October 2007

XPR® PREMIUM-SYSTEM

DATA SHEET

PARTITION WALLS FOR CINEMAS & LECTURE THEATRES – WITH XPR SYSTEMS

The strength of steel framing with the flexibility of dry lining.

Multi-screen cinemas, often known as multiplexes, are usually constructed from a basic steel-framed shell, which is then fitted out internally with partitions and dry lining to the exterior walls. This system also produces a building with multi-functional space, which can readily be converted and adapted to other uses at a later date.

A demanding performance specification.

These lightweight, non load-bearing internal walls need to meet the very demanding acoustic insulation requirements which are obviously dictated by this type of application, as well as satisfying the appropriate fire safety regulations. In a cinema auditorium such walls may also reach considerable heights. This imposes additional mechanical stresses on the construction and demands a very high degree of structural stability.

The same applies to lecture theatres in educational establishments.

The solution

XPR Partition systems.

With these exacting requirements in mind, the XPR Systems include thin-section lightweight constructions that are fire rated up to F 120.

Depending on system configuration, site conditions and the design and construction of the building shell, XPR walls of 200mm thickness can achieve sound insulation ratings (measured on-site) of up to 70 dB (frequency range 100–3200 Hz) and 53 dB (63 Hz octave band frequency). Laboratory measurements yielded sound insulation ratings of up to 74 dB. In addition to these features, the wall constructions will have the other benefits of XPR – structural stability, impact and abrasion resistance, moisture resistance and the ability to accept wall mounted fittings as standard.

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Fast and simple installation makes these systems highly cost-effective.

The studwork and wall linings are formed using XPR system components, PROTEKTOR studs and ROCKWOOL insulation, and then boarded using different layers of FERMACELL according to the intended performance of the finished construction. Because only the first layer of board needs to be screwed to the metal studwork, these XPR systems are quick and easy to erect.

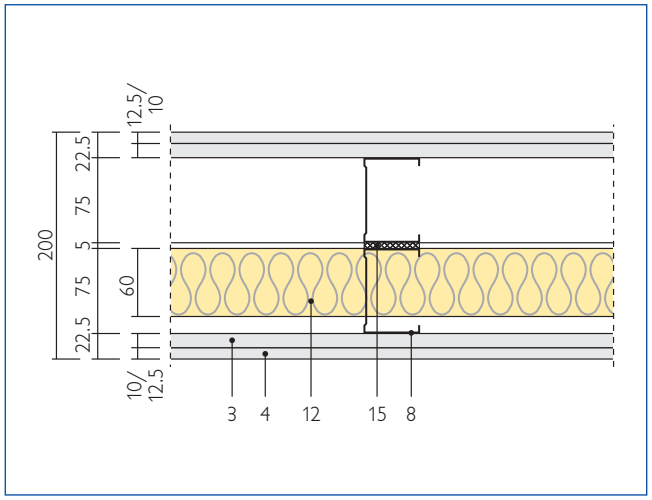
Subsequent layers of board are fixed directly to the previous layer on both sides of the partition, irrespective of the position of the studs, using screws or steel staples.

The lower layer or layers of boards are simply butted together dry, while the joints in the final or outer most layer are either glued with FERMACELL Jointstik or taped and jointed if tapered edge boards are used.

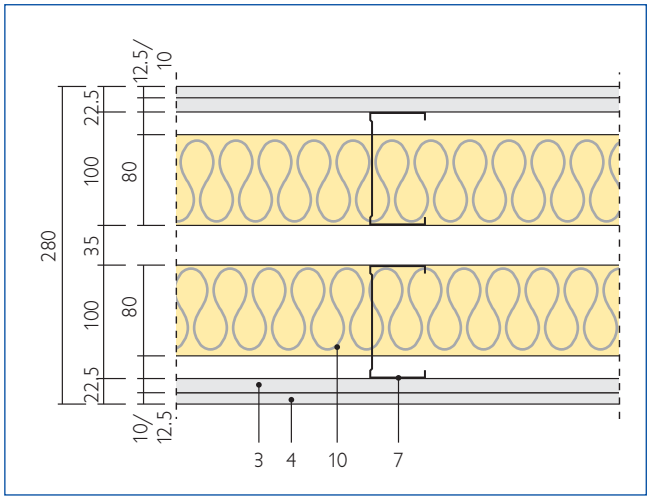
This time-saving and cost-effective technique for fastening and jointing multiple layers of FERMACELL building boards is standard practice for all types of construction.

The same technique can be used to construct high-performance walls of exceptional height that meet the most demanding standards of fire resistance and sound insulation.

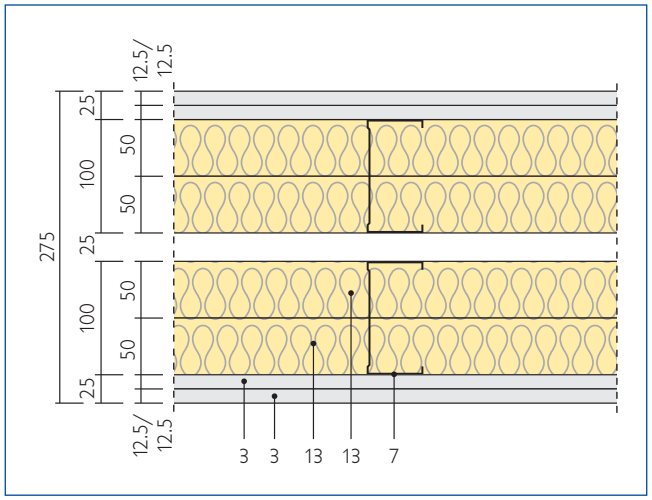
In triple layer system, the first two layers may need to be fixed back to the stud. Call the technical helpline for assistance.



Laboratory sound insulation rating (Rw) = 66 dB
Fire resistance rating = F 90-A. For walls up to 6m in height



Laboratory sound insulation rating (Rw) = 71 dB
Fire resistance rating = F 90-A. For walls up to 4m in height



Laboratory sound insulation rating (Rw) = 74 dB
Fire resistance rating = F 90-A. For walls up to 4m in height

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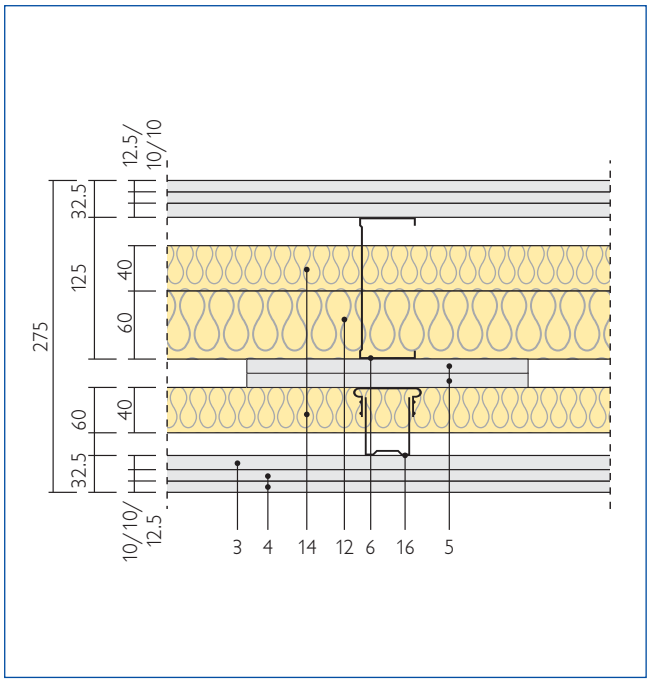
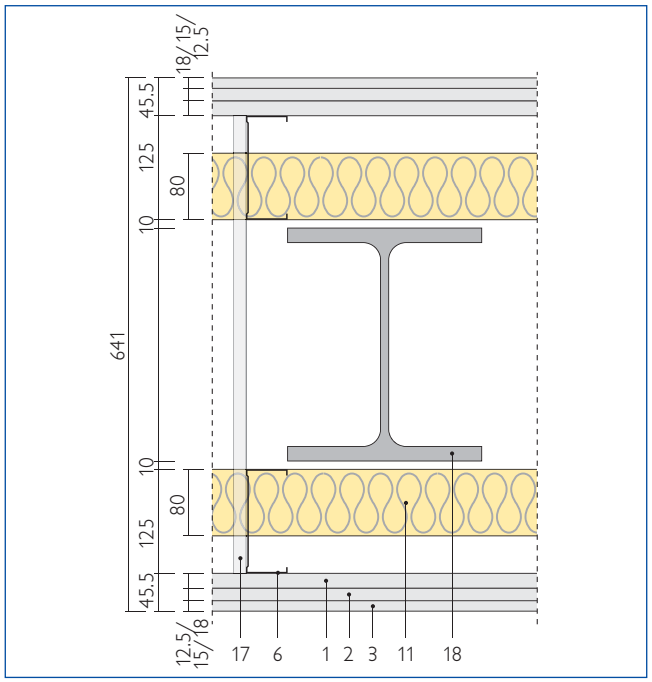
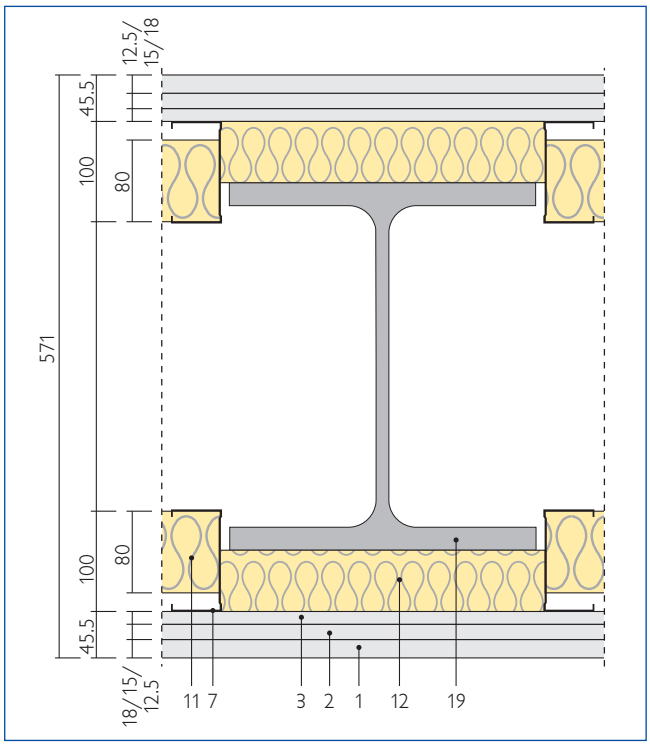


Sound insulation rating (R'w) = 68 dB (measured on-site)
Rated difference in sound levels (D'w) = 78 dB
Fire resistance rating = F 90-A for walls up to 10m in height



Sound insulation rating (R'w) = 65 dB (measured on-site)
Fire resistance rating (both faces) = F 90-A for
walls up to 9.6m in height



Sound insulation rating (R'w) = 71 dB (measured on-site)
Sound damping in the 63 Hz octave band frequency:
R'w= 53 dB (lined on one side)
Fire resistance rating (both faces) =
F 90-A for walls up to 5m in height

Key to diagrams

1 18mm FERMACELL board
2 15mm FERMACELL board
3 12.5mm FERMACELL board
4 10mm FERMACELL board
5 Cut strips of 12.5mm FERMACELL board
6 PROTEKTOR stud, 125 x 0.6mm
7 PROTEKTOR stud, 100 x 0.6mm
8 PROTEKTOR stud, 75 x 0.6mm
9 PROTEKTOR stud, 50 x 0.6mm
10 ROCKWOOL 80mm/100 kg/m³
11 ROCKWOOL 80mm/50 kg/m³
12 ROCKWOOL 60mm/40 kg/m³
13 ROCKWOOL 50mm/30 kg/m³
14 ROCKWOOL 40mm/40 kg/m³
15 Double-sided adhesive tape
16 PROTEKTOR VCD System
17 Strips of FERMACELL board positioned at 1/3 of wall height
18 Steel column HE-B/IPB 280
19 Steel column HE-B/IPB 360

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Other benefits

As well as meeting the demanding performance specification outlined overleaf, XPR has additional benefits in the construction of partition walls and dry lining for cinema and lecture theatre interiors.

Because of their impact resistance and high mechanical strength, large wall-mounted fittings such as display cabinets, display boards and signs, projection screens and sound absorbing panels can be attached directly to the FERMACELL boards without the need for hanging rails or noggins/dwangs.

XPR's enhanced abrasion and impact resistance is particularly suited to high traffic areas such as cinema foyers and corridors, and the inherent moisture of the board often allows the dry lining to be commenced before the building envelope is complete.

Finally, XPR's FST finishing system means that non-skilled trades may be employed to finish the board to plaster smoothness.

The information contained in this technical datasheet represents only a small part of XPR's vast experience of tailoring systems to a client's precise acoustic requirements. For further information, please contact XPR and we will arrange for a technical expert to come and discuss your requirements.