin bed adhesives (usually 3mm thick). Stud centres will normally require closing down. Please refer to Section 2.3 - Ceramic tiling.

Board finishing
Please refer to Section 1.5 - Finishing Coat Plasters, Section 2.2 - Jointing, and Section 2.5 - Decorative effects. Mineral based paints (e.g. lime, silicone) are not suitable for use with Gyproc Rigidur.
Construction details

Fig 1 Plan detail

Fig 2 Head and base

Fig 3 Wall junction

Fig 4a Corner detail – single layer

Fig 4b Corner detail (double layer)
Fig 5  Door frame – detailing to satisfy BS 5234: Parts 1 & 2: 1992 for Severe Duty partitions

Notes to Fig 5
The studs each side of the opening are sleeved to full door height with Gypframe Deep Flange Floor and Ceiling Channel. At the base, the channel is cut 300mm short to allow for the extension of floor channel, which is then cut, bent, and folded up to cloak the studs as shown in section A-A, and then fixed twice to each side. At the head, Gypframe Deep Flange Floor and Ceiling Channel is cut and bent to extend 150mm down the face of the studs, and fixed twice to each side. A further section of Channel is cut and friction fitted to the studs between the head and the base cloaking.
Fig 6 Door frame - detailing to satisfy Severe Duty BS 5234 - reduced waste alternative

The studs each side of the opening are sleeved to full door height with Gypframe Deep Flange Floor and Ceiling Channel. At the base, the channel is cut 300mm short to allow for the extension of floor channel, which is then cut, bent, and folded up to cloak the studs as shown in section A-A, and then fixed twice to each side. At the head, Gypframe Deep Flange Floor and Ceiling Channel is cut and bent to extend 150mm down the face of the stud, and fixed twice to each side. A further section of Channel is cut and friction fitted to the stud between the head and the base cloaking.