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Title:

Classification of Fire Resistance Performance in Accordance With EN 13501-2: 2023

Product Name:

Polypipe TDI Insulating Damp-Proof Course/Cavity Barrier Stonecor

Report No:

WF 541661 Issue 1

Job No:

541661

Prepared for:

Manthorpe Building Products Ltd
Brittain Drive,
Codnor Gate Business Park,
Ripley,
DE5 3ND,
United Kingdom

Date:

8th October 2024

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Table of Contents

1 Introduction

This classification report defines the resistance to fire classification assigned to the element 'Polypipe TDI Insulating Damp-Proof Course/Cavity Barrier Stonecor' in accordance with the procedures given in BS EN 13501-2: 2023.

2 Details of classified product

2.1 General

The element 'Polypipe TDI Insulating Damp-Proof Course/Cavity Barrier Stonecor' is defined as a linear joint seal to maintain the fire separating function and, if relevant, to accommodate a specified degree of movement within the linear joint.

2.2 Product description

The product, 'Polypipe TDI Insulating Damp-Proof Course/Cavity Barrier Stonecor' is fully described in the test reports provided in support of classification detailed in Clause 3.1.

3 Test reports in support of classification

3.1 Summary of test reports

Classification Report Issue 1

Name of laboratory	Name of sponsor	Test report no.	Test method
Warringtonfire Testing and Certification Ltd t/a Warringtonfire Accredited laboratory UKAS no. 0249	Manthorpe Building Products Ltd	WF 542679/R Issue 3	BS EN 1366-4: 2021
		WF 542680/R Issue 4	

Note, for full test report summaries please see Appendix A.

4 Classification and direct field of application (DIAP)

4.1 Reference of classification

This classification has been carried out in accordance with Clause 7 of EN 13501-2: 2023.

4.2 Classification

The product, 'Polypipe TDI Insulating Damp-Proof Course/Cavity Barrier Stonecor' may be classified according to the following combinations of performance parameters and classes as appropriate.

R	E	I	W		*t*	-	M	C	S	IncSlow	sn	ef	r
	✓	✓											

Performance Criteria

Integrity (E)
The assessment of integrity shall be made on the basis of the following three aspects:

a) cracks or opening in excess of given dimensions

b) ignition of a cotton pad

c) sustained flaming on the unexposed face

Classification of integrity shall be according to whether or not the element is also classified for insulation.

Where an element is classified both for integrity E and insulation I, the value of integrity is determined by whichever of the three criteria fails first. Where an element is classified without an insulation classification, the value of integrity is determined by the time to failure using only the cracks/openings or sustained flaming criteria, whichever fails first.

Thermal Insulation (I)
The performance level used to define the thermal insulation criterion shall be the maximum temperature rise at any point, limited to 180^0 C above the initial mean temperature.
No mean temperature shall be considered.

Considering the tests submitted for classification, 'Polypipe TDI Insulating Damp-Proof Course/Cavity Barrier Stonecor' provides the following classification for the tested seal type.

4.3 Classification (Report Issue 1)

Polypipe TDI Insulating Damp-Proof Course/Cavity Barrier in Rigid Walls

Construction details:

To be installed in rigid walls with a minimum thickness of 150 mm and a minimum density of 670 kg/m^3 formed from aerated concrete, concrete, blockwork or masonry.

Barriers may be fitted at any position recessed from either the exposed or unexposed face, or both or full fill.

Barrier is friction fit into the aperture. Product code GSC165 to be used for 100mm depth applications and product code GSC225 to be used for 150mm deep applications.

The DPC layer is to be 0.5mm thick. For the GSC165 product, the DPC is to protrude from the face of the seal on each side by 32.5mm. For the GSC225 product the DPC is to protrude from the face of the seal on each side by 37.5mm.

*For more information on applicable DIAP rules please refer to section 4.4 of this report.

Test ref.: WF 542680/R Issue 4 – Specimens A, B, C and D

Substrate	Minimum Depth (mm)	Backing Material	Compression (%)	CLASSIFICATION
Rigid Wall to Rigid Wall	100	n/a	≥0*	**EI 30 – V – X – F – W 01 to 25**

*Applying Clause 13.5.4 from BS EN 1366-4: 2021. There is no limit on compression as long as it doesn't induce a mechanical failure of the seal e.g. delamination fracture of the mineral wool.

Polypipe TDI Insulating Damp-Proof Course/Cavity Barrier in Rigid Floors

Construction details:

To be installed in rigid floors with a minimum thickness of 150 mm and a minimum density of 670 kg/m^3 formed from aerated concrete, concrete, blockwork or masonry.

Barriers may be fitted at any position recessed from either the exposed or unexposed face, or both or full fill.

Barrier is friction fit into the aperture. Product code GSC165 to be used for 100mm depth applications and product code GSC225 to be used for 150mm deep applications.

The DPC layer is to be 0.5mm thick. For the GSC165 product, the DPC is to protrude from the face of the seal on each side by 32.5mm. For the GSC225 product the DPC is to protrude from the face of the seal on each side by 37.5mm.

*For more information on applicable DIAP rules please refer to section 4.4 of this report.

Test ref.: WF 542679/R Issue 3 – Specimens A, B, C and D

Substrate	Minimum Depth (mm)	Backing Material	Compression (%)	CLASSIFICATION
Rigid Floor to Rigid Floor	100	n/a	≥0*	**EI 30 – H – X – F – W 01 to 25**

*Applying Clause 13.5.4 from BS EN 1366-4: 2021. There is no limit on compression as long as it doesn't induce a mechanical failure of the seal e.g. delamination fracture of the mineral wool.

Field of Direct Application

Field of Direct Application (Extracted relevant sections from EN 1366-4: 2021):

Orientation
The field of application regarding the orientation of the linear joint is given in Table 2.

Table 2 — Field of direct application regarding orientation

Tested orientation	Application
A	A
B	B

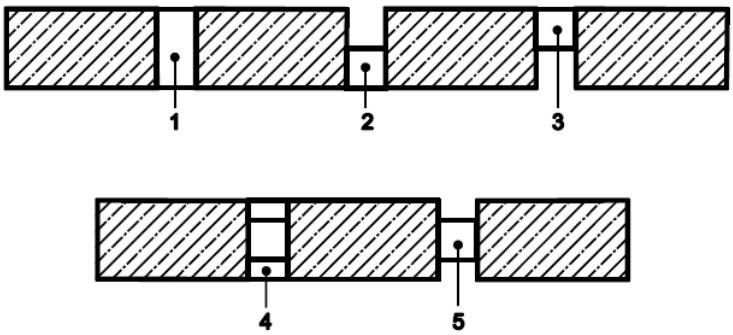
Key

A horizontal linear joint in a horizontal test construction
B vertical linear joint in a vertical test construction

Table 2 only applies when both the supporting construction and the location of the seal within the linear joint remain unchanged.

Supporting construction
Results obtained with autoclaved aerated concrete standard supporting constructions apply to concrete, block work and masonry separating elements of a thickness and density equal to or greater than that tested.

Seal Position
Test results are valid only for the position (see Figure 17) in which the seal was tested, except that where the linear joint seal was fitted flush with the surface of the supporting construction and is exposed to the fire (Figure 17, position 2), the result may also be applied to linear joint seals with positions 3 and 5.



Linear joint seal made of mineral wool (faced/ coated or not faced/coated)
Test results of a seal compressed in the B⇔B or C⇔C directions (see 7.2.4) cover smaller joint width and/or higher compression, provided the compression applied is not sufficient to induce a mechanical failure of the seal e.g. a de-lamination fracture of the mineral wool or coating.

The depth of a seal may be increased but not decreased.

5 Limitations

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

SIGNED	REVIEWED & APPROVED
Signed by: 8840FE92771F47D...	Signed by: B130CD47CCDA452...
***David Thorniley** Senior Product Assessor	***Chris Tye** Role Technical Manager

* For and on behalf of Warringtonfire

Issue 1: 8th October 2024

First issue. Polypipe TDI Insulating Damp-Proof Course/Cavity Barrier Stonecor up to 25 mm gap width, depths from 100mm, for rigid floors and walls, of a minimum thickness 150 mm, all with classifications of EI 30.

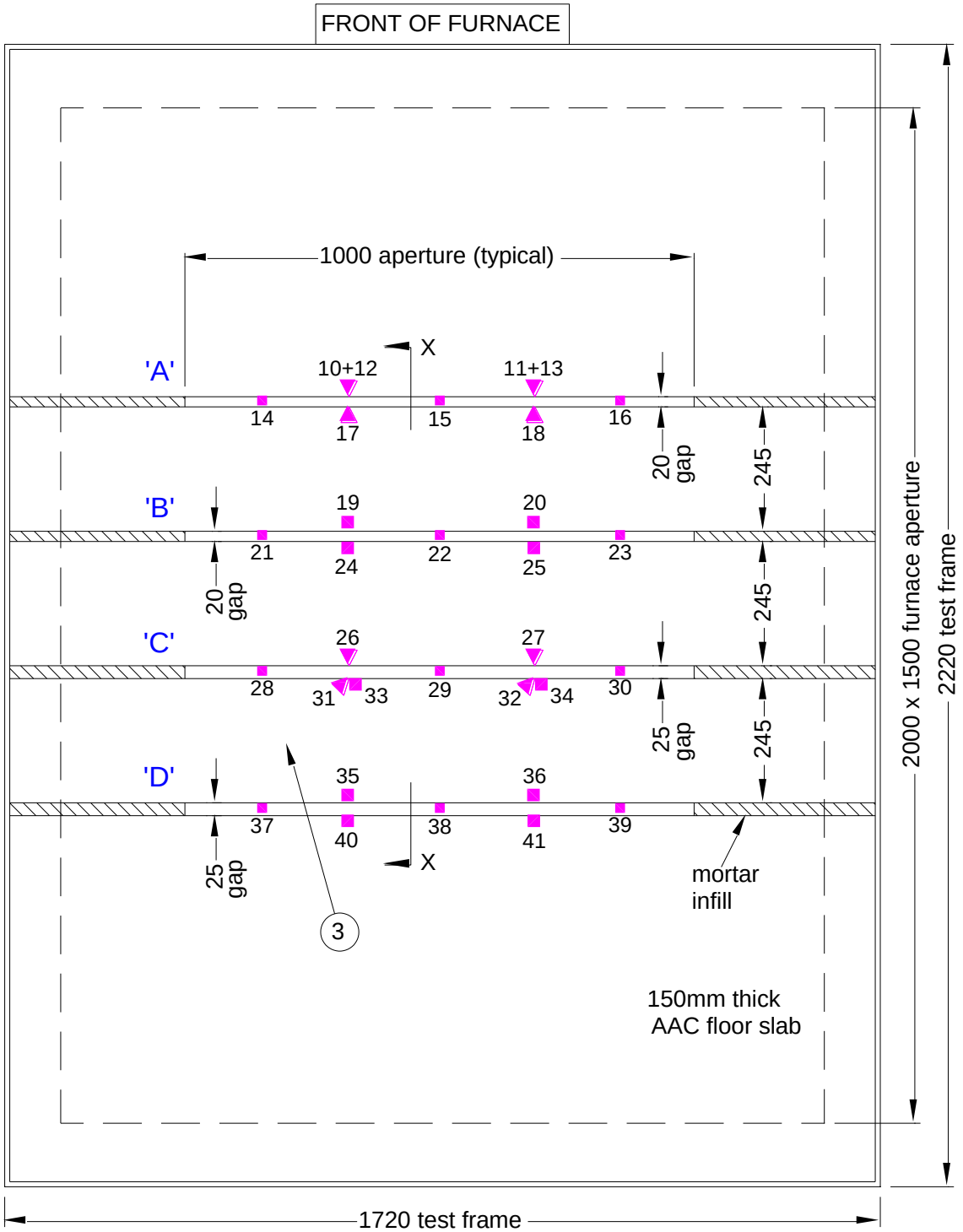
Appendix A – Test Report Summaries

A.1 Test Summaries (Issue 1)

Summary of WF Test Report No. 542679 Issue 2

Test Construction

5.1 Figure 1- General plan view of floor specimens 'A' to 'D' showing thermocouple positions

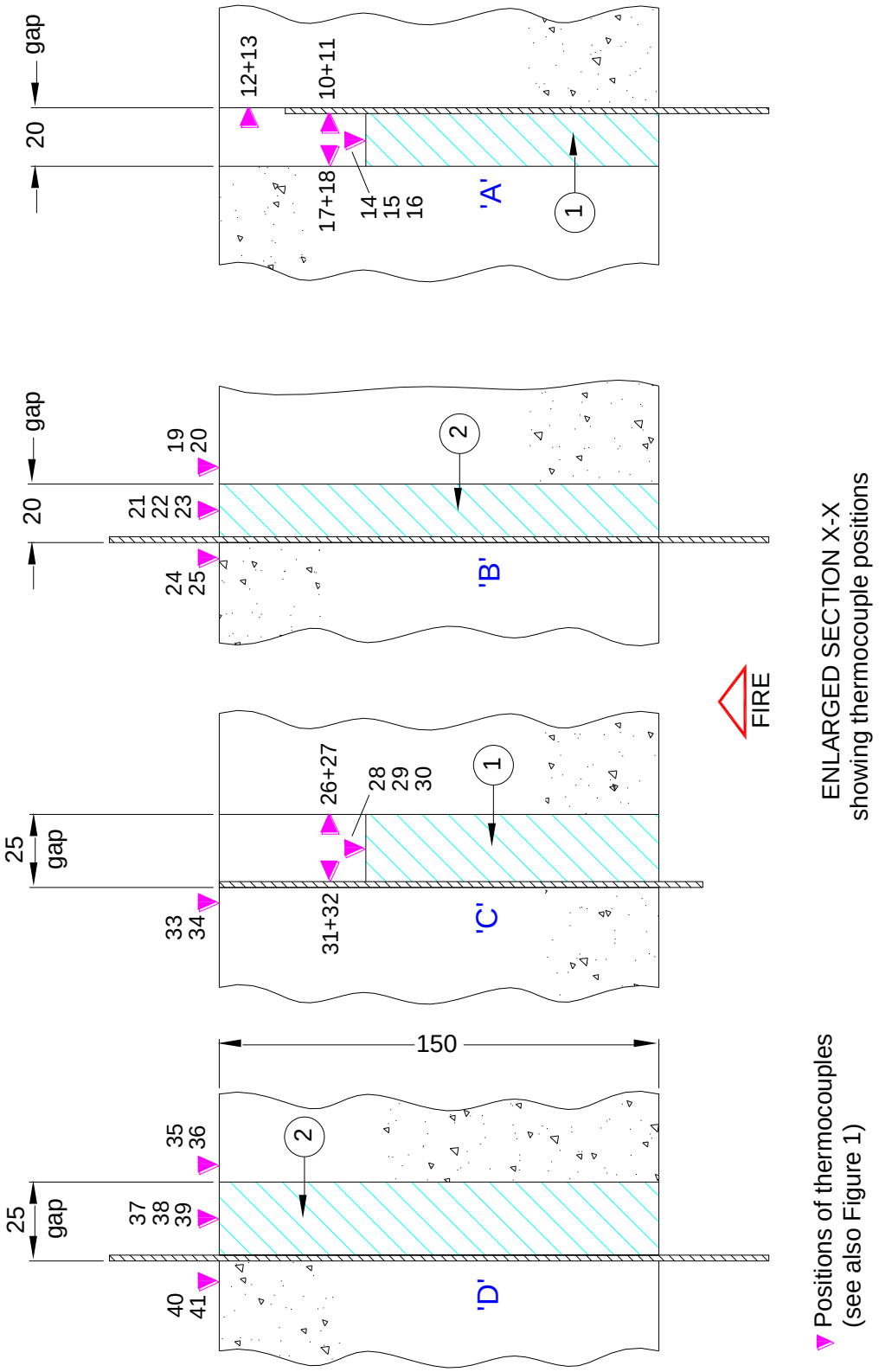


AAC = Autoclaved aerated concrete

▼■ Positions of thermocouples (see also Figure 2)

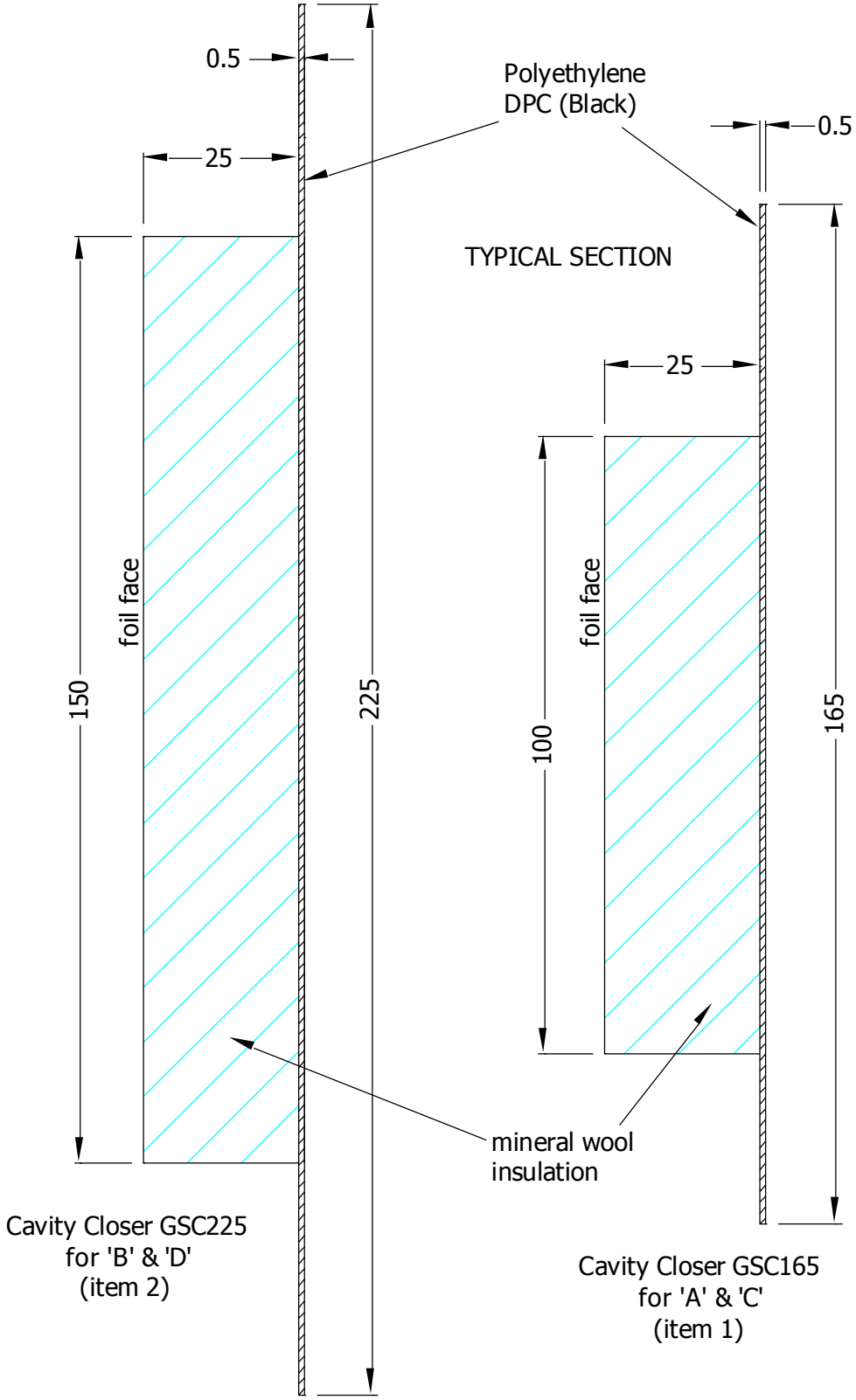
Do not scale. All dimensions are in mm

5.2 Figure 2 – Typical section through floor specimens 'A' to 'D'



Do not scale. All dimensions are in mm

5.3 Figure 3 – Typical details of Cavity Closers 'A' to 'D'



Do not scale. All dimensions are in mm

Schedule of Components

(Refer to Figures 1 to 3)
(All values are nominal unless stated otherwise)
(All other details are as stated by the sponsor)

Item		**5.3.1.1.1.1.1.1.1 Description**
1. Cavity Closer (specimen 'A' & 'C')		
Manufacturer	:	Manthorpe Building Products Ltd.
Product Reference	:	Polypipe TDI Insulating Damp-Proof Course/Cavity Barrier Stonecor
Product Code	:	GSC165
Material	:	Polyethylene DPC supplied pre-fitted to mineral wool section, aluminium foil faced. Specimen A – Mineral wool fitted centrally to the DPC. Specimen C – Mineral wool fitted 25 mm from one edge of the DPC.
Density	:	45 kg/m^3 mineral wool (stated)
Overall section size	:	See Figure 3
Overall length	:	1000 mm long (single piece, no butt joint)
Fixing method	:	Friction fit within masonry aperture (mineral wool section flush at exposed face of masonry floor).
Masonry aperture size		
i. aperture 'A'	:	1000 mm long x 20 mm wide x 150 mm deep
ii. aperture 'C'	:	1000 mm long x 25 mm wide x 150 mm deep
2. Cavity Closer (specimen 'B' & 'D')		
Manufacturer	:	Manthorpe Building Products Ltd.
Product Reference	:	Polypipe TDI Insulating Damp-Proof Course/Cavity Barrier Stonecor
Product Code	:	GSC225
Material	:	Polyethylene DPC supplied pre-fitted to mineral wool section, aluminium foil faced.
Density	:	45 kg/m^3 mineral wool (stated)
Overall section size	:	See Figure 3
Overall length	:	1000 mm long (single piece, no butt joint)
Fixing method	:	Friction fit within masonry aperture (mineral wool section flush at both faces of masonry floor).
Masonry aperture size		
i. aperture 'B'	:	1000 mm long x 20 mm wide x 150 mm deep
ii. aperture 'D'	:	1000 mm long x 25 mm wide x 150 mm deep
3. Masonry floor (supplied by Warringtonfire)		
Material	:	Autoclaved aerated concrete lintels
Density	:	670 kg/m^3
5.3.1.2 Lintel size	:	245 mm wide x 150 mm thick
5.3.1.3		
5.3.1.4		

Performance Criteria and Test Results

Integrity

It is required that the specimen retains its separating function, without either causing ignition of a cotton pad when applied as specified in BS EN 1363-1: 2020, or resulting in sustained flaming on the unexposed surface.

Insulation

The requirements of the standard are that the maximum temperature rise shall not be greater than 180°C. Insulation failure also occurs simultaneously with integrity failure as specified in BS EN 1363-1: 2020.

Test Results

Specimen	Integrity (minutes)		Insulation (minutes)
	Cotton Pad	Sustained flaming	
A	33*	33*	33*
B	33*	33*	33*
C	33*	33*	33*
D	33*	33*	33*

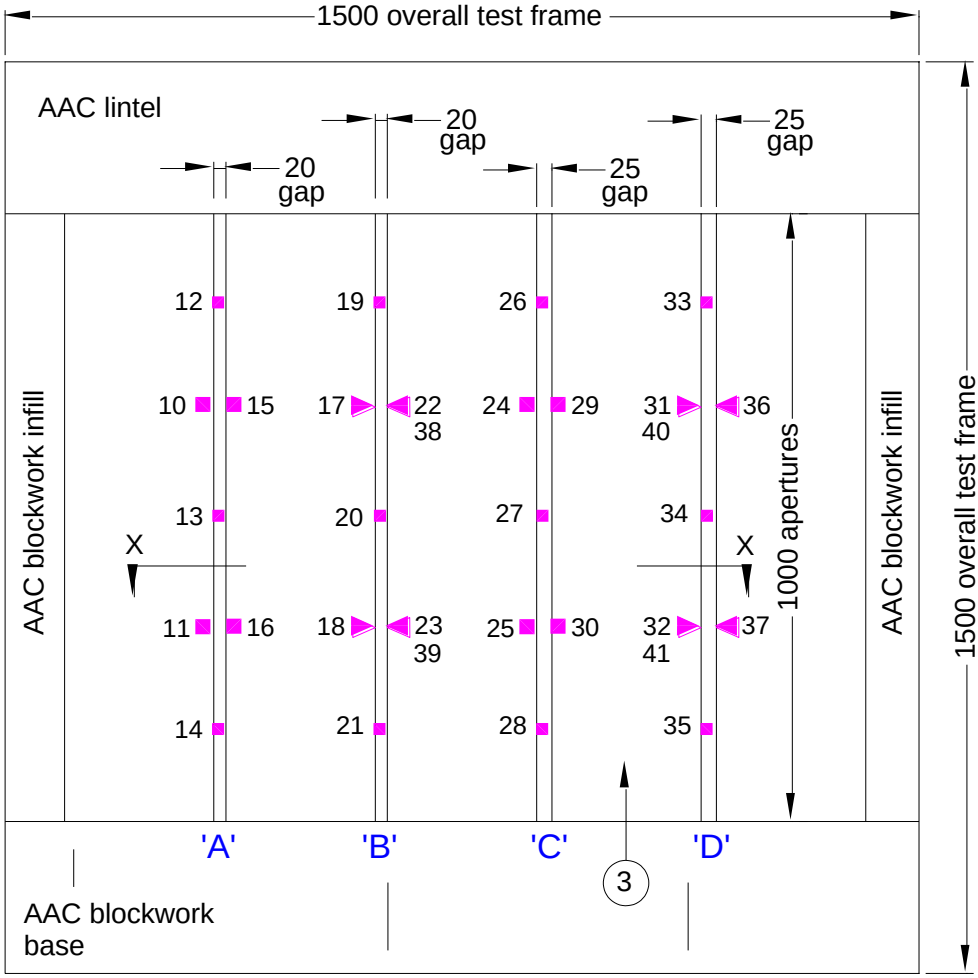
*Test was discontinued after a period of 33 minutes, there were no insulation or integrity failures during the test.

Date of Test 12 April 2024

Summary of WF Test Report No. 542680 Issue 3

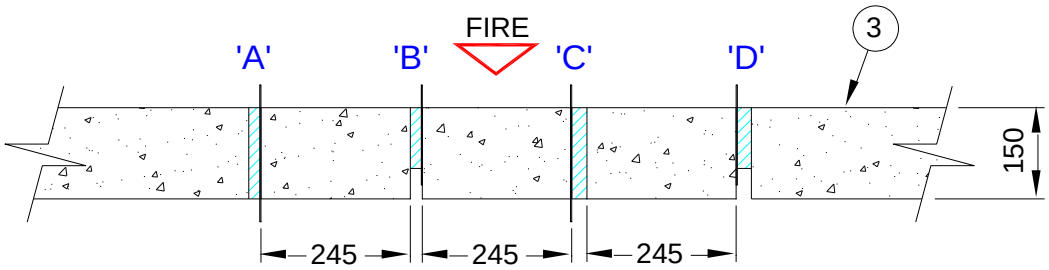
Test Construction

Figure 1- General elevation view of wall specimens 'A' to 'D' showing thermocouple positions



AAC = Autoclaved aerated concrete

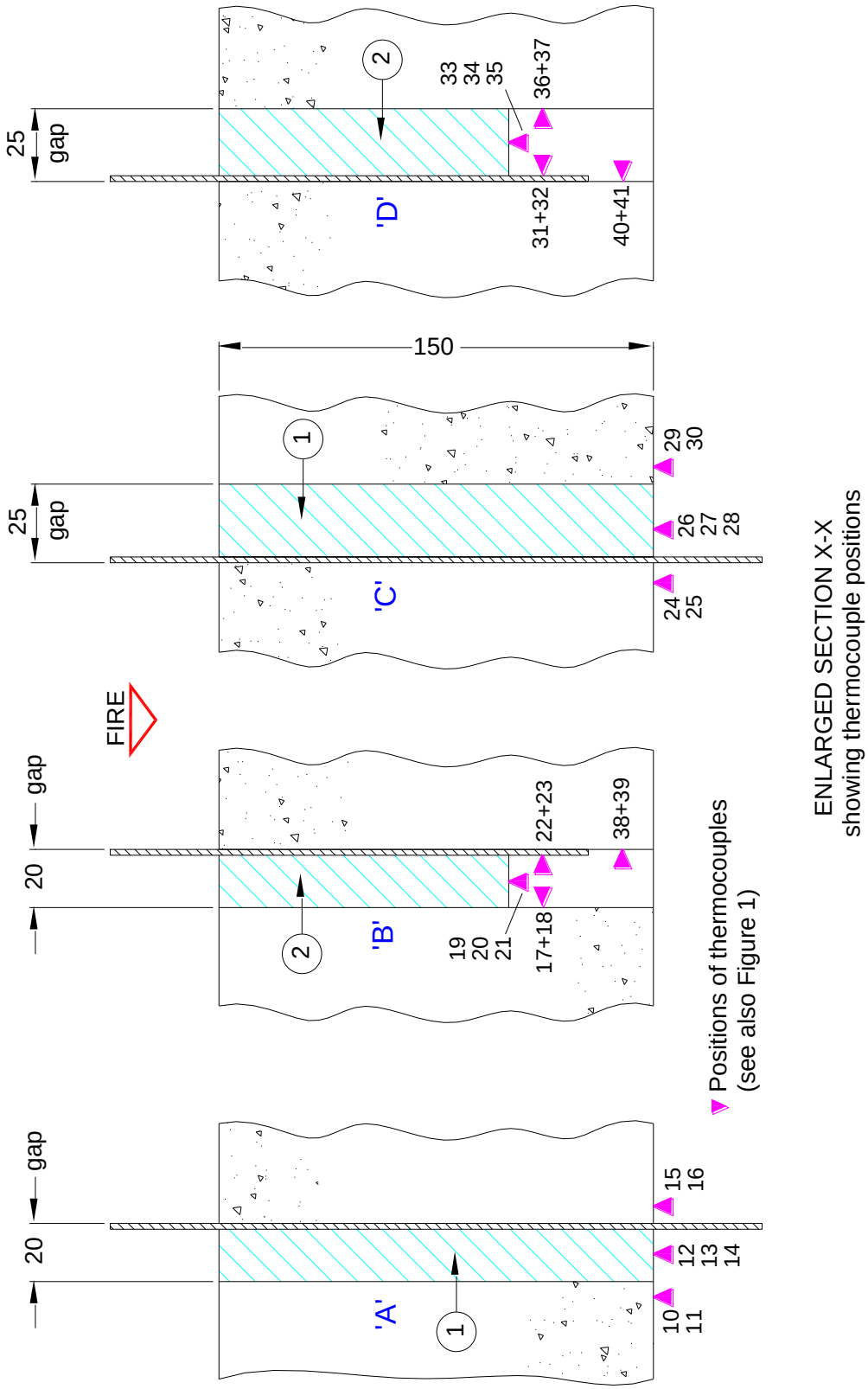
▼■ Positions of thermocouples (see also Figure 2)



TYPICAL SECTION X-X

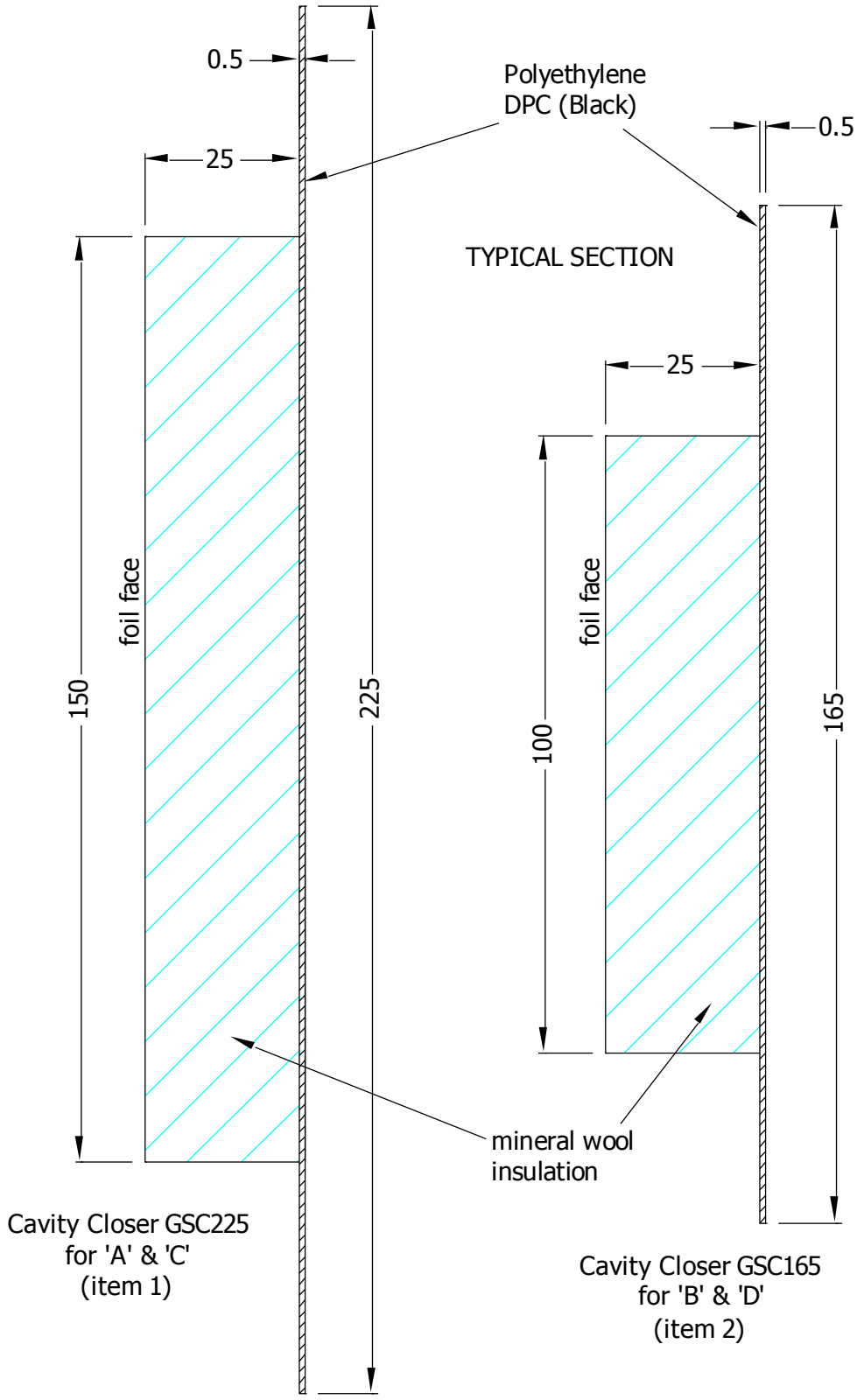
Do not scale. All dimensions are in mm

Figure 2 – Typical section through wall specimens 'A' to 'D'



Do not scale. All dimensions are in mm

Figure 3 – Typical details of Cavity Closers 'A' to 'D'



Do not scale. All dimensions are in mm

Schedule of Components

(Refer to Figures 1 to 3)
(All values are nominal unless stated otherwise)
(All other details are as stated by the sponsor)

Item		**5.3.1.4.1.1.1.1.1 Description**
1. Cavity Closer (specimen 'A' & 'C')		
Manufacturer	:	Manthorpe Building Products Ltd.
Product Reference	:	Polypipe TDI Insulating Damp-Proof Course/Cavity Barrier Stonecor
Product Code	:	GSC225
Material	:	Polyethylene DPC supplied pre-fitted to mineral wool section, aluminium foil faced.
Density	:	45 kg/m^3 mineral wool (stated)
Overall section size	:	See Figure 3
Overall length	:	1000 mm long (single piece, no butt joint)
Fixing method	:	Friction fit within masonry aperture (mineral wool section flush at both faces of masonry wall).
Masonry aperture size		
i. aperture 'A'	:	1000 mm long x 20 mm wide x 150 mm deep
ii. aperture 'C'	:	1000 mm long x 25 mm wide x 150 mm deep
2. Cavity Closer (specimen 'B' & 'D')		
Manufacturer	:	Manthorpe Building Products Ltd.
Product Reference	:	Polypipe TDI Insulating Damp-Proof Course/Cavity Barrier Stonecor
Product Code	:	GSC165
Material	:	Polyethylene DPC supplied pre-fitted to mineral wool section, aluminium foil faced.
Density	:	45 kg/m^3 mineral wool (stated)
Overall section size	:	See Figure
Overall length	:	1000 mm long (single piece, no butt joint)
Fixing method	:	Friction fit within masonry aperture (mineral wool section flush at exposed face of masonry wall).
Masonry aperture size		
i. aperture 'B'	:	1000 mm long x 20 mm wide x 150 mm deep
ii. aperture 'D'	:	1000 mm long x 25 mm wide x 150 mm deep
3. Masonry wall (supplied by Warringtonfire)		
Material	:	Autoclaved aerated concrete lintels
Density	:	670 kg/m^3
5.3.1.5 Lintel size	:	245 mm wide x 150 mm thick
5.3.1.6		
5.3.1.7		

Performance Criteria and Test Results

Integrity

It is required that the specimen retains its separating function, without either causing ignition of a cotton pad when applied as specified in BS EN 1363-1: 2020, or resulting in sustained flaming on the unexposed surface.

Insulation

The requirements of the standard are that the maximum temperature rise shall not be greater than 180°C. Insulation failure also occurs simultaneously with integrity failure as specified in BS EN 1363-1: 2020.

Test Results

Specimen	Integrity (minutes)		Insulation (minutes)
	Cotton Pad	Sustained flaming	
A	34*	34*	34*
B	34*	34*	34*
C	34*	34*	34*
D	34*	34*	34*

* Test was discontinued after a period of 34 minutes, there were no insulation or integrity failures during the test.

Date of Test 14 April 2024