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Astroflame Fireseals Ltd
Unit 8 The I O Centre
Stephenson Road
Segensworth, Fareham
Hampshire, PO15 5RU

14
1121-CPR-JA5016

ETA-14/0046
ETAG 026-Part 1
ETAG 026-Part 2
X SERIES PILLOWS

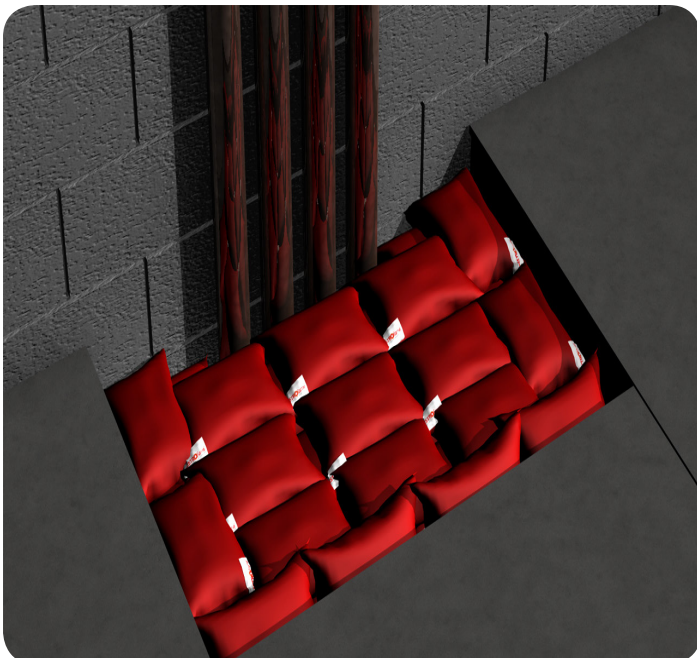
“see ETA-14/0046
for relevant
characteristics”



APPROVED
CF615

EN13501-2
EN1026:2000
EN10140-2:2010

EN1366-3:2009
BS476 part 20&22



Issue: 1
Feb 2014

Technical Data Sheet

Astro X Series Pillow®

UIC of product-type: XSPIL

TECHNICAL DATA SHEET

ASTRO X SERIES
PILLOW®ETA 14-0046
CE-1121-CPR-JA5016

Unique identification code of product-type: XSPIIL

Astro X series Pillow are a compressible combination of reactive and non-reactive components, encased in a thin woven glass fibre casing used to reinstate the fire resistance performance of wall construction where they have been provided with apertures for the penetration of single or multiple services.

Astro X series Pillow is a dry system and does not require the use of any sealant or sealing products.

Astro X series Pillow are supplied in three different sizes referenced Large (330mm x 200mm x 45mm), Medium (330 x 200mm x 25mm) and small (330mm x 50mm x 20mm), a mixture of which may be utilized to obtain a tight compression.

Intended Use

The intended use of Astro X series Pillow is to reinstate the fire resistance performance of rigid wall construction where they are penetrated by various cables and metallic pipes.

Rigid Walls:

The wall must have a minimum thickness of 150mm and comprise concrete, aerated concrete or masonry, with a minimum density of 650kg/m³.

The supporting construction must be classified in accordance with EN 13501-2 for the required fire resistance period.

The Astro X series Pillow may be used to provide a penetration seal with pipes and cables.

The total amount of cross sections of services (including insulation) should not exceed 60% of the penetration area.

The system Astro X series Pillow may be used to seal apertures in the separation element up to 1100mm wide by 1100mm high dependant on the configuration. The minimum permitted separation between adjacent seals/apertures is 200mm.

Pipes must be installed singular, cables require no minimum separation.

Services in walls shall be supported at maximum 250mm from the face of the separating element.

The provisions made in this European Technical Assessment are based on an assumed working life of the Astro X series Pillow of 10 years, provided that the conditions laid down in sections 4.2/5.1/5.2 for the packaging/transport/installation/use/repair are met. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

Use Category

Type Z1: Intended for use in internal conditions with humidity equal to or higher than 85% RH excluding temperatures below 0oC, without exposure to rain or UV.

Reaction to Fire

System Astro X series Pillow is classified 'F' in accordance with EN 13501-1.

Resistance to Fire

System Astro X Series Pillow has been tested in accordance with BS EN 1366-3: 2009 based upon the test results and the field of direct application specified within EN 1366-3: 2009, the system Astro X series Pillow has been classified in accordance with EN 13501-2, as given in Annex C:



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PILLOW®ETA 14-0046
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Air Permeability

System Astro X series Pillow has been tested in accordance with BS EN 1314-1 to provide the following results:

Product tested		Astro X series Pillow		
	Results under positive chamber pressure		Results under negative chamber pressure	
Pressure (Pa)	Leakage (m3/m2/h)	Leakage (m3/m2/h)	Leakage (m3/h)	Leakage (m3/m2/h)
50	2.5	13.9	31.	17.2
100	4.1	22.8	5.6	31.1
150	5.8	32.2	7.4	41.1
200	7.2	40.0	8.9	49.4
250	8.7	48.3	10.3	57.2
300	9.8	54.4	11.1	61.7
450	13.4	74.4	15.3	85.0
600	17.5	97.2	18.6	103.3

Dangerous Substances

Astroflame Fireseals Ltd presented a declaration that Astro X series Pillow does not contain any substance of high concern with regards to REACH Regulations and are compliant with the requirements reference to <http://ec.europa.eu/emerprise/construction/cpd-ds/index.cfm>

Confirmation has further been declared that all dangerous chemical substances $\geq 1.0\%$ w/w as well as all toxic, carcinogenic, toxic for reproduction and mutagenic chemical substances $\geq 0.1\%$ w/w (Status: 29. adaption - 2004/73/EG - of the EU directive 67/548/EEC - classification, packaging and labelling of dangerous substances) are stated in the Astro Intu Mastic 300 safety data sheets in the Astro Intu Mastic 300 safety data sheets (according to 91/155/EEC including amendments) and have been considered for the classification of the products according to the directive 1999/45/EG (classification of preparations, including amendments).

All dangerous chemical substances are below the classification limits of 67/548/EEC.

In addition to the specific clauses relating to dangerous substances contained in the European Technical Approval, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Regulations, these requirements need also to be complied with, when and where they apply.

Airborne Sound Insulation

The results of the test provided the following single number rating:

Rw (C;Ctr)=33(0;-2)

Durability and Serviceability

Astro X series Pillow has been tested in accordance with EOTA Technical Report - TR024 - Edition November 2006, for the type Z¹ use category specified in ETAG 026-3 (used as European Assessment Document, EAD), and the results of the tests have demonstrated suitability for penetration seals intended for use in internal conditions with humidity equal to or higher than 85% RH excluding temperatures below 0°C, without exposure to rain or UV.



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TECHNICAL DATA SHEET

ASTRO X SERIES PILLOW®

ETA 14-0046
CE-1121-CPR-JA5016



Unique identification code of product-type: XSPIL

Durability and serviceability

The principle of the durability is to select suitable physico-chemical or technological properties of the product and to check whether these properties have changed during exposure of the product to defined exposure conditions. The product shall be tested according to the following procedures:

Property	Test Method
Bag	
Apperance	EOTA ETAG No 026: Part 2: Clause B.12
Tear Strength of Fabric	EN ISO 13934-1
Tear Strength of Seams	EN ISO 13935-1 or EN ISO 13935-2
Filling material	
Expansion ratio	EOTA TR 024, clause 3.1.11



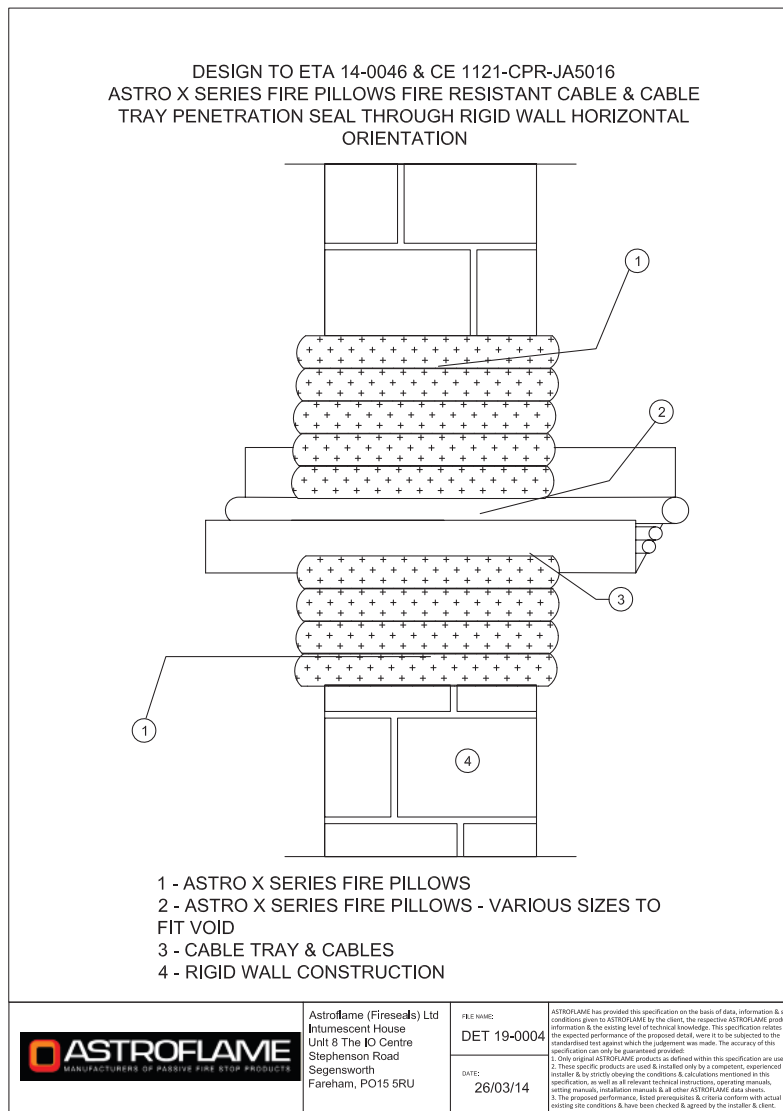
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Unique identification code of product-type: XSPIL

Astro X series Pillow Penetration Seals 300 mm deep, in Rigid Walls 150mm thick (min.)	
Services	Classification
Telecom cables up to 21mm Ø (single or bundles up 100mm Ø)	EI 120
Electrical cables up to 21mm Ø	EI 120
Electrical cables up to 50mm Ø	E 120, EI 90
Electrical cables up to 80mm Ø	E 120, EI 90
Unsheathed wires up to 24mm Ø	EI 120
Steel or Copper conduits and tubes up to 16mm Ø	EI 120
Plastic (any) conduits and tubes up to 16mm Ø	EI 120
Cables trays or ladders up to 300mm wide	E 120, EI 60

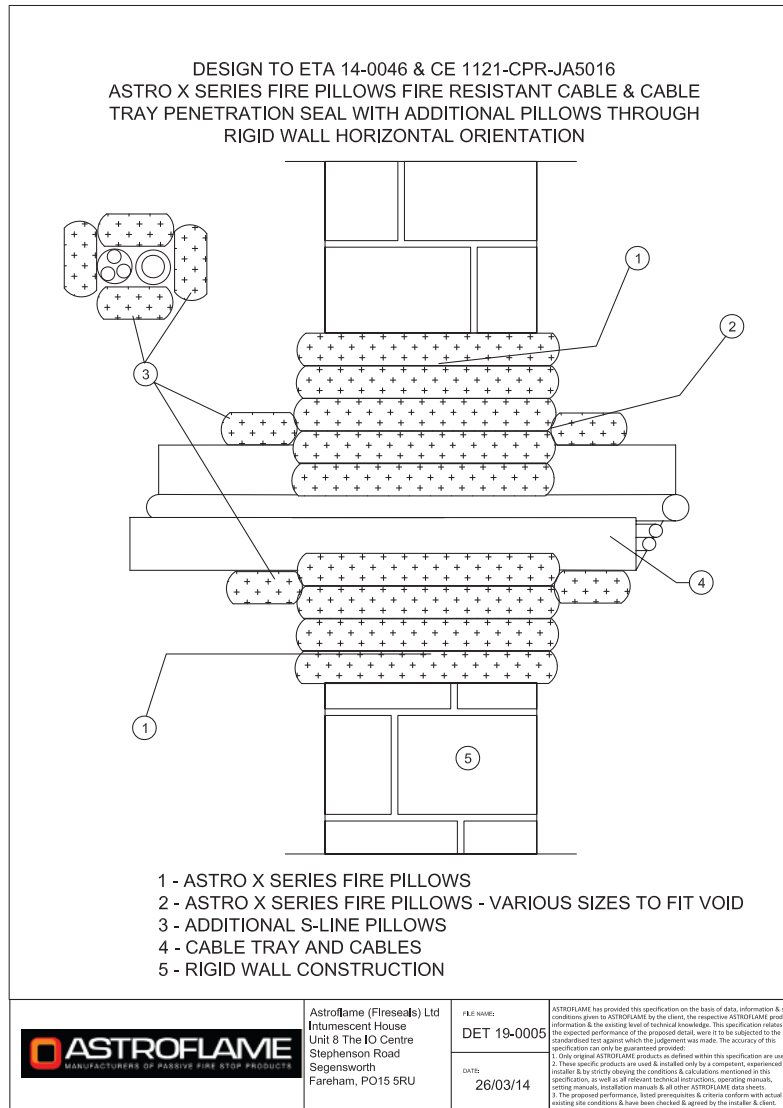


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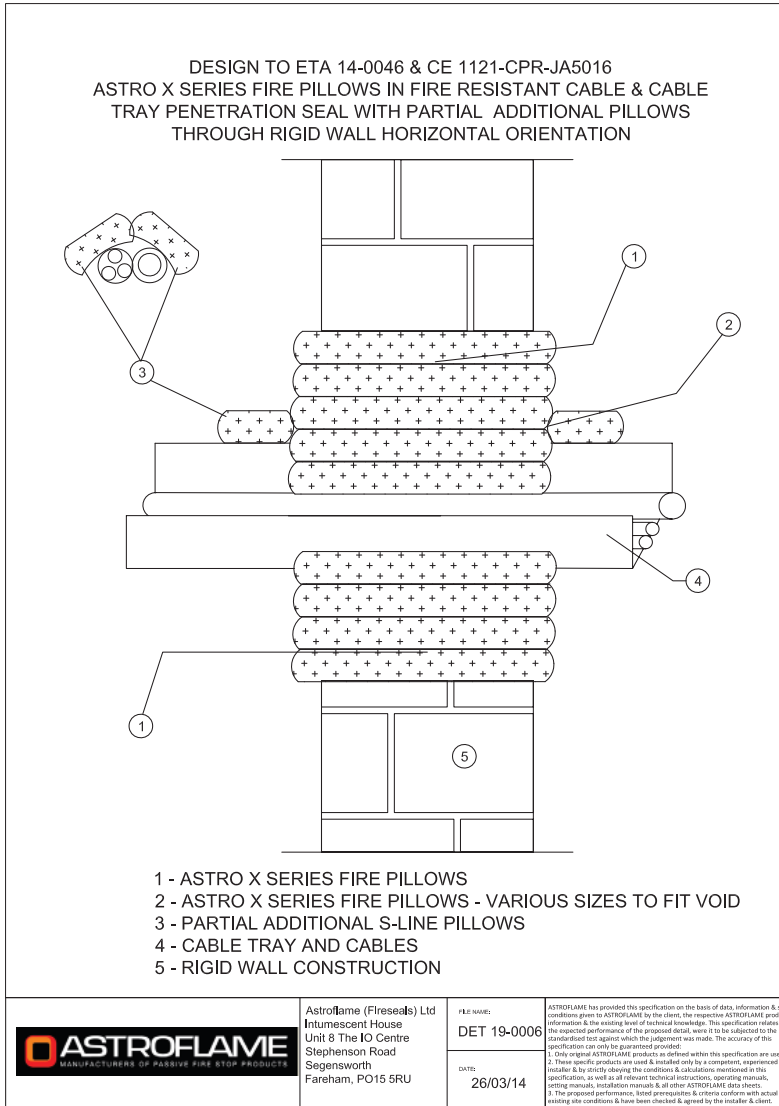
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DESIGN TO ETA 14-0046 & CE 1121-CPR-JA5016
ASTRO X SERIES FIRE PILLOWS IN FIRE RESISTANT PLASTIC TUBE
PENETRATION SEAL THROUGH RIGID WALL HORIZONTAL ORIENTATION

1 - ASTRO X SERIES FIRE PILLOWS
2 - ASTRO X SERIES FIRE PILLOWS - VARIOUS SIZES TO FIT VOID
3 - PLASTIC TUBES UP TO 16mm
4 - RIGID WALL CONSTRUCTION

	Astroflame (Fireseals) Ltd Intumescent House Unit 8 The IO Centre Stephenson Road Segensworth Fareham, PO15 5RU	FILE NAME: DET 19-0012	ASTROFLAME has provided this specification on the basis of data, information & site conditions given to ASTROFLAME by the client, the respective ASTROFLAME product information & the existing level of technical knowledge. This specification relates to the expected performance of the proposed detail, where it to be subjected to the standardized test against which the judgement was made. The accuracy of this specification can only be guaranteed provided: 1. Only original ASTROFLAME products as defined within this specification are used 2. These specific products are used & installed only by a competent, experienced installer & by strictly observing the conditions & calculations mentioned in this specification, as well as all relevant technical instructions, operating manuals, setting manuals, installation manuals & other ASTROFLAME data sheets. 3. The proposed performance, listed pre-conditions & criteria conform with actual existing site conditions & have been checked & agreed by the installer & client.
	DATE: 26/03/14		

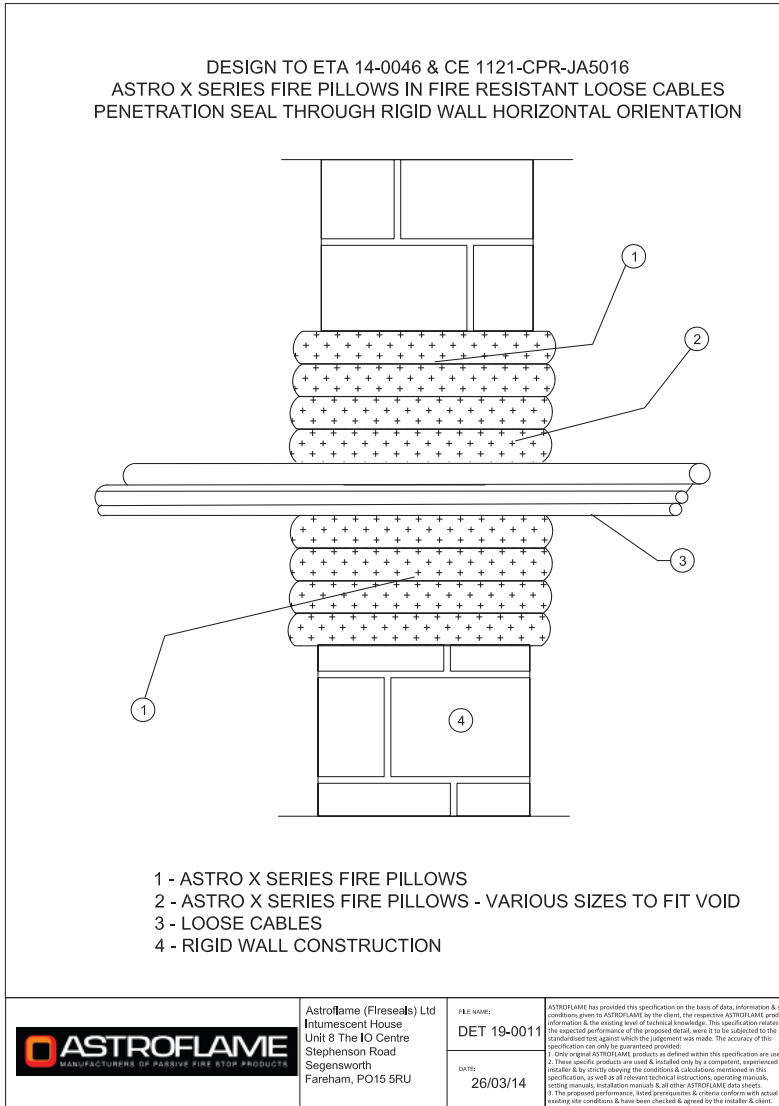


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Unique identification code of product-type: XSPIL



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TECHNICAL DATA SHEET

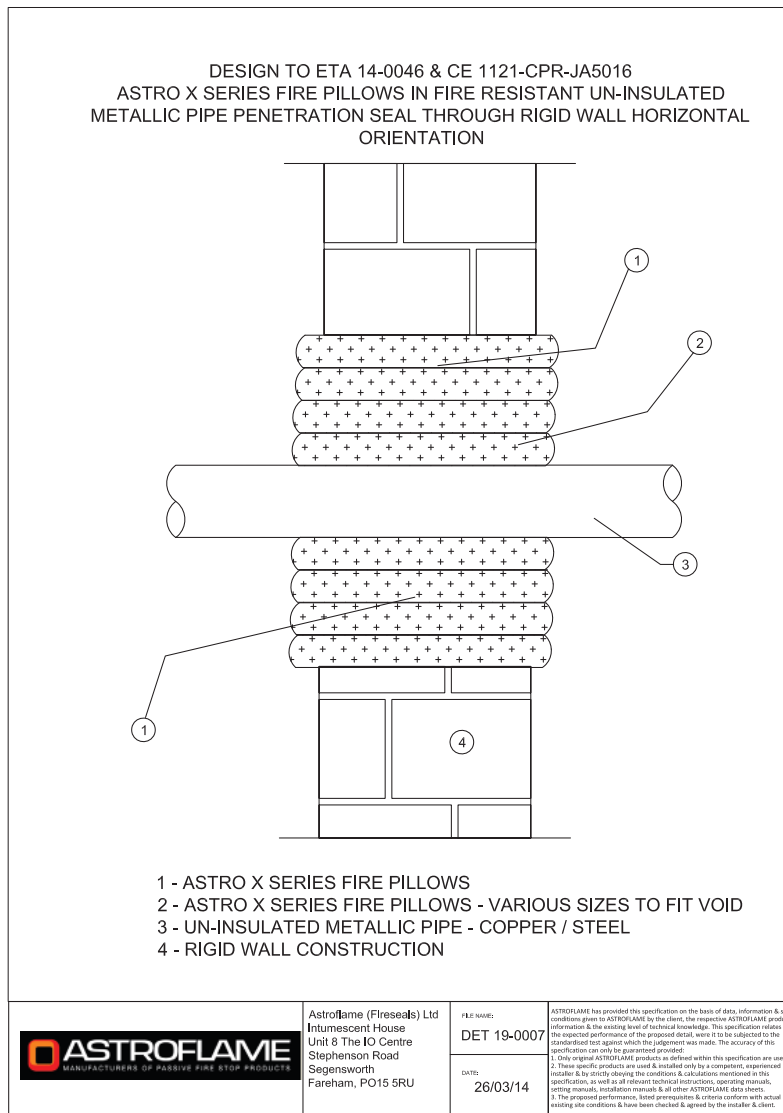
**ASTRO X SERIES
PILLOW®**

ETA 14-0046
CE-1121-CPR-JA5016



Unique identification code of product-type: XSPIL

Astro X series Pillow Penetrations Seals 300mm deep, in Rigid Walls 150mm thick (min).	
Services	Classification
165mm Ø x 5.6-14.2mm thick mild steel pipe	E 120 C/U



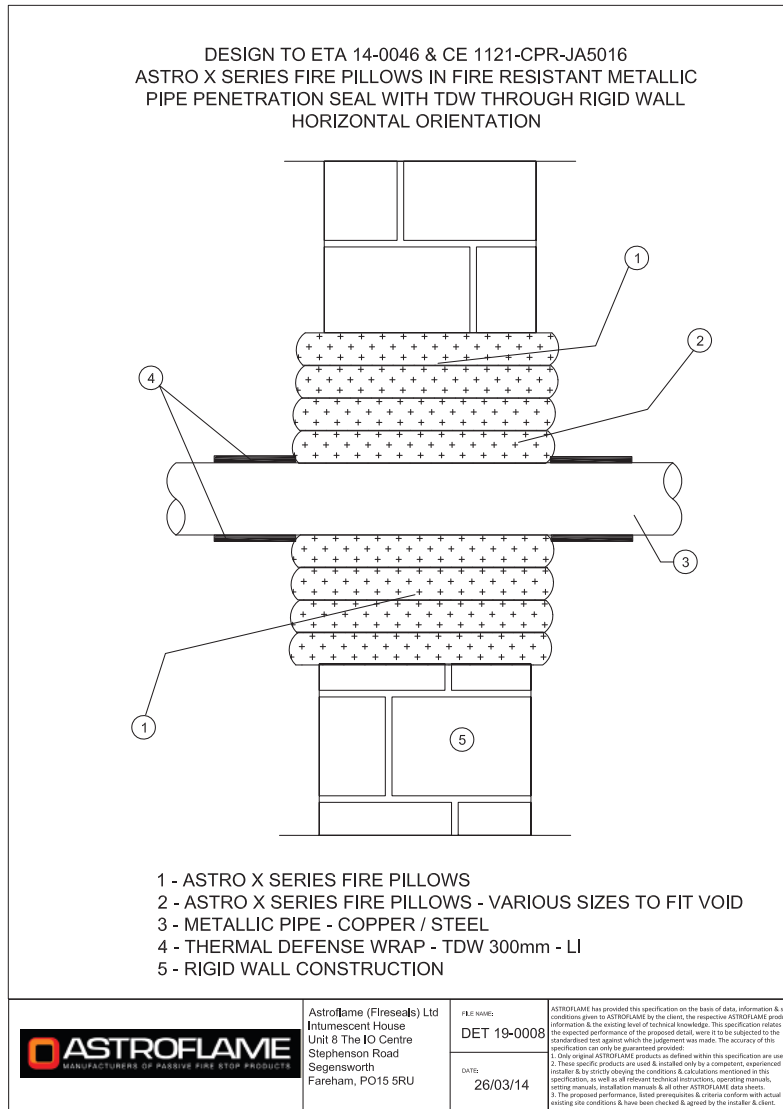
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Unique identification code of product-type: XSPIL

Astro X series Pillow Fire Penetration Seals 300mm deep, in Rigid Walls 150mm thick (min).	
Services	Classification
48mm Ø x 3.5-14.2mm thick steel pipe with 300mm Local Interrupted (LI) Astroflame Thermal Defense Wrap 7mm Thick	EI 120 C/U
113mm Ø x 3.5-14.2mm thick steel pipe with 300mm Local Interrupted (LI) Astroflame Thermal Defense Wrap 10mm thick	EI 120 C/U



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Unique identification code of product-type: XSPIL

Astro X series Pillow Fire Pillow Penetration Seals 300mm deep, in Rigid Walls 150mm thick (min).	
Services	Classification
108mm Ø x 1.5-14.2mm thick copper pipe	E 120 C/U, EI 90 C/U

DESIGN TO ETA 14-0046 & CE 1121-CPR-JA5016
ASTRO X SERIES FIRE PILLOWS FIRE RESISTANT METALLIC PIPE
PENETRATION SEAL WITH ADDITIONAL PILLOWS THROUGH RIGID
WALL HORIZONTAL ORIENTATION

1 - ASTRO X SERIES FIRE PILLOWS
2 - ASTRO X SERIES FIRE PILLOWS - VARIOUS SIZES TO FIT VOID
3 - METALLIC PIPE - COPPER / STEEL
4 - ADDITIONAL S-LINE PILLOWS - LI
5 - RIGID WALL CONSTRUCTION

	Astroflame (Fireseals) Ltd Intumescent House Unit 8 The IO Centre Stephenson Road Segensworth Fareham, PO15 5RU	P.F.# NAME: DET 19-0009	ASTROFLAME has provided this specification on the basis of data, information & site conditions given to ASTROFLAME by the client. The respective ASTROFLAME product information & the existing level of technical knowledge. This specification relates to the expected performance of the proposed detail, were it to be subjected to the standardised test against which the judgement was made. The accuracy of this specification can only be guaranteed provided: 1. Only original ASTROFLAME products as defined within this specification are used 2. These specific products are used & installed only by a competent, experienced installer & by strictly observing the conditions & calculations mentioned in this specification, as well as all relevant technical instructions, operating manuals, setting manuals, installation manuals & all other ASTROFLAME data sheets. 3. The proposed performance, listed prerequisites & criteria conform with actual existing site conditions & have been checked & agreed by the installer & client.
	DATE: 26/03/14		



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TECHNICAL DATA SHEET

**ASTRO X SERIES
PILLOW®**

ETA 14-0046
CE-1121-CPR-JA5016



Unique identification code of product-type: XSPIL

Astro X series Pillow Penetration Seals 300mm Deep, in Rigid Walls 150mm thick (min).	
Services	Classification
54mm Ø x 1.0-14.2mm thick copper pipe with 2 layers of insulation	EI 120

DESIGN TO ETA 14-0046 & CE 1121-CPR-JA5016 ASTRO X SERIES FIRE PILLOWS IN FIRE RESISTANT INSULATED WITH ARMAFLEX METALLIC PIPE PENETRATION SEAL WITH ASTRO TDW THROUGH RIGID WALL HORIZONTAL ORIENTATION

1 - ASTRO X SERIES FIRE PILLOWS
2 - ASTRO X SERIES FIRE PILLOWS - VARIOUS SIZES TO FIT VOID
3 - METALLIC PIPE - COPPER / STEEL
4 - ASTRO THERMAL DEFENSE WRAP - TDW 300mm - LI (Local Interrupted)
5 - ARMAFLEX INSULATION - LS (Local Sustained)
6 - RIGID WALL CONSTRUCTION

	Astroflame (Fireseals) Ltd Intumescent House Unit 8 The IO Centre Stephenson Road Segensworth Fareham, PO15 5RU	FILE NAME: DET 19-0010 DATE: 26/03/14	ASTROFLAME has provided this specification on the basis of data, information & site conditions given to ASTROFLAME by the client, the respective ASTROFLAME product information & the existing level of technical knowledge. This specification relates to the expected performance of the proposed detail, were it to be subjected to the penetration test against which the judgement was made. The accuracy of the information can only be guaranteed provided: 1. Only original ASTROFLAME products as detailed within this specification are used 2. These specific products are used & installed only by a competent, experienced installer & by strictly obeying the conditions & calculations mentioned in the specification, as well as all relevant technical instructions, operating manuals, setting manuals, installation manuals & all other ASTROFLAME data sheets. 3. The proposed performance, tested penetration & criteria conform with actual existing site conditions & have been checked & agreed by the installer & client.
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Unique identification code of product-type: XSPIL



Astro X series Pillow Systems TS03 Penetration Sealing

Astro X series Pillow

This approval relates to the use of Astro X series Pillow for the fire protection where services are penetrating walls and floors. The detailed scope is given in the Approval Matrix included in this Certificate. This shows the thickness and acceptable services for Astro X series Pillow Required to provide fire resistance periods in accordance with BS 476: Part 20: 1987 and for Astro X series Pillow required to provide fire resistance periods in accordance with EN 1366-3: 2009 (as indicated in the Matrix of Approval) of up to 120 minutes for differing services and wall/floor constructions. The scope of certification complies with the guidelines stated in the ASFP Red book: 3rd Edition for 3rd party certification schemes.

This Certification is designed to demonstrate compliance of the product or system specifically with Approved Document B (England and Wales), Section 2 of the Technical Standards (Scotland), Technical Booklet E (N.Ireland). If compliance is required to other regulatory or guidance documents there may be additional considerations or conflict to be taken into account.

The product is approved on the basis of:

- I. Initial type testing
- II. Audit testing at the frequency specified in TS03
- III. A design appraisal against TS03
- IV. Inspection and surveillance of factory production control

The concrete floors and/or masonry or concrete walls shall be at least as thick as the sealing system as shown in the Approval matrix and have at least the same fire rating as that required for the penetration seal.

The services which may be fitted through the seals are cables ladders of various sizes and communication cables.

The approval relates to ongoing production. Products 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 certifire number and application where appropriate.

Further Information

Further information regarding the details contained in the data sheet may be obtained from Astroflame Fireseals Ltd. (Tel: 01329 844500).

Further information regarding CERTIFIRE Certifire certification and other approved products can be obtained from CERTIFIRE (TEL: 01925 646777).



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TECHNICAL DATA SHEET

ASTRO X SERIES
PILLOW®
TECHNICAL SCHEDULE
No. CF615


Unique identification code of product-type: XSPIL

Product Name:		Astro X series Pillow				
Coating / WFT:		Not applicable				
Density:		Not applicable				
Orientation	Services	Integrity/ Insulation	Required Pillows Thickness For Fire Resistance Perios (minimum)			
			30 mins	60 mins	90 mins	120 mins
Floor	No	Int. & Ins.	150mm	150mm	200mm	200mm
	Yes	Int. & Ins.	150mm	200mm	250mm	300mm
	Yes	Int. only	150mm	150mm	200mm	200mm
Wall	No	Int. & Ins.	150mm	180mm	250mm	300mm
	Yes	Int. & Ins.	150mm	200mm	250mm	300mm
	Yes	Int. only	180mm	180mm	250mm	300mm
Penetrating Services:		Cable ladders and communication cables.				
Maximum aperture:		1000mm by 1000mm				
Wall/floor thickness:		The floors and walls shall be a minimum of 100mm thick for periods of up to 60 minutes fire resistance and 150mm (floor) and 200mm (wall) thick for periods of 90 minutes and 120 minutes fire resistance. The minimum density for the concrete of the floor or wall is 780kg/m ³ and for walls made of concrete blocks is 600kg/m ³ .				
Application Technique:		<p>Floors: Steel mesh (50mm square with 5mm wire) is mechanically fixed either to the soffit of the floor or within the reveal of the aperture via vertical returns at the edges of the mesh. The fire pillows are tightly packed into the opening and around the services.</p> <p>Walls: The fire pillows are tightly packed into the opening and around the services (no mesh is required).</p>				
Services Coat-Back:		Not required			U Value:	Not Known
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 500mm from the surface of the sealing system on both faces.				
Air Permeability EN1026		Pressure (pa)	Positive pressure (m ³ /h/m ²)	Negative pressure (m ³ /h/m ²)	Weather Capability:	Not evaluated by this approval
		50	13.9	17.2		
		100	22.8	31.1		
Acoustic Rating: BS EN ISO 10140-2:2010		R _w (C;C _{tr}) : 33(0;2) dB D _{new} (C;C _{tr}) : 38(-2;-2) dB			Movement Capability:	Not evaluated by this approval


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TECHNICAL DATA SHEET

ASTRO X SERIES
PILLOW®

TECHNICAL SCHEDULE

No. CF615



Unique identification code of product-type: XSPIIL

Product Name:		Astro X series Pillow		
Element of construction	Services	Additional requirements	Integrity	Insulation
Masonry/ concrete wall min 150mm thick	Telecom cables up to 21mm \varnothing (single or bundles up to 100m)	None	120 minutes	120 minutes
	Electrical cables up to 21mm \varnothing	None	120 minutes	120 minutes
	Electrical cables up to 50mm \varnothing	Cables lagged*	120 minutes	90 minutes
	Electrical cables up to 80mm \varnothing	Cables lagged*	120 minutes	90 minutes
	Unsheathed wires up to 24mm \varnothing	Cables lagged*	120 minutes	120 minutes
	Steel or Copper conduits and tubes up to 16mm \varnothing	None	120 minutes	120 minutes
	Plastic (any) conduits and tubes up to 16mm \varnothing	None	120 minutes	120 minutes
	Cable tray/ladder up to 300mm wide	None	120 minutes	60 minutes
	Cable tray up to 500mm wide	None	120 minutes	90 minutes
	54mm \varnothing x 1.0mm thick copper pipe with 15mm armaflex insulation	Pipe lagged***	120 minutes	120 minutes
	108mm \varnothing x 1.5mm thick copper pipe	Pipe lagged*	120 minutes	90 minutes
	48mm \varnothing x 3.5mm thick mild steel pipe	Pipe lagged**	120 minutes	120 minutes
	113mm \varnothing x 4.5mm thick copper pipe	Pipe lagged***	120 minutes	120 minutes
	165mm \varnothing x 5.6mm thick mild steel pipe	None	120 minutes	-
*Lagging:	To be formed from 2 or more pillows stitched together around the service to a minimum length of 300mm on both sides of the wall/main seal.			
**Lagging:	To be formed from Thermal Defense Wrap 1 to a minimum length of 300mm on both sides of the wall/main seal.			
***Lagging:	To be formed from Thermal Defense Wrap 2 to a minimum length of 300mm on both sides of the wall/main seal.			
Application Technique:	1100mm by 1100mm			
Services Coat-Back:	Not required	U Value:	Not Known	
Service Support Requirements:	Services should be rigidly supported via steel angles/hangers/channels, not further than 250mm from the surface of the sealing system, on both faces.			



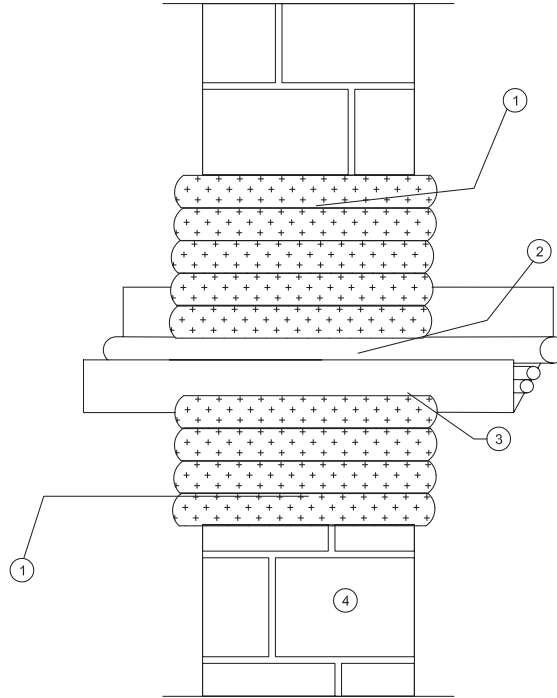
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TYPICAL VERTICAL SECTION SHOWING THE USE OF ASTRO X SERIES FIRE PILLOWS WITH CABLE TRUNKING SYSTEM IN A WALL



- 1 - ASTRO X SERIES FIRE PILLOWS
- 2 - ASTRO X SERIES FIRE PILLOWS - VARIOUS SIZES TO FIT VOID
- 3 - CABLE TRAY & CABLES
- 4 - RIGID WALL CONSTRUCTION

	Astroflame (Fireseals) Ltd Intumescent House Unit 8 The IO Centre Stephenson Road Segensworth Fareham, PO15 5RU	FILE NAME: DET 19-0002	ASTROFLAME has provided this specification on the basis of data, information & site conditions given to ASTROFLAME by the client, the respective ASTROFLAME product information & the existing level of technical knowledge. This specification relates to the expected performance of the proposed detail, which it is to be subjected to the standardised test against which the judgement was made. The accuracy of this specification can only be guaranteed provided: 1. Only original ASTROFLAME products as defined within this specification are used 2. These specific products are used & installed only by a competent, experienced installer & by strictly obeying the conditions & calculations mentioned in this specification, as well as all relevant technical instructions, operating manuals, setting manuals, installation manuals & all other ASTROFLAME data sheets 3. The proposed performance, listed pre-qualifier & correct conform with actual existing site conditions & have been checked & agreed by the installer & client.
		DATE: 26/03/14	



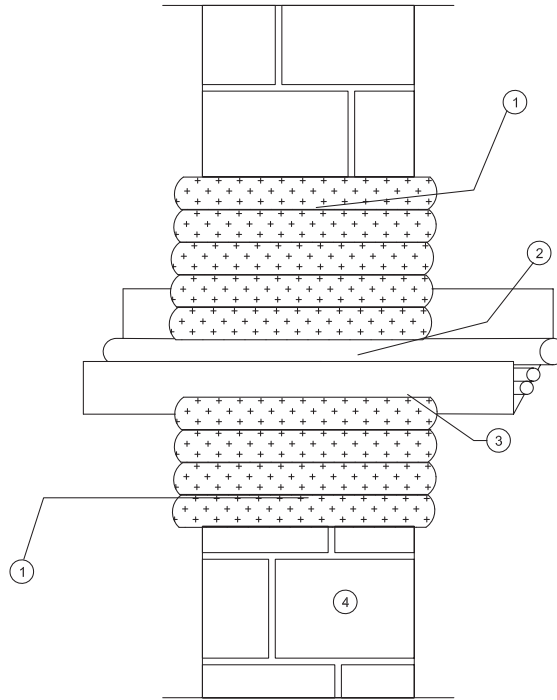
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TYPICAL VERTICAL SECTION SHOWING THE USE OF ASTRO X SERIES FIRE PILLOWS WITH CABLE TRUNKING SYSTEM IN A WALL



- 1 -ASTRO X SERIES FIRE PILLOWS
- 2 - ASTRO - VARIOUS SIZES TO FIT VOID
- 3 - CABLE TRAY & CABLES
- 4 - RIGID WALL CONSTRUCTION

	Astroflame (Fireseals) Ltd Intumescent House Unit 8 The IO Centre Stephenson Road Segensworth Fareham, PO15 5RU	FILE NAME: DET 17-0001	ASTROFLAME has provided this specification on the basis of data, information & site conditions given to ASTROFLAME by the client, the respective ASTROFLAME product information & the existing level of technical knowledge. This specification relates to the expected performance of the proposed detail, which it is to be subjected to the standardised test against which the judgement was made. The accuracy of this specification can only be guaranteed provided: 1. Only original ASTROFLAME products as defined within this specification are used 2. These specific products are used & installed only by a competent, experienced installer & by strictly obeying the conditions & calculations mentioned in this specification, as well as all relevant technical instructions, operating manuals, setting manuals, installation manuals & all other ASTROFLAME data sheets 3. The proposed performance, listed pre-qualifier & criteria conform with actual existing site conditions & have been checked & agreed by the installer & client.
		DATE: 26/03/14	



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TECHNICAL DATA SHEET

**ASTRO X SERIES
PILLOW®**

**TECHNICAL SCHEDULE
No. CF615**



Unique identification code of product-type: XSPIL

TYPICAL HORIZONTAL DETAIL FOR ASTRO X SERIES FIRE PILLOWS

1 - ASTRO X SERIES FIRE PILLOWS - (VARIOUS SIZES TO FILL VOID)
 2 - WELD MESH 50 x 50 x5mm TO SUPPORT ASTRO X SERIES FIRE INTUMESCENT PILLOWS
 3 - CABLE TRAY
 4 - RIGID FLOOR

	P/E NAME	Astroflame (Fireseals) Limited Intumescent House Unit 8 The IO Centre Stephenson Road Segensworth Fareham, PO15 5RU	ASTROFLAME has provided this specification on the basis of data, information & site conditions given to ASTROFLAME by the client, the respective ASTROFLAME product information & the existing level of technical knowledge. This specification relates to the expected performance of the proposed detail, were it to be subjected to the standardised test against which the judgement was made. The accuracy of this specification can only be guaranteed by the client. 1. Only original ASTROFLAME products as defined within this specification are used. 2. These specific products are used & installed only by a competent, experienced installer & by strictly following the conditions & calculations mentioned in this specification, as well as all relevant technical instructions, operating manuals, setting manuals, installation manuals & all other ASTROFLAME data sheets. 3. The proposed performance, load penetration & criteria conform with actual existing site conditions & have been checked & agreed by the installer & client.
	DET 19-0003	DATE 31/03/14	



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Unique identification code of product-type: XSPIL

Air Permeability Test - EN 1026

BM TRADA

Results of Test: Chilt/P12083/09/AR1

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 Intumescent House
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This document confirms that performance testing was conducted on 13 September 2012. Testing was conducted the principles of the following standard:-

- BS EN 1026: 2000 Windows and doors - Air permeability - Test method.

The following results were achieved

Product tested		Astro X-Series Pillows		
Pressure (Pa)	Results under positive chamber pressure		Results under negative chamber pressure	
	Leakage (m ³ /h)	Leakage (m ³ /m ² /h)	Leakage (m ³ /h)	Leakage (m ³ /m ² /h)
50	2.5	13.9	3.1	17.2
100	4.1	22.8	5.6	31.1
150	5.8	32.2	7.4	41.1
200	7.2	40.0	8.9	49.4
250	8.7	48.3	10.3	57.2
300	9.8	54.4	11.1	61.7
450	13.4	74.4	15.3	85.0
600	17.5	97.2	18.6	103.3

The results relate only to the specimen tested, as detailed in the technical specification Chilt/P12083/tec9/AR1



Paul Andrews – Head of Section



Vincent Kerrigan - Technical Manager
 Date: 31 October 2013

BM TRADA

Chiltem House, Stocking Lane, Hughenden Valley, High Wycombe, HP14 4ND, United Kingdom

Tel: 01494 569800 Fax: 01494 564895

Web: www.bmtradagroup.com

Email: testing@bmtrada.com

This document is confidential and remains the property of Chiltem International Fire Ltd, trading as BM TRADA

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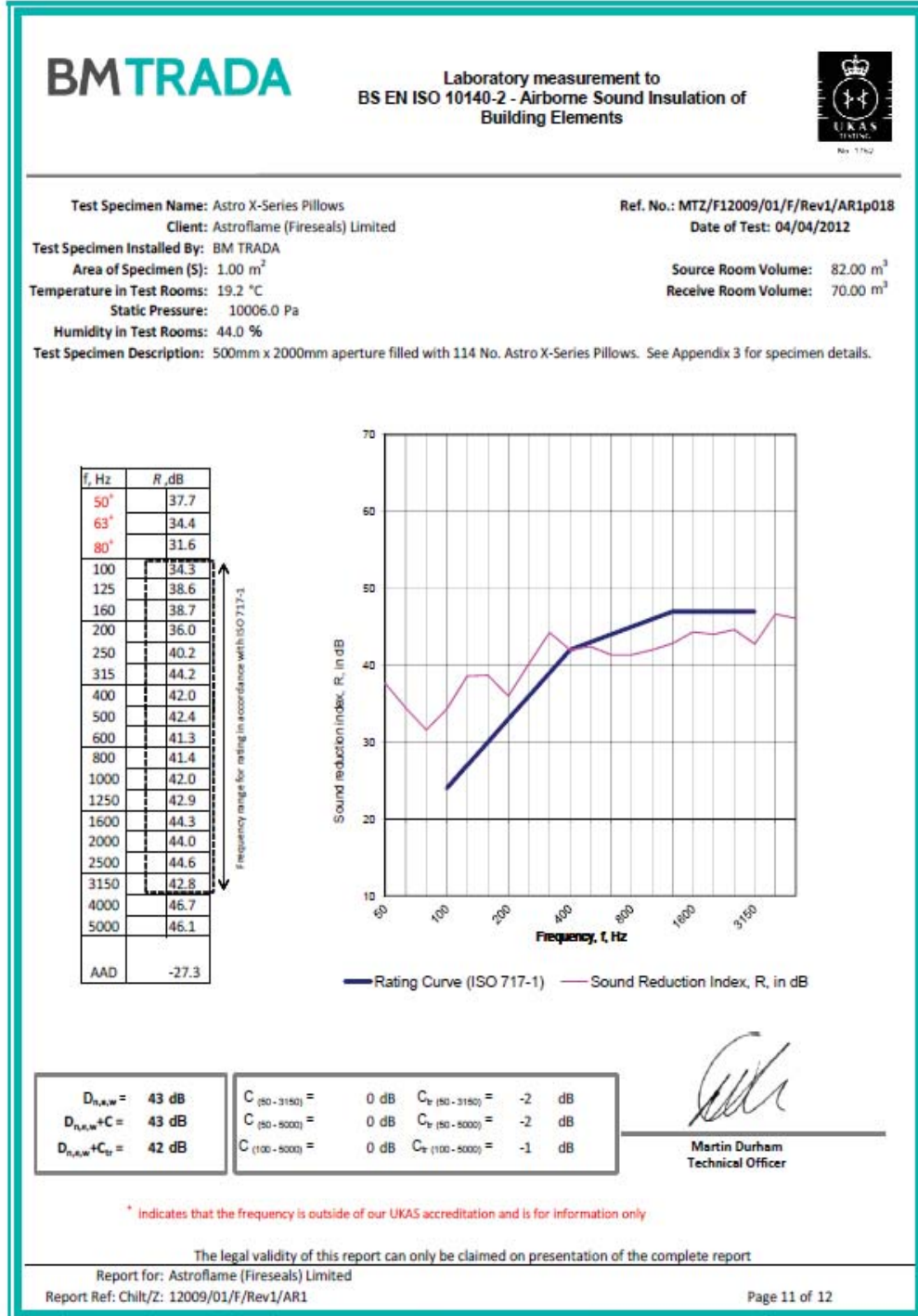
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Unique identification code of product-type: XSPIL

Acoustic Isolation Test - EN10140



TECHNICAL DATA SHEET

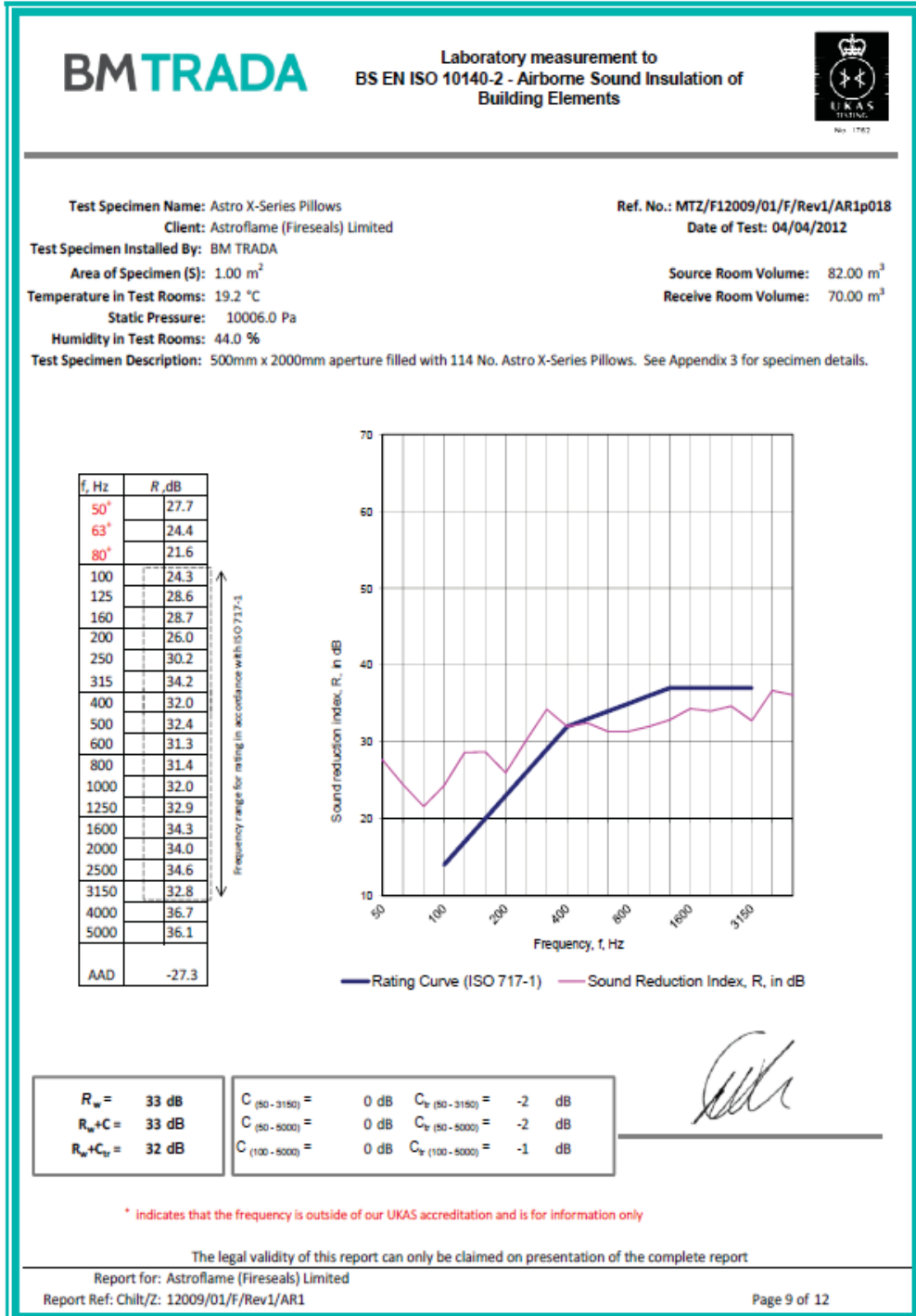
**ASTRO X SERIES
PILLOW®**

TECHNICAL SCHEDULE
No. CF615



Unique identification code of product-type: XSPIL

Acoustic Isolation Test - EN10140



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Unique identification code of product-type: XSPIL

Air Permeability & Acoustic Isolation Test - EN10140

TYPICAL VERTICAL SECTION SHOWING THE USE OF ASTRO X SERIES FIRE PILLOWS IN A BLOCK WALL or PARTITION
Fire Resistance EI 120
Acoustic dB 43 Dnew
dB 33 Rw
Air Permeability tested pressure 600Pa

1 - ASTRO X SERIES FIRE PILLOWS
2 - ASTRO X SERIES FIRE PILLOWS (VARIOUS SIZES TO FIT VOID)
3 - BLOCKWORK
4 - FLEXIBLE WALL

	Astroflame (Fireseals) Ltd Intumescent House Unit 8 The IO Centre Stephenson Road Segensworth Fareham, PO15 5RU	FILE NAME: DET 19-0001 DATE: 26/03/14	ASTROFLAME has provided this specification on the basis of data, information & site conditions given by ASTROFLAME by the client, the respective ASTROFLAME product information & the existing level of technical knowledge. This specification relates to the expected performance of the proposed detail, were it to be subjected to the standardised test against which the judgement was made. The accuracy of this specification can only be guaranteed provided: 1. Only original ASTROFLAME products as defined within this specification are used 2. These specific products are used & installed only by a competent, experienced installer & by strictly obeying the conditions & calculations mentioned in this specification, as well as all relevant technical instructions, operating manuals, setting manuals, installation manuals & all other ASTROFLAME data sheets. 3. The proposed performance, based prerequisites & criteria conform with actual existing site conditions & have been checked & agreed by the installer & client.
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