

CLASSIFICATION OF FIRE RESISTANCE PERFORMANCE IN ACCORDANCE WITH BS EN 13501-2:2016

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Product name: GYPLYNER IWL METAL STUD PARTITION WITH 48 MM STUD FRAMEWORK CLAD ON THE EXPOSED SIDE WITH A DOUBLE LAYER OF 12.5 MM GYPROC WALLBOARD 12.5MM WITH 50 MM ISOVER STEEL FRAME INFILL BATT IN THE CAVITY AND GALVANISED STEEL CLADDING ON THE UNEXPOSED FACE

Classification report no: BTC 22721FC

Issue number: One

Date of issue: 19th June 2023

This classification report consists of 8 pages and may only be reproduced in its entirety.

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1. Introduction

This classification report defines the classification assigned to element GypLyner IWL metal stud partition with 48 mm stud framework clad on the exposed side with a double layer of 12.5 mm Gyproc WallBoard 12.5mm with 50 mm Isover Steel Frame Infill Batt in the cavity and galvanised steel cladding on the unexposed face, in accordance with the procedures given in BS EN 13501-2:2016.

2. Details of Classified Product

2.1 Product Description

The element, GypLyner IWL metal stud partition with 48 mm stud framework clad on the exposed side with a double layer of 12.5 mm Gyproc WallBoard 12.5mm with 50 mm Isover Steel Frame Infill Batt in the cavity and galvanised steel cladding on the unexposed face, fully described below, is provided in support of the classification, listed in Clause 3.1.

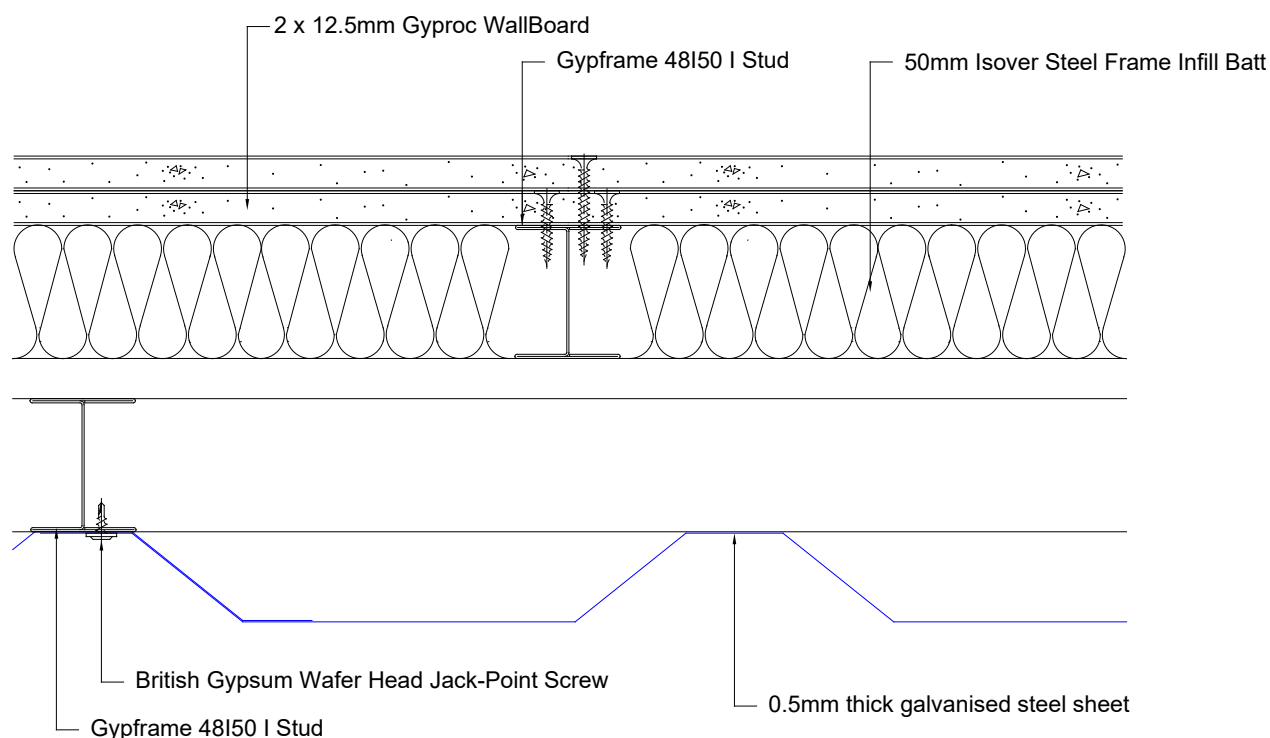


Figure 1. Horizontal cross section – GypLyner IWL metal stud partition with 48 mm stud framework clad on the exposed side with a double layer of 12.5 mm Gyproc WallBoard 12.5mm with 50 mm Isover Steel Frame Infill Batt in the cavity and galvanised steel cladding on the unexposed face.

Construction Details

The specimen was constructed in a refractory concrete lined steel restraint test frame with an opening of 3000 mm (high) x 3000 mm (wide).

Gypframe 50FEC50 Folded Edge Standard Floor and Ceiling Channels were fixed to the head and base of the test aperture at 600 mm centres using 60 mm fire resistant fixings.

At the left-hand edge a Gypframe 48S50 'C' Stud was used to fix the partition to the test frame, using 60 mm fire resistance fixings at 600 mm centres.

Gypframe 48I50 'I' Studs were positioned at 600 mm centres between the channels. The right-hand stud viewed from the unexposed face was not fixed to the perimeter of the test frame.

A second framework was positioned 15 mm adjacent to the first frame on the unexposed face side of the test frame. A 100 mm wide x 25 mm thick rock mineral fibre gasket was positioned on the web of the Gypframe 50FEC50 Folded Edge Standard Floor and Ceiling Channel and fixed to the head of the test aperture at 600 mm centres using 60 mm fire resistant fixings. The rock mineral fibre gasket was positioned such that a 50 mm wide overhang was positioned on the unexposed face side of the channel.

A 100 mm wide x 25 mm thick rock mineral fibre gasket was positioned on the web of the Gypframe 50FEC50 Folded Edge Standard Floor and Ceiling Channel and fixed to the base of the test aperture at 600 mm centres using 60 mm fire resistant fixings. The rock mineral fibre gasket was positioned such that a 50 mm wide overhang was positioned on the unexposed face side of the channel.

At the left-hand edge a Gypframe 48S50 'C' Stud was used to fix the partition to the test frame, using 60 mm fire resistance fixings at 600 mm centres.

Gypframe 48I50 'I' Studs were positioned at alternating 600 mm / 400 mm centres between the channels to coincide with the troughs on the cladding panels. The right-hand stud viewed from the unexposed face was not fixed to the perimeter of the test frame.

The gap between the right-hand studs in both frameworks and the frame lining was filled with a 25 mm thick rock mineral fibre gasket.

Thermocouples were added to the studs of the exposed face framework at mid height on the web, hot and cold flanges of the central two studs.

50 mm Isover Steel Frame Infill Batt was placed within the stud cavity of the framework on the exposed face of the test aperture.

The exposed face of the specimen was clad with a double layer of 12.5 mm Gyproc WallBoard 12.5mm. The inner layer boards were fixed with 25 mm British Gypsum Drywall Screws 25mm at 300 mm centres around the perimeter of the boards only. The outer layer boards were fixed with

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35 mm British Gypsum Drywall Screws 35mm at 300 mm centres around the perimeter and within the field of the boards.

All vertical joints were staggered between layers, with a full board at the free end of the exposed face. A horizontal joint was positioned at 2400 mm from the base on the outer layer boards and at 600 mm from the base on the inner layer boards, on the exposed face of the specimen. A Gyproframe GFS1 Fixing Strap was used behind the horizontal outer layer board joint.

All external board joints on the exposed face were taped and filled using Gyproc Paper Joint Tape and Gyproc Joint Filler as appropriate. All screw heads were spotted using Gyproc Joint Filler.

The unexposed face of the test specimen was clad with 3000 mm long x 0.5 mm thick 32/1000RR galvanised steel profile cladding sheet.

The sheeting was pushed into the rock mineral fibre gasket at the head and base of the specimen to inhibit convective air flow through the specimen cavity.

The steel sheet was fixed to all framing members through the troughs in the sheeting using 13 mm British Gypsum Wafer Head Jack-Point Screws 13mm. The sheet was fixed to the head and base channels at approximately 200 mm centres and to the vertical studs at 300 mm centres. The sheets were joined together by overlapping the two adjacent sheets and were fixed through both sheets into the vertical metal framework using 13 mm British Gypsum Wafer Head Jack-Point Screws 13mm at 300 mm centres.

3. Test Reports / Extended Application Reports and Test Results in Support of Classification

3.1 Test Reports / Extended Application Reports

Name of Laboratory	Name of Sponsor	Test Reports / Extended Application Report Nos.	Test Method / Extended Application Rules & Date
The Building Test Centre	British Gypsum	BTC 21131F	BS EN 1364-1:2015

3.2 Test Results

Test Method & Test Number	Parameter		Results
BS EN 1364-1:2015 BTC 21131F	Integrity	Sustained Flaming	60 minutes, no failure
		6 mm Gap Gauge	60 minutes, no failure
		25 mm Gap Gauge	60 minutes, no failure
		Cotton Pad	54 minutes
	Insulation		46 minutes

All data can be found in the relevant test report.

4. Classification and Field of Application

4.1 Reference of Classification

This classification has been carried out in accordance with clause 7.5.2 of BS EN 13501-2:2016.

4.2 Classification

The element, GypLyner IWL metal stud partition with 48 mm stud framework clad on the exposed side with a double layer of 12.5 mm Gyproc WallBoard 12.5mm with 50 mm Isover Steel Frame Infill Batt in the cavity and galvanised steel cladding on the unexposed face, is classified according to the following combinations of performance parameters and classes as appropriate.

R	E	I	W		t	t	-	M	S	C	IncSlow	sn	ef	r	G	K
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Fire resistance classification: EI 45 / E60

4.3 Field of Application

This classification is valid for any of the following end use applications, as specified in BS EN 1364-1: 2015.

- i) Decrease in height.
- ii) Increase in the thickness of the wall.
- iii) Increase thickness of component materials.
- iv) Decrease in the linear dimensions of the boards but not thickness.
- v) Decrease stud spacing.
- vi) Decrease in fixing centres.
- vii) Increase in the number of horizontal joints, of the type tested, when tested with one joint not more than (500 ± 150) mm from the top edge.

Extension of Width

For test specimens tested without a supporting construction, the width of an identical construction may be increased as the specimen was tested at nominally 3000 mm wide with one vertical edge without restraint.

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Extension of Height

The height of the construction may be increased by 1000 mm under the following conditions:

30 minutes	60 minutes
≤ 100 mm	≤ 100 mm

5. Limitations

This classification document does not represent type approval or certification of the product.

6. Authorisation

SIGNED



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APPROVED



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