



Cormet High Performance metal stud partitions are designed for installations requiring enhanced fire, sound or impact resistance and for use in creating exceptionally wide or high partitions.

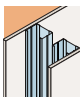
Ideal for fast-track projects, they offer markedly better sound performance/thickness ratios than can be achieved using blockwork.

This has made them popular for buildings ranging from manufacturing facilities, multiplex cinemas and multi-occupancy domestic properties to hospitals.



3





**Introduction**

**Cormet High Performance Walls**

Cormet non-load bearing High Performance Walls constructed from plasterboard facings on metal studs have considerable advantages compared with traditional heavy masonry construction.

They are:

- lightweight
- quick to construct
- cost effective
- compact
- able to achieve high levels of fire resistance and acoustic insulation.

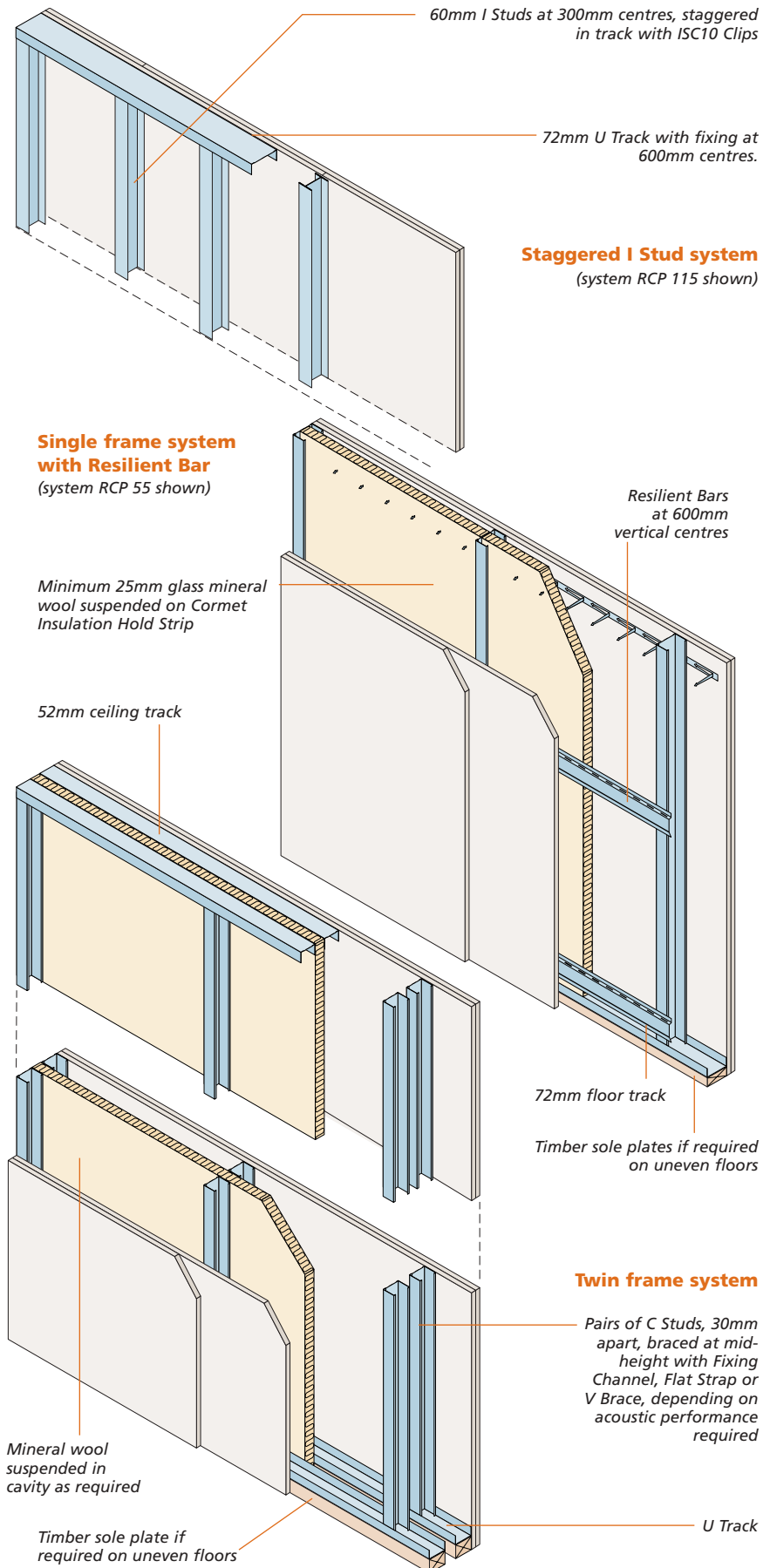
There are various Cormet systems:

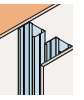
- staggered stud systems in single track
- single frame system constructed using 70mm wide Cormet metal studs with Resilient Bars
- twin frame systems constructed using two separate metal frames, 30mm apart and braced together.

**Performance**

The selection of system, and the type, number and thickness of board layers will depend on the partition height and the performance required for fire resistance and sound insulation. Refer to the performance table 3.25.

Lafarge plasterboards are defined as Class 0 in accordance with National Building Regulations 1991 Approved Documents B1/2/3/4/5 *Fire Safety* and Building Standards (Scotland) Regulations 1990, Regulation D2 when tested to BS 476: Part 6: 1989 and Part 7: 1997. The gypsum core is classified as non-combustible when tested in accordance with BS 476: Part 4: 1970 and Euroclass A1. Lafarge jointing compounds, metal systems, textures and bonding compounds are non-combustible when tested in accordance with BS 476: Part 4: 1970 and Euroclass A1.





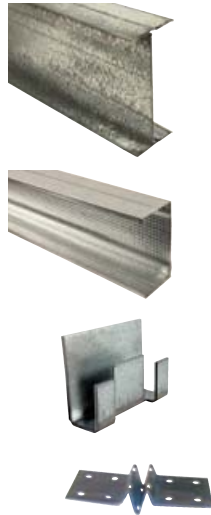
**Components**

Components used are as on pages 109 and 110, with additional components as shown below.

Colour coding is used to identify metal thickness: red (R) 0.50mm, blue (B) 0.70mm, white (W) 0.90.

Maximum heights shown in table 3.25 refer to 0.50mm thick studs (red gauge). If 0.70mm thick studs (blue gauge) are used then the maximum heights can be increased by 0.60m for double layer systems.

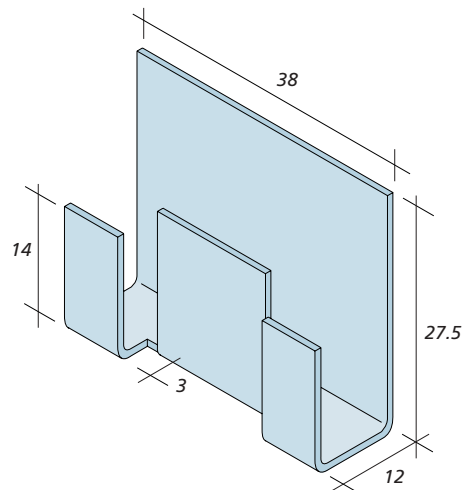
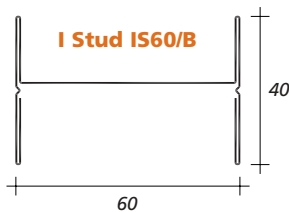
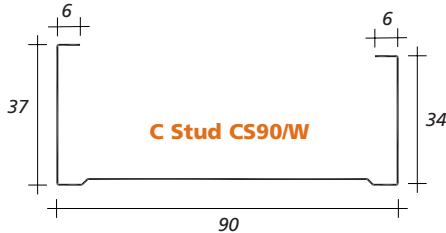
All components are manufactured to BS 7364: 1990 specification for galvanised steel studs and channels for stud and sheet partitions and linings using screw fixed gypsum wallboards.



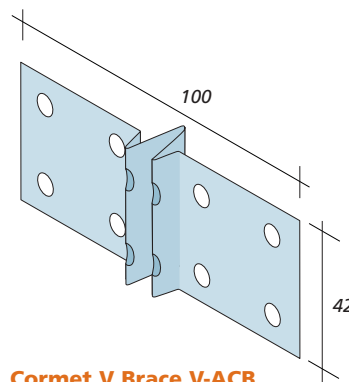
**3.24 Additional components for Cormet High Performance Partitions**

Component colour code metal thickness (mm)	Lafarge code	Dimensions (mm)
I Stud blue gauge 0.68 – 0.73	IS60/B	40 x 60
C Stud white gauge 0.88 – 0.93	CS90/W	36 x 90 x 34
Staggered Stud Clip	ISC10	12 x 27.5 x 38
V Brace	V-ACB	100 x 42

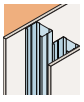
**Components**



**Staggered Stud Clip ISC10**



**Cormet V Brace V-ACB**



**Application details**

**Single frame system with Resilient Bars**

Set out U Track along the setting out line of the partition. Secure with two rows of fixings, each row at 600mm centres, rows offset by 300mm. If applying the track direct to new concrete floor which has not completely dried out a damp proofing membrane should be used.

Cut C Studs 5mm shorter than the floor to ceiling height to allow for floor variations. Insert the studs into the U Track and twist to lock. Perimeter C Studs abutting other walls should be secured to them at 600mm centres. The C Studs should all face the same way, except at door openings, and be positioned at up to 600mm centres for 12.5mm and 15mm plasterboard. Arrange the framing so that board widths of less than 300mm are avoided. C Studs can be boxed for greater rigidity.

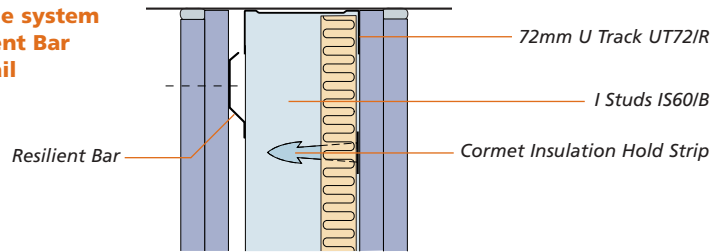
Secure glass mineral wool insulation with Cormet Insulation Hold Strip to prevent later sagging and loss of performance. Cormet Insulation Hold Strip is a 25mm wide galvanised steel strip, with pre-punched arrows, which is screw fixed or crimped to the studs 150mm from the partition head and then at 1200mm centres prior to boarding.

Secure Resilient Bars horizontally to faces of studs one side only using Lafarge Wafer Head Screws. Resilient Bars should be at maximum 600mm centres. Top bar should be inverted as shown in diagram to ensure that 50mm fixing distance is maintained.

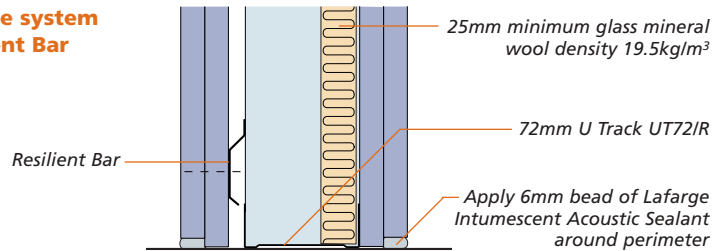
Board one side of the partition at a time. Cut plasterboard 5mm to 8mm shorter than the floor-to-ceiling height, butt firmly against the ceiling and fix with drywall screws. Butt plasterboard edges lightly against each other and centre edges of the plasterboard over the studs. Stagger all joints between layers. When the partition height is greater than the length of the plasterboard use Cormet Flat Strap (FS50/R), on double board systems, to support the horizontal cut edged of the plasterboards. Always apply a 6mm bead of Lafarge Intumescent Acoustic Sealant around the perimeter of the framing before applying the plasterboards.

Where 19mm Lafarge Plank is used it should be fixed with long edges horizontal when fixed direct to studs, but with long edges vertical when fixed to Resilient Bars.

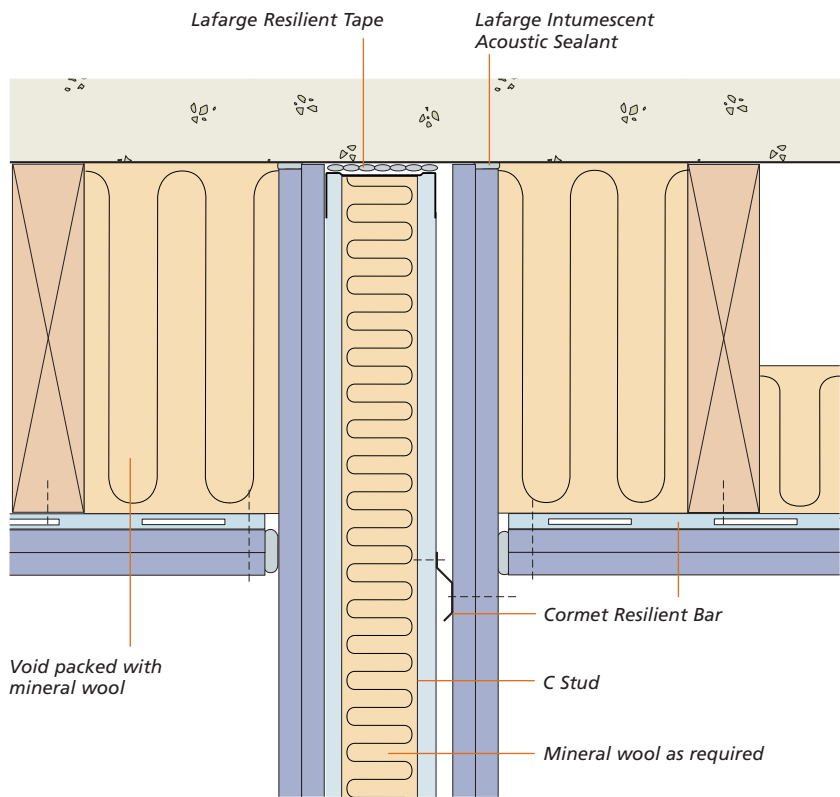
**Single frame system with Resilient Bar ceiling detail**

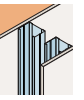


**Single frame system with Resilient Bar floor detail**



**Single frame high performance wall head junction**

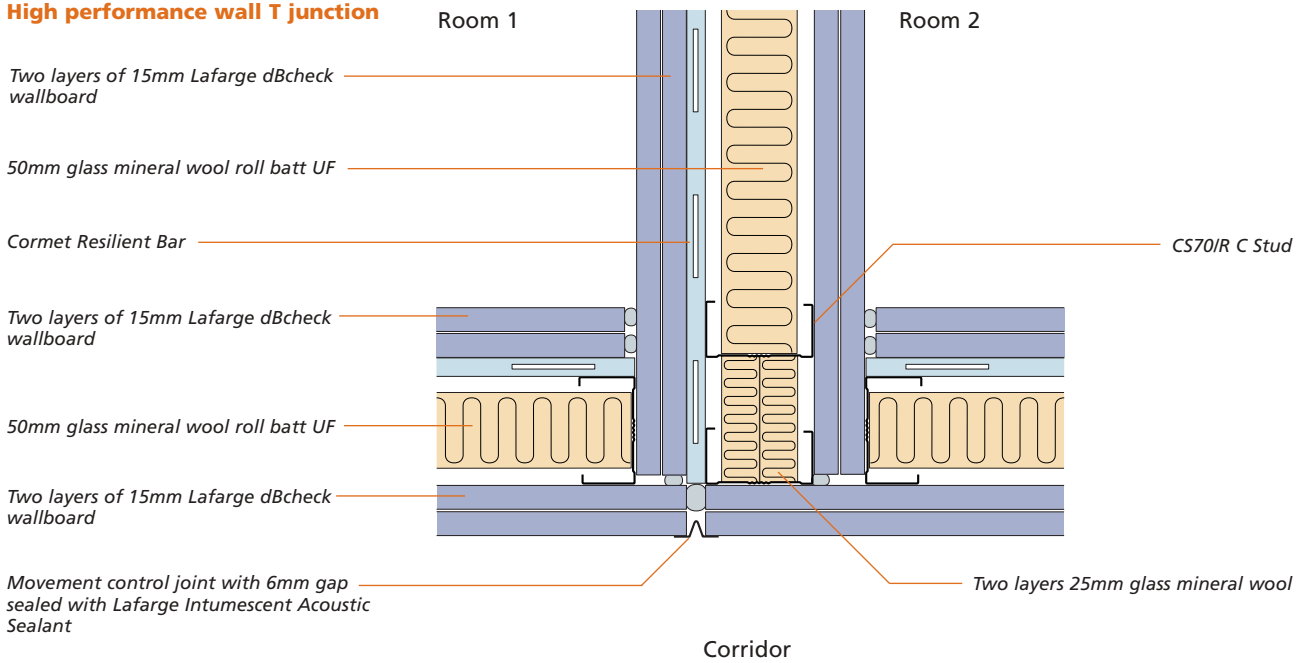


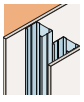


**Flanking transmission**

Where sound insulation is required it is extremely important to minimise flanking transmission at abutments.

**High performance wall T junction**



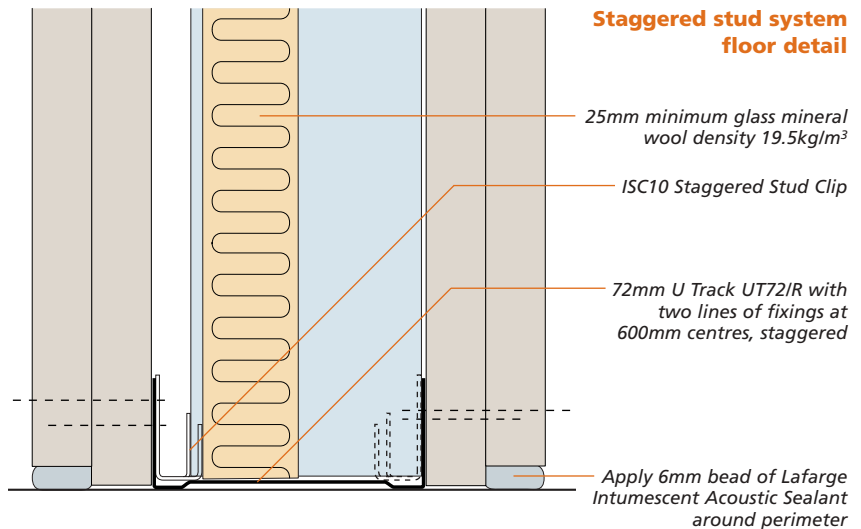
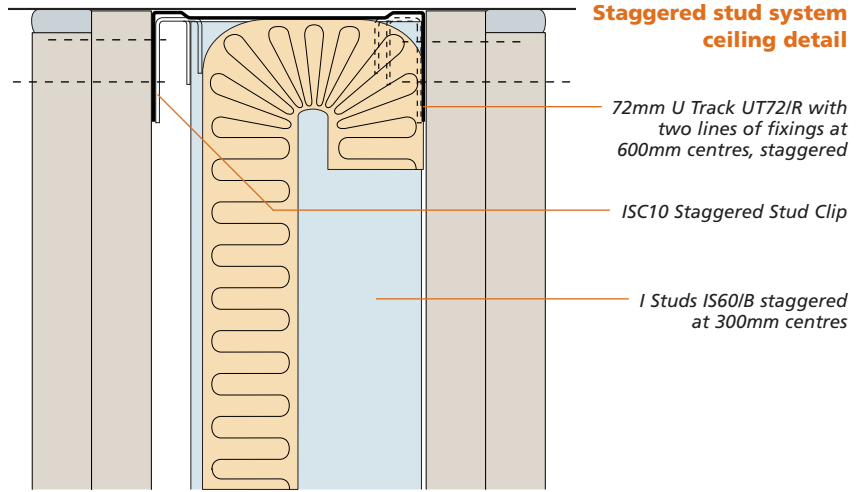


**Application details**

**Staggered I Stud system**

Setting out of floor and head track is as for single frame systems. End studs are C Studs ref CS70/R

Intermediate I Studs ref IS60/B are set at 300mm centres, staggered side to side with ISC10 Clips fixed to ends of studs before offering into track to secure. Boarding and finishing frame generally as for normal single frame.

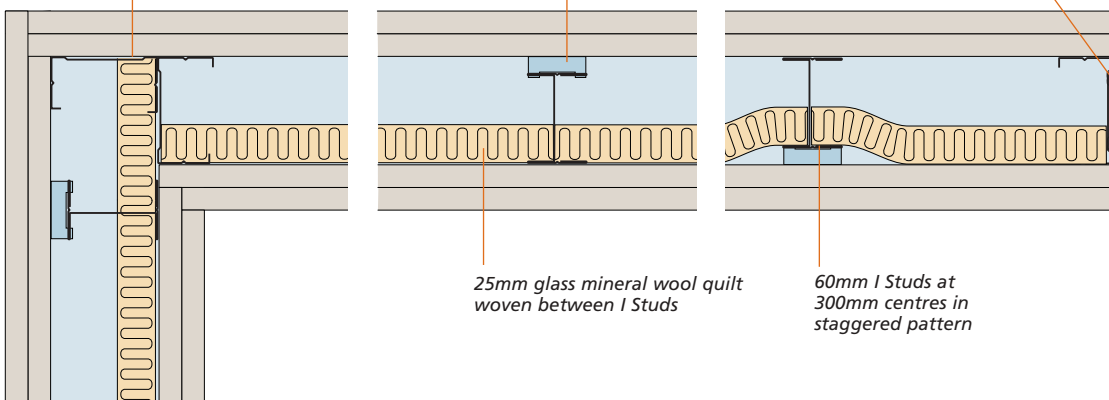


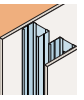
**Staggered I Stud system plan detail**

70mm C Stud at corner junctions and at abutments

Staggered Stud Clip ISC 10

Apply 6mm bead of Lafarge Intumescent Acoustic Sealant around perimeter





Application details

**Twin frame system**

Install the metal framing on one side first. Set out U Track along the line of the partition, and fix at 600mm centres to floor and ceiling or structural soffit. If applying the track direct to new concrete floor which has not completely dried out a damp proofing membrane should be used. On uneven floors a timber sole plate may be required.

Cut C Studs 5mm shorter than the floor to ceiling height to allow for floor variations. Insert the studs into the U Track and twist to lock. Perimeter studs abutting other walls should be secured to them at 600mm centres. Arrange the framing so that board widths of less than 300mm are avoided.

Secure glass mineral wool insulation to prevent later sagging and loss of performance.

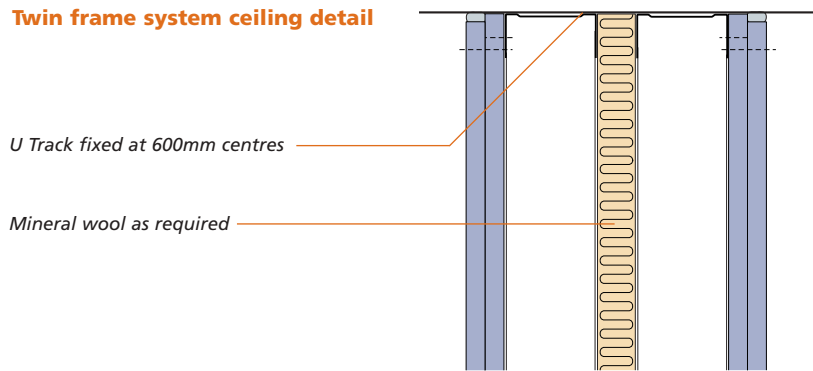
Erect the metal framing on the other side, spaced 30mm from the first. Brace the C Studs together in pairs with a short length of Cormet Flat Strap, MDF brace or where specified Cormet V Brace screw-fixed horizontally at mid-height, two screws both sides.

Apply a continuous 6mm bead of Lafarge Intumescent Acoustic Sealant around the perimeter of the framing on both sides before applying the boarding.

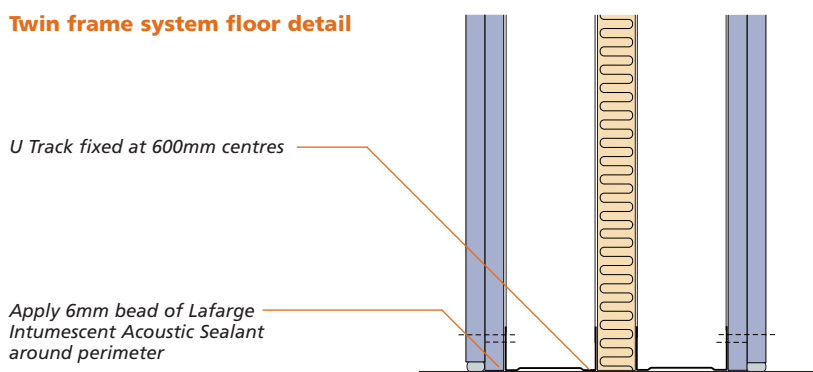
Board one side of the partition at a time. Cut plasterboard 5mm to 8mm shorter than the floor-to-ceiling height, butt firmly against the ceiling and fix with Lafarge Self Tapping Drywall Screws. Butt board edges lightly against each other and centre edges of the plasterboard over the studs.

Where 19mm Lafarge Plank forms the inner layer of boarding, fix this with the long edges horizontal followed by the outer layer of wallboard with long edges vertical.

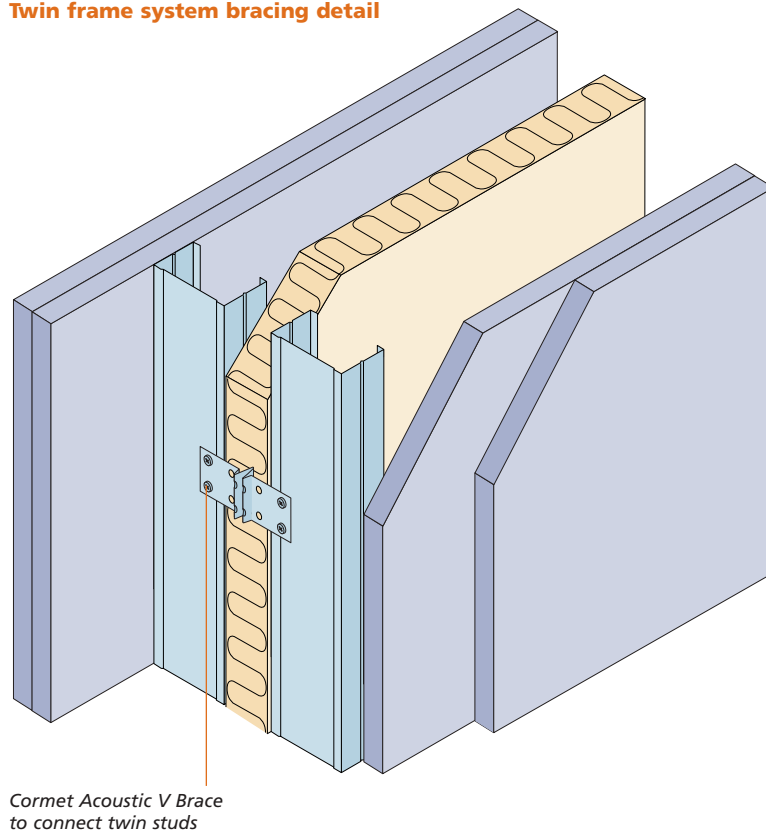
**Twin frame system ceiling detail**

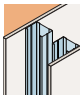


**Twin frame system floor detail**



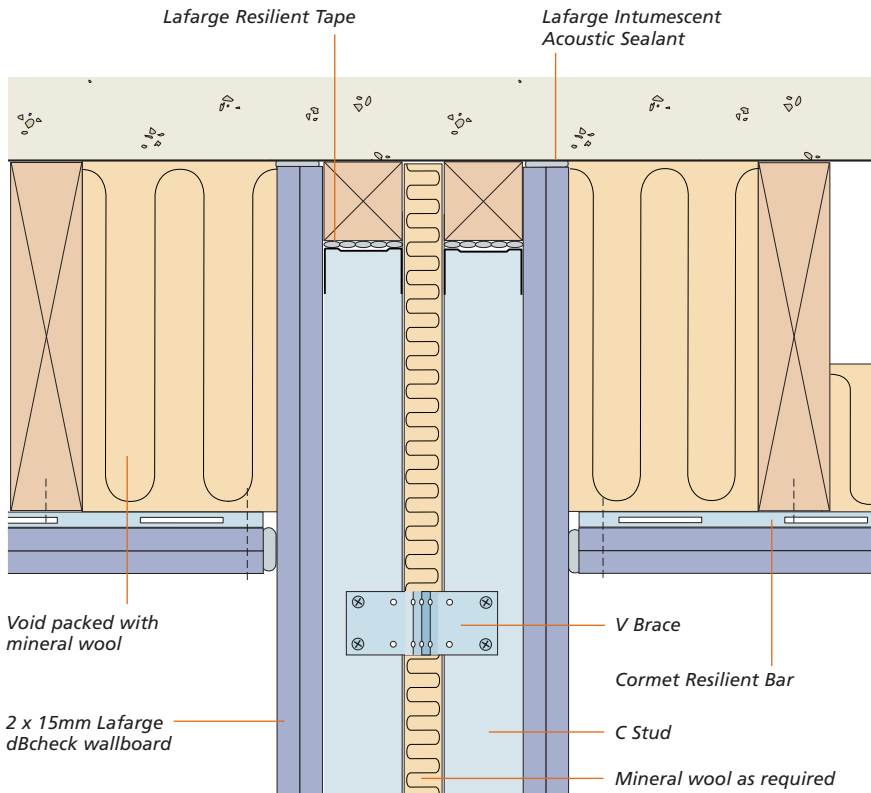
**Twin frame system bracing detail**





**Application details**

**Twin frame high performance wall head junction**



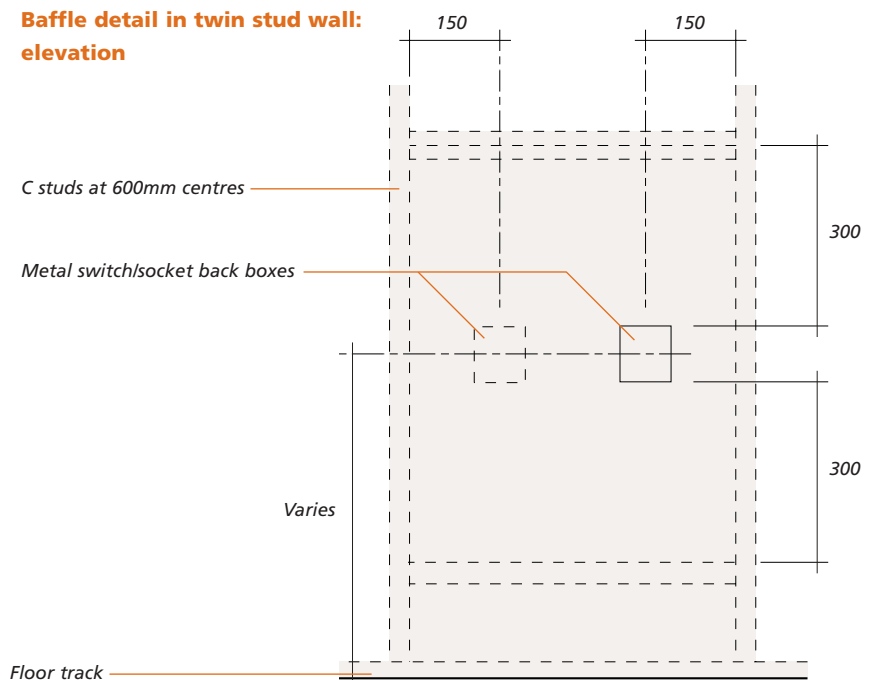
**Services penetration**

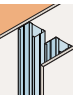
If services are to be installed in High Performance Walls it is essential to maintain the fire and acoustic performance of the partition system.

Glass mineral wool batts must be inserted behind any switch or socket boxes and the area adjacent to the penetration should be encapsulated by the use of 15mm Lafarge Firecheck wallboard as shown.

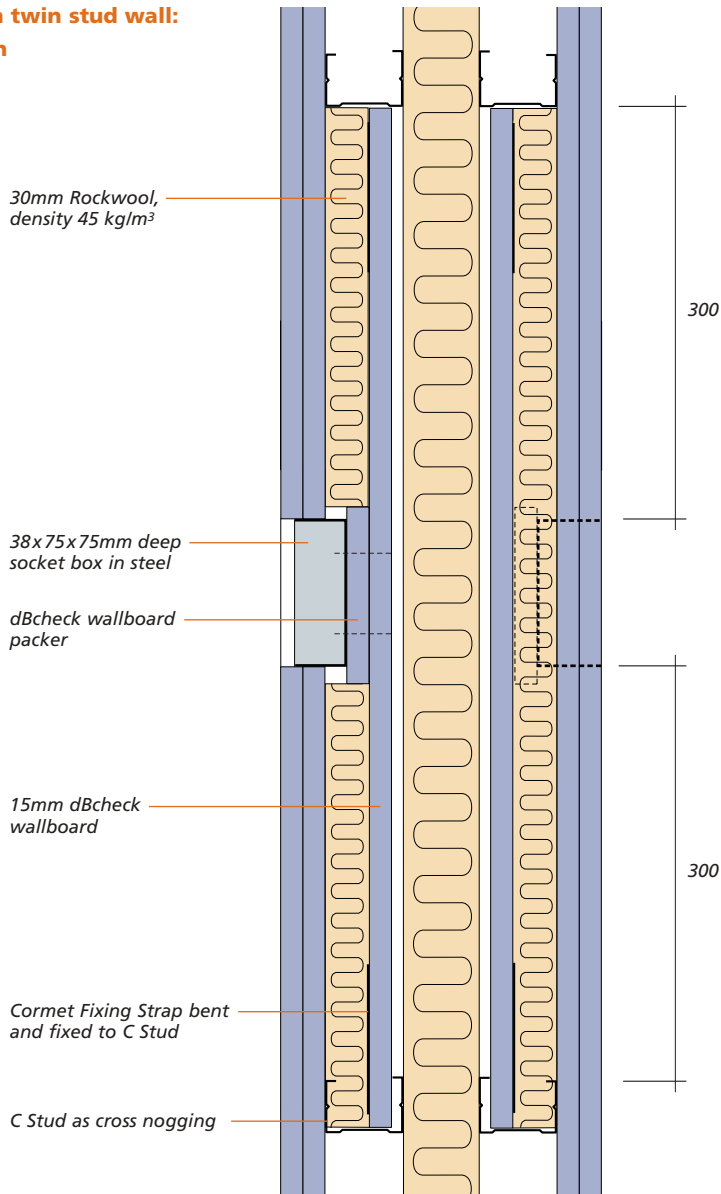
Baffle box is required even where there is a box on one side only.

**Baffle detail in twin stud wall: elevation**

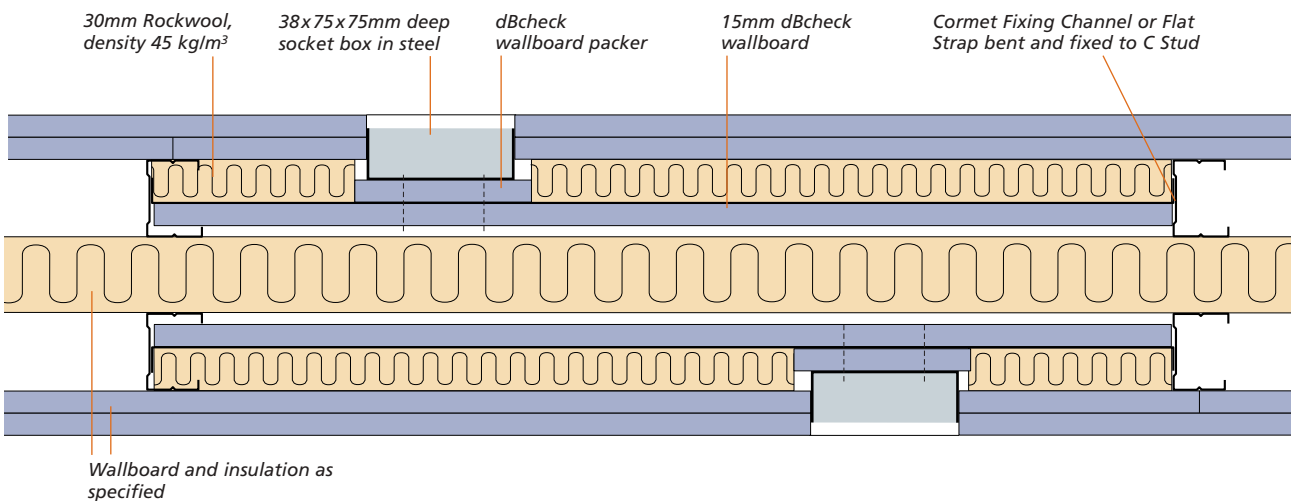


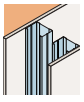


**Baffle detail in twin stud wall:  
vertical section**



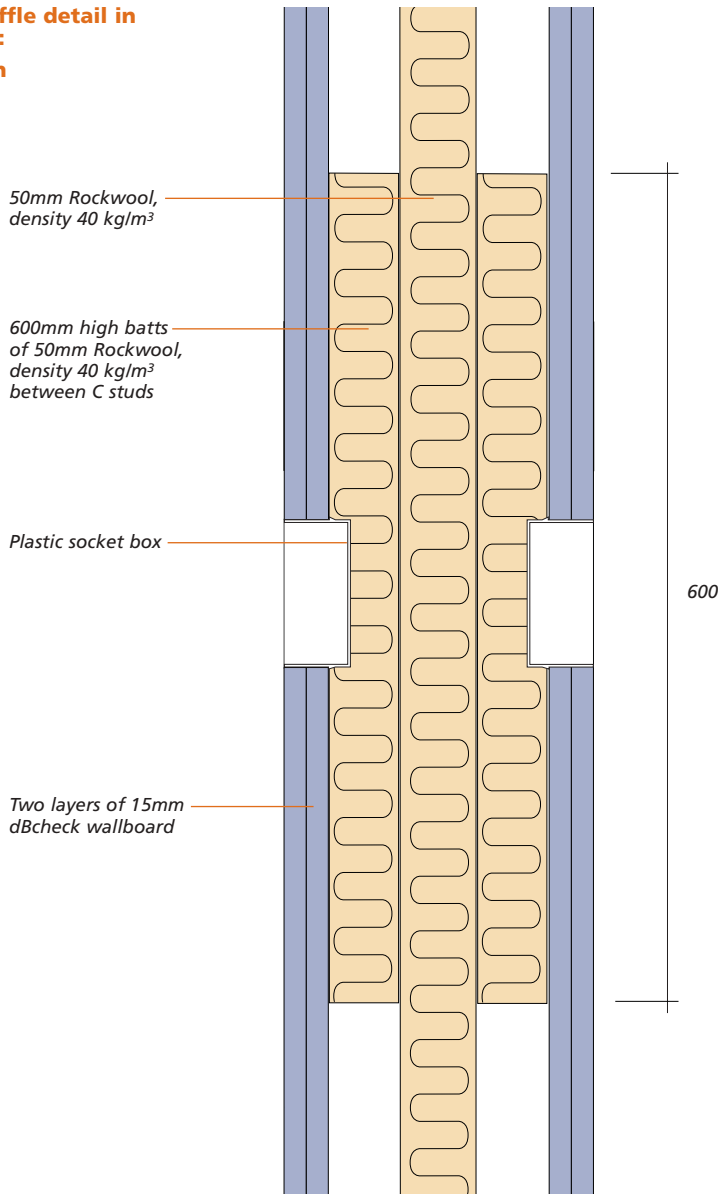
**Baffle detail in twin stud wall:  
plan section**



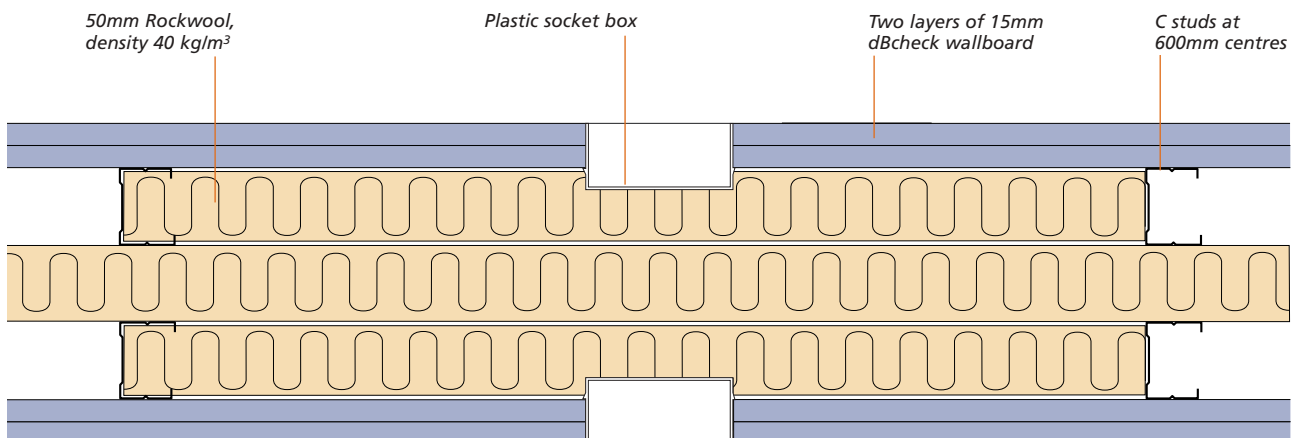


**Application details**

**Alternative baffle detail in twin stud wall:  
vertical section**



**Alternative baffle detail in twin stud wall:  
plan section**

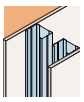




**Performance tables**

In the new Approved Document E the method of calculating airborne sound insulation has changed. It is now necessary to apply a correction factor ( $C_{tr}$ ) to all site test results.

For a  $C_{tr}$  calculation on any Lafarge systems detailed please contact Technical Enquiryline on 01275 377789.



**Performance tables**

**Partitions: High Performance**

**Table 3.25 Cormet High Performance wall**

System reference	Specification	Weight (kg/m <sup>2</sup> )	Maximum height (m)*	Normal thickness (mm)	Fire resistance (minutes)	Sound insulation (R <sub>v</sub> dB)
RCP 91	<p><b>Studs:</b> two 50mm studs at 600mm centres, set 30mm apart, braced at 800mm centres with Cormet V Brace</p> <p><b>Facings:</b> two layers 12.5mm Lafarge Echeck wallboard both sides</p> <p><b>Insulation:</b> 25mm glass mineral wool density 19.5 kg/m<sup>3</sup></p>	39	4.2	180	60	54
RCP 92	<p><b>Studs:</b> two 50mm studs at 600mm centres, set 30mm apart, braced at 800mm centres with Cormet V Brace</p> <p><b>Facings:</b> inner layer 15mm Lafarge Standard wallboard, outer layer 15mm Lafarge Standard wallboard or Predeco wallboard both sides</p> <p><b>Insulation:</b> 25mm glass mineral wool density 19.5 kg/m<sup>3</sup></p>	47	4.8	190	60	56
RCP 94	<p><b>Studs:</b> two 60mm studs at 600mm centres, set 30mm apart, braced at 800mm centres with Cormet V Brace</p> <p><b>Facings:</b> two layers 12.5mm Lafarge Echeck wallboard both sides</p> <p><b>Insulation:</b> 25mm glass mineral wool density 19.5 kg/m<sup>3</sup></p>	39	4.8	200	60	55
RCP 115	<p><b>Studs:</b> 60mm wide I Studs at 300mm centres, staggered in 72mm track with ISC10 clips</p> <p><b>Facings:</b> inner layer 15mm Lafarge Standard wallboard, outer layer 15mm Lafarge Standard wallboard or Predeco wallboard both sides</p> <p><b>Insulation:</b> 25mm glass mineral wool density 19.5 kg/m<sup>3</sup></p>	46	3.9	132	90	54
RCP 116	<p><b>Studs:</b> 60mm wide I Studs at 300mm centres, staggered in 72mm track with ISC10 clips</p> <p><b>Facings:</b> inner layer 15mm Lafarge Standard wallboard, outer layer 15mm Lafarge Standard wallboard or Predeco wallboard both sides</p> <p><b>Insulation:</b> 50mm glass mineral wool insulation density 16 kg/m<sup>3</sup></p>	47	3.9	132	90	55

(continued next page)

\* With studs at 400mm centres, maximum height can be increased by 0.30m for single layer boarding and 0.60m for double layer boarding. All maximum heights based on deflection of L/240 at 200 Pa U.D.L. For partitions at 4.2m and above, U Track Deep Flange should be used at the partition head.

\*\* 90mm C Stud ref CS90/W may be used as an alternative

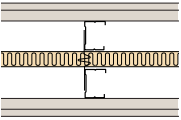
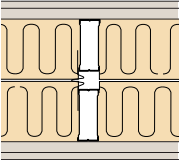
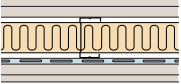
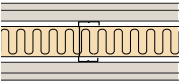
Rock mineral wool density 33kg/m<sup>3</sup> may be used in lieu of glass mineral wool as specified.

At the time of publication the exact implications on board weights resulting from changes to Building Regulations Approved Document E for England and Wales are not clear. For this reason systems in this manual that may be specified in dwellings have been illustrated with Lafarge Echeck Wallboard. Echeck Wallboard has a board weight that meets the requirements of the approved document sections 1 and 2. If in doubt contact Technical Enquiryline.



Partitions: High Performance

Table 3.25 Cormet High Performance wall (continued)

System reference	Specification	Weight (kg/m <sup>2</sup> )	Maximum height (m)*	Normal thickness (mm)	Fire resistance (minutes)	Sound insulation (R <sub>v</sub> db)
RCP 93 	<b>Studs:</b> two 50mm studs at 600mm centres, set 30mm apart, braced at 800mm centres with Cormet V Brace <b>Facings:</b> inner layer 19mm Lafarge Plank fixed with long edges horizontally, outer layer 12.5mm Lafarge Echeck wallboard both sides <b>Insulation:</b> 25mm glass mineral wool density 19.5kg/m <sup>3</sup>	48	4.2	200	60	60
RCP 110 	<b>Studs:</b> two 90mm boxed studs** at 600mm centres, set 30mm apart, braced at 2400mm centres across boxed studs with Cormet V Brace <b>Facings:</b> inner layer 19mm Lafarge Plank fixed with long edges horizontally, outer layer 12.5mm Lafarge Standard wallboard or Predeco wallboard both sides <b>Insulation:</b> 100mm glass mineral wool density 10.5 kg/m <sup>3</sup>	52	7.2	277	60	67
RCP 55 	<b>Studs:</b> 70mm width at 600mm centres <b>Facings:</b> inner layer 19mm Lafarge Plank fixed with long edges horizontally to stud side and long edges vertically to Resilient Bar side. Outer layer 12.5mm Lafarge Echeck wallboard. Resilient Bar fixed to one side at 600mm vertical centres <b>Insulation:</b> 50mm glass mineral wool density 16 kg/m <sup>3</sup>	48	3.0	144	60	63
RCP 56 	<b>Studs:</b> 70mm width at 600mm centres <b>Facings:</b> inner layer 19mm Lafarge Plank fixed with long edges horizontally, outer layer 12.5mm Lafarge Echeck wallboard <b>Insulation:</b> 50mm glass mineral wool density 16 kg/m <sup>3</sup>	47	4.6	133	60	55

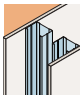
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\* With studs at 400mm centres, maximum height can be increased by 0.30m for single layer boarding and 0.60m for double layer boarding. All maximum heights based on deflection of L/240 at 200 Pa U.D.L. For partitions at 4.2m and above, U Track Deep Flange should be used at the partition head.

\*\* 90mm C Stud ref CS90/W may be used as an alternative

Rock mineral wool density 33kg/m<sup>3</sup> may be used in lieu of glass mineral wool as specified.

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**Performance tables**

**Partitions: High Performance**

**Table 3.25 Cormet High Performance wall (continued)**

System reference	Specification	Weight (kg/m <sup>2</sup> )	Maximum height (m)*	Normal thickness (mm)	Fire resistance (minutes)	Sound insulation (R <sub>v</sub> dB)
RCP 114	<p><b>Studs:</b> two 146mm boxed studs** at 600mm centres, set 52mm apart, braced at 3000mm centres with Cormet V Brace</p> <p><b>Facings:</b> two inner layers Lafarge 15mm Firecheck wallboard, outer layer 12.5mm Lafarge Echeck wallboard both sides</p> <p><b>Insulation:</b> two 100mm glass mineral wool quilts density 10.5kg/m<sup>3</sup></p>	72	12.0	432	120	71
RCP 57	<p><b>Studs:</b> 70mm width at 600mm centres</p> <p><b>Facings:</b> inner layer Lafarge 15mm Firecheck wallboard, outer layer 15mm Lafarge Firecheck wallboard or Megadeco wallboard and with Resilient Bar to one side at 600mm vertical centres</p> <p><b>Insulation:</b> 50mm glass mineral wool density 24kg/m<sup>3</sup></p>	50	3.0	131	120	62
RCP 111	<p><b>Studs:</b> two 50mm studs at 600mm centres set 45mm apart</p> <p><b>Facings:</b> inner layer 15mm Lafarge Firecheck wallboard, outer layer 15mm Lafarge Firecheck wallboard or Megadeco wallboard</p> <p><b>Core:</b> three layers 15mm Lafarge Firecheck wallboard</p>	86	6.0	209	240	60
RCP 112	<p><b>Studs:</b> two 50mm studs at 600mm centres set 45mm apart</p> <p><b>Facings:</b> inner layer 15mm Lafarge Firecheck wallboard, outer layer 15mm Lafarge Firecheck wallboard or Megadeco wallboard</p> <p><b>Core:</b> three layers 15mm Lafarge Firecheck wallboard</p> <p><b>Insulation:</b> 25mm glass mineral wool quilt in each cavity</p>	88	6.0	209	240	65

\* With studs at 400mm centres, maximum height can be increased by 0.30m for single layer boarding and 0.60m for double layer boarding. All maximum heights based on deflection of L/240 at 200 Pa U.D.L. For partitions at 4.2m and above, U Track Deep Flange should be used at the partition head.

\*\* 146mm C Stud ref CS146/Y may be used as an alternative. Please call Technical Enquiryline for further information. Rock mineral wool density 33kg/m<sup>3</sup> may be used in lieu of glass mineral wool as specified.

At the time of publication the exact implications on board weights resulting from changes to Building Regulations Approved Document E for England and Wales are not clear. For this reason systems in this manual that may be specified in dwellings have been illustrated with Lafarge Echeck Wallboard. Echeck Wallboard has a board weight that meets the requirements of the approved document sections 1 and 2. If in doubt contact Technical Enquiryline.