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European Technical Assessment

ETA 14/0387
 of 8/10/14

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011:

Trade name of the construction product	fischer FFSC FireStop Compound
Product family to which the construction product belongs	Fire Stopping and Sealing Product Penetration Seals
Manufacturer	Fischerwerke GmbH & Co Weinhalde 14-18 72178 Waldachtal Germany
Manufacturing plant(s)	E/092
This European Technical Assessment contains	14 pages including 3 Annex(es) which form an integral part of this assessment.
	Annex(es) A - C Contain(s) confidential information and is/are not included in the European Technical Assessment when that assessment is publicly available.
This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of	ETAG 026, edition 2011, used as European Assessment Document (EAD)

General Comments

1. This European Technical Assessment is issued by Warrington Certification Limited on the basis of ETAG 026 Fire Protective Products Part 1: General June 2013, and Part 2: Fire Stopping and Fire Sealing Products Aug 2011, Used as European Assessment Document.
2. This European Technical Assessment is not to be transferred to manufacturers or agents of manufacturers other than those indicated on page 1, or manufacturing plants other than those indicated on page 1.



1 SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical Description of the Product

(Detailed information and data are given in Annexes)

- 1) fischer FFSC FireStop Compound is a gypsum based mortar material, used to reinstate the fire resistance performance of floor constructions where they have been provided with apertures for the penetrations of multiple services.
- 2) fischer FFSC FireStop Compound is supplied as a dry material, and is mixed with water to the required ratio prior to installation.
- 3) fischer FFSC FireStop Compound when mixed is self-supporting in a floor to a maximum of 1800mm x 1800mm. Temporary shuttering is required to support the wet weight of the fischer FFSC FireStop Compound.

Internal use- ETAG 026-2 (used as European Assessment Document EAD) Type Z₁.

2 Specification Of The Intended Use In Accordance With The Relevant EAD

2.1 Intended Use

The intended use of fischer FFSC FireStop Compound is to reinstate the fire resistance performance of rigid floor constructions where they are penetrated by various cables and metallic pipes.

- 1) The specific elements of construction that the System fischer FFSC FireStop Compound may be used to provide a penetration seal in, are as follows:

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

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

- 2) The fischer FFSC FireStop Compound may be used to provide a penetration seal with cables, cable trays and metallic pipes with insulation (for details see Annex C).
- 3) The total amount of cross sections of services (including insulation) should not exceed 60% of the penetration area.
- 4) The system fischer FFSC FireStop Compound may be used to seal apertures in the separating element up to 1800mm wide by 1800mm long in a floor. The minimum permitted separation between adjacent seals/apertures is 200mm. Services within the system fischer FFSC FireStop Compound do not require a minimum separation.
- 5) Services in floors shall be supported at maximum 150mm and 300mm from the exposed face.



- 6) The provisions made in this European Technical Approval are based on an assumed working life of the fischer FFSC FireStop Compound of 25 years, provided that the conditions laid down in sections 4.2/5.1/5.2 for the packaging/transport/ storage/installation/use/repair are met. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

2.2 Use Category

Type Z₁: 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.

3 Performance Of The Product And References To The Methods Used For Its Assessment

The assessment of fitness for use has been made in accordance with EOTA ETAG 026 Part 2: 2011-08-08 (used as European Assessment Document, EAD)

ETAG Clause No.	ETA Clause No.	Characteristic	Assessment of characteristic
		Mechanical resistance and stability	Not relevant
		Safety in case of fire	
2.4.1	3.1	Reaction to fire	Class F according to EN 13501-1
2.4.2	3.2	Resistance to fire	See clause 3.2 & Annex C
		Hygiene, Health and the Environment	
2.4.3	3.3	Air permeability	No performance determined
2.4.4	3.4	Water permeability	No performance determined
2.4.5	3.5	Dangerous substances	See clause 3.5
		Safety in use	
2.4.6	3.6	Mechanical resistance and stability	No performance determined
2.4.7	3.7	Resistance to impact/movement	No performance determined
2.4.8	3.8	Adhesion	No performance determined
		Protection against noise	No performance determined
2.4.9	3.9	Airborne sound insulation	R_w (C;C_{tr}) = 50(-1;-4)dB
		Energy, Economy and Heat Retention	
2.4.10	3.10	Thermal properties	No performance determined
2.4.11	3.11	Water vapour permeability	No performance determined
		General aspects relating to fitness for use	
2.4.12	3.12	Durability and serviceability	Z₁



3.1 Reaction to fire

System fischer FFSC FireStop Compound is classified 'F' in accordance with EN 13501-1.

3.2 Resistance to fire

System fischer FFSC FireStop Compound has been tested in accordance with BS EN 1366-3: 2009 and Pr EN 1366-3: 2002 based upon the test results and the field of direct application specified within EN 1366-3: 2009, the system fischer FFSC FireStop Compound has been classified in accordance with EN 13501-2, as given in Annex C:

The seals may only be penetrated by the services described in Annex C; other parts or support constructions must not penetrate the seal.

The service support construction must be fixed to the building element containing the penetration seal or a suitable adjacent building element, and the unexposed side for floors, in such a manner that in the case of fire, no additional load is imposed on the seal. Furthermore it is assumed that the unexposed face support is maintained for the required period of fire resistance.

fischer FFSC FireStop Compound seals in floors must be installed over a shutter that is capable of supporting the weight of the mortar, the shutter should then be removed in accordance with 4.2.

Cables should be insulated with minimum 45kg/m³ Rockwool Duct Wrap minimum 25mm thick 500mm long to the unexposed face

Pipes should be insulated with minimum 150kg/m³ Rockwool H&V Pipe Section minimum 50mm thick 500mm long to the unexposed face (CI)

Pipes must be perpendicular to the seal surface.

It is assumed that compressed air systems are switched off by other means in the case of fire.

The function of the pipe seal in case of pneumatic dispatch systems, pressurised air systems etc. is guaranteed only when the systems are shut off in case of fire.

The assessment does not cover the avoidance of destruction of the seal or of the abutting building element(s) by forces caused by temperature changes in case of fire. This has to be considered when designing the piping system.

The approval does not address any risks associated with leakage of dangerous liquids or gases caused by failure of the pipe(s) in case of fire.

The durability assessment does not take account of the possible effect of substances permeating through the pipe on the penetration seal.

The classifications relate to C/U (capped inside /uncapped outside the furnace) for metallic pipes, insulated. For further information refer to national regulations.

3.3 Air permeability

No performance determined



3.4 Water permeability

No performance determined

3.5 Dangerous substances

Fischerwerke GmbH & Co has presented a declaration that fischer FFSC FireStop Compound 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/enterprise/construction/cpd-ds/index.cfm>

In addition to the specific clauses relating to dangerous substances contained in this 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 Directive, these requirements need also to be complied with, when and where they apply.

3.6 Mechanical resistance and stability

No performance determined.

3.7 Resistance to impact/movement

No performance determined.

3.8 Adhesion

Not relevant.

3.9 Airborne sound insulation

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

$D_{n,e,w} (C;Ctr) = 52(-4;-8)$

3.10 Thermal Properties

No performance determined.

3.11 Water vapour permeability

No performance determined.

3.12 Durability and serviceability

fischer FFSC FireStop Compound has been tested in accordance with EOTA Technical Report - TR024 – Edition November 2006, for the type Z₁ use category specified in ETAG 026-2, 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.



4 Assessment And Verification Of Constancy Of Performance (Hereinafter AVCP) System Applied, With References To Its Legal base

According to the decision 1999/454/EC of the European Commission the system of assessment and verification of constancy of performance (see Annex V to the Regulation (EU) No 305/2011) given in the following table apply:

Products	Intended uses	Level or Class	System
Fire stopping and fire sealing products	For fire compartmentation and / or fire protection or fire performance	Any	System 1

5. Technical Details Necessary For The Implementation Of The AVCP System, As Provided For In The Applicable EAD.

Tasks for the Manufacturer

Factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall ensure that the product is in conformity with this European technical assessment.

The manufacturer may only use constituent materials stated in the technical documentation of this European technical assessment.

The factory production control shall be in accordance with the Control Plan of 7.3.13 relating to the European technical assessment ETA 14/0387 which is part of the technical documentation of this European technical assessment. The "Control Plan" is laid down in the context of the factory production control system operated by the manufacturer and deposited at Warrington Certification Limited.

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the Control Plan.



Other tasks of manufacturer

Additional information

The manufacturer shall provide a technical data sheet and an installation instruction with the following minimum information:

(a) Technical data sheet:

- Field of application:
- Building elements for which the penetration seal is suitable, type and properties of the building elements like minimum thickness, density, and - in case of lightweight constructions – the construction requirements.
- Services for which the penetration seal is suitable, type and properties of the services like material, diameter, thickness etc. in case of pipes including insulation materials; necessary/allowed supports/fixings (e.g. cable trays)
- Limits in size, minimum thickness etc. of the penetration seal
- Construction of the penetration seal including the necessary components and additional products (e.g. backfilling material) with clear indication whether they are generic or specific.

(b) Installation instruction:

- Steps to be followed
- Procedure in case of retrofitting.

Tasks of approved bodies

The approved body shall perform the

- initial type-testing of the product,
- initial inspection of factory and of factory production control,
- continuous surveillance, assessment and approval of factory production control,

In accordance with the provisions laid down in the "Control Plan" of 7.3.13 relating to the European Technical Assessment 14/0387

The approved body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in a written report.

The approved certification body involved by the manufacturer shall issue an EC certificate of conformity of the product stating the conformity with the provisions of this European technical assessment.

In cases where the provisions of the European technical assessment and its "Control Plan" are no longer fulfilled the certification body shall withdraw the certificate of conformity and inform the Warrington Certification Limited without delay.



Signatories



Responsible Officer

C. Abbott* - Principal Certification Engineer



Approved

A. Kearns* - Technical Manager

* For and on behalf of Warrington Certification Limited.



Annex A

Reference Documents and LIST OF ABBREVIATIONS

References to standards mentioned in the ETA:

EN 13501-1	Fire classification of construction products and building elements – Part 1: Classification using test data from reaction to fire tests
EN 13501-2	Fire classification of construction products and building elements – Part 2: Classification using test data from fire resistance tests

Other reference documents:

EOTA TR 024	Characterisation, Aspects of Durability and Factory Production Control for Reactive Materials, Components and Products
ETAG No. 026: Part 2	Guideline For European Technical Approval of Fire Stopping and Fire Sealing Products, Part 3: Penetration Seals(used as European Assessment Document, EAD)



Annex B

Description of Product and Product Literature

fischer FFSC FireStop Compound

A detailed specification of the product is contained in document "Evaluation Report" and "Control Plan of 7th March 2013" relating to the European Technical Approval ETA 14/0387 issued on 8/7/14, of fischer FFSC FireStop Compound which is a non-public part of this ETA.



Compound - FFSC

Overview





Application examples:
 Metallic services-Steel & Cast Iron pipes
 Non metallic service- With FIP Intumescent Pipe Wrap or FFC Firestop Collar
 Voids or cavities in floors or wall- structural or non
 Cable bunches

Approved to:

British Standard

BS 476 - 20

BS EN ISO 140-3:1995

The laboratory measurement of outdoor sound insulation of building elements

Application area:

- ☐ Metallic services
- ☐ Non metallic services
- ☐ Opening in Floors & Walls
- ☐ Electrical Services

Product Description

Features / uses

- Water based
- Low VOC
- Excellent acoustic properties
- Load bearing
- Gas & Air tight

Uscher FFSC is a specially formulated gypsum based compound, which when mixed with water can be trowelled or poured around service penetrations in either vertical or horizontal applications. Tested to BS476 Part 20, the FFSC can provides up to 6 hours integrity and 6 hour insulation. Has been designed to set within 30-45 min depending on ambient temperature, and is capable of accommodate foot traffic within 72 hours.

Formulated to be halogen and asbestos free the FFSC exhibits excellent load bearing capacity and can help to maintain the sound reduction index of a structure.

Non metallic service which pass through the FFSC should be adequately protected with either the Uscher FIP Intumescent Pipe Wrap or FFC Firestop Collar and installed in accordance with the detailed instruction or approved system.



Technical Data

Compressive Strength:		MPA 8 (80kg/cm ²)
Surface Hardness	cyl/dia20:	MPA 8 (Load 4kN)
Surface Hardness	cyl/dia20:	MPA 13 (Load 15kN)
Combustion (ISO 1182 and NF Fire 001)		Non-combustible
Corrosive fumes		Non
Toxicity		Nil
Density (Specfic Gravity) (g/cm ³)		0.8 to 0.9
Expansion during curing		1:1
Curing Time (Hardening)		1-3 days
Colour		Beige
Bonding to:	Concrete	1.0 (10kg/cm ²)
	Steel	0.35 (3.5kg/cm ²)
Blast resistance:	(Bar)	7
Air & Gas permeability coefficient	(10 ⁻¹⁴ m ²)	3.5 as concrete
Sound Insulation		10cm/50dB
Resistance to: Water		Good
Mineral/Oil/Petrol/Solvent		Good
Acids		Good
Halogen Content:		
Chlorine, Flourides, Bromine		Negligible less than 38 ppm



Annex C

Resistance to Fire Classification of fischer FFSC FireStop Compound

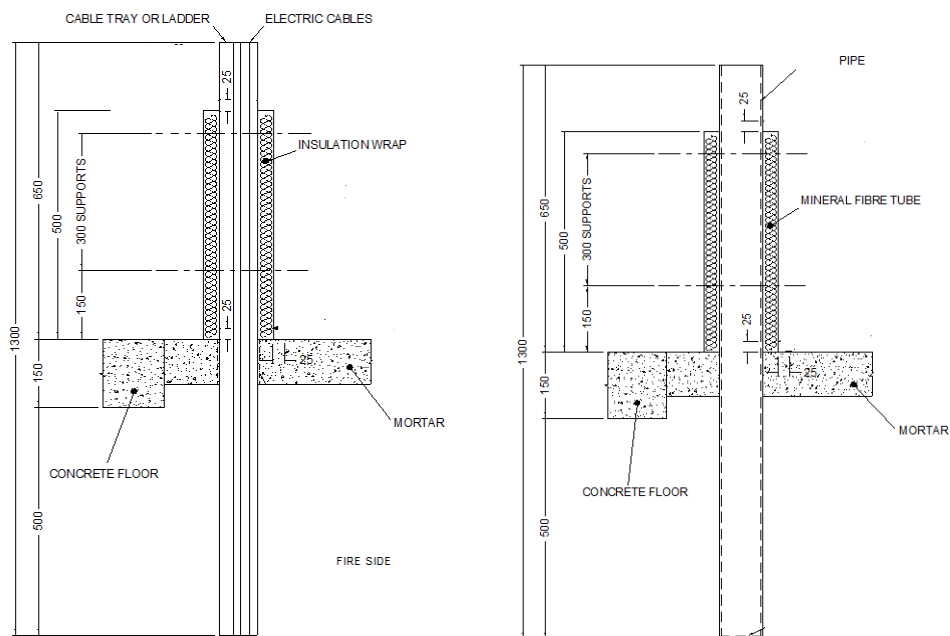
C.1 Rigid floor constructions according to 1.2.1 with floor thickness of minimum 150 mm

C.1.1 Penetration seal with fischer FFSC FireStop Compound installed the 100mm depth of the floor, maximum seal size 1800mm x 1800mm

Penetration Seal: Metallic pipes (insulated) and various cables (insulated) penetrating through a rigid floor construction. fischer FFSC FireStop Compound flush with the upper surface of the floor.

fischer FFSC FireStop Compound is applied to seal around the services and gaps of service penetration

Construction details:



C.1.1.1 Separation of openings minimum 200 mm

Services	Classification
Copper pipe 40-107 mm Ø and 1.5 – 14.2 mm wall, insulated with 'LI' (local interrupted 500mm) 50 mm thick Rockwool H&V Pipe Section min 150kg/m ³	E 60 C/U EI 15 C/U
Steel pipe 40-115 mm Ø and 3.5 – 14.2 mm wall, insulated with 'LI' (local interrupted 500mm) 50 mm thick Rockwool H&V Pipe Section min 150kg/m ³	EI120 C/U
Steel pipe 160 mm Ø and 5– 14.2 mm wall, insulated with 'LI' (local interrupted 500mm) 50 mm thick Rockwool H&V Pipe Section min 150kg/m ³	E 120 C/U EI 90 C/U
Electrical cables up to 80 mm Ø, insulated with 25mm thick Rockwool Duct Wrap 500mm long min 45kg/m ³	E 120 EI 60
Non-sheathed wire up to 24 mm Ø insulated with 25mm thick Rockwool Duct Wrap 500mm long min 45kg/m ³	EI 120



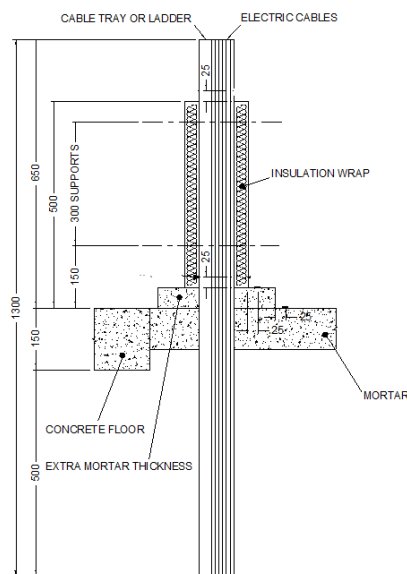
C.2 Rigid floor constructions according to 1.2.1 with floor thickness of minimum 150 mm

C.2.1 Penetration seal fischer FFSC FireStop Compound installed the 150mm depth of the floor, maximum seal size 1800mm x 1800mm

Penetration Seal: Various cables (insulated) penetrating through a rigid floor construction. fischer FFSC FireStop Compound flush with the upper surface of the floor. An additional 50mm thickness of compound is applied round the upper side of the cables.

fischer FFSC FireStop Compound is applied to seal around the services and gaps of service penetration

Construction details:



C.2.1.1 Separation of openings minimum 200 mm

Services	Classification
Telecomm cables in bundles of up to 100 mm diameter with 25mm thick Rockwool Duct Wrap 500mm long min 45kg/m ³	EI120

