

EKSPLUATĀCIJAS ĪPAŠĪBU DEKLARĀCIJA

saskaņā ar Regulas (ES) Nr. 305/2011 (par būvizrādājumiem) III pielikumu

Hilti ugunsdrošā vadu pāreja CFS-T

Nr. Hilti CFS-T "1139-CPD-0499/13"

1. Unikāls izstrādājuma tipa identifikācijas numurs:

Hilti ugunsdrošā vadu pāreja CFS-T

2. Paredzētais lietojums:

Ugunsdrošības un izolācijas izstrādājums izolācijas nodrošināšanai šķērsojuma vietās; skatīt ETA-13/0516 (19.12.2019.)

Jauktu iespiešanās vietu blīvējums	Vadu, metāla cauruļu un kombinētie šķērsojumi
---------------------------------------	---

3. Ražotājs:

Hilti Corporation, Feldkircherstrasse 100, 9494 Schaan, Lihtenšteinas Firstiste

4. Ekspluatācijas īpašību noturības novērtējuma un pārbaudes (AVCP) sistēma:

1 sistēma

5. Eiropas novērtējuma dokuments:

EAD 350454-00-1104 "Ugunsdrošības un ugunsgrēka izolācijas izstrādājumi — izolācijas nodrošināšana šķērsojuma vietās"

Eiropas Tehniskais novērtējums:

ETA-13/0516 (19.12.2019.)

Tehniskā novērtējuma iestāde:

Austrian Institute of Construction Engineering (OIB)

Iestāde(-es), kam paziņots:

Magistratsabteilung 39 – Prüf-, Überwachungs- und Zertifizierungsstelle der Stadt Wien, No. 1139

6. Deklarētās ekspluatācijas īpašības:

Galvenie raksturlielumi	Deklarētā(-ās) ekspluatācijas īpašība(-as)/saskaņotās tehniskās specifikācijas
Ugunsreakcija	Tērauda korpus: A1 klase, saskaņā ar EN 13501-1 Starplika: E klase saskaņā ar Standarta EN 13501-1 prasībām
Ugunsizturība	Ugunsizturības īpašības un paredzētais izmantojums atbilst Standarta EN 13501-2 prasībām. Skatīt pielikumu
Triecienizturība/kustību pretestība	Atbilst IV riska zonas prasībām saskaņā ar EOTA TR 001 prasībām
Izturīgums un darbderīgums	X saskaņā ar EOTA tehnisko apstiprinājumu TR024.

Iepriekš norādītā izstrādājuma ekspluatācijas īpašības atbilst deklarēto ekspluatācijas īpašību kopumam. Šī ekspluatācijas īpašību deklarācija izdota saskaņā ar Regulu (ES) Nr. 305/2011, un par to ir atbildīgs vienīgi iepriekš norādītais ražotājs.

Parakstīts ražotāja vārdā:



Tatjana Tsalolikina

Product Manager
Business Unit Fire Protection
Hilti Aktiengesellschaft

Schaan, 19.12.2019



Martin Althof

Leiter Qualitätssicherung
Business Unit Fire Protection
Hilti Aktiengesellschaft

DoP_Iv_04-01_000000001549_Hilti CFS-T

Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

Intended use

“Hilti Firestop Cable Transit CFS-T” is intended to be used as a cable- and / or pipe penetration seal (mixed penetration seal) to temporarily or permanently reinstate the fire resistance performance of rigid wall constructions and rigid floor constructions where they have been provided with apertures which are penetrated by various cables, conduits, metal pipes, plastic pipes and multi-layer composite pipes. Other parts or service support constructions shall not penetrate the penetration seal. Further details are given in Annex C of the ETA.

The maximum opening size of the penetration seal in walls is 504 mm x 562 mm. For more details see Annex C of the ETA.

“Hilti Firestop Cable Transit CFS-T” can be installed only in the types of separating elements as specified in the following table.

Separating element	Construction
Rigid walls	> Concrete > Minimum density 2200 kg/m³ > Minimum thickness 150 mm > The rigid wall shall be classified in accordance with EN 13501-2 for the required fire resistance period
Rigid floors	> Concrete > Minimum density 2200 kg/m³ > Minimum thickness 200 mm > The rigid floor shall be classified in accordance with EN 13501-2 for the required fire resistance period

This European Technical Assessment does not cover sandwich panel constructions.

Abbreviations used in drawings

Abbreviation	Description
A ₁	Hilti Firestop Cable Transit Frame (Sleeve)
A ₂	Hilti Firestop Cable Transit Modules
A ₂ SM	Hilti Firestop Cable Transit Super Modules
A ₃	Hilti Firestop Cable Transit Wedge
A ₄	Hilti Firestop Cable Transit Plug Seal
A ₅	Sealing with Hilti Firestop Acrylic Sealant CFS-S ACR
C ₁	Cable
C ₂	Pipe
d _{C2}	Pipe diameter (nominal outside diameter)
AP ₁	Cable Insulation
AP ₂	Pipe Insulation
AP ₃	Transit Frame Insulation
E	Building element (wall, floor)
F	Fixing of the frame (sleeve)
S ₁	Minimum distance between single penetration seals
t _{C2}	Pipe wall thickness
t _{AP1}	Insulation thickness / cable
t _{AP2}	Insulation thickness / pipe
t _{AP3}	Insulation thickness / transit frame
t _E	Thickness of the building element
L _{AP1}	Length of Cable Insulation
L _{AP2}	Length of Pipe Insulation

C.2 Penetration seal system Hilti CFS-T SB and CFS-T SBO in rigid walls and floors according to Annex C.1.1 of the ETA

Maximum distance for 1st service support: 420 mm.

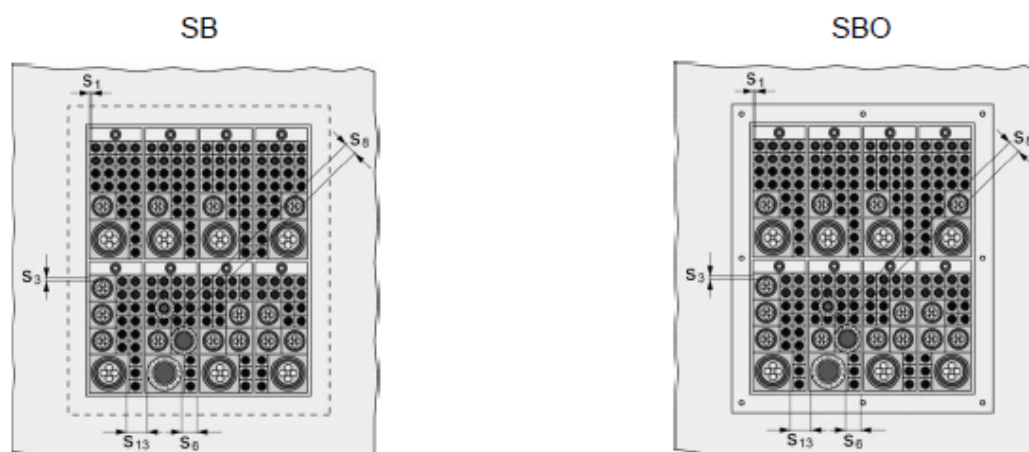
Maximum seal size: 504 x 562 mm (width x height).

Minimum distances in mm cable and metal pipe penetration seal:

s_1 =	5	(distance between cables and the side seal edge)
s_3 =	5	(distance between cables and upper seal edge)
s_6 =	0	(distance between the insulation of metal pipes and the seal edge)
s_8 =	0	(distance between the insulation of metal pipes)
s_{13} =	90	(distance between cables and metal pipes)

The results are also valid for mixed penetration seals

Minimum distances in mm (see illustration of distances below):



C.2.1 Rigid Walls according to Annex C.1.1 of the ETA – minimum wall thickness 150 mm

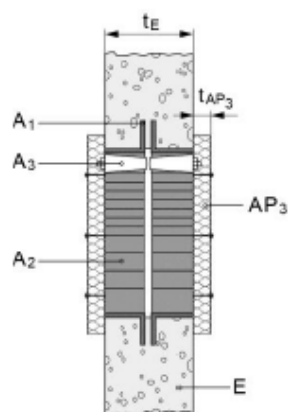
C.2.1.1 Blank seal (no services) - System: CFS-T SB

Classification

- Single frame

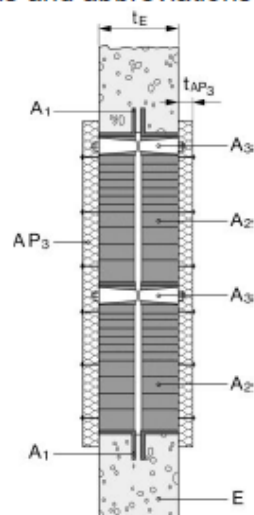
Maximum seal size: 277 mm x 120 mm (CFS-T SB 8x1),

Construction details (for symbols and abbreviations see Annex A of the ETA):



EI 180

- Multiple frame
Maximum seal size: 504 mm x 562 mm (CFS-T SB 8+8x4),
Construction details (for symbols and abbreviations see Annex A of the ETA):

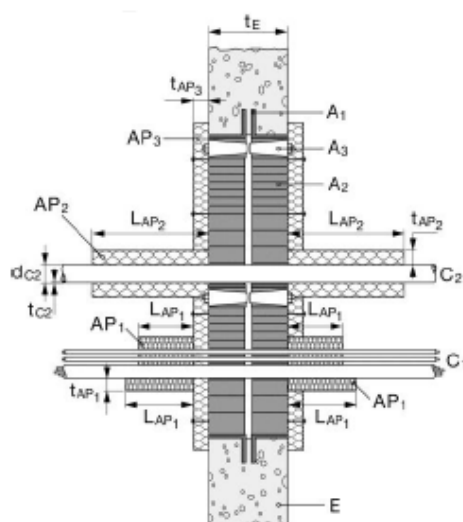


EI 180

C.2.1.2 Cable penetration - System: CFS-T SB

Maximum seal size: 504mm x 562mm (CFS-T SB 8+8x4)

Construction details (for symbols and abbreviations see Annex A):



Cable diameter C_1 (mm)	Cable insulation thickness t_{AP1} (mm)	Cable insulation length L_{AP1} (mm)	Classification
All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables, except waveguide and non-sheathed cables) with a diameter of:			
Small cable group max. Ø21mm	30	250	EI 180
Medium cable group max. Ø50mm	30	250	EI 180
Large cable group max. Ø80mm	30	250	EI 120 / E 180

C.2.1.3 Non-combustible pipe penetration - System: CFS-T SB

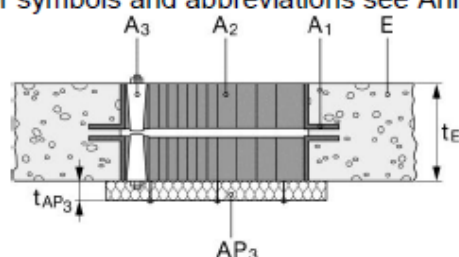
Maximum seal size: 504mm x 562mm (CFS-T SB 8+8x4)

Pipe diameter d_{C2} (mm)	Pipe wall thickness t_{C2} (mm)	Thickness of pipe insulation t_{AP2} (mm)	Length of pipe insulation L_{AP2} (mm)	Arrangement pipe insulation	Classification
15	1 – 14,2	≥ 30	≥ 500	LI	EI 180
15 – 28	1 – 14,2	≥ 30	≥ 500	LI	EI 120-C/U, E 180-C/U
28 – 54	1/1,5 – 14,2	≥ 30	≥ 500	LI	
15 – 28	1 – 14,2	≥ 30	-	CI	EI 180
28 – 54	1/1,5 – 14,2	≥ 30	-	CI	EI 180

C.2.2 Rigid Floors according to Annex C.1.1 of the ETA – minimum floor thickness 200 mm

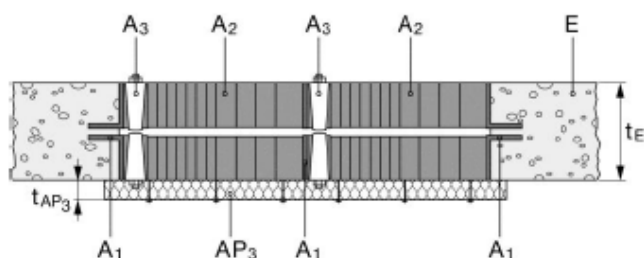
C.2.2.1 Blank seal (no services) - System: CFS-T SB

- Single frame
Maximum seal size: 277mm x 120mm (CFS-T SB 8x1),
Construction details (for symbols and abbreviations see Annex A of the ETA):



EI 180

- Multiple frame
Maximum seal size: 504mm x 562mm (CFS-T SB 8+8x4),
Construction details (for symbols and abbreviations see Annex A of the ETA):

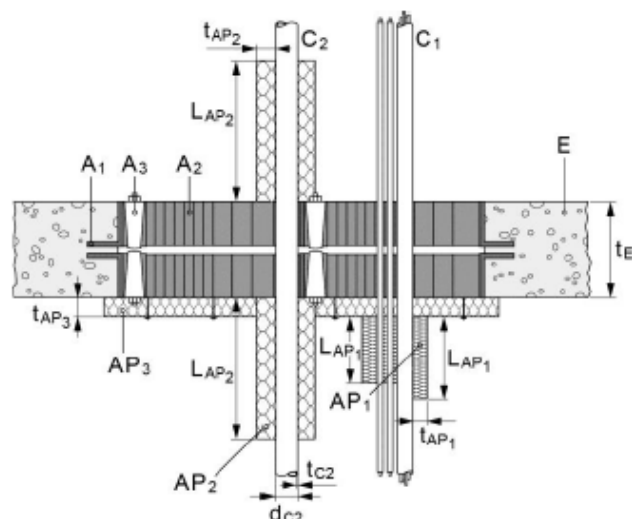


EI 180

C.2.2.2 Cable penetration - System: CFS-T SB

Maximum seal size: 504mm x 562mm (CFS-T SB 8+8x4)

Construction details (for symbols and abbreviations see Annex A of the ETA):



Cable diameter C_1 (mm)	Cable insulation thickness t_{AP1} (mm)	Cable insulation length L_{AP1} (mm)	Classification
All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables, except waveguide and non-sheathed cables with a diameter of:			
Small cable group max. $\varnothing$ 21 mm	30	300	EI 180
Medium cable group max. $\varnothing$ 50 mm	30	300	EI 180
Large cable group max. $\varnothing$ 80 mm	30	300	EI 120 / E 180

C.2.2.3 Non-combustible pipe penetration - System: CFS-T SB

Maximum seal size: 504 mm x 562 mm (CFS-T SB 8+8x4)

Pipe diameter d_{C2} (mm)	Pipe wall thickness t_{C2} (mm)	Thickness of pipe insulation t_{AP2} (mm)	Length of pipe insulation L_{AP2} (mm)	Arrangement pipe insulation	Classification
15 - 28	1 - 14,2	≥ 30	≥ 400	LI	EI 120-C/U, E 180-C/U
28 - 54	1/1,5 - 14,2	≥ 30	≥ 500	LI	
15 - 28	1 - 14,2	≥ 30	-	CI	EI 180
28 - 54	1/1,5 - 14,2	≥ 30	-	CI	EI 180

C.2.3 Rigid Walls according to Annex C.1.1 of the ETA – minimum wall thickness 150 mm

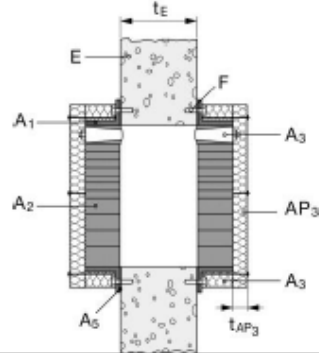
C.2.3.1 Blank seal (no services) - System: CFS-T SBO

Classification

- Single frame

Maximum seal size: 120 mm x 277 mm (CFS-T SBO 8x1),

Construction details (for symbols and abbreviations see Annex A of the ETA):

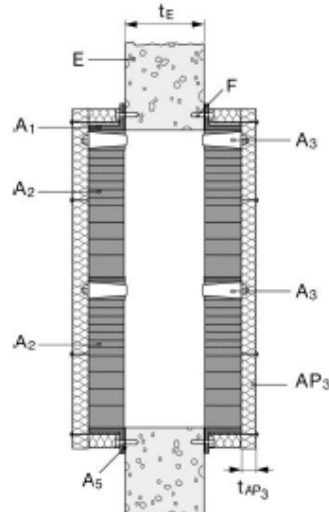


EI 180

- Multiple frame

Maximum seal size: 504 mm x 562 mm (CFS-T SBO 8+8x4),

Construction details (for symbols and abbreviations see Annex A of the ETA):

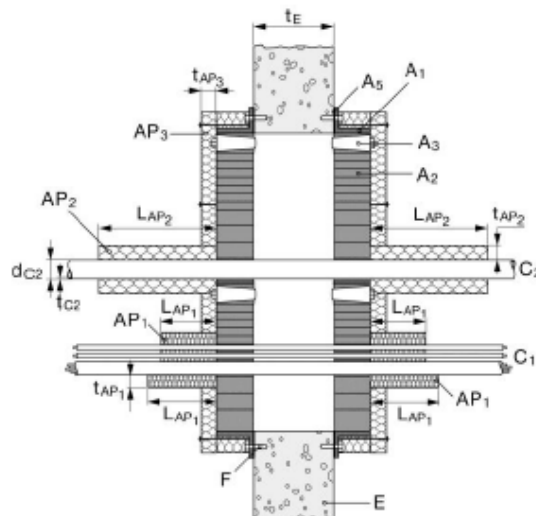


EI 180

C.2.3.2 Cable penetration - System: CFS-T SBO

Maximum seal size: 504 mm x 562 mm (CFS-T SBO 8+8x4)

Construction details (for symbols and abbreviations see Annex A of the ETA):



Cable diameter C_1 (mm)	Cable insulation thickness t_{AP1} (mm)	Cable insulation length L_{AP1} (mm)	Classification
All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables, except waveguide and non-sheathed cables with a diameter of:			
Small cable group max. $\varnothing 21$ mm	30	150	EI 180
Medium cable group max. $\varnothing 50$ mm	30	150	EI 180
Large cable group max. $\varnothing 80$ mm	30	150	EI 120 / E 180

C.2.3.3 Non-combustible pipe penetration - System: CFS-T SBO

Maximum seal size: 504mm x 562mm (CFS-T SB 8+8x4)

Pipe diameter d_{C2} (mm)	Pipe wall thickness t_{C2} (mm)	Thickness of pipe insulation t_{AP2} (mm)	Length of pipe insulation L_{AP2} (mm)	Arrangement pipe insulation	Classification
15	1 – 14,2	≥ 30	≥ 250	LI	EI 180
15 – 28	1 – 14,2	≥ 30	≥ 250	LI	EI 120-C/U, E 180-C/U
28 – 54	1/1,5 – 14,2	≥ 30	≥ 500	LI	
15 – 28	1 – 14,2	≥ 30	-	CI	EI 180
28 – 54	1/1,5 – 14,2	≥ 30	-	CI	EI 180

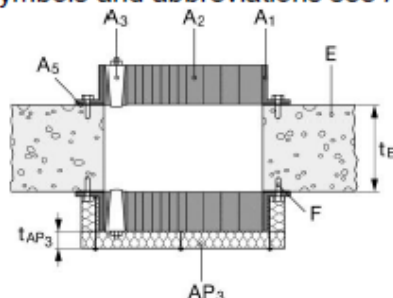
C.2.4 Rigid Floors according to Annex C.1.1 of the ETA – minimum floor thickness 200 mm

C.2.4.1 Blank seal (no services) - System: CFS-T SBO

- Single frame

Maximum seal size: 277 mm x 120 mm (CFS-T SBO 8x1),

Construction details (for symbols and abbreviations see Annex A of the ETA):

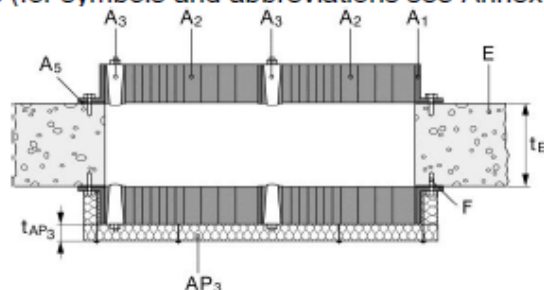


EI 180

- Multiple frame

Maximum seal size: 520 mm x 580 mm (CFS-T SBO 8+8x4),

Construction details (for symbols and abbreviations see Annex A of the ETA):

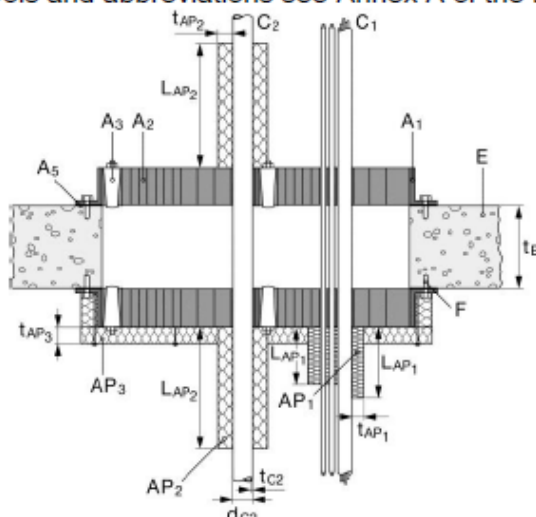


EI 180

C.2.4.2 Cable penetration - System: CFS-T SBO

Maximum seal size: 504mm x 562mm (CFS-T SBO 8+8x4)

Construction details (for symbols and abbreviations see Annex A of the ETA):



Cable diameter C_1 (mm)	Cable insulation thickness t_{AP1} (mm)	Cable insulation length L_{AP1} (mm)	Classification
All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables, except waveguide and non-sheathed cables with a diameter of:			
Small cable group max. $\varnothing$ 21 mm	30	250	EI 180
Medium cable group max. $\varnothing$ 50 mm	30	250	EI 180
Large cable group max. $\varnothing$ 80 mm	30	250	EI 180

C.2.4.3 Non-combustible pipe penetration - System: CFS-T SBO

Maximum seal size: 520 mm x 580 mm (CFS-T SB 8+8x4)

Pipe diameter d_{C2} (mm)	Pipe wall thickness t_{C2} (mm)	Thickness of pipe insulation t_{AP2} (mm)	Length of pipe insulation L_{AP2} (mm)	Arrangement pipe insulation	Classification
15 – 28	1 – 14,2	≥ 30	≥ 300	LI	EI 120-C/U, E 180-C/U
28 – 54	1/1,5 – 14,2	≥ 30	≥ 500	LI	
15 – 28	1 – 14,2	≥ 30	-	CI	EI 180
28 – 54	1/1,5 – 14,2	≥ 30	-	CI	EI 180

C.3 Penetration seal system Hilti CFS-T SBF in rigid walls and floors according to Annex C.1.1 of the ETA

Maximum distance for 1st service support: 420 mm.

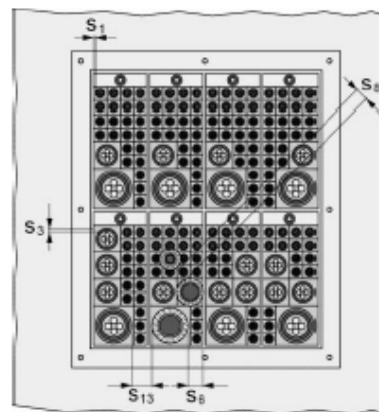
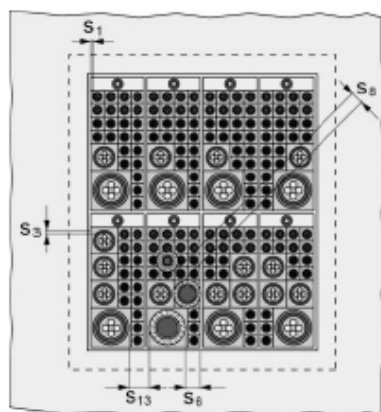
Maximum seal size: 504 x 562 mm (width x height).

Minimum distances in mm cable and metal pipe penetration seal:

s_1	=	5	(distance between cables and the side seal edge)
s_3	=	5	(distance between cables and upper seal edge)
s_6	=	0	(distance between the insulation of metal pipes and the seal edge)
s_8	=	0	(distance between the insulation of metal pipes)
s_{13}	=	90	(distance between cables and metal pipes)

The results are also valid for mixed penetration seals

Minimum distances in mm (see illustration of distances below):



C.3.1 Rigid Walls according to Annex C.1.1 of the ETA – minimum wall thickness 150 mm

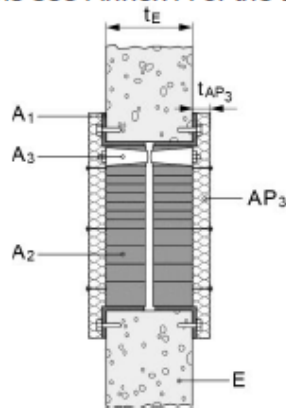
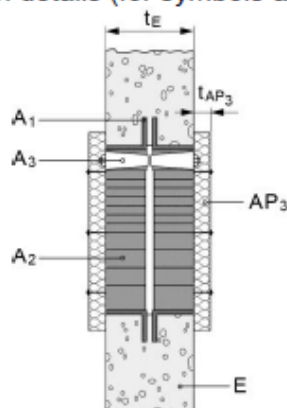
C.3.1.1 Blank seal (no services) - System: CFS-T SBF

Classification

- Single frame

Maximum seal size: 277 mm x 120 mm (CFS-T SBF 8x1),

Construction details (for symbols and abbreviations see Annex A of the ETA):



EI 180

C.3.1.3 Non-combustible pipe penetration - System: CFS-T SBF

Maximum seal size: 504mm x 562mm (CFS-T SBF 8+8x4)

Pipe diameter d_{c2} (mm)	Pipe wall thickness t_{c2} (mm)	Thickness of pipe insulation t_{AP2} (mm)	Length of pipe insulation L_{AP2} (mm)	Arrangement pipe insulation	Classification
15	1 – 14,2	≥ 30	≥ 500	LI	EI 180
15 – 28	1 – 14,2	≥ 30	≥ 500	LI	EI 120-C/U, E 180-C/U
28 – 54	1/1,5 – 14,2	≥ 30	≥ 500	LI	
15 – 28	1 – 14,2	≥ 30	-	CI	EI 180
28 – 54	1/1,5 – 14,2	≥ 30	-	CI	EI 180

C.3.2 Rigid Floors according to Annex C.1.1 of the ETA – minimum floor thickness 200 mm

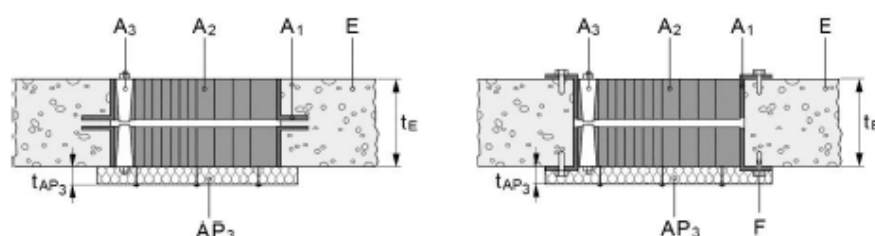
C.3.2.1 Blank seal (no services) - System: CFS-T SBF

Classification

- Single frame

Maximum seal size: 277mm x 120mm (CFS-T SBF 8x1),

Construction details (for symbols and abbreviations see Annex A of the ETA):

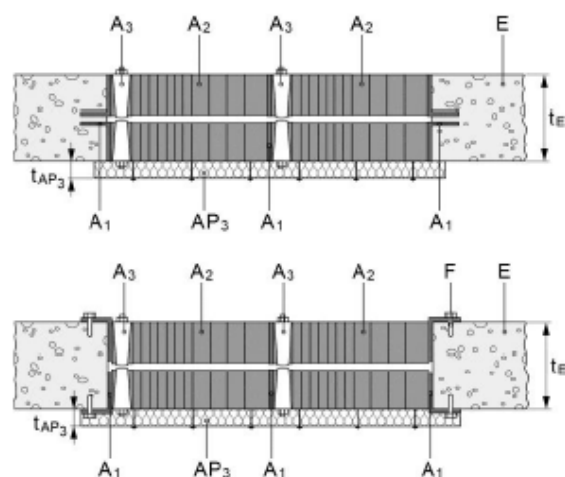


EI 180

- Multiple frame

Maximum seal size: 504mm x 562mm (CFS-T SBF 8+8x4),

Construction details (for symbols and abbreviations see Annex A of the ETA):

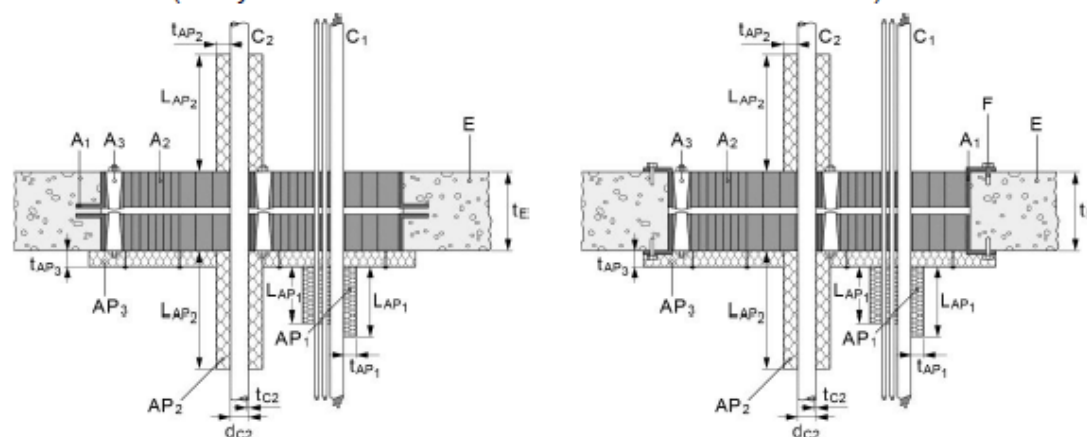


EI 180

C.3.2.2 Cable penetration - System: CFS-T SBF

Maximum seal size: 504mm x 562mm (CFS-T SBF 8+8x4)

Construction details (for symbols and abbreviations see Annex A of the EAT):



Cable diameter C_1 (mm)	Cable insulation thickness t_{AP1} (mm)	Cable insulation length L_{AP1} (mm)	Classification
All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables, except waveguide and non-sheathed cables with a diameter of:			
Small cable group max. $\varnothing$ 21 mm	30	300	EI 180
Medium cable group max. $\varnothing$ 50 mm	30	300	EI 180
Large cable group max. $\varnothing$ 80 mm	30	300	EI 120 / E 180

C.3.2.3 Non-combustible pipe penetration - System: CFS-T SBF

Maximum seal size: 504 mm x 562 mm (CFS-T SBF 8+8x4)

Pipe diameter d_{C2} (mm)	Pipe wall thickness t_{C2} (mm)	Thickness of pipe insulation t_{AP2} (mm)	Length of pipe insulation L_{AP2} (mm)	Arrangement pipe insulation	Classification
15 - 28	1 - 14,2	≥ 30	≥ 400	LI	EI 120-C/U, E 180-C/U
28 - 54	1/1,5 - 14,2	≥ 30	≥ 500	LI	
15 - 28	1 - 14,2	≥ 30	-	CI	EI 180
28 - 54	1/1,5 - 14,2	≥ 30	-	CI	EI 180

C.4 Penetration seal system Hilti CFS-T SBS and CFS-T SBSO in rigid walls and floors according to Annex C.1.1 of the ETA

Maximum distance for 1st service support: 420 mm.

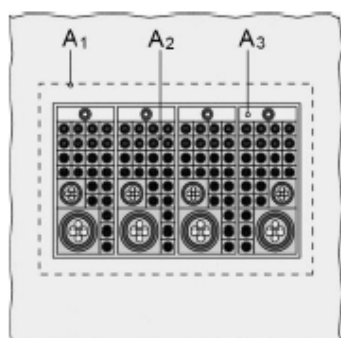
Maximum seal size: 595 x 347 mm (width x height).

Minimum distances in mm cable and metal pipe penetration seal:

$s_1 =$	5	(distance between cables and the side seal edge)
$s_3 =$	5	(distance between cables and upper seal edge)
$s_6 =$	0	(distance between the insulation of metal pipes and the seal edge)
$s_8 =$	0	(distance between the insulation of metal pipes)
$s_{13} =$	90	(distance between cables and metal pipes)

The results are also valid for mixed penetration seals

Minimum distances in mm (see illustration of distances below):



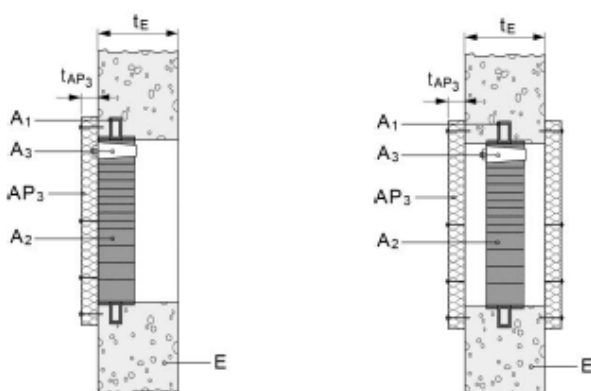
C.4.1 Rigid Walls according to Annex C.1.1 of the ETA – minimum wall thickness 200 mm

C.4.1.1 Blank seal (no services) - System: CFS-T SBS and CFS-T SBSO

Classification

- Single frame

Maximum seal size: 277 mm x 120 mm (CFS-T SBS and CFS-T SBSO 8x1),
Construction details (for symbols and abbreviations see Annex A of the ETA):

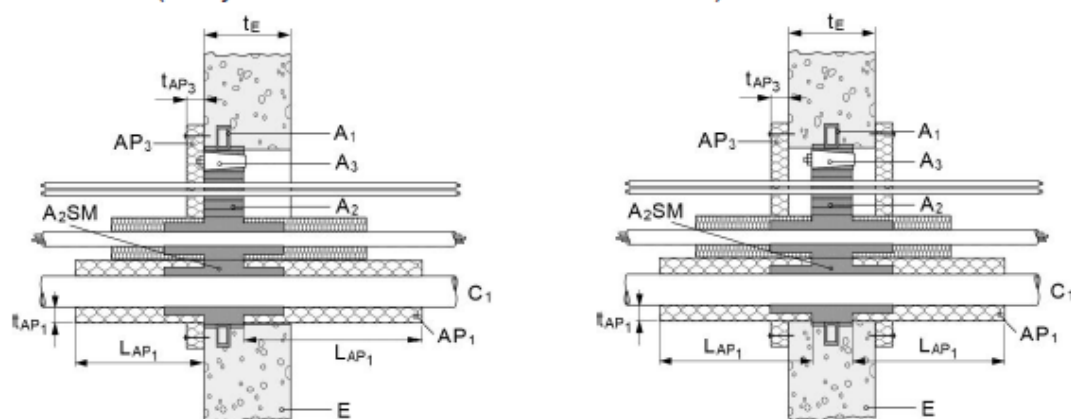


EI 120

C.4.1.2 Cable penetration - System: CFS-T SBS and CFS-T SBSO

Maximum seal size: 595 mm x 347 mm (CFS-T SBS and CFS-T SBSO 8x4)

Construction details (for symbols and abbreviations see Annex A):



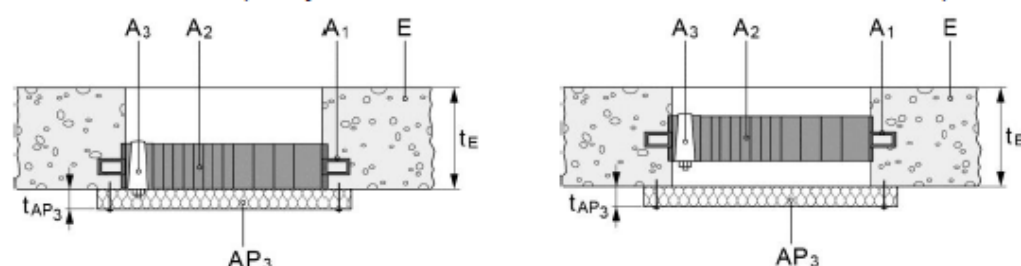
Cable diameter C_1 (mm)	Cable insulation thickness t_{AP1} (mm)	Cable insulation length L_{AP1} (mm)	Super module (CFS-T SM) A_{2SM}	Classification
All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables, except waveguide and non-sheathed cables) with a diameter of:				
Small cable group max. $\varnothing$ 13 mm	without	without	Without	EI 120
Small cable group max. $\varnothing$ 21 mm	30	300	without	EI 120
Medium cable group max. $\varnothing$ 50 mm	30	300	yes	EI 120
Large cable group max. $\varnothing$ 80 mm	30	300	yes	EI 120

C.4.2 Rigid Floors according to Annex C.1.1 of the ETA – minimum floor thickness 150 mm

C.4.2.1 Blank seal (no services) - System: CFS-T SBS and CFS-T SBSO

Classification

Maximum seal size: 595 mm x 347 mm (CFS-T SBS and CFS-T SBSO 8x4),
Construction details (for symbols and abbreviations see Annex A of the ETA):

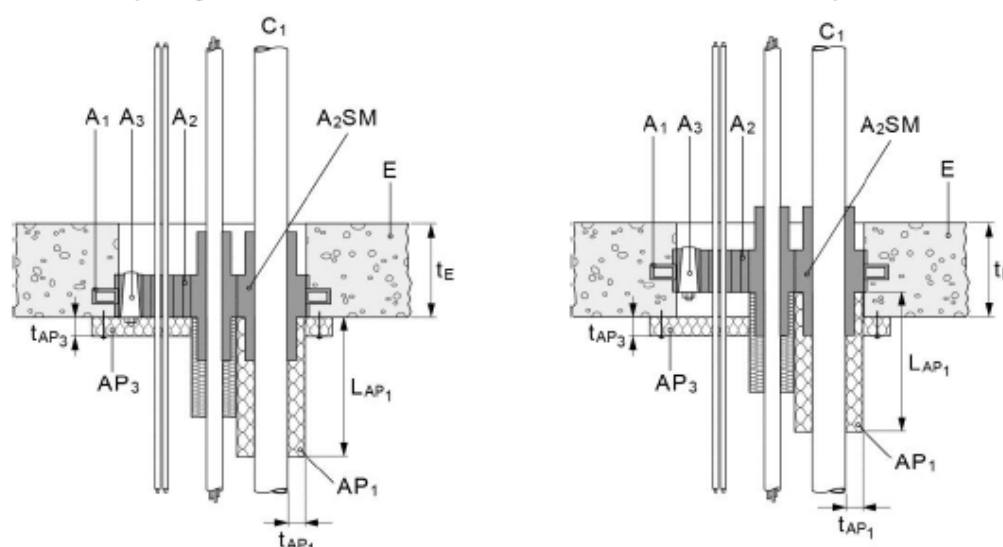


EI 120

C.4.2.2 Cable penetration - System: CFS-T SBS and CFS-T SBSO

Maximum seal size: 595 mm x 347 mm (CFS-T SBS and CFS-T SBSO 8x4)

Construction details (for symbols and abbreviations see Annex A of the EAT):



Cable diameter
 C_1 (mm)

Cable insulation
thickness t_{AP1}
(mm)

Cable insulation
length L_{AP1} (mm)

Super module
(CFS-T SM)
 A_{2SM}

Classification

All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables, except waveguide and non-sheathed cables) with a diameter of:

Small cable group max. Ø 13 mm	without	without	Without	EI 120
Small cable group max. Ø 21 mm	30	300	without	EI 120
Medium cable group max. Ø 50 mm	30	300	yes	EI 120
Large cable group max. Ø 80 mm	30	300	yes	EI 120

C.5 Penetration seal system Hilti CFS-T RR and CFS-T RRS in rigid walls and floors according to Annex C.1.1 of the ETA

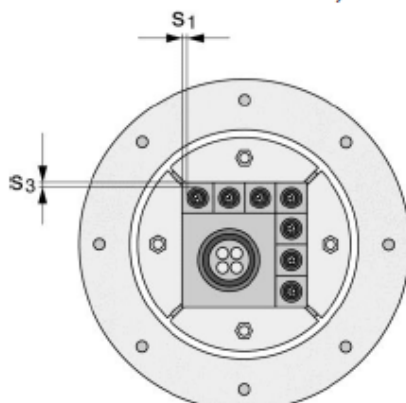
Maximum distance for 1st service support: 420 mm.

Maximum seal size: Ø 205mm (diameter).

Minimum distances in mm cable and metal pipe penetration seal:

$s_1 =$	5	(distance between cables and the side seal edge)
$s_3 =$	5	(distance between cables and upper seal edge)
$s_6 =$	0	(distance between the insulation of metal pipes and the seal edge)
$s_8 =$	0	(distance between the insulation of metal pipes)
$s_{13} =$	90	(distance between cables and metal pipes)

Minimum distances in mm (see illustration of distances below):



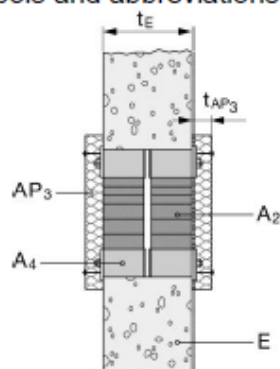
C.5.1 Rigid Walls according to Annex C.1.1 of the ETA – minimum wall thickness 150 mm

C.5.1.1 Blank seal (no services) - System: CFS-T RR

Maximum seal size: Ø 205 mm (CFS-T RR-200),

Classification

Construction details (for symbols and abbreviations see Annex A of the ETA):

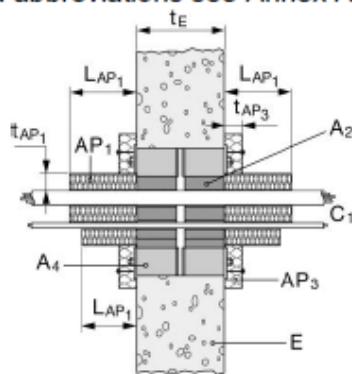


EI 180

C.5.1.2 Cable penetration - System: CFS-T RR

Maximum seal size: Ø 205 mm (CFS-T RR-200)

Construction details (for symbols and abbreviations see Annex A of the ETA):



Cable diameter C_1 (mm)	Cable insulation thickness t_{AP1} (mm)	Cable insulation length L_{AP1} (mm)	Classification
All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables, except waveguide and non-sheathed cables with a diameter of:			
Small cable group max. Ø 21 mm	30	250	EI 180
Medium cable group max. Ø 50 mm	30	250	EI 180
Large cable group max. Ø 80 mm	30	250	EI 120

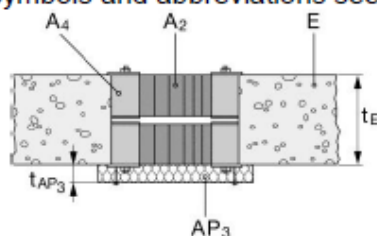
C.5.2. Rigid Floors according to Annex C.1.1 of the ETA – minimum floor thickness 200 mm

C.5.2.1 Blank seal (no services) - System: CFS-T RR

Maximum seal size: Ø 205 mm (CFS-T RR-200),

Classification

Construction details (for symbols and abbreviations see Annex A of the ETA):

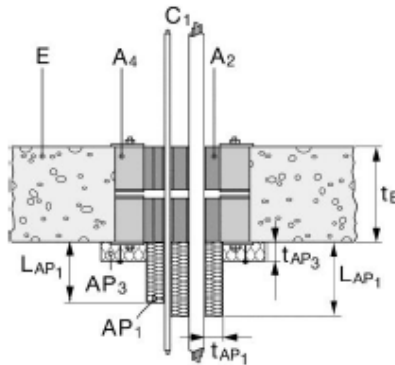


EI 180

C.5.2.2 Cable penetration - System: CFS-T RR

Maximum seal size: Ø 205 mm (CFS-T RR-200)

Construction details (for symbols and abbreviations see Annex A of the ETA):



Cable diameter C_1 (mm)	Cable insulation thickness t_{AP1} (mm)	Cable insulation length L_{AP1} (mm)	Classification
All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables, except waveguide and non-sheathed cables with a diameter of:			
Small cable group max. $\varnothing 21$ mm	30	300	EI 180
Medium cable group max. $\varnothing 50$ mm	30	300	EI 180
Large cable group max. $\varnothing 80$ mm	30	300	EI 180

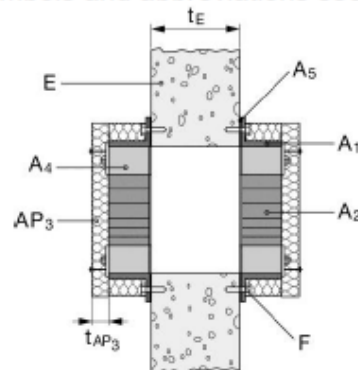
C.3.3 Rigid Walls according to Annex C.1.1 of the ETA – minimum wall thickness 150 mm

C.3.3.1 Blank seal (no services) - System: CFS-T RR + CFS-T SLF

Maximum seal size: Ø 205 mm (CFS-T RR-200)

Classification

Construction details (for symbols and abbreviations see Annex A of the ETA):

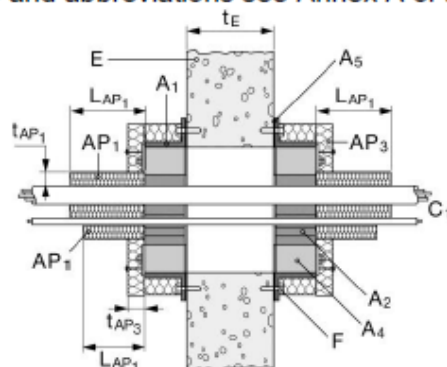


EI 180

C.5.3.2 Cable penetration - System: CFS-T RR + CFS-T SLF

Maximum seal size: Ø 205 mm (CFS-T RR-200)

Construction details (for symbols and abbreviations see Annex A of the ETA):



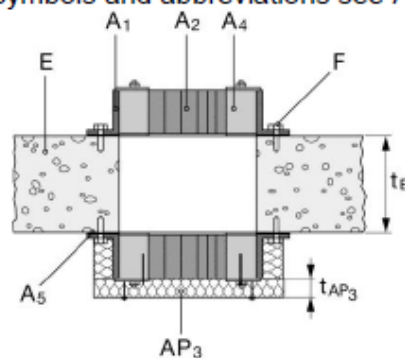
Cable diameter C_1 (mm)	Cable insulation thickness t_{AP1} (mm)	Cable insulation length L_{AP1} (mm)	Classification
All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables, except waveguide and non-sheathed cables with a diameter of:			
Small cable group max. Ø 21 mm	30	150	EI 180
Medium cable group max. Ø 50 mm	30	150	EI 180
Large cable group max. Ø 80 mm	30	150	EI 180

C.5.4 Rigid Floors according to Annex C.1.1 of the ETA – minimum floor thickness 200 mm

C.5.4.1 Blank seal (no services) - System: CFS-T RR + CFS-T SLF

Maximum seal size: Ø 205 mm (CFS-T RR-200)

Construction details (for symbols and abbreviations see Annex A of the ETA):

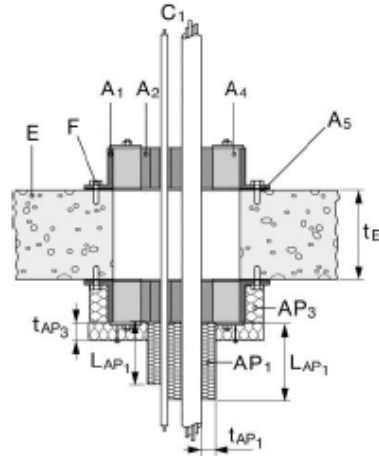


EI 180

C.5.4.2 Cable penetration - System: CFS-T RR + CFS-T SLF

Maximum seal size: Ø 205 mm (CFS-T RR-200)

Construction details (for symbols and abbreviations see Annex A of the ETA):



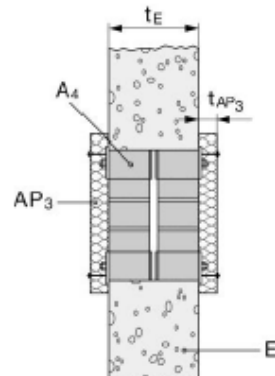
Cable diameter C_1 (mm)	Cable insulation thickness t_{AP1} (mm)	Cable insulation length L_{AP1} (mm)	Classification
All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables, except waveguide and non-sheathed cables with a diameter of:			
Small cable group max. Ø 21 mm	30	250	EI 180
Medium cable group max. Ø 50 mm	30	250	EI 180
Large cable group max. Ø 80 mm	30	250	EI 180

C.5.5 Rigid Walls according to Annex C.1.1 of the ETA – minimum wall thickness 150 mm

C.5.5.1 Blank seal (no services) - System: CFS-T RRS

Maximum seal size: Ø 103 mm (CFS-T RRS-100)

Construction details (for symbols and abbreviations see Annex A of the ETA):

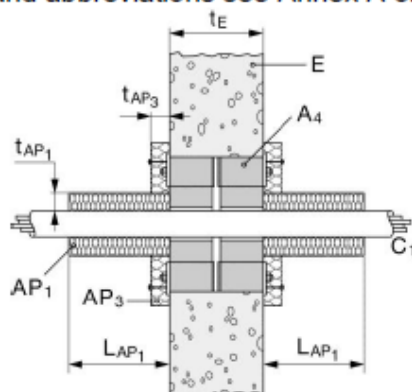


EI 180

C.5.5.2 Cable penetration - System: CFS-T RRS

Maximum seal size: Ø 103 mm (CFS-T RRS-100)

Construction details (for symbols and abbreviations see Annex A of the ETA):



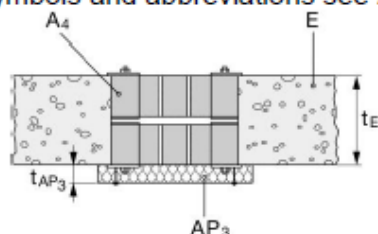
Cable diameter C_1 (mm)	Cable insulation thickness t_{AP1} (mm)	Cable insulation length L_{AP1} (mm)	Classification
All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables, except waveguide and non-sheathed cables with a diameter of:			
Small cable group max. Ø 21 mm	30	250	EI 180
Medium cable group max. Ø 50 mm	30	250	EI 120 / E 180
Large cable group max. Ø 80 mm	30	250	EI 120 / E180

C.5.6 Rigid Floors according to Annex C.1.1 of the ETA – minimum floor thickness 200 mm

C.5.6.1 Blank seal (no services) - System: CFS-T RRS

Maximum seal size: Ø103mm (CFS-T RRS-100)

Construction details (for symbols and abbreviations see Annex A of the ETA):

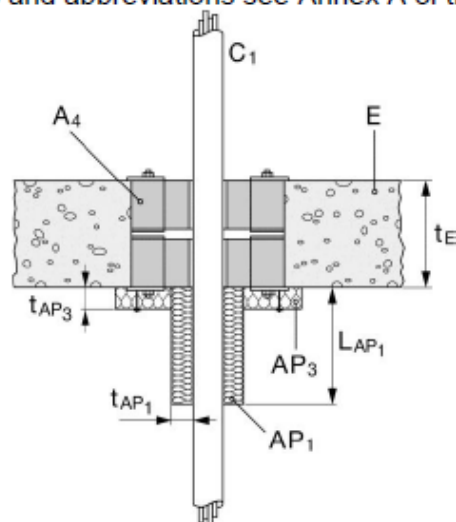


EI 180

C.5.6.2 Cable penetration - System: CFS-T RRS

Maximum seal size: Ø 103 mm (CFS-T RRS-100)

Construction details (for symbols and abbreviations see Annex A of the ETA):



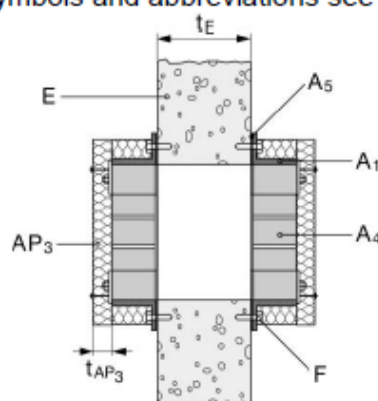
Cable diameter C_1 (mm)	Cable insulation thickness t_{AP1} (mm)	Cable insulation length L_{AP1} (mm)	Classification
All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables, except waveguide and non-sheathed cables with a diameter of:			
Small cable group max. Ø 21 mm	30	300	EI 180
Medium cable group max. Ø 50 mm	30	300	EI 180
Large cable group max. Ø 80 mm	30	300	EI 180

C.5.7 Rigid Walls according to Annex C.1.1 of the ETA – minimum wall thickness 150 mm

C.5.7.1 Blank seal (no services) - System: CFS-T RRS + CFS-T SLF

Maximum seal size: Ø103mm (CFS-T RRS-100)

Construction details (for symbols and abbreviations see Annex A of the ETA):

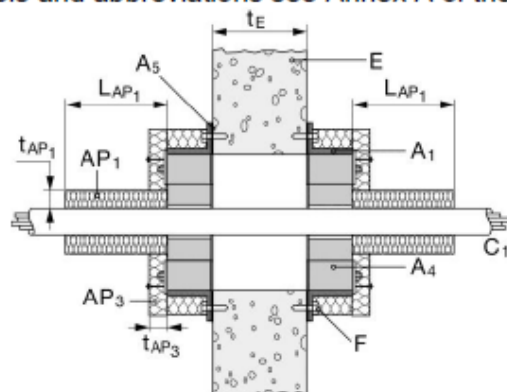


EI 180

C.5.7.2 Cable penetration - System: CFS-T RRS + CFS-T SLF

Maximum seal size: Ø 103 mm (CFS-T RRS-100)

Construction details (for symbols and abbreviations see Annex A of the ETA):



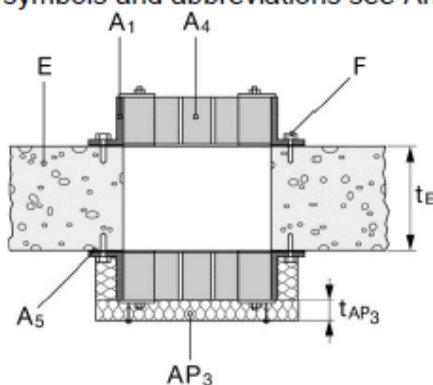
Cable diameter C_1 (mm)	Cable insulation thickness t_{AP1} (mm)	Cable insulation length L_{AP1} (mm)	Classification
All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables, except waveguide and non-sheathed cables with a diameter of:			
Small cable group max. Ø 21 mm	30	150	EI 180
Medium cable group max. Ø 50 mm	30	150	EI 180
Large cable group max. Ø 80 mm	30	150	EI 180

C.5.8 Rigid Floors according to Annex C.1.1 of the ETA – minimum floor thickness 200 mm

C.5.8.1 Blank seal (no services) - System: CFS-T RRS + CFS-T SLF

Maximum seal size: Ø 103 mm (CFS-T RRS-100)

Construction details (for symbols and abbreviations see Annex A of the ETA):

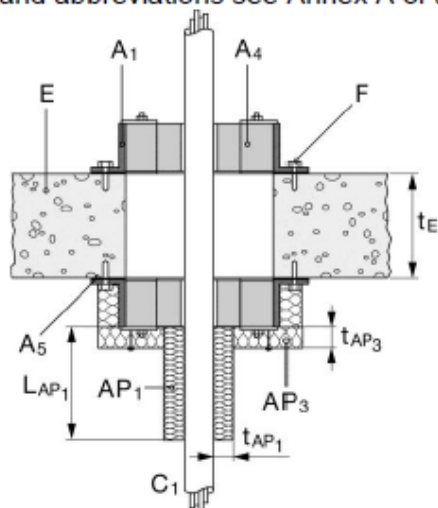


EI 180

C.5.8.2 Cable penetration - System: CFS-T RRS + CFS-T SLF

Maximum seal size: Ø 103 mm (CFS-T RRS-100)

Construction details (for symbols and abbreviations see Annex A of the ETA):



Cable diameter C_1 (mm)	Cable insulation thickness t_{AP1} (mm)	Cable insulation length L_{AP1} (mm)	Classification
All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables, except waveguide and non-sheathed cables with a diameter of:			
Small cable group max. Ø 21 mm	30	25	EI 180
Medium cable group max. Ø 50 mm	30	250	EI 180
Large cable group max. Ø 80 mm	30	250	EI 180