CERTIFICATE OF APPROVAL
No CF 429

This is to certify that, in accordance with
TS00 General Requirements for Certification of Fire Protection Products
The undermentioned products of

ETEX BUILDING PERFORMANCE LTD

Gordano House, Marsh Lane, Easton-in-Gordano, Bristol, BS20 0NE
Tel: 0800 145 6033

Have been assessed against the requirements of the Technical Schedule(s) denoted below and are approved for use subject to the conditions appended hereto:

CERTIFIED PRODUCT	TECHNICAL SCHEDULE
Durasteel Partitions and Ceiling Membranes	**TS49 Vertical and Horizontal Separating Elements**

Signed and sealed for and on behalf of Warringtonfire Testing and Certification Limited

Paul Duggan
Certification Manager

Issued: 13th April 2006
Reissued: 9th February 2022
Valid to: 30th June 2023

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Durasteel Partition and Ceiling Membrane Assemblies

1. This approval relates to the use of the above partitions and ceiling membrane assemblies in providing fire resistance of up to 240 minutes integrity for uninsulated assemblies, or integrity and insulation, for insulated assemblies, as defined in BS 476: Part 22: 1987. Subject to the undermentioned conditions, the partitions and ceiling membranes will meet the relevant requirements of BS 5588 for fire resisting compartment walls and floors, for periods of up to 240 minutes (dependent upon design limitations) when used in accordance with the provisions therein.

2. This certification is provided to the client for their own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.

3. The partitions and ceiling membranes are approved on the basis of:

   i) Initial type testing
   ii) Audit testing at the frequency specified in TS49
   iii) A design appraisal against TS49
   iv) Inspection and surveillance of factory production control
   v) Production surveillance under ISO 9001:2008

4. The partition and ceiling membrane assemblies comprise Durasteel board screwed to a steel framework and for insulated constructions include mineral wool insulation.

5. This approval is applicable to insulated and uninsulated Durasteel partition and ceiling membrane assemblies as described within this Certificate.

6. The partition and ceiling membrane assemblies shall be mechanically fixed to wall and/or floor constructions or structural steel members having a fire resistance of at least the same period as the partition or ceiling membrane.

7. The approval relates to ongoing production. Product and/or its immediate packaging is identified with the manufacturers' name, the product name or number, the CERTIFIRE name or name and mark, together with the CERTIFIRE certificate number and application where appropriate.

Further Information

Further information regarding the details contained in this certificate may be obtained from Etex Building Performance Ltd(Tel: 0800 145 6033).

Further information regarding CERTIFIRE certification and other approved products can be obtained from CERTIFIRE.
(Tel:01925 646777, website: www.warringtoncertification.com/certifire).

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Durasteel Partition Assemblies

Uninsulated partition assemblies (up to 240 minutes integrity)

A single layer of Durasteel board, 9.5mm thick, supported by a framework of steel channels, minimum 80mm wide x 60mm deep x 3mm thick, with the vertical channels at 1200mm maximum centres. The boards are fastened to one flange of the steel channels with M5.5 steel self-drill and tap Tek screws at 250mm nominal centres. The Durasteel boards are supplied at a maximum size of 2.5 m x 1.2 m. Vertical board joints coincide with the channel studs. Horizontal board joints are backed by a steel channel the same size as the vertical studs. The perimeter channels of the partition are fastened to the surrounding construction with M10 or M12 all-steel expanding anchors (or equivalent for alternative types of supporting construction) at 500mm maximum centres. The maximum height of the partition assemblies is 15.0 m. Fire attack may be from either face.

The horizontal and vertical channel members are either welded together or joined with steel angle cleats, minimum 60mm x 60mm x 3mm thick x 60mm long, that are fastened to each channel member with two M10 steel bolts and nuts. Wherever possible the main vertical channel studs are formed in one continuous length to avoid the need for splicing. However, if splicing is unavoidable, details for the spliced joints should be confirmed by the manufacturer per their conducted tests.

Where an expansion allowance is provided at the top of a partition, steel channels, minimum 50mm flanges x 3mm thick, are fastened to the vertical channels with M10 steel bolts and nuts. The width of the channel (web dimensions) should be such that it is a close fit within the channel studs. At the junction above the expansion gap the channels are connected with minimum two M10 bolts. At the junction below the expansion gap the channels are connected, through slotted holes, with minimum two M10 bolts fitted with fusible washers. The gap in the Durasteel board facing is covered with a Durasteel cover panel that is fastened to the steel framework above the gap (through the Durasteel facing board) and overlaps the Durasteel board below the gap by at least 50mm. Up to a height of 4 m no expansion allowance is required. Above that height an expansion allowance of at least 6mm per metre height is required.

Increased partition heights

The size of steel channel used in the construction of the partition framework for various heights is as follows:

Table 1: uninsulated single skin uninsulated partitions

Height of partition - m	Size of channel for single skin uninsulated partitions – mm x mm x mm
0 – 6	80 x 60 x 3
6 – 9	100 x 60 x 3
9 – 12	150 x 60 x 3
12 - 15	200 x 60 x 3

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Insulated partition assemblies

The construction of the insulated double-skin DURASTEEL partitions is identical to the uninsulated single-skin partitions except for the following changes:

- A second skin of Durasteel, 9.5mm thick, is fitted to the opposite face of the steel framework.
- For some constructions Durasteel fillets are fitted over both faces of the channel members before the faces are fitted. The fillets must overlap the channels by at least 20mm on both sides.
- For 120 and 240 minute insulation periods mineral wool insulation is fitted in the cavity of the partition.

Details of the different specifications for the insulated partitions are as follows:

Table 1: Insulated partitions assemblies with different heights

Integrity	Insulation	Height (m)	Stud size - mm	DURASTEEL fillets per face	Rock wool infill
240	60	up to 6	80 x 60 x 3	1	None
240	60	6 - 9	100 x 60 x 3	1	None
240	60	9 - 12	150 x 60 x 3	1	None
240	60	12 - 15	200 x 60 x 4	1	None
240	120	up to 6	80 x 60 x 3	1	2 x 40 mm x 140 kg/m3
240	120	6 - 9	150 x 60 x 3	1	2 x 40 mm x 140 kg/m3
240	120	9 - 12	200 x 60 x 3	1	2 x 40 mm x 140 kg/m3
240	120	12 - 15	250 x 60 x 4	1	2 x 40 mm x 140 kg/m3
240	120	up to 6	150 x 60 x 3	None	3 x 50 mm x 80 kg/m3
240	120	6 - 9	150 x 60 x 3	None	3 x 50 mm x 80 kg/m3
240	120	9 - 12	200 x 60 x 3	None	3 x 50 mm x 80 kg/m3
240	120	12 - 15	250 x 60 x 4	None	3 x 50 mm x 80 kg/m3
240	120	up to 6	200 x 60 x 3	None	4 x 50 mm x 60 kg/m3
240	120	6 - 9	200 x 60 x 3	None	4 x 50 mm x 60 kg/m3
240	120	9 - 12	200 x 60 x 3	None	4 x 50 mm x 60 kg/m3
240	120	12 - 15	250 x 60 x 4	None	4 x 50 mm x 60 kg/m3
240	240	up to 6	120 x 60 x 3	2	3 x 40 mm x 140 kg/m3
240	240	6 - 9	150 x 60 x 3	2	3 x 40 mm x 140 kg/m3
240	240	9 - 12	200 x 60 x 3	2	3 x 40 mm x 140 kg/m3
240	240	12 - 15	250 x 60 x 4	2	3 x 40 mm x 140 kg/m3
240	240	up to 6	150 x 60 x 3	2	3 x 50 mm x 100 kg/m3
240	240	6 - 9	150 x 60 x 3	2	3 x 50 mm x 100 kg/m3
240	240	9 - 12	200 x 60 x 3	2	3 x 50 mm x 100 kg/m3
240	240	12 - 15	250 x 60 x 4	2	3 x 50 mm x 100 kg/m3
240	240	up to 6	200 x 60 x 3	1	4 x 50 mm x 80 kg/m3
240	240	6 - 9	200 x 60 x 3	1	4 x 50 mm x 80 kg/m3
240	240	9 - 12	200 x 60 x 3	1	4 x 50 mm x 80 kg/m3
240	240	12 - 15	250 x 60 x 4	1	4 x 50 mm x 80 kg/m3

The rock wool must be fitted into the channels. If the rock wool does not fill the cavity it must be fastened in position with 2.5 mm-diameter steel stud-welded pins and 38 mm-diameter spring steel washers. The pins are positioned in a grid 400 mm x 400 mm maximum. Joints in the layers of rock wool must overlap by at least 150 mm.

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Durasteel Ceiling Membrane Assemblies

Uninsulated ceiling membrane assemblies (240 minutes integrity)

Fire resistance - minutes		Durasteel - mm	Rock wool
Integrity	Insulation		
240	0	9.5	None

A single layer of Durasteel board, 9.5mm thick, supported by a framework of steel channels, minimum 80mm wide x 60mm deep x 3mm thick, with the primary channels at 1200mm maximum centres. The primary channels are supported from the building structure above the ceiling membrane with steel drop rods at 1.50m maximum centres. The threaded rods pass through clearance holes in the upper flange of the channels and are fastened with steel hexagon full nuts. The diameter of the drop rods is such that the tensile stress within the rods does not exceed 6N/mm^2 for fire ratings up to 240 minutes and 10N/mm^2 for fire ratings up to 120 minutes.

The boards are fastened to the lower flange of the steel channels with M5.5 steel self-drill and tap Tek screws at 200mm nominal centres. The Durasteel boards are supplied at a maximum size of 2.5m x 1.2m. Longitudinal board joints coincide with the primary channels. Transverse board joints are backed by a steel channel the same size as the primary channels. The perimeter channels of the ceiling membrane are fastened to the surrounding construction with M10 or M12 all-steel expanding anchors (or equivalent for alternative types of supporting construction) at 500mm maximum centres. Fire attack may be from either above or below the ceiling membrane.

The longitudinal and transverse channel members are either welded together or joined with steel angle cleats, minimum 60mm x 60mm x 3mm thick x 60mm long, that are fastened to each channel member with two M10 steel bolts and nuts.

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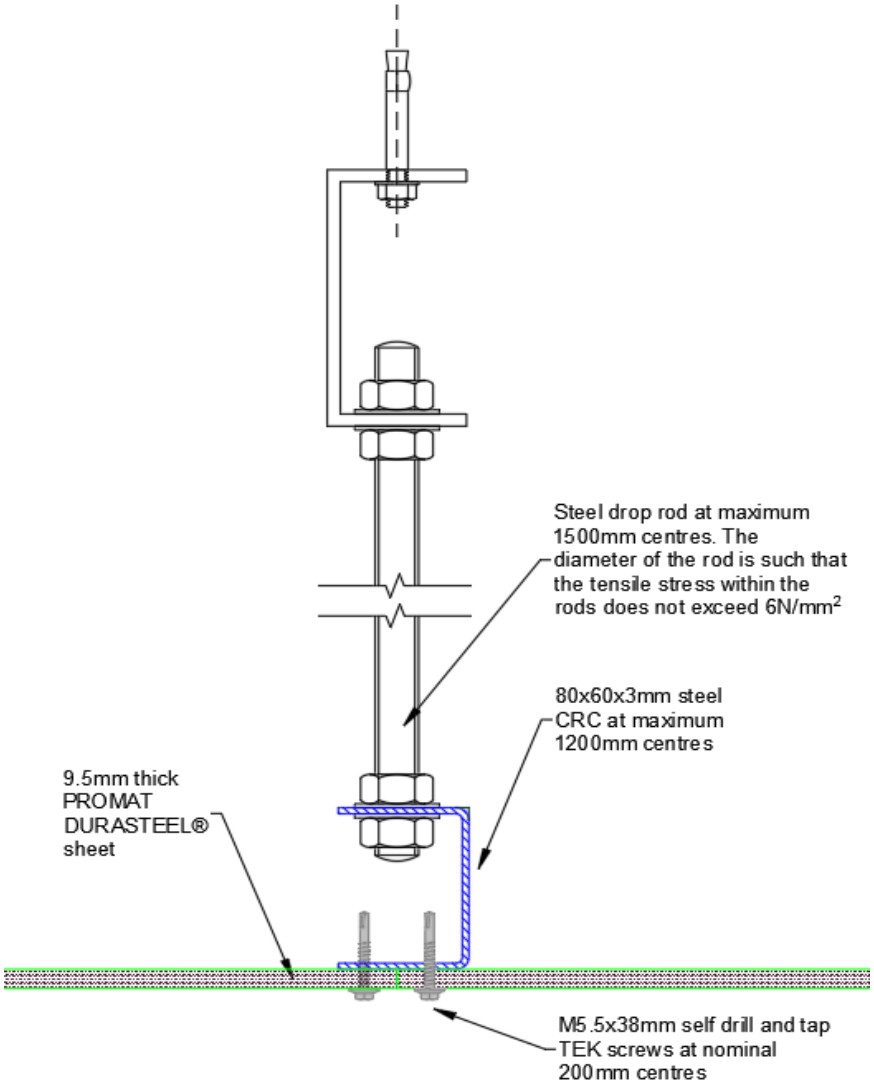

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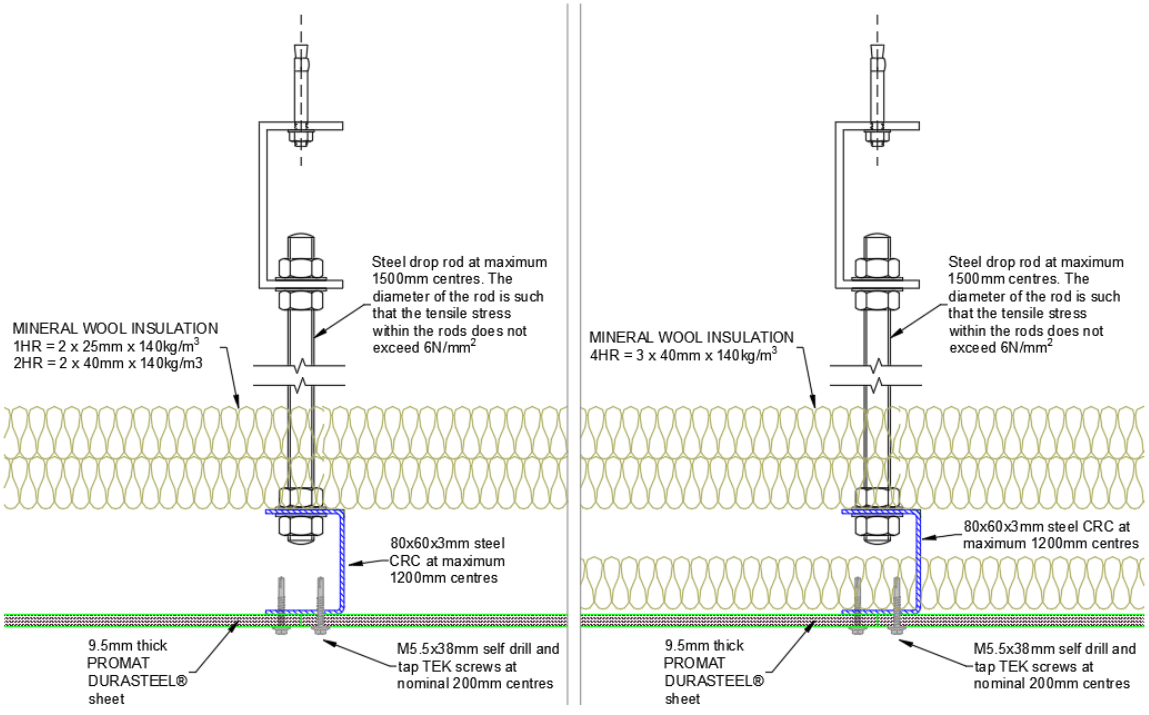
Durasteel Ceiling Membrane Assemblies

Insulated suspended ceiling membrane assemblies (Up to 240 minutes integrity & Insulation)

The construction of the insulated single and double-skin Durasteel ceiling membranes is identical to the uninsulated suspended single-skin ceiling membranes except for the following changes:

- Mineral wool insulation, 140kg/m^3 nominal density, is fitted over the soffit layer of Durasteel and either filling the channels or covering the channels. Joints in the layers of mineral wool overlap by at least 150mm.

Fire resistance - minutes		Durasteel - mm	Rock wool
Integrity	Insulation		
240	60	9.5	2 x 25mm x 140kg/m^3
240	120	9.5	2 x 40mm x 140kg/m^3
240	240	9.5	3 x 40mm x 140kg/m^3



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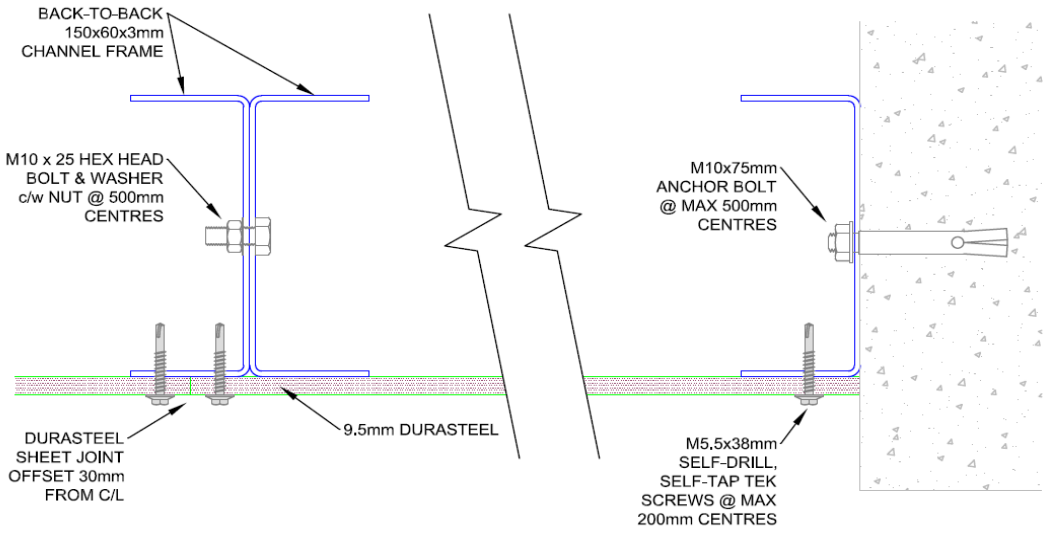
Durasteel Ceiling Membrane Assemblies

Uninsulated ceiling membrane assemblies (240 minutes integrity)

A single layer of Durasteel board, 9.5mm thick, supported by a framework of steel channels, minimum back to back steel channel 60mmx 150mm x 60mm x 3mm, with primary channels at 1200mm centres. The back-to-back channels are fastened together with M10 steel bolts and nuts at maximum 500mm centres.
The boards are fastened to the lower flange of the steel channels with 43.2mm long, M5.5 steel self-drill and tap Tek screws at 200mm nominal centres. Longitudinal board joints coincide with the primary channels but are offset by 30mm from the centreline of the back-to-back channels to avoid a straight through path for hot gases.
Transverse board joints are backed by a single steel channel the same size as the primary channels. The single channels are connected to the primary arrangement via angle cleats/brakets, minimum 60mm x 120mm x 3mm using 2, 32mm long M10 per bracket at the end joists.
The perimeter channels of the ceiling membrane are fastened to the surrounding construction with 75mm long M10 sleeve anchor bolt (or equivalent for alternative types of supporting construction) at 500mm maximum centres. Fire attack would be from below the ceiling membrane.

The maximum span of the ceiling is 4400mm, the width is unrestricted.



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