FIRE RESISTANCE CLASSIFICATION REPORT No. 20835B

OWNER OF THE CLASSIFICATION REPORT

Hilti AG
Feldkircherstraße 100
FL-9494 SCHAAN
Liechtenstein

INTRODUCTION

This classification report defines the classifications assigned to penetration seals in wall and floor configurations,

Sealing system type: Hilti Firestop Board Seal CP 673 2S;

in accordance with the procedures given in EN 13501-2:2016: Fire classification of products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services.

This classification report consists of 72 pages and may only be used or reproduced in its entirety.

1 Details of classified product

1.1 General

The elements, service penetrations sealed by means of Hilti Firestop Board Seal CP 673 2S and different additional Hilti closure devices, are defined as penetration seals with fire resisting characteristics.

1.2 Description

The classified elements are described below and in the test reports listed in § 2.1, in support of this classification. The drawings of the test elements are enclosed in the test reports.

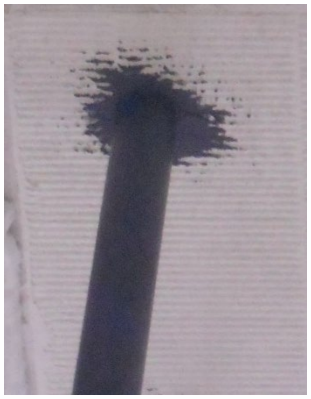
1.2.1 Penetration seals

The following penetrations sealing systems are classified:

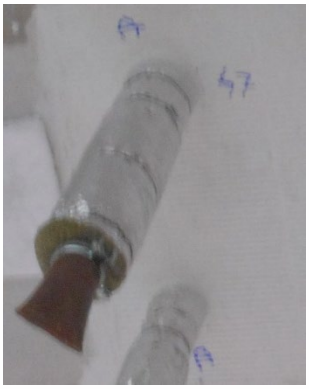
- Hilti coated board CP 673 2S in combination with:
  - Hilti Firestop Endless Collar CFS-C EL + Acrylic sealant CFS-S ACR;

  - Hilti Firestop Premium Collar CFS-C P + Acrylic sealant CFS-S ACR;

- Hilti Intumescent Sealant CFS-IS;



- Hilti Acrylic Sealant CFS-S ACR;


- Hilti Firestop Cable Disc CFS-D 25;

- Hilti Firestop Bandage CFS-B + Acrylic sealant CFS-S ACR.



1.2.1.1 Aperture part of the penetration seal

Hilti coated board CP 673 2S

Coated board – brand and type: Hilti coated board CP 673 2S – material: double sided pre-coated stone wool insulation with CP 673 coating – total thickness: 60 mm – thickness coating: 0.7 mm – original dimensions: 1000 mm x 600 mm – density of the stone wool: 160 kg/m³ (NV).

- number: 1 layer;
- position:
  - in the supporting construction aperture;
- dimensions:
  - in wall constructions: h ≤ 1200 mm x w ≤ 1000 mm;
  - in floor constructions: ≤ 1000 mm x ≤ 800;
- fixing:
  - by means of friction fitting and Hilti Firestop Acrylic Sealant CFS-S ACR;
  - board to board joints fixed by Hilti Firestop Acrylic Sealant CFS-S ACR;
  - inside the installation opening.

1.2.1.2 Service part of the penetration seal

Hilti Firestop Endless Collar CFS-C EL + Acrylic sealant CFS-S ACR

Endless collar seal – brand and type: Hilti Firestop Endless Collar CFS-C EL – composed of a casing fabric, graphite based active layer, soft PU foam strip, closure plates and fixing hooks – ETA No. 14/0085.

- number:
  - in wall constructions: 2 per service;
  - in floor constructions: 1 per service;
- position:
  - circular around the service without a gap in between to the coated board seal;
  - in wall constructions: 1 at each side of the wall;
  - in floor constructions: 1 at the bottom side of the floor;
  - fully outside the coated board seal;
- amount:
  - active component section dimensions (per collar): 51 mm x 5 mm;
- fixing:
  - circular collar closed by means of 2 closure plates;
  - fixed by treated rods M6 through the coated board – one per fixing bracket;
  - number of fixings:
    - pipe diameter ≤ 50 mm: 2;
    - pipe diameter ≤ 110 mm: 3.

Acrylic sealant – brand and type: Hilti Firestop Acrylic Sealant CFS-S ACR – material: water basted acrylic sealant – ETA No. 10/0292.

- number:
  - 2 per service;
- position:
  - fills the annular gap;
  - between the service and the coated board;
  - fully inside, flush with both sides of the coated board;
- amount:
  - depth: 10 mm;
  - width: 1 - 5 mm;
- fixing: self-adhesive.

Hilti Firestop Premium Collar CFS-C P + Acrylic sealant CFS-S ACR

Fire stopping collar – brand and type: Hilti Firestop Power Collar CFS-C P – composed of a galvanised steel housing including an expandable graphite based active strip and fixing hooks – ETA No. 10/0404.

- number:
  - in wall constructions: 2 per service;
  - in floor constructions: 1 per service;
- position:
  - circular around the service without a gap in between to the coated board seal;
  - in wall constructions: 1 at each side of the wall;
  - in floor constructions: 1 at the bottom side of the floor;
  - fully outside the coated board seal;
- amount:
  - active component section dimensions: kept in the confidential part of the Control Plan of to the ETA No. 10/0404 (OIB Vienna);
  - collar size: see § 3.2;
- fixing:
  - collar closed by means of an integrated closing system in the preformed and punched steel casing ring;
  - fixed by treated rods M6 through the coated board - 1 per fixing bracket;
  - number of fixings:
    - CFS-C P-125/5": 4;
    - CFS-C P-160/6": 6.

Acrylic sealant – brand and type: Hilti Firestop Acrylic Sealant CFS-S ACR – material: water basted acrylic sealant – ETA No. 10/0292.

- number:
  - 2 per service;
- position:
  - fills the annular gap;
  - between the service and the coated board;
  - fully inside, flush with both sides of the coated board;
- amount:
  - depth: 10 mm;
  - width: 1 - 5 mm;
- fixing: self-adhesive.

Hilti Intumescent Sealant CFS-IS

Intumescent sealant – brand and type: Hilti Firestop Intumescent Sealant CFS-IS (= CP 611A) – material: Intumescent dispersion – ETA No. 10:0406.

- number:
  - 2 per service;
- position:
  - fills the annular gap;
  - 1 at each side of the coated board;
  - between the service and the coated board;
  - fully inside, flush with both sides of the coated board;
- amount:
  - depth: see § 3.2;
  - width: see § 3.2;
- fixing: self-adhesive.

Hilti Acrylic Sealant CFS-S ACR

Acrylic sealant – brand and type: Hilti Firestop Acrylic Sealant CFS-S ACR – material: water basted acrylic sealant – ETA No. 10/0292.

- number:
  - 2 per service;
- position:
  - fills the annular gap;
  - 1 at each side of the coated board;
  - between the service and the coated board;
  - fully inside, flush with both sides of the coated board;
- amount:
  - depth: see § 3.2;
  - width: see § 3.2;
- fixing: self-adhesive.

Hilti Firestop Cable Disc CFS-D 25

Cable sealing – brand and type: Hilti Firestop Cable Disc CFS-D 25 – material: butyl rubber – thickness: 3 mm – outer diameter 60 mm.

- number: 2 per service;
- position:
  - installed around and pasted against the cable and coated board;
  - covers the opening of ≤ 25 mm x 25 mm, 1 at each side of the coated board;
  - pasted on the coated board surface, so that it covers the whole hole;
  - by clusters, the discs are pasted on each other;
- amount:
  - depth: see § 3.2;
  - width: see § 3.2;
- fixing:
  - self-adhesive.

Hilti Firestop Bandage CFS-B + Acrylic sealant CFS-S ACR

Bandage seal – brand and type: Hilti Firestop Bandage CFS-B – material: graphite based component lined with glass fibre fabric on one side – width: 125 mm – layer thickness: appr. 2 mm – ETA No. 10/0212.

- number: 1 per service;
- position:
  - wrapped around the service(s) or service insulation;
  - centrally inside the coated board;
  - protruding 31.8 mm out each side of the coated board;
- amount: number of layers: see § 3.2.
- fixing: secured by means of 2 metal wires, one on each side of the coated board (offered by Hilti as part of the product CFS-B).

1.2.2 Supporting construction

Flexible walls

The tested supporting constructions are standard supporting constructions in accordance with the European standard EN 1366-3:2009 § 7.2.2.

The supporting construction consists of two flexible walls with a thickness of 100 mm and an indicative fire resistance of 60 minutes.

The flexible walls (height: 3000 mm; width: 1200 mm; thickness: 100 mm) are composed of a steel frame (thickness: 50 mm), covered with two layers of gypsum boards (type F in accordance with EN 520, thickness: 12.5 mm, moisture content at 50°C: 0.62%) on both sides. The wall is insulated with stone wool boards (thickness: 50 mm; density: 40 kg/m³).

Rigid floors

The tested supporting constructions are standard supporting constructions in accordance with the European standard EN 1366-3:2009 § 7.2.2.

The supporting construction consists of a rigid aerated concrete floor with a thickness of 150 mm and a density of 550 kg/m³.

1.2.3 Services

All services are passing through the penetration seals in an angle of 90° to the supporting construction.

There is no gap between the service(s), annular sealant, service penetration seals and the aperture edges.

1.2.4 Service insulation

Armaflex AF

Elastomeric rubber foam tube – brand and type: Armacell Armaflex/AF Tube – material: flexible elastomeric rubberlike foam (FEF) – classification of reaction to fire: Euroclass B_L-s3, d0 – density: 57.6 kg/m³ (52.5 kg/m³ (NV)).

- position: slip fitted around the pipes;
- amount:
  - thickness: see § 3.2;
  - length: see § 3.2;
- pipe insulation definition: see § 3.2.

Isover ML-3

Aluminum backed glass wool lamella sheet – brand and type: Isover ML-3 – material: glass wool lamellas glued on a glass fibre mat reinforced aluminum backing – thickness backing: 0.25 mm – classification of reaction to fire: Euroclass A2-s1, d0 – density: 25 kg/m³ (NV).

- position: wrapped around the insulated pipes;
- amount:
  - total thickness: see § 3.2;
  - length: see § 3.2;
- fixing: with alu tape;
- pipe insulation definition: see § 3.2.

Isover Climacover

Insulation – material: mineral glass wool – brand and type: Isover Climacover Lamella – manufacturer: Saint-Gobain Isover Benelux nv – density: 23 kg/m³ (NV) – classification of reaction to fire: Euroclass A2 – wall thickness and length: see § 3.2

- position:
  - around the pipes indicated in § 3.2
  - pipe insulation definition: LS*– see § 3.2.

Isover ORStech LSP 40

Aluminum backed stone wool sheet – brand and type: Isover Orsteck LSP 40 – material: stone wool sheet with a reinforced aluminum backing – thickness backing: 1 mm – classification of reaction to fire: Euroclass A2-s1, d0 – density: 49,5 kg/m³ (40 kg/m³ (NV)).

- position: wrapped around the pipes;
- amount:
  - total thickness: see § 3.2;
  - length: see § 3.2;
- fixing: with alu tape and steel wire;
- pipe insulation definition: see § 3.2.

Isover U Protect Alu2

Aluminum backed stone wool pipe shell – brand and type: Isover U Protect pipe section Alu2 – material: preformed stone wool pipe shell with a reinforced aluminum backing – thickness backing: 1 mm – classification of reaction to fire: Euroclass $A2_L$-s1, d0 – density: 65 kg/m³.

- position: slip fitted around the pipes.
- amount:
  - total thickness: see § 3.2;
  - length: see § 3.2;
- fixing: with alu tape and steel wire;
- pipe insulation definition: see § 3.2.

Rockwool Klimarock

Aluminum backed stone wool sheet – brand and type: Rockwool Klimarock – material: stone wool sheet with a reinforced aluminum backing – thickness backing: 1 mm – classification of reaction to fire: Euroclass A – density: 42 kg/m³ (40 kg/m³ (NV)).

- position: wrapped around the cable/cable carriers on the unexposed side of the boards;
- amount:
  - total thickness: see § 3.2;
  - length: see § 3.2;
- fixing: with alu tape and steel wire;
- pipe insulation definition: see § 3.2.

Hilti Firestop Coating CFS-CT

Coating – brand and type: Hilti Firestop Coating CFS-CT – material: water based ablative coating – ETA No. 11/0429.

- number: 1 layer per service/cable tray;
- position:
  - on the service, on both sides of the coated board;
- amount:
  - length: see § 3.2;
  - thickness: see § 3.2;
- fixing: painted on with brush.

1.2.5 Service support construction

The first support of the services from the supporting construction surface is 250 mm.

2 Test reports/EXAP reports and test results in support of the classification

2.1 Test reports/EXAP reports

Name of the laboratory	Report ref. no.	Name of the owner	Date of the test	Method
WFRGent	17460A	Hilti AG	09/11/2015	EN 1366-3:2009
WFRGent	17461A	Hilti AG	10/11/2015	EN 1366-3:2009
WFRGent	17462A	Hilti AG	10/11/2015	EN 1366-3:2009
WFRGent	17463A	Hilti AG	11/11/2015	EN 1366-3:2009
WFRGent	20822A	Hilti AG	31/03/2021	EN 1366-3:2009
WFRGent	20823A	Hilti AG	01/04/2021	EN 1366-3:2009
WFRGent	20834A	Hilti AG	04/06/2021	EN 1366-3:2009
WFRGent	20835A	Hilti AG	09/06/2021	EN 1366-3:2009

Exposure conditions during the fire resistance test:

Temperature/time Curve: standard as in EN 1363-1:2012.

Direction of exposure: flexible wall and rigid floor construction: from one side.

2.2 Test results

2.2.1. Flexible wall

Test report No. 17460A

Observations	Exceeded (minutes)			
Pipe No.	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Ignition of cotton pad	Spontaneous and sustained flaming	Failure with gap gauge
d35	78	90(1)	90(1)	90(1)
d36	61	90(1)	90(1)	90(1)
d37	78	90(1)	90(1)	90(1)
d31	70	90(1)	90(1)	90(1)
d32	67	90(1)	90(1)	90(1)
d33	63	90(1)	90(1)	90(1)
d22	78	90(1)	90(1)	90(1)
d23	78	90(1)	90(1)	90(1)
d5	78	90(1)	90(1)	90(1)
d6	78	90(1)	90(1)	90(1)
d24	78	90(1)	90(1)	90(1)
d25	78	90(1)	90(1)	90(1)
d48	60	90(1)	90(1)	90(1)
d49	86	90(1)	90(1)	90(1)
d50	85	90(1)	90(1)	90(1)
d51.2	90(1)	90(1)	90(1)	90(1)
d51.3	90(1)	90(1)	90(1)	90(1)
d51.4	90(1)	90(1)	90(1)	90(1)
d51.6	90(1)	90(1)	90(1)	90(1)
d51.8	90(1)	90(1)	90(1)	90(1)
d51.9	90(1)	90(1)	90(1)	90(1)
d51.10	90(1)	90(1)	90(1)	90(1)
d51.11	80	90(1)	90(1)	90(1)
d51.12	90(1)	90(1)	90(1)	90(1)
d51.13	90(1)	90(1)	90(1)	90(1)
d51.14	90(1)	90(1)	90(1)	90(1)
d51.15	90(1)	90(1)	90(1)	90(1)
d51.16	90(1)	90(1)	90(1)	90(1)
d51.17	90(1)	90(1)	90(1)	90(1)
d51.18	90(1)	90(1)	90(1)	90(1)
d51.19	90(1)	90(1)	90(1)	90(1)

* Classification according to EN 13501-2.

(1) 90 minutes, no failure. The test was stopped after 90 minutes at the request of the sponsor.

Test report No. 17462A

Observations	Exceeded (minutes)			
Pipe No.	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Ignition of cotton pad	Spontaneous and sustained flaming	Failure with gap gauge
d29	66(1)	66(1)	66(1)	66(1)
d40	53	66(1)	66(1)	66(1)
d41	66(1)	66(1)	66(1)	66(1)
d42	51	66(1)	66(1)	66(1)
d43	58	66(1)	66(1)	66(1)
d28	64	66(1)	66(1)	66(1)
d44	64	66(1)	66(1)	66(1)
d45	55	66(1)	66(1)	66(1)
d46	64	66(1)	66(1)	66(1)
d47	64	66(1)	66(1)	66(1)
d8	66(1)	66(1)	66(1)	66(1)
d9	64	66(1)	66(1)	66(1)
d10	66(1)	66(1)	66(1)	66(1)
d26	66(1)	66(1)	66(1)	66(1)
d27	66(1)	66(1)	66(1)	66(1)
d1	66(1)	66(1)	66(1)	66(1)
d2	66(1)	66(1)	66(1)	66(1)
d7	66(1)	66(1)	66(1)	66(1)
d15	66(1)	66(1)	66(1)	66(1)
d19	66(1)	66(1)	66(1)	66(1)

* Classification according to EN 13501-2.

(1) 66 minutes, no failure. The test was stopped after 66 minutes at the request of the sponsor.

Test report No. 17463A

Observations	Exceeded (minutes)			
Pipe No.	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Ignition of cotton pad	Spontaneous and sustained flaming	Failure with gap gauge
d52	66(1)	66(1)	66(1)	66(1)
d53	60	66(1)	66(1)	66(1)
d54	66(1)	66(1)	66(1)	66(1)
d55	30	66(1)	66(1)	66(1)
d56	60	66(1)	66(1)	66(1)
d57	26	66(1)	66(1)	66(1)
d58	42	66(1)	66(1)	66(1)
d59	34	66(1)	66(1)	66(1)
d60	16	66(1)	66(1)	66(1)
d16	60	66(1)	66(1)	66(1)
d30	60	66(1)	66(1)	66(1)
d34	60	66(1)	66(1)	66(1)
d38	60	66(1)	66(1)	66(1)
d39	60	66(1)	66(1)	66(1)
d3	66(1)	66(1)	66(1)	66(1)
d4	66(1)	66(1)	66(1)	66(1)
d12	47	55(2)	55	55(2)
d13	53	55(2)	55	55(2)
d17	66(1)	66(1)	66(1)	66(1)
d11	66(1)	66(1)	66(1)	66(1)
d14	62	66(1)	66(1)	66(1)
d18	23(2)	23(2)	23	23(2)
d20	66(1)	66(1)	66(1)	66(1)
d21	66(1)	66(1)	66(1)	66(1)

* Classification according to EN 13501-2.

(1) 66 minutes, no failure. The test was stopped after 66 minutes at the request of the sponsor.

(2) No failure until the moment of spontaneous and continuous flaming.

Test report No. 20822A

Bandage seal with acrylic sealant in a coated board: Hilti Firestop CFS-B with Hilti Firestop CFS-S ACR in Hilti coated board CP 673 2S.

Pipes

Observations	Exceeded (minutes)			
Position	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
dw1.16	44	66(1)	66(1)	66(1)
dw1.17	66(1)	66(1)	66(1)	66(1)
dw1.1	54	66(1)	66(1)	66(1)
dw1.6	60	66(1)	66(1)	66(1)
dw1.10	62	66(1)	66(1)	66(1)
dw1.18	66(1)	66(1)	66(1)	66(1)
dw1.19	66(1)	66(1)	66(1)	66(1)
dw1.24	32	66(1)	66(1)	66(1)
dw1.9	66(1)	66(1)	66(1)	66(1)
dw1.8	66(1)	66(1)	66(1)	66(1)
dw1.7	66(1)	66(1)	66(1)	66(1)
dw1.25	60	66(1)	66(1)	66(1)
dw1.3	66(1)	66(1)	66(1)	66(1)
dw1.2	64	66(1)	66(1)	66(1)
dw1.4	66(1)	66(1)	66(1)	66(1)
dw1.5	59	66(1)	66(1)	66(1)
dw2.20	31	66(1)	66(1)	66(1)
dw2.21	35	66(1)	66(1)	66(1)
dw2.22	36	66(1)	66(1)	66(1)
dw2.23	66(1)	66(1)	66(1)	66(1)
dw2.26	47	66(1)	66(1)	66(1)
dw2.27	47	66(1)	66(1)	66(1)
dw2.14	66(1)	66(1)	66(1)	66(1)
dw2.13	66(1)	66(1)	66(1)	66(1)
dw2.11	66(1)	66(1)	66(1)	66(1)
dw2.12	66(1)	66(1)	66(1)	66(1)

Conduits and cables

Observations		Exceeded (minutes)			
Position		Thermal insulation – I*	Integrity – E*		
		ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
dw2.31	1	55	66(1)	66(1)	66(1)
	2	55	66(1)	66(1)	66(1)
	3	55	66(1)	66(1)	66(1)
	4	55	66(1)	66(1)	66(1)
	5	55	66(1)	66(1)	66(1)
	6	55	66(1)	66(1)	66(1)
	7	55	66(1)	66(1)	66(1)
	8	55	66(1)	66(1)	66(1)
	9	55	66(1)	66(1)	66(1)
	10	55	66(1)	66(1)	66(1)
dw2.32	1	66(1)	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)
	6	66(1)	66(1)	66(1)	66(1)
	7	66(1)	66(1)	66(1)	66(1)
	8	66(1)	66(1)	66(1)	66(1)
	9	66(1)	66(1)	66(1)	66(1)
	10	66(1)	66(1)	66(1)	66(1)

Klimasplit

Observations		Exceeded (minutes)			
Position		Thermal insulation – I*	Integrity – E*		
		ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
dw1.29	1	46	66(1)	66(1)	66(1)
	2	46	66(1)	66(1)	66(1)
	3	46	66(1)	66(1)	66(1)
	4	46	66(1)	66(1)	66(1)
	5	46	66(1)	66(1)	66(1)
dw2.30	1	53	66(1)	66(1)	66(1)
	2	53	66(1)	66(1)	66(1)
	3	53	66(1)	66(1)	66(1)
	4	53	66(1)	66(1)	66(1)
	5	53	66(1)	66(1)	66(1)

Endless collar with acrylic sealant in a coated board: Hilti Firestop CFS-C EL with Hilti Firestop CFS-S ACR in Hilti coated board CP 673 2S.

Pipes

Observations	Exceeded (minutes)			
Position	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
dw1.15	66(1)	66(1)	66(1)	66(1)

Acrylic sealant in a coated board: Hilti Firestop CFS-S ACR in Hilti coated board CP 673 2S.

Pipes

Observations	Exceeded (minutes)			
Position	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
dw2.28	59	66(1)	66(1)	66(1)

(*) Classification according to EN 13501-2.

(1) 66 minutes, no failure. The test was stopped after 66 minutes at the request of the sponsor.

Test report No. 20834A

Hilti Firestop CFS-B with Hilti Firestop CFS-S ACR in Hilti coated board CP 673 2S.

Pipes

Observations	Exceeded (minutes)			
Position	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
dw1.20	66(1)	66(1)	66(1)	66(1)
dw1.4	62	66(1)	66(1)	66(1)
dw1.21	66(1)	66(1)	66(1)	66(1)
dw1.22	66(1)	66(1)	66(1)	66(1)
dw1.16	65	66(1)	66(1)	66(1)
dw1.24	66(1)	66(1)	66(1)	66(1)
dw1.26	61	66(1)	66(1)	66(1)
dw1.25	66(1)	66(1)	66(1)	66(1)
dw1.27	66(1)	66(1)	66(1)	66(1)
dw1.2	59	66(1)	66(1)	66(1)
dw2.1	66(1)	66(1)	66(1)	66(1)
dw2.27	66(1)	66(1)	66(1)	66(1)
dw2.5	62	66(1)	66(1)	66(1)
dw2.40	66(1)	66(1)	66(1)	66(1)
dw2.16	66(1)	66(1)	66(1)	66(1)

Klimasplit

Observations		Exceeded (minutes)			
Position		Thermal insulation – I*	Integrity – E*		
		ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
dw1.30	1	64	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	53	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)
dw1.29	1	63	66(1)	66(1)	66(1)
	2	63	66(1)	66(1)	66(1)
	3	63	66(1)	66(1)	66(1)
	4	63	66(1)	66(1)	66(1)
	5	63	66(1)	66(1)	66(1)

Conduits and cables

Observations		Exceeded (minutes)			
Position		Thermal insulation – I*	Integrity – E*		
		ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
dw1.31	1	58	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)
	6	66(1)	66(1)	66(1)	66(1)
	7	66(1)	66(1)	66(1)	66(1)
	8	66(1)	66(1)	66(1)	66(1)
	9	66(1)	66(1)	66(1)	66(1)
	10	66(1)	66(1)	66(1)	66(1)
dw1.32	1	66(1)	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
	3	9	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)
	6	66(1)	66(1)	66(1)	66(1)
	7	66(1)	66(1)	66(1)	66(1)
	8	66(1)	66(1)	66(1)	66(1)
	9	66(1)	66(1)	66(1)	66(1)
	10	66(1)	66(1)	66(1)	66(1)
dw2.31	1	66(1)	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)
	6	66(1)	66(1)	66(1)	66(1)
	7	66(1)	66(1)	66(1)	66(1)
	8	66(1)	66(1)	66(1)	66(1)
	9	66(1)	66(1)	66(1)	66(1)
	10	66(1)	66(1)	66(1)	66(1)

Hilti Firestop Intumescent sealant CP 611A / CFS-IS in Hilti coated board CP 673 2S.

Pipes

Observations	Exceeded (minutes)			
Position	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
dw1.3	66(1)	66(1)	66(1)	66(1)
dw1.5	66(1)	66(1)	66(1)	66(1)

Hilti Firestop CFS-S ACR in Hilti coated board CP 673 2S.

Pipes

Observations	Exceeded (minutes)			
Position	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
dw1.28	66(1)	66(1)	66(1)	66(1)
dw2.28	66(1)	66(1)	66(1)	66(1)

Hilti Firestop Coating CFS-CT and Hilti Firestop CFS-S ACR in Hilti coated board CP 673 2S.

Cable carriers and cables as part of a multiple seal

Observations		Exceeded (minutes)			
Position		Thermal insulation – I*	Integrity – E*		
		ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
dw2.41	1	66(1)	66(1)	66(1)	66(1)
	2	64	66(1)	66(1)	66(1)
	3	59	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	48	66(1)	66(1)	66(1)

Cable carriers and cable/conduits as part of a large cable penetration seal

Observations		Exceeded (minutes)			
Position		Thermal insulation – I*	Integrity – E*		
		ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
dw3.1	1	57	66(1)	66(1)	66(1)
	2	56	66(1)	66(1)	66(1)
	3	65	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)
dw3.2	1	66(1)	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
dw3.3	1	66(1)	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	57	66(1)	66(1)	66(1)
	6	66(1)	66(1)	66(1)	66(1)
	7	65	66(1)	66(1)	66(1)
	8	66(1)	66(1)	66(1)	66(1)
	9	58	66(1)	66(1)	66(1)
dw3.4	1	27	66(1)	66(1)	66(1)
	2	38	66(1)	66(1)	66(1)
	3	43	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)
	6	66(1)	66(1)	66(1)	66(1)

(*) Classification according to EN 13501-2.

(1) 66 minutes, no failure. The test was stopped after 66 minutes at the request of the sponsor.

2.2.2. Rigid floor

Test report No. 17461A

Observations	Exceeded (minutes)			
Pipe No.	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Ignition of cotton pad	Spontaneous and sustained flaming	Failure with gap gauge
f1	66(1)	66(1)	66(1)	66(1)
f2	9	66(1)	66(1)	66(1)
f3	66(1)	66(1)	66(1)	66(1)
f4	66(1)	66(1)	66(1)	66(1)
f7	66(1)	66(1)	66(1)	66(1)
f28	66(1)	66(1)	66(1)	66(1)
f5	34(2)	34(2)	34	34(2)
f6	46(2)	46(2)	46	46(2)
f8	46(2)	46(2)	46	46(2)
f9	46(2)	46(2)	46	46(2)
f14	45	46(2)	46	46(2)
f29	46(2)	46(2)	46	46(2)
f10	66(1)	66(1)	66(1)	66(1)
f11	66(1)	66(1)	66(1)	66(1)
f12	9	20(2)	20	20(2)
f13	66(1)	66(1)	66(1)	66(1)
f15	66(1)	66(1)	66(1)	66(1)
f19	19	22(2)	22	22(2)
f16	66(1)	66(1)	66(1)	66(1)
f17	66(1)	66(1)	66(1)	66(1)
f18	66(1)	66(1)	66(1)	66(1)
f20	66(1)	66(1)	66(1)	66(1)
f21	66(1)	66(1)	66(1)	66(1)
f22	66(1)	66(1)	66(1)	66(1)
f23	11(2)	11(2)	11	11(2)
f25	66(1)	66(1)	66(1)	66(1)
f30	66(1)	66(1)	66(1)	66(1)
f31	66(1)	66(1)	66(1)	66(1)
f32	66(1)	66(1)	66(1)	66(1)
f33	66(1)	66(1)	66(1)	66(1)
f26	66(1)	66(1)	66(1)	66(1)
f34	66(1)	66(1)	66(1)	66(1)
f35	66(1)	66(1)	66(1)	66(1)
f36	66(1)	66(1)	66(1)	66(1)
f37	66(1)	66(1)	66(1)	66(1)

Observations	Exceeded (minutes)			
Pipe No.	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Ignition of cotton pad	Spontaneous and sustained flaming	Failure with gap gauge
f27	14	15(2)	15	15(2)
f40	46	66(1)	66(1)	66(1)
f41	66(1)	66(1)	66(1)	66(1)
f42	59	66(1)	66(1)	66(1)
f43	66(1)	66(1)	66(1)	66(1)
f38	66(1)	66(1)	66(1)	66(1)
f39	56	66(1)	66(1)	66(1)
f46	66(1)	66(1)	66(1)	66(1)
f47	66(1)	66(1)	66(1)	66(1)
f48	55	66(1)	66(1)	66(1)
f51.2 (D1)	63	66(1)	66(1)	66(1)
f51.3 (E)	62	66(1)	66(1)	66(1)
f51.4 (D2)	66(1)	66(1)	66(1)	66(1)
f51.6 (D3)	66(1)	66(1)	66(1)	66(1)
f51.8 (A1)	66(1)	66(1)	66(1)	66(1)
f51.9 (A2)	66(1)	66(1)	66(1)	66(1)
f51.10 (A3)	66(1)	66(1)	66(1)	66(1)
f51.11 (B)	66(1)	66(1)	66(1)	66(1)
f51.12 (C1)	66(1)	66(1)	66(1)	66(1)
f51.13 (C2)	66(1)	66(1)	66(1)	66(1)
f51.14 (C3)	66(1)	66(1)	66(1)	66(1)
f51.18 (F)	37	66(1)	66(1)	66(1)
f51.17 (I)	37	66(1)	66(1)	66(1)
f51.16 (H)	37	66(1)	66(1)	66(1)
f51.19 (G2)	37	66(1)	66(1)	66(1)
f51.20 (G1)	37	66(1)	66(1)	66(1)
f24	66(1)	66(1)	66(1)	66(1)
f44	66(1)	66(1)	66(1)	66(1)
f45	64	66(1)	66(1)	66(1)
f49	66(1)	66(1)	66(1)	66(1)
f50	66(1)	66(1)	66(1)	66(1)

* Classification according to EN 13501-2.

(1) 66 minutes, no failure. The test was stopped after 66 minutes at the request of the sponsor.

(2) No failure until the moment of spontaneous and continuous flaming.

Test report No. 20823A

Acrylic sealant in a coated board: Hilti Firestop CFS-S ACR in Hilti coated board CP 670 2S.

Pipes

Observations	Exceeded (minutes)			
Position	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf8.42	25	66(1)	66(1)	66(1)

Bandage seal with acrylic sealant in a coated board: Hilti Firestop CFS-B with Hilti Firestop CFS-S ACR in Hilti coated board CP 673 2S.

Pipes

Observations	Exceeded (minutes)			
Position	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf1.5	66(1)	66(1)	66(1)	66(1)
rf1.4	66(1)	66(1)	66(1)	66(1)
rf1.3	66(1)	66(1)	66(1)	66(1)
rf1.1	66(1)	66(1)	66(1)	66(1)
rf5.12	66(1)	66(1)	66(1)	66(1)
rf5.11	66(1)	66(1)	66(1)	66(1)
rf5.10	66(1)	66(1)	66(1)	66(1)
rf5.14	66(1)	66(1)	66(1)	66(1)
rf5.13	66(1)	66(1)	66(1)	66(1)
rf7.30	66(1)	66(1)	66(1)	66(1)
rf7.29	66(1)	66(1)	66(1)	66(1)
rf7.28	66(1)	66(1)	66(1)	66(1)
rf7.27	66(1)	66(1)	66(1)	66(1)
rf9.34	66(1)	66(1)	66(1)	66(1)
rf9.33	57	66(1)	66(1)	66(1)
rf9.32	66(1)	66(1)	66(1)	66(1)
rf9.31	62	66(1)	66(1)	66(1)
rf9.38	56	66(1)	66(1)	66(1)
rf9.37	55	66(1)	66(1)	66(1)
rf9.36	66(1)	66(1)	66(1)	66(1)
rf9.35	56	66(1)	66(1)	66(1)
rf6.22	66(1)	66(1)	66(1)	66(1)
rf6.25	66(1)	66(1)	66(1)	66(1)

Observations	Exceeded (minutes)			
Position	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf4.6	66(1)	66(1)	66(1)	66(1)
rf4.7	66(1)	66(1)	66(1)	66(1)
rf4.8	66(1)	66(1)	66(1)	66(1)
rf4.9	66(1)	66(1)	66(1)	66(1)

Conduits and cables

Observations		Exceeded (minutes)			
Position		Thermal insulation – I*	Integrity – E*		
		ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf10.40	1	66(1)	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)
	6	66(1)	66(1)	66(1)	66(1)
	7	66(1)	66(1)	66(1)	66(1)
	8	66(1)	66(1)	66(1)	66(1)
	9	66(1)	66(1)	66(1)	66(1)
	10	66(1)	66(1)	66(1)	66(1)
rf10.41	1	66(1)	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)
	6	66(1)	66(1)	66(1)	66(1)
	7	66(1)	66(1)	66(1)	66(1)
	8	66(1)	66(1)	66(1)	66(1)
	9	66(1)	66(1)	66(1)	66(1)
	10	66(1)	66(1)	66(1)	66(1)

Klimasplit

Observations		Exceeded (minutes)			
Position		Thermal insulation – I*	Integrity – E*		
		ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf10.38	1	54	66(1)	66(1)	66(1)
	2	54	66(1)	66(1)	66(1)
	3	54	66(1)	66(1)	66(1)
	4	54	66(1)	66(1)	66(1)
	5	54	66(1)	66(1)	66(1)
rf10.39	1	55	66(1)	66(1)	66(1)
	2	38	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)

Endless collar with acrylic sealant in a coated board: Hilti Firestop CFS-C EL with Hilti Firestop CFS-S ACR in Hilti coated board CP 673 2S.

Pipes

Observations	Exceeded (minutes)			
Position	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf3.18	66(1)	66(1)	66(1)	66(1)
rf3.20	66(1)	66(1)	66(1)	66(1)
rf3.19	66(1)	66(1)	66(1)	66(1)
rf7.26	66(1)	66(1)	66(1)	66(1)
rf6.21	66(1)	66(1)	66(1)	66(1)
rf6.23	66(1)	66(1)	66(1)	66(1)
rf6.24	66(1)	66(1)	66(1)	66(1)
rf2.15	66(1)	66(1)	66(1)	66(1)
rf2.16	66(1)	66(1)	66(1)	66(1)
rf2.17	66(1)	66(1)	66(1)	66(1)

Acrylic sealant in a coated board: Hilti Firestop CFS-S ACR in Hilti coated board CP 673 2S.

Pipes

Observations	Exceeded (minutes)			
Position	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf7.39	46	66(1)	66(1)	66(1)

(*) Classification according to EN 13501-2.

(1) 66 minutes, no failure. The test was stopped after 66 minutes at the request of the sponsor.

Test report No. 20835A

Hilti Firestop CFS-B with Hilti Firestop CFS-S ACR in Hilti coated board CP 673 2S.

Pipes

Observations	Exceeded (minutes)			
Position	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf5.52	35	66(1)	66(1)	66(1)

Hilti Firestop CFS-B with Hilti Firestop CFS-S ACR in Hilti coated board CP 673 2S.

Pipes

Observations	Exceeded (minutes)			
Position	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf1.37	62	66(1)	66(1)	66(1)
rf1.35	66(1)	66(1)	66(1)	66(1)
rf1.38	65	66(1)	66(1)	66(1)
rf1.36	66(1)	66(1)	66(1)	66(1)
rf3.40	55	66(1)	66(1)	66(1)
rf3.5	66(1)	66(1)	66(1)	66(1)
rf3.38	66(1)	66(1)	66(1)	66(1)
rf3.22	66(1)	66(1)	66(1)	66(1)
rf8.32	66(1)	66(1)	66(1)	66(1)
rf8.33	36	66(1)	66(1)	66(1)
rf8.31	35	66(1)	66(1)	66(1)
rf8.34	66(1)	66(1)	66(1)	66(1)
rf4.22	66(1)	66(1)	66(1)	66(1)
rf4.38	66(1)	66(1)	66(1)	66(1)
rf4.5	66(1)	66(1)	66(1)	66(1)
rf4.40	55	66(1)	66(1)	66(1)

Klimasplit

Observations		Exceeded (minutes)			
Position		Thermal insulation – I*	Integrity – E*		
		ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf3.39	1	45	66(1)	66(1)	66(1)
	2	48	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)
rf4.39	1	56	66(1)	66(1)	66(1)
	2	50	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)
rf2.39	1	66(1)	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)
rf2.38	1	66(1)	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)

Conduits and cables

Observations		Exceeded (minutes)			
Position		Thermal insulation – I*	Integrity – E*		
		ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf2.40	1	66(1)	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)
	6	66(1)	66(1)	66(1)	66(1)
	7	66(1)	66(1)	66(1)	66(1)
	8	66(1)	66(1)	66(1)	66(1)
	9	66(1)	66(1)	66(1)	66(1)
	10	66(1)	66(1)	66(1)	66(1)
rf2.41	1	66(1)	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	65	66(1)	66(1)	66(1)
	5	65	66(1)	66(1)	66(1)
	6	65	66(1)	66(1)	66(1)
	7	65	66(1)	66(1)	66(1)
	8	65	66(1)	66(1)	66(1)
	9	65	66(1)	66(1)	66(1)
	10	65	66(1)	66(1)	66(1)

Hilti Firestop Intumescent sealant CP 611A / CFS-IS in Hilti coated board CP 673 2S.

Pipes

Observations		Exceeded (minutes)			
Position		Thermal insulation – I*	Integrity – E*		
		ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf7.14		66(1)	66(1)	66(1)	66(1)
rf7.13		66(1)	66(1)	66(1)	66(1)
rf7.12		66(1)	66(1)	66(1)	66(1)
rf7.11		66(1)	66(1)	66(1)	66(1)
rf6.68	1	66(1)	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
rf6.69		66(1)	66(1)	66(1)	66(1)

Hilti Firestop CFS-S ACR in Hilti coated board CP 673 2S.

Pipes

Observations	Exceeded (minutes)			
Position	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf3.42	66(1)	66(1)	66(1)	66(1)
rf6.67	66(1)	66(1)	66(1)	66(1)
rf4.42	60	66(1)	66(1)	66(1)

Cable carriers and cable/conduits as part of a cable penetration seal

Observations		Exceeded (minutes)			
Position		Thermal insulation – I*	Integrity – E*		
		ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf10.25	1	66(1)	66(1)	66(1)	66(1)
	2	58	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)
	6	66(1)	66(1)	66(1)	66(1)
rf10.24	1	66(1)	66(1)	66(1)	66(1)
	2	59	66(1)	66(1)	66(1)
	3	53	66(1)	66(1)	66(1)
	4	51	66(1)	66(1)	66(1)
	5	46	66(1)	66(1)	66(1)
	6	45	66(1)	66(1)	66(1)

Hilti Firestop Coating CFS-CT and Hilti Firestop CFS-S ACR in Hilti coated board CP 673 2S.

Pipes

Observations	Exceeded (minutes)			
Position	Thermal insulation – I*	Integrity – E*		
	ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf6.66	16	66(1)	66(1)	66(1)
rf6.61	38	66(1)	66(1)	66(1)
rf6.62	21	66(1)	66(1)	66(1)
rf6.63	17	66(1)	66(1)	66(1)
rf6.64	17	66(1)	66(1)	66(1)
rf6.65	21	66(1)	66(1)	66(1)

Cable carriers and cables as part of a multiple seal

Observations		Exceeded (minutes)			
Position		Thermal insulation – I*	Integrity – E*		
		ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf3.50	1	66(1)	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	60	66(1)	66(1)	66(1)
rf4.50	1	65	66(1)	66(1)	66(1)
	2	55	66(1)	66(1)	66(1)
	3	61	66(1)	66(1)	66(1)
	4	60	66(1)	66(1)	66(1)
	5	55	66(1)	66(1)	66(1)

Cable carriers and cable/conduits as part of a (large) cable penetration seal

Observations		Exceeded (minutes)			
Position		Thermal insulation – I*	Integrity – E*		
		ΔT_M = 180°C	Spontaneous and sustained flaming	Ignition of cotton pad	Failure with gap gauge
rf9.21	1	66(1)	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)
rf9.22	1	66(1)	66(1)	66(1)	66(1)
	2	66(1)	66(1)	66(1)	66(1)
rf9.23	1	66(1)	66(1)	66(1)	66(1)
	2	63	66(1)	66(1)	66(1)
	3	66(1)	66(1)	66(1)	66(1)
	4	66(1)	66(1)	66(1)	66(1)
	5	66(1)	66(1)	66(1)	66(1)
	6	66(1)	66(1)	66(1)	66(1)
	7	66(1)	66(1)	66(1)	66(1)
	8	66(1)	66(1)	66(1)	66(1)
	9	53	66(1)	66(1)	66(1)
rf9.34	1	66(1)	66(1)	66(1)	66(1)
	2	58	66(1)	66(1)	66(1)
	3	40	66(1)	66(1)	66(1)
	4	53	66(1)	66(1)	66(1)
	5	47	66(1)	66(1)	66(1)
	6	66(1)	66(1)	66(1)	66(1)

(*) Classification according to EN 13501-2.

(1) 66 minutes, no failure. The test was stopped after 66 minutes at the request of the sponsor.

warringtonfire
Proud to be part of element

3 Classification and field of application

3.1 Reference of classification

This classification has been carried out in accordance with clause 7 of EN 13501-2:2016.

3.2 Classification

The elements, penetration seals – type: Hilti Firestop Board Seal CP 673 2S – are classified according to the following combinations of performance parameters and classes as appropriate. Lower classifications are permitted.
The services listed in this paragraph can be mixed in the Hilti Firestop Board Seal CP 673 2S seal, with respect of the separation distances.
Distances: see 3.3.5.

3.2.1 Hilti coated board CP 673 2S in combination with Hilti Firestop Endless Collar CFS-C EL + Acrylic sealant CFS-S ACR

Flexible and rigid wall constructions (thickness ≥ 100 mm)

Single layer PE pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part													
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers	Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
17463A s11-d3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PE	EN 1519-1 EN 12666-1 EN 12201-2	-	≤ 75	3.0	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17463A s11-d4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PE	EN 1519-1 EN 12666-1 EN 12201-2	-	≤ 90	3.5	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17460A s1-d5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PE	EN 1519-1 EN 12666-1 EN 12201-2	-	≤ 110	4.3	U/U	-	-	-	-	**EI 60 U/U**	**E 90 U/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**CFS-C EL**	**1**	**PE**	**EN 1519-1 EN 12666-1 EN 12201-2**	**-**	**≤ 75 - 110**	**3.0, 3.5, 4.3[(1)] till 4.3**	**U/U**	**-**	**-**	**-**	**-**	**EI 60 U/U**	**E 60 U/U**

Covered pipe materials: Single layer PE pipes in accordance with EN 1519-1, EN 12666-1, EN 12201-2 and EN ISO 15494, PE-X pipes in accordance with EN ISO 15875-2, ABS pipes in accordance with EN 1455-1 and EN ISO 15493 as well as SAN+PVC pipes in accordance with ISO 19220.

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part													
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers	Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
17462A s7-d15	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PE-S2	Geberit	Silent dB20	≤ 56	3.2	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17463A s9-d16	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PE-S2	Geberit	Silent dB20	≤ 75	3.6	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17463A s11-d17	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PE-S2	Geberit	Silent dB20	≤ 110	6.0	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**CFS-C EL**	**1**	**PE-S2**	**Geberit**	**Silent dB20**	**≤ 56 - 110**	**3.2, 3.6, 6.0[(1)] till 6.0**	**U/U**	**-**	**-**	**-**	**-**	**EI 60 U/U**	**E 60 U/U**

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

warringtonfire
Proud to be part of element

Single layer PVC pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17462A s6-d10	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PVC-U	EN 1452-1 EN 1329-1 EN 1453-1 EN 1566-1	-	≤ 50	1.8	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17463A s10-d11	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PVC-U	EN 1452-1 EN 1329-1 EN 1453-1 EN 1566-1	-	≤ 75	1.8	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**CFS-C EL**	**1**	**PVC-U**	**EN 1452-1 EN 1329-1 EN 1453-1 EN 1566-1**	**-**	**≤ 50 - 75**	**1.8**	**U/U**	**-**	**-**	**-**	**-**	EI 60 U/U	E 60 U/U
17463A s11-d12	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PVC-U	EN 1452-1 EN 1329-1 EN 1453-1 EN 1566-1	-	≤ 110	2.2	U/U	-	-	-	-	**EI 45 U/U**	**E 45 U/U**
17463A s11-d13	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PVC-U	EN 1452-1 EN 1329-1 EN 1453-1 EN 1566-1	-	≤ 110	3.2	U/U	-	-	-	-	**EI 45 U/U**	**E 45 U/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**CFS-C EL**	**1**	**PVC-U**	**EN 1452-1 EN 1329-1 EN 1453-1 EN 1566-1**	**-**	**≤ 50 - 110**	**1.8, 2.2, 3.2(1) till 3.2**	**U/U**	**-**	**-**	**-**	**-**	EI 45 U/U	E 45 U/U

Covered pipe materials: Single layer PVC-U pipes in accordance with EN 1329-1, EN 1453-1, EN ISO 15493 and EN ISO 1452-2 and PVC-C pipes in accordance with EN 1566-1, EN ISO 15493 and EN ISO 15877-2.

(1) Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Multi layer PP pipes (Non-regulated PP pipes)

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17460A s1-d23	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PP-MB	Wavin	AS+	≤ 110	5.3	U/U	-	-	-	-	**EI 60 U/U**	**E 90 U/U**

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20822A dw1.15	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-C EL	1	PP / PP-MD / PP	Rehau	Raupiano Plus	≤ 32	1.8	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17463A s10-d20	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PP / PP-MD / PP	Rehau	Raupiano Plus	≤ 50	1.8	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17463A s10-d21	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PP / PP-MD / PP	Rehau	Raupiano Plus	≤ 75	1.9	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17460A s1-d22	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PP / PP-MD / PP	Rehau	Raupiano Plus	≤ 110	2.7	U/U	-	-	-	-	**EI 60 U/U**	**E 90 U/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**CFS-C EL**	**1**	PP / PP-MD / PP	**Rehau**	**Raupiano Plus**	**≤ 32 - 110**	**1.8, 1.9, 2.7(1) till 2.7**	**U/U**	**-**	**-**	**-**	**-**	EI 60 U/U	E 60 U/U

(1) Interpolation between minimum pipe wall thickness in relation to pipe diameter.

warringtonfire
Proud to be part of element

Rigid floor constructions (thickness ≥ 150 mm)

Single layer PE pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20823A rf3.18	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-C EL	1	PE80	Geberit EN 1519-1	PE80	≤ 32	3.0	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17461A s1-f3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PE	EN 1519-1 EN 12666-1 EN 12201-2	-	≤ 75	3.0	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17461A s1-f4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PE	EN 1519-1 EN 12666-1 EN 12201-2	-	≤ 90	3.5	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
20823A rf3.19	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-C EL	1	PE 100	Georg Fischer EN ISO 15494	ecoFIT	≤ 110	3.1	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
20823A rf3.20	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-C EL	1	PE 100	Simona EN 12201-2	SDR 26	≤ 110	4.2	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**CFS-C EL**	**1**	**PE**	**EN 1519-1 EN 12666-1 EN 12201-2**	**-**	**≤ 32 - 110**	**3.0, 3.0, 3.5, 3.1[(1)] till 4.2**	**U/U**	**-**	**-**	**-**	**-**	**EI 60 U/U**	**E 60 U/U**

Covered pipe materials: Single layer PE pipes in accordance with EN 1519-1, EN 12666-1, EN 12201-2 and EN ISO 15494, PE-X pipes in accordance with EN ISO 15875-2, ABS pipes in accordance with EN 1455-1 and EN ISO 15493 as well as SAN+PVC pipes in accordance with ISO 19220.

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17461A s3-f15	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PE-S2	Geberit	Silent dB20	≤ 56	3.2	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17461A s4-f16	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PE-S2	Geberit	Silent dB20	≤ 75	3.6	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17461A s4-f17	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PE-S2	Geberit	Silent dB20	≤ 110	6.0	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17461A s4-f18	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PE-S2	Geberit	Silent dB20	≤ 135	6.0	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**CFS-C EL**	**1**	**PE-S2**	**Geberit**	**Silent dB20**	**≤ 56 - 135**	**3.2, 3.6, 6.0[(1)] till 6.0**	**U/U**	**-**	**-**	**-**	**-**	**EI 60 U/U**	**E 60 U/U**

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

warringtonfire
Proud to be part of element

Single layer PVC pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20823A rf2.15	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-C EL	1	PVC-U	EN 1452-2	-	≤ 32	1.6	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17461A s3-f10	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PVC-U	EN 1452-1 EN 1329-1 EN 1453-1 EN 1566-1	-	≤ 50	1.8	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17461A s3-f11	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PVC-U	EN 1452-1 EN 1329-1 EN 1453-1 EN 1566-1	-	≤ 75	1.8	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
20823A rf2.16	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-C EL	1	PVC-U	EN 1452-1	-	≤ 110	2.2	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17461A s3-f13	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PVC-U	EN 1452-1 EN 1329-1 EN 1453-1 EN 1566-1	-	≤ 110	3.2	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
20823A rf2.17	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-C EL	1	PVC-U	EN 1452-1	-	≤ 110	5.3	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**CFS-C EL**	**1**	**PVC-U**	**EN 1452-1,2 EN 1329-1 EN 1453-1 EN 1566-1**	**-**	**≤ 32 - 110**	**1,6, 1.8, 2.2[(1)] till 5.3**	**U/U**	**-**	**-**	**-**	**-**	EI 60 U/U	E 60 U/U

Covered pipe materials: Single layer PVC-U pipes in accordance with EN 1329-1, EN 1453-1, EN ISO 15493 and EN ISO 1452-2 and PVC-C pipes in accordance with EN 1566-1, EN ISO 15493 and EN ISO 15877-2.

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Single layer PP pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20823A rf6.21	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-C EL	1	PP-H	Ostendorf-OSMA EN 1451-1	HTEM	≤ 32	1.8	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
20823A rf6.23	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-C EL	1	PP	Ostendorf-OSMA EN 1451-1	HT-System plus	≤ 75	1.9	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
20823A rf6.24	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-C EL	1	PP	Ostendorf-OSMA EN 1451-1	HT-System plus	≤ 110	2.7	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
20823A rf7.26	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-C EL	1	PP-H	Ostendorf-OSMA EN 1451-1	Skolan	≤ 110	5.3	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-C EL**	**1**	**PP**	**EN 1451-1**	**-**	**≤ 32 - 110**	**1,8, 1.9, 2.7[(1)] till 5.3**	**U/U**	**-**	**-**	**-**	**-**	EI 60 U/U	E 60 U/U

Covered pipe materials: Single layer PP pipes in accordance with EN 1451-1, EN ISO 15874 and EN ISO 15494.

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

warringtonfire
Proud to be part of element

Multi layer PP pipes (Non-regulated PP pipes)

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17461A s4-f20	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PP / PP-MD / PP	Rehau	Raupiano Plus	≤ 50	1.8	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17461A s4-f21	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PP / PP-MD / PP	Rehau	Raupiano Plus	≤ 75	1.9	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17461A s4-f22	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C EL	1	PP / PP-MD / PP	Rehau	Raupiano Plus	≤ 110	2.7	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**CFS-C EL**	**1**	PP / PP-MD / PP	**Rehau**	**Raupiano Plus**	**≤ 50 - 110**	**1.8, 1.9, 2.7[(1)] till 2.7**	**U/U**	**-**	**-**	**-**	**-**	EI 60 U/U	E 60 U/U

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

3.2.2 Hilti coated board CP 673 2S in combination with Hilti Firestop Power Collar CFS-C P + Acrylic sealant CFS-S ACR

Flexible and rigid wall constructions (thickness ≥ 100 mm)

Single layer PE pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	Collar size												
17460A s1-d6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C P	125/5”	PE	EN 1519-1, EN 12666-1, EN 12201-2	-	125	4.8	U/U	-	-	-	-	**EI 60 U/U**	**E 90 U/U**
17462A s7-d7	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C P	160/6”	PE	EN 1519-1, EN 12666-1, EN 12201-2	-	160	6.2	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**

Covered pipe materials: Single layer PE pipes in accordance with EN 1519-1, EN 12666-1, EN 12201-2 and EN ISO 15494, PE-X pipes in accordance with EN ISO 15875-2, ABS pipes in accordance with EN 1455-1 and EN ISO 15493 as well as SAN+PVC pipes in accordance with ISO 19220.

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	Collar size												
17463A s10-d18	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C P	160/6”	PE-S2	Geberit	Silent dB20	135	6.0	U/U	-	-	-	-	**EI 20 U/U**	**E 20 U/U**
17462A s7-d19	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C P	160/6”	PE-S2	Geberit	Silent dB20	160	7.0	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**

Single layer PVC pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	Collar size												
17463A s10-d14	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C P	160/6”	PVC-U	EN 1452-1, EN 1329-1, EN 1453-1, EN 1566-1	-	160	3.2	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**

Covered pipe materials: Single layer PVC-U pipes in accordance with EN 1329-1, EN 1453-1, EN ISO 15493 and EN ISO 1452-2 and PVC-C pipes in accordance with EN 1566-1, EN ISO 15493 and EN ISO 15877-2.

Multi layer PP pipes (Non-regulated PP pipes)

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	Collar size												
17460A s1-d24	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C P	125/5”	PP / PP-MD / PP	Rehau	Raupiano Plus	125	3.1	U/U	-	-	-	-	**EI 60 U/U**	**E 90 U/U**
17462A s6-d26	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C P	160/6”	PP / PP-MD / PP	Rehau	Raupiano Plus	160	3.9	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**

warringtonfire
Proud to be part of element

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part													
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	Collar size	Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
17460A s1-d25	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C P	125/5”	PP / PP-MV / PP	Poloplast	Polokal 3S	125	5.3	U/U	-	-	-	-	**EI 60 U/U**	**E 90 U/U**
17462A s6-d27	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C P	160/6”	PP / PP-MV / PP	Poloplast	Polokal 3S	160	7.5	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**

Rigid floor constructions (thickness ≥ 150 mm)

Single layer PE pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part													
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	Collar size	Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
17461A s1-f7	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C P	110/4”	PE	EN 1519-1, EN 12666-1, EN 12201-2	-	110	4.3	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17461A s2-f6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C P	125/5””	PE	EN 1519-1, EN 12666-1, EN 12201-2	-	125	4.8	U/U	-	-	-	-	**EI 30 U/U**	**E 30 U/U**

Covered pipe materials: Single layer PE pipes in accordance with EN 1519-1, EN 12666-1, EN 12201-2 and EN ISO 15494, PE-X pipes in accordance with EN ISO 15875-2, ABS pipes in accordance with EN 1455-1 and EN ISO 15493 as well as SAN+PVC pipes in accordance with ISO 19220.

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part													
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	Collar size	Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
17461A s3-f19	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C P	160/6”	PE-S2	Geberit	Silent dB20	≤ 160	7.0	U/U	-	-	-	-	**EI 0 U/U**	**E 0 U/U**

Single layer PVC pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part													
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	Collar size	Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
17461A s2-f14	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C P	160/6”	PVC-U	EN 1452-1, EN 1329-1, EN 1453-1, EN 1566-1	-	160	3.2	U/U	-	-	-	-	**EI 30 U/U**	**E 30 U/U**

Covered pipe materials: Single layer PVC-U pipes in accordance with EN 1329-1, EN 1453-1, EN ISO 15493 and EN ISO 1452-2 and PVC-C pipes in accordance with EN 1566-1, EN ISO 15493 and EN ISO 15877-2.

warringtonfire
Proud to be part of element

Multi layer PP pipes (Non-regulated PP pipes)

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	Collar size												
17461A s10-f24	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C P	125/5”	PP / PP-MD / PP	Rehau	Raupiano Plus	125	3.1	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17461A s6-f26	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C P	160/6”	PP / PP-MD / PP	Rehau	Raupiano Plus	160	3.9	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	Collar size												
17461A s5-f25	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	CFS-C P	125/5”	PP / PP-MV / PP	Poloplast	Polokal 3S	125	5.3	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**

3.2.3 Hilti coated board CP 673 2S in combination with Hilti Firestop Intumescent Sealant CFS-IS

Flexible and rigid wall constructions (thickness ≥ 100 mm)

Single layer PE pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17462A s7-d1	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE	EN 1519-1, EN 12666-1, EN 12201-2	-	≤ 40	3.0	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17462A s7-d2	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE	EN 1519-1, EN 12666-1, EN 12201-2	-	≤ 56	3.0	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**

Covered pipe materials: Single layer PE pipes in accordance with EN 1519-1, EN 12666-1, EN 12201-2 and EN ISO 15494, PE-X pipes in accordance with EN ISO 15875-2, ABS pipes in accordance with EN 1455-1 and EN ISO 15493 as well as SAN+PVC pipes in accordance with ISO 19220.

Single layer PVC pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17462A s6-d8	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PVC-U	EN 1452-1, EN 1329-1, EN 1453-1, EN 1566-1	-	≤ 50	1.8	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17462A s6-d9	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PVC-U	EN 1452-1, EN 1329-1, EN 1453-1, EN 1566-1	-	≤ 50	2.4	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
	CP 673 2S	**1 x 60**	**CFS-IS**	**15**	**60**	-	-	**PVC-U**	**EN 1452-1, EN 1329-1, EN 1453-1, EN 1566-1**	-	**≤ 50**	**1.8, 2.4[(1)] till 2.4**	**U/U**	-	-	-	-	**EI 60 U/U**	**E 60 U/U**

Covered pipe materials: Single layer PVC-U pipes in accordance with EN 1329-1, EN 1453-1, EN ISO 15493 and EN ISO 1452-2 and PVC-C pipes in accordance with EN 1566-1, EN ISO 15493 and EN ISO 15877-2.

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Single layer PP pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
21834A dw1.3	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PP-RCT	FV Plast EN ISO 15874	Uni	≤ 20	2.3	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
21834A dw1.5	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PP-RCT	FV Plast EN ISO 15874	Uni	≤ 50	4.6	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
	CP 673 2S	**1 x 60**	**CFS-IS**	**15**	**60**	**-**	**-**	**PP-RCT**	**FV Plast EN ISO 15874**	**Uni**	**≤ 20 – 50**	**2.3, 4.6[(1)] till 4.6**	**U/C**	**-**	**-**	**-**	**-**	**EI 60 U/C**	**E 60 U/C**

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

MLC pipes with AF insulation

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17463A s9-d30	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE-RT / Al / PE-RT	Geberit	Mepla	≤ 16	2.25	U/C	Armaflex AF1	8.0	full	CS	**EI 60 U/C**	**E 60 U/C**
17460A s1-d31	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE-RT / Al / PE-RT	Geberit	Mepla	≤ 16	2.25	U/C	Armaflex AF4	17.0	full	CS	**EI 60 U/C**	**E 90 U/C**
17460A s1-d32	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE-RT / Al / PE-RT	Geberit	Mepla	≤ 40	3.5	U/C	Armaflex AF1	9.0	full	CS	**EI 60 U/C**	**E 90 U/C**
17460A s1-d33	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE-RT / Al / PE-RT	Geberit	Mepla	≤ 40	3.5	U/C	Armaflex AF4	20.5	full	CS	**EI 60 U/C**	**E 90 U/C**
	CP 673 2S	**1 x 60**	**CFS-IS**	**15**	**60**	**-**	**-**	**PE-RT / Al / PE-RT**	**Geberit**	**Mepla**	**≤ 16 - 40**	**2.25, 3.5[(1)] till 3.5**	**U/C**	**Armaflex AF1 – AF4**	**8.0 - 20.5**	**full**	**CS**	**EI 60 U/C**	**E 60 U/C**

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17463A s9-d34	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE-RT/Al/PE-RT	Uponor	Unipipe plus	≤ 16	2.0	U/C	Armaflex AF1	8.0	full	CS	**EI 60 U/C**	**E 60 U/C**
17460A s1-d35	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE-RT/Al/PE-RT	Uponor	Unipipe plus	≤ 16	2.0	U/C	Armaflex AF4	17.0	full	CS	**EI 60 U/C**	**E 90 U/C**
17460A s1-d36	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE-RT/Al/PE-RT	Uponor	Unipipe plus	≤ 32	3.0	U/C	Armaflex AF1	9.0	full	CS	**EI 60 U/C**	**E 90 U/C**
17460A s1-d37	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE-RT/Al/PE-RT	Uponor	Unipipe plus	≤ 32	3.0	U/C	Armaflex AF4	19.0	full	CS	**EI 60 U/C**	**E 90 U/C**
	CP 673 2S	**1 x 60**	**CFS-IS**	**15**	**60**	**-**	**-**	**PE-RT/Al/PE-RT**	**Uponor**	**Unipipe plus**	**≤ 16 - 32**	**2.0, 3.0[(1)] till 3.0**	**U/C**	**Armaflex AF1 - AF4**	**8.0 - 19.0**	**full**	**CS**	**EI 60 U/C**	**E 60 U/C**

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Cu pipes with AF insulation

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17462A s4-d40	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	Cu	-	-	≤ 28	1.0 till ∞	C/U	Armaflex AF1	8.0	full	CS	**EI 45 C/U**	**E 60 C/U**
17462A s4-d41	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	Cu	-	-	≤ 28	1.0 till ∞	C/U	Armaflex AF4	19.0	full	CS	**EI 60 C/U**	**E 60 C/U**
17462A s4-d42	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	Cu	-	-	≤ 42	1.2 till ∞	C/U	Armaflex AF1	9.0	full	CS	**EI 45 C/U**	**E 60 C/U**
17462A s4-d43	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	Cu	-	-	≤ 42	1.2 till ∞	C/U	Armaflex AF4	20.5	full	CS	**EI 45 C/U**	**E 60 C/U**
	CP 673 2S	**1 x 60**	**CFS-IS**	**15**	**60**	**-**	**-**	**Cu**	**-**	**-**	**≤ 28 - 42**	**1.0, 1.2[(1)] till ∞**	**C/U**	**Armaflex AF1 - AF4**	**8.0 - 20.5**	**full**	**CS**	**EI 45 C/U**	**E 60 C/U**

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

warringtonfire
Proud to be part of element

Cu pipes with glass wool insulation

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17463A s9-d38	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	Cu	-	-	≤ 28	1.0 till ∞	C/U	Isover Climacover lamella	30.0	≥ 470	LS	**EI 60 C/U**	**E 60 C/U**
17463A s9-d39	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	Cu	-	-	≤ 42	1.2 till ∞	C/U	Isover Climacover lamella	30.0	≥ 470	LS	**EI 60 C/U**	**E 60 C/U**
	CP 673 2S	**1 x 60**	**CFS-IS**	**15**	**60**	**-**	**-**	**Cu**	**-**	**-**	**≤ 28 - 42**	**1.0, 1.2[1] till ∞**	**C/U**	**Isover Climacover lamella**	**30.0**	**≥ 470**	**LS**	**EI 60 C/U**	**E 60 C/U**

[1] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

warringtonfire
Proud to be part of element

Rigid floor constructions (thickness ≥ 150 mm)

Single layer PE pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17461A s1-f1	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE	EN 1519-1, EN 12666-1, EN 12201-2	-	≤ 40	3.0	U/U	-	-	-	-	**EI 60 U/U**	**E 60 U/U**
17461A s1-f2	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE	EN 1519-1, EN 12666-1, EN 12201-2	-	≤ 56	3.0	U/U	-	-	-	-	**EI 0 U/U**	**E 60 U/U**

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20835A rf6.69	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE80	Geberit EN 1519-1	PE80	≤ 50	3.0	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**

Covered pipe materials: Single layer PE pipes in accordance with EN 1519-1, EN 12666-1, EN 12201-2 and EN ISO 15494, PE-X pipes in accordance with EN ISO 15875-2, ABS pipes in accordance with EN 1455-1 and EN ISO 15493 as well as SAN+PVC pipes in accordance with ISO 19220.

(1) Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Single layer PVC pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17461A s2-f8	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PVC-U	EN 1452-1, EN 1329-1, EN 1453-1, EN 1566-1		≤ 50	1.8	U/U	-	-	-	-	**EI 45 U/U**	**E 45 U/U**
17461A s2-f9	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PVC-U	EN 1452-1, EN 1329-1, EN 1453-1, EN 1566-1		≤ 50	2.4	U/U	-	-	-	-	**EI 45 U/U**	**E 45 U/U**
	CP 673 2S	**1 x 60**	**CFS-IS**	**15**	**60**	**-**	**-**	**PVC-U**	**EN 1452-1, EN 1329-1, EN 1453-1, EN 1566-1**		**≤ 50**	**1.8, 2.4(1) till 2.4**	**U/U**	**-**	**-**	**-**	**-**	**EI 45 U/U**	**E 45 U/U**

Covered pipe materials: Single layer PVC-U pipes in accordance with EN 1329-1, EN 1453-1, EN ISO 15493 and EN ISO 1452-2 and PVC-C pipes in accordance with EN 1566-1, EN ISO 15493 and EN ISO 15877-2.

(1) Interpolation between minimum pipe wall thickness in relation to pipe diameter.

warringtonfire
Proud to be part of element

Single layer PP pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20835A rf7.13	CP 673 2S	1 x 60	CFS-IS	7 – 8	60	-	-	PP-RCT	FV Plast EN ISO 15874	Uni	≤ 20	2.3	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20835A rf7.14	CP 673 2S	1 x 60	CFS-IS	7 – 8	60	-	-	PP-RCT	FV Plast EN ISO 15874	Hot	≤ 25	3.5	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20835A rf7.12	CP 673 2S	1 x 60	CFS-IS	7 – 8	60	-	-	PP-RCT	FV Plast EN ISO 15874	Uni	≤ 50	4.6	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20835A rf7.11	CP 673 2S	1 x 60	CFS-IS	7 – 8	60	-	-	PP-RCT	FV plast EN ISO 15874	Hot	≤ 50	6.9	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
	CP 673 2S	**1 x 60**	**CFS-IS**	**7 – 8**	**60**	**-**	**-**	**PP-RCT**	**FV plast EN ISO 15874**	**Uni, Hot**	**≤ 20 - 50**	**2.3, 3.5, 4.6[(1)] till 6.9**	**U/C**	**-**	**-**	**-**	**-**	EI 60 U/C	E 60 U/C

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

- Bundle of pipes, outer bundle diameter ≤ 80 mm

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20835A rf6.68-3	CP 673 2S	1 x 60	CFS-IS	7 – 8	60	-	-	PP-RCT	FV Plast EN ISO 15874	Uni	≤ 20	2.3	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20835A rf6.68-2	CP 673 2S	1 x 60	CFS-IS	7 – 8	60	-	-	PP-RCT	FV Plast EN ISO 15874	Hot	≤ 25	3.5	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20835A rf6.68-1	CP 673 2S	1 x 60	CFS-IS	7 – 8	60	-	-	PP-RCT	FV Plast EN ISO 15874	Uni	≤ 50	4.6	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
	CP 673 2S	**1 x 60**	**CFS-IS**	**7 – 8**	**60**	**-**	**-**	**PP-RCT**	**FV Plast EN ISO 15874**	**Uni, Hot**	**≤ 20 - 50**	**2.3, 3.5, 4.6[(1)] till 4.6**	**U/C**	**-**	**-**	**-**	**-**	EI 60 U/C	E 60 U/C

MLC (alu. comp.) pipes with AF insulation

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17461A s5-f30	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE-RT / Al / PE-RT	Geberit	Mepla	≤ 16	2.25	U/C	Armaflex AF1	8.0	full	CS	**EI 60 U/C**	**E 60 U/C**
17461A s5-f31	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE-RT / Al / PE-RT	Geberit	Mepla	≤ 16	2.25	U/C	Armaflex AF4	17.0	full	CS	**EI 60 U/C**	**E 60 U/C**
17461A s5-f32	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE-RT / Al / PE-RT	Geberit	Mepla	≤ 40	3.5	U/C	Armaflex AF1	9.0	full	CS	**EI 60 U/C**	**E 60 U/C**
17461A s5-f33	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE-RT / Al / PE-RT	Geberit	Mepla	≤ 40	3.5	U/C	Armaflex AF4	20.5	full	CS	**EI 60 U/C**	**E 60 U/C**
	CP 673 2S	**1 x 60**	**CFS-IS**	**15**	**60**	**-**	**-**	**PE-RT / Al / PE-RT**	**Geberit**	**Mepla**	**≤ 16 - 40**	**2.25, 3.5[(1)] till 3.5**	**U/C**	**Armaflex AF1 - AF4**	**8.0 - 20.5**	**full**	**CS**	EI 60 U/C	E 60 U/C

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17461A s6-f34	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE-RT/Al/PE-RT	Uponor	Unipipe plus	≤ 16	2.0	U/C	Armaflex AF1	8.0	full	CS	**EI 60 U/C**	**E 60 U/C**
17461A s6-f35	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE-RT/Al/PE-RT	Uponor	Unipipe plus	≤ 16	2.0	U/C	Armaflex AF4	17.0	full	CS	**EI 60 U/C**	**E 60 U/C**
17461A s6-f36	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE-RT/Al/PE-RT	Uponor	Unipipe plus	≤ 32	3.0	U/C	Armaflex AF1	9.0	full	CS	**EI 60 U/C**	**E 60 U/C**
17461A s6-f37	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	PE-RT/Al/PE-RT	Uponor	Unipipe plus	≤ 32	3.0	U/C	Armaflex AF4	19.0	full	CS	**EI 60 U/C**	**E 60 U/C**
	CP 673 2S	**1 x 60**	**CFS-IS**	**15**	**60**	**-**	**-**	**PE-RT/Al/PE-RT**	**Uponor**	**Unipipe plus**	**≤ 16 - 32**	**2.0, 3.0[1] till 3.0**	**U/C**	**Armaflex AF1 - AF4**	**8.0 - 19.0**	**full**	**CS**	EI 60 U/C	E 60 U/C

[1] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Cu pipes with AF insulation

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17461A s7-f40	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	Cu	-	-	≤ 28	1.0 till ∞	C/U	Armaflex AF1	8.0	full	CS	**EI 45 C/U**	**E 60 C/U**
17461A s7-f41	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	Cu	-	-	≤ 28	1.0 till ∞	C/U	Armaflex AF4	19.0	full	CS	**EI 60 C/U**	**E 60 C/U**
17461A s7-f42	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	Cu	-	-	≤ 42	1.2 till ∞	C/U	Armaflex AF1	9.0	full	CS	**EI 45 C/U**	**E 60 C/U**
17461A s7-f43	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	Cu	-	-	≤ 42	1.2 till ∞	C/U	Armaflex AF4	20.5	full	CS	**EI 60 C/U**	**E 60 C/U**
	CP 673 2S	**1 x 60**	**CFS-IS**	**15**	**60**	**-**	**-**	**Cu**	**-**	**-**	**≤ 28 - 42**	**1.0, 1.2[1] till ∞**	**C/U**	**Armaflex AF1 - AF4**	**8.0 - 20.5**	**full**	**CS**	EI 45 C/U	E 60 C/U
	CP 673 2S	**1 x 60**	**CFS-IS**	**15**	**60**	**-**	**-**	**Cu**	**-**	**-**	**≤ 28 - 42**	**1.0, 1.2[1] till ∞**	**C/U**	**Armaflex AF4**	**19.0 - 20.5**	**full**	**CS**	EI 60 C/U	E 60 C/U

[1] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Cu pipes with glass wool insulation

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17461A s8-f38	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	Cu	-	-	≤ 28	1.0 till ∞	C/U	Isover Climacover lamella	20.0	≥ 470	LS	**EI 60 C/U**	**E 60 C/U**
17461A s8-f39	CP 673 2S	1 x 60	CFS-IS	15	60	-	-	Cu	-	-	≤ 42	1.2 till ∞	C/U	Isover Climacover lamella	20.0	≥ 470	LS	**EI 30 C/U**	**E 60 C/U**
	CP 673 2S	**1 x 60**	**CFS-IS**	**15**	**60**	**-**	**-**	**Cu**	**-**	**-**	**≤ 28 - 42**	**1.0, 1.2[1] till ∞**	**C/U**	**Isover Climacover lamella**	**20.0**	**≥ 470**	**LS**	EI 30 C/U	E 60 C/U

[1] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

3.2.4 Hilti coated board CP 673 2S in combination with Acrylic sealant CFS-S ACR

Flexible and rigid wall constructions (thickness ≥ 100 mm)

Multi layer PE pipes with mineral wool insulation

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17462A s5-d28	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	PE-Xa	Rehau	Rautitan flex	≤ 16	2.25	U/C	Rockwool Klimarock	20.0	≥ 220	LS	EI 60 U/C	E 60 U/C
17462A s4-d29	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	PE-Xa	Rehau	Rautitan flex	≤ 32	4.4	U/C	Rockwool Klimarock	20.0	≥ 220	LS	EI 60 U/C	E 60 U/C
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**-**	**-**	**PE-Xa**	**Rehau**	**Rautitan flex**	**≤ 16 - 32**	**2.25, 4.4[(1)] till 4.4**	**U/C**	**Rockwool Klimarock**	**20.0**	**≥ 220**	**LS**	**EI 60 U/C**	**E 60 U/C**

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Cu pipes with mineral wool insulation

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17462A s5-d44	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Cu	-	-	≤ 28	1.0 till ∞	C/U	Rockwool Klimarock	20.0	≥ 970	LS	EI 60 C/U	E 60 C/U
17460A s2-d49	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Cu	-	-	≤ 28	1.0 till ∞	C/U	Rockwool Klimarock	30.0	≥ 970	LS	EI 60 C/U	E 90 C/U
17462A s5-d46	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Cu	-	-	≤ 28	1.0 till ∞	C/U	Rockwool Klimarock	30.0	≥ 470	LS	EI 60 C/U	E 60 C/U
17462A s5-d45	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Cu	-	-	≤ 54	1.5 till ∞	C/U	Rockwool Klimarock	20.0	≥ 970	LS	EI 45 C/U	E 60 C/U
17462A s5-d47	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Cu	-	-	≤ 54	1.5 till ∞	C/U	Rockwool Klimarock	30.0	≥ 470	LS	EI 60 C/U	E 60 C/U
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**-**	**-**	**Cu**	**-**	**-**	**≤ 28 - 54**	**1.0, 1.5[(1)] till ∞**	**C/U**	**Rockwool Klimarock**	**30.0**	**≥ 470**	**LS**	EI 60 C/U	E 60 C/U
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**-**	**-**	**Cu**	**-**	**-**	**≤ 28 - 54**	**1.0, 1.5[(1)] till ∞**	**C/U**	**Rockwool Klimarock**	**20.0**	**≥ 970**	**LS**	EI 45 C/U	E 60 C/U

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Fe pipes with mineral wool insulation

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17460A s2-d48	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Fe	-	-	≤ 114.3	1.8 till ∞	C/U	Rockwool Klimarock	20.0	full	CS	EI 60 C/U	E 90 C/U
17460A s2-d50	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Fe	-	-	≤ 114.3	1.8 till ∞	C/U	Rockwool Klimarock	30.0	≥ 970	LS	EI 60 C/U	E 90 C/U
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**-**	**-**	**Fe**	**-**	**-**	**≤ 114.3**	**1.8 till ∞**	**C/U**	**Rockwool Klimarock**	**20.0 - 30.0**	**full**	**CS**	EI 60 C/U	E 90 C/U
20834A dw2.28	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Fe	-	-	≤ 114.3	3.2 till ∞	C/U	Isover ORStech LSP-40	30.0	≥ 700	LS	EI 60 C/U	E 60 C/U

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

warringtonfire
Proud to be part of element

Cables with mineral wool insulation

Pos.	Sealing system							Cable					Cable insulation				Classifications	
	Aperture part					Service part		Bundle diameter [mm]	Type	Number	Cable diameter [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal												
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers											
17460A s3-d51.2	CP 673 2S	1 x 60	CFS-S ACR	**1 – 5**	10	-	-	-	D1	1	52	-	Rockwool Klimarock	30.0	200	LI	**EI 60**	**E 90**
17460A s3-d51.3	CP 673 2S	1 x 60	CFS-S ACR	**1 – 5**	10	-	-	-	E	2	27	-	Rockwool Klimarock	30.0	200	LI		
17460A s3-d51.4	CP 673 2S	1 x 60	CFS-S ACR	**1 – 5**	10	-	-	-	D2	1	80	-	Rockwool Klimarock	30.0	200	LI		
17460A s3-d51.6	CP 673 2S	1 x 60	CFS-S ACR	**1 – 5**	10	-	-	-	D3	1	58	-	Rockwool Klimarock	30.0	200	LI		
17460A s3-d51.8	CP 673 2S	1 x 60	CFS-S ACR	**1 – 5**	10	-	-	-	A1	10	14	-	Rockwool Klimarock	30.0	200	LI		
17460A s3-d51.9	CP 673 2S	1 x 60	CFS-S ACR	**1 – 5**	10	-	-	-	A2	10	14.4	-	Rockwool Klimarock	30.0	200	LI		
17460A s3-d51.10	CP 673 2S	1 x 60	CFS-S ACR	**1 – 5**	10	-	-	-	A3	10	13	-	Rockwool Klimarock	30.0	200	LI		
17460A s3-d51.11	CP 673 2S	1 x 60	CFS-S ACR	**1 – 5**	10	-	-	-	B	2	21	-	Rockwool Klimarock	30.0	200	LI		
17460A s3-d51.12	CP 673 2S	1 x 60	CFS-S ACR	**1 – 5**	10	-	-	-	C1	1	47	-	Rockwool Klimarock	30.0	200	LI		
17460A s3-d51.13	CP 673 2S	1 x 60	CFS-S ACR	**1 – 5**	10	-	-	-	C2	1	61	-	Rockwool Klimarock	30.0	200	LI		
17460A s3-d51.14	CP 673 2S	1 x 60	CFS-S ACR	**1 – 5**	10	-	-	-	C3	1	42	-	Rockwool Klimarock	30.0	200	LI		
17460A s3-d51.16	CP 673 2S	1 x 60	CFS-S ACR	**1 – 5**	10	-	-	-	H	3	16	C/U	Rockwool Klimarock	30.0	200	LI		
17460A s3-d51.17	CP 673 2S	1 x 60	CFS-S ACR	**1 – 5**	10	-	-	-	I	3	16	U/C	Rockwool Klimarock	30.0	200	LI		
17460A s3-d51.18	CP 673 2S	1 x 60	CFS-S ACR	**1 – 5**	10	-	-	100	F	39	17	-	Rockwool Klimarock	30.0	200	LI		
17460A s3-d51.19	CP 673 2S	1 x 60	CFS-S ACR	**1 – 5**	10	-	-	-	G1	1	17.1	-	Rockwool Klimarock	30.0	200	LI		
17460A s3-d51.20	CP 673 2S	1 x 60	CFS-S ACR	**1 – 5**	10	-	-	-	G2	1	23.3	-	Rockwool Klimarock	30.0	200	LI		
-	**CP 673 2S**	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**-**	**-**	**All cable types currently and commonly used in building practice in Europe with a maximum outer diameter of 28 mm for coaxial cables and a maximum outer diameter of 80 mm for all other cables, subject to electro-technical rules. All cables are installed perpendicular to the supporting construction. Cables of a diameter not greater than 21 mm can be installed in a tied cable bundle with a maximum outer bundle diameter of 100 mm. Non-sheathed cables (wires) and waveguides are not covered. Cable carriers can penetrate the supporting construction.**					**Rockwool Klimarock**	**30.0**	**200**	**LI**	**EI 60**	**E 90**

Cables with CFS-CT protection

Pos.	Sealing system							Cable					Cable insulation				Classifications	
	Aperture part					Service part		Bundle diameter [mm]	Type	Number	Cable diameter [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal												
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers											
20834A dw2.41-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	D2	1	80	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20834A dw2.41-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	E	1	27	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20834A dw2.41-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	E	1	27	-	CFS-CT	1.0	350	LI	**EI 30**	**E 60**
20834A dw2.41-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	D1	1	52	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20834A dw2.41-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	Cable ladder 300 x 1.25	-	-	-	CFS-CT	1.0	350	LI	**EI 30**	**E 60**
20834A dw3.1-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	D1	1	52	-	CFS-CT	1.0	350	LI	**EI 30**	**E 60**
20834A dw3.1-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	E	1	27	-	CFS-CT	1.0	350	LI	**EI 30**	**E 60**
20834A dw3.1-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	E	1	27	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20834A dw3.1-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	D2	1	80	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20834A dw3.1-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	Cable ladder 300 x 1.25	-	-	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20834A dw3.2-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	D3	1	58	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20834A dw3.2-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	Cable ladder 200 x 1	-	-	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20834A dw3.3-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	A1	10	14	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20834A dw3.3-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	A2	10	14.4	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**

warringtonfire
Proud to be part of element

Pos.	Sealing system							Cable					Cable insulation				Classifications	
	Aperture part					Service part		Bundle diameter [mm]	Type	Number	Cable diameter [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal												
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers											
20834A dw3.3-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	A3	10	13	-	CFS-CT	1.0	350	LI	EI 60	E 60
20834A dw3.3-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	B	1	21	-	CFS-CT	1.0	350	LI	EI 60	E 60
20834A dw3.3-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	B	1	21	-	CFS-CT	1.0	350	LI	EI 30	E 60
20834A dw3.3-6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	C1	1	47	-	CFS-CT	1.0	350	LI	EI 60	E 60
20834A dw3.3-7	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	C2	1	61	-	CFS-CT	1.0	350	LI	EI 60	E 60
20834A dw3.3-8	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	C3	1	42	-	CFS-CT	1.0	350	LI	EI 60	E 60
20834A dw3.3-9	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	Perforated cable tray 500 x 1.5	-	-	-	CFS-CT	1.0	350	LI	EI 30	E 60
20834A dw3.4-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	G1	1	17.1	-	CFS-CT	1.0	350	LI	EI 20	E 60
20834A dw3.4-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	G2	1	23.3	-	CFS-CT	1.0	350	LI	EI 30	E 60
20834A dw3.4-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	H	3	16	C/U	CFS-CT	1.0	350	LI	EI 30	E 60
20834A dw3.4-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	I	3	16	U/C	CFS-CT	1.0	350	LI	EI 60	E 60
20834A dw3.4-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	100	F	20	17	-	CFS-CT	1.0	350	LI	EI 60	E 60
20834A dw3.4-6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	-	-	-	Unperforated cable tray 500 x 1.5	-	-	-	CFS-CT	1.0	350	LI	EI 60	E 60
-	**CP 673 2S**	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**-**	**-**	**All cable types currently and commonly used in building practice in Europe with a maximum outer diameter of 28 mm for coaxial cables and a maximum outer diameter of 80 mm for all other cables, subject to electro-technical rules. All cables are installed perpendicular to the supporting construction. Cables of a diameter not greater than 21 mm can be installed in a tied cable bundle with a maximum outer bundle diameter of 100 mm. Rigid plastic and metal conduits up to an outer diameter of 16 mm. Non-sheathed cables (wires) and waveguides are not covered. Cable carriers can penetrate the supporting construction.**					**CFS-CT**	**1.0**	**350**	**LI**	**EI 30**	**E 60**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**-**	**-**	**All non-sheathed cables (wires) currently and commonly used in building practice in Europe with a maximum outer diameter of 24.**					**CFS-CT**	**1.0**	**350**	**LI**	**EI 20**	**E 60**

warringtonfire
Proud to be part of element

Rigid floor constructions (thickness ≥ 150 mm)

Single layer PE pipes with mineral wool insulation

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17461A s1-f28	CP 673 2S	1 x 60	CFS-S ACR	1 - 5	10	-	-	PE-Xa	Rehau	Rautitan flex	≤ 16	2.25	U/C	Rockwool Klimarock	20.0	≥ 220	LS	**EI 60 U/C**	**E 60 U/C**
17461A s2-f29	CP 673 2S	1 x 60	CFS-S ACR	1 - 5	10	-	-	PE-Xa	Rehau	Rautitan flex	≤ 32	4.4	U/C	Rockwool Klimarock	20.0	≥ 220	LS	**EI 30 U/C**	**E 30 U/C**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 - 5**	**10**	**-**	**-**	**PE-Xa**	**Rehau**	**Rautitan flex**	**≤ 16 - 32**	**2.25, 4.4[(1)] till 4.4**	**U/C**	**Rockwool Klimarock**	**20.0**	**≥ 220**	**LS**	EI 30 U/C	E 30 U/C

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Cu pipes with mineral wool insulation

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17461A s10-f44	CP 673 2S	1 x 60	CFS-S ACR	1 - 5	10	-	-	Cu	-	-	≤ 28	1.0 till ∞	C/U	Rockwool Klimarock	20.0	≥ 970	LS	**EI 60 C/U**	**E 60 C/U**
17461A s8-f46	CP 673 2S	1 x 60	CFS-S ACR	1 - 5	10	-	-	Cu	-	-	≤ 28	1.0 till ∞	C/U	Rockwool Klimarock	30.0	≥ 470	LS	**EI 60 C/U**	**E 60 C/U**
17461A s10-f49	CP 673 2S	1 x 60	CFS-S ACR	1 - 5	10	-	-	Cu	-	-	≤ 28	1.0 till ∞	C/U	Rockwool Klimarock	30.0	≥ 970	LS	**EI 60 C/U**	**E 60 C/U**
17461A s10-f45	CP 673 2S	1 x 60	CFS-S ACR	1 - 5	10	-	-	Cu	-	-	≤ 54	1.5 till ∞	C/U	Rockwool Klimarock	20.0	≥ 970	LS	**EI 60 C/U**	**E 60 C/U**
17461A s8-f47	CP 673 2S	1 x 60	CFS-S ACR	1 - 5	10	-	-	Cu	-	-	≤ 54	1.5 till ∞	C/U	Rockwool Klimarock	30.0	≥ 470	LS	**EI 60 C/U**	**E 60 C/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	1 - 5	**10**	**-**	**-**	**Cu**	**-**	**-**	**≤ 28 - 54**	**1.0, 1.5[(1)]** till ∞	**C/U**	**Rockwool Klimarock**	**30.0**	**≥ 470**	**LS**	EI 60 C/U	E 60 C/U
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**-**	**-**	**Cu**	**-**	**-**	**≤ 28 - 54**	**1.0, 1.5[(1)] till ∞**	**C/U**	**Rockwool Klimarock**	**20.0**	**≥ 970**	**LS**	EI 60 C/U	E 60 C/U
20835A rf6.67	CP 673 2S	1 x 60	CFS-S ACR	1 - 5	60	-	-	Cu	-	-	≤ 88.9	2.25 till ∞	C/U	Isover U Protect Alu2	40.0	full	CS	**EI 60 C/U**	**E 60 C/U**

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Fe pipes with mineral wool insulation

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config/	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
17461A s8-f48	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Fe	-	-	≤ 114.3	1.8 till ∞	C/U	Rockwool Klimarock	20.0	full	CS	**EI 45 C/U**	**E 60 C/U**
17461A s10-f50	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Fe	-	-	≤ 114.3	1.8 till ∞	C/U	Rockwool limarock	30.0	≥ 970	LS	**EI 60 C/U**	**E 60 C/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	1 – 5	**10**	**-**	**-**	**Fe**	**-**	**-**	**≤ 114.3**	**1.8** till ∞	**C/U**	**Rockwool limarock**	**20.0 - 30.0**	**full**	**CS**	EI 45 C/U	E 60 C/U
20835A rf4.42	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Fe	-	-	≤ 114.3	3.2 till ∞	C/U	Isover ORStech LSP-40	30.0	≥ 970	LS	**EI 60 C/U**	**E 60 C/U**

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

warringtonfire
Proud to be part of element

Fe pipes with CFS-CT protection

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20835A rf6.61	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Fe	-	-	≤ 17.2	2.0 till ∞	C/U	CFS-CT	1	≥ 350	LS	**EI 30 C/U**	**E 60 C/U**
20835A rf6.62	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Fe	-	-	≤ 26.9	2.3 till ∞	C/U	CFS-CT	1	≥ 350	LS	**EI 20 C/U**	**E 60 C/U**
20835A rf6.65	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Fe	-	-	≤ 33.7	2.0 till ∞	C/U	CFS-CT	1	≥ 350	LS	**EI 15 C/U**	**E 60 C/U**
20835A rf6.64	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Fe	-	-	≤ 33.7	3.3 till ∞	C/U	CFS-CT	1	≥ 350	LS	**EI 15 C/U**	**E 60 C/U**
20835A rf6.63	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Fe	-	-	≤ 48.3	2.6 till ∞	C/U	CFS-CT	1	≥ 350	LS	**EI 20 C/U**	**E 60 C/U**
20835A rf6.66	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	Fe	-	-	≤ 48.3	3.2 till ∞	C/U	CFS-CT	1	≥ 350	LS	**EI 15 C/U**	**E 60 C/U**

(1) Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Cables with mineral wool insulation

Pos.	Sealing system							Cable					Cable insulation				Classifications	
	Aperture part					Service part		Bundle diameter [mm]	Type	Number	Cable diameter [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal												
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers											
17461A s3-f51.2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	D1	1	52	-	Rockwool Klimarock	30.0	200	LI	**EI 60**	**E 60**
17461A s3-f51.3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	E	2	27	-	Rockwool Klimarock	30.0	200	LI	**EI 60**	**E 60**
17461A s3-f51.4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	D2	1	80	-	Rockwool Klimarock	30.0	200	LI	**EI 60**	**E 60**
17461A s3-f51.6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	D3	1	58	-	Rockwool Klimarock	30.0	200	LI	**EI 60**	**E 60**
17461A s3-f51.8	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	A1	10	14	-	Rockwool Klimarock	30.0	200	LI	**EI 60**	**E 60**
17461A s3-f51.9	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	A2	10	14.4	-	Rockwool Klimarock	30.0	200	LI	**EI 60**	**E 60**
17461A s3-f51.10	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	A3	10	13	-	Rockwool Klimarock	30.0	200	LI	**EI 60**	**E 60**
17461A s3-f51.11	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	B	2	21	-	Rockwool Klimarock	30.0	200	LI	**EI 60**	**E 60**
17461A s3-f51.12	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	C1	1	47	-	Rockwool Klimarock	30.0	200	LI	**EI 60**	**E 60**
17461A s3-f51.13	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	C2	1	61	-	Rockwool Klimarock	30.0	200	LI	**EI 60**	**E 60**
17461A s3-f51.14	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	C3	1	42	-	Rockwool Klimarock	30.0	200	LI	**EI 60**	**E 60**
17461A s3-f51.16	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	H	3	16	C/U	Rockwool Klimarock	30.0	200	LI	**EI 30**	**E 60**
17461A s3-f51.17	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	I	3	16	U/C	Rockwool Klimarock	30.0	200	LI	**EI 30**	**E 60**
17461A s3-f51.18	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	100	F	39	17	-	Rockwool Klimarock	30.0	200	LI	**EI 30**	**E 60**
17461A s3-f51.19	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	G1	1	17.1	-	Rockwool Klimarock	30.0	200	LI	**EI 30**	**E 60**
17461A s3-f51.20	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	G2	1	23.3	-	Rockwool Klimarock	30.0	200	LI	**EI 30**	**E 60**
-	**CP 673 2S**	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**-**	**-**	**All cable types currently and commonly used in building practice in Europe with a maximum outer diameter of 28 mm for coaxial cables and a maximum outer diameter of 80 mm for all other cables, subject to electro-technical rules. All cables are installed perpendicular to the supporting construction. Tied cable bundles, non-sheathed cables (wires) and waveguides are not covered. Cable carriers can penetrate the supporting construction.**					**Rockwool Klimarock**	**30.0**	**200**	**LI**	**EI 60**	**E 60**
-	**CP 673 2S**	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**-**	**-**	**Cables of a diameter not greater than 21 mm can be installed in a tied cable bundle with a maximum outer bundle diameter of 100 mm. Rigid plastic and metal conduits up to an outer diameter of 16 mm. All non-sheathed cables (wires) currently and commonly used in building practice in Europe with a maximum outer diameter of 24.**					**Rockwool Klimarock**	**30.0**	**200**	**LI**	**EI 30**	**E 60**

warringtonfire
Proud to be part of element

Pos.	Sealing system							Cable					Cable insulation				Classifications	
	Aperture part					Service part		Bundle diameter [mm]	Type	Number	Cable diameter [mm]	End config.	Insulation type	Thickness [mm]	Length on Exp/Unexp sides [mm]	Config.		
	Seal		Annular sealant			Seal												
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers											
20835A rf10.25.1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	G1	1	17.1	-	Rockwool Klimarock	30.0	0 / 200	LI	**EI 60**	**E 60**
20835A rf10.25.2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	G2	1	23.3	-	Rockwool Klimarock	30.0	0 / 200	LI	**EI 30**	**E 60**
20835A rf10.25.3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	H	3	16	C/U	Rockwool Klimarock	30.0	0 / 200	LI	**EI 60**	**E 60**
20835A rf10.25.4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	I	3	16	U/C	Rockwool Klimarock	30.0	0 / 200	LI	**EI 60**	**E 60**
20835A rf10.25.5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	100	F	20	17	-	Rockwool Klimarock	30.0	0 / 200	LI	**EI 60**	**E 60**
20835A rf10.25.6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	Unperforated cable tray 500 x 1.5	-	-	-	Rockwool Klimarock	30.0	0 / 200	LI	**EI 60**	**E 60**
-	**CP 673 2S**	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**-**	**-**	**Rigid plastic and metal conduits up to an outer diameter of 16 mm.**					**Rockwool Klimarock**	**30.0**	**0 / 200**	**LI**	**EI 60**	**E 60**
-	**CP 673 2S**	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**-**	**-**	**All non-sheathed cables (wires) currently and commonly used in building practice in Europe with a maximum outer diameter of 24. All cables are installed perpendicular to the supporting construction. Cable carriers can penetrate the supporting construction.**					**Rockwool Klimarock**	**30.0**	**0 / 200**	**LI**	**EI 30**	**E 60**

Cables with CFS-CT protection

Pos.	Sealing system							Cable					Cable insulation				Classifications	
	Aperture part					Service part		Bundle diameter [mm]	Type	Number	Cable diameter [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal												
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers											
20835A rf3.50-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	D2	1	80	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf3.50-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	E	1	27	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf3.50-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	E	1	27	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf3.50-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	D1	1	52	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf3.50-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	Cable ladder 300 x 1.25	-	-	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.21-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	D1	1	52	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.21-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	E	1	27	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.21-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	E	1	27	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.21-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	D2	1	80	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.21-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	Cable ladder 300 x 1.25	-	-	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.22-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	D3	1	58	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.22-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	Cable ladder 200 x 1	-	-	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.23-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	A1	10	14	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.23-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	A2	10	14.4	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.23-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	A3	10	13	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.23-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	B	1	21	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.23-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	B	1	21	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.23-6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	C1	1	47	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.23-7	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	C2	1	61	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.23-8	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	C3	1	42	-	CFS-CT	1.0	350	LI	**EI 45**	**E 60**
20835A rf9.23-9	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	Perforated cable tray 500 x 1.5	-	-	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.24-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	G1	1	17.1	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
20835A rf9.24-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	G2	1	23.3	-	CFS-CT	1.0	350	LI	**EI 45**	**E 60**
20835A rf9.24-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	H	3	16	C/U	CFS-CT	1.0	350	LI	**EI 30**	**E 60**
20835A rf9.24-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	I	3	16	U/C	CFS-CT	1.0	350	LI	**EI 45**	**E 60**
20835A rf9.24-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	100	F	20	17	-	CFS-CT	1.0	350	LI	**EI 45**	**E 60**
20835A rf9.24-6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	-	Unperforated cable tray 500 x 1.5	-	-	-	CFS-CT	1.0	350	LI	**EI 60**	**E 60**
-	**CP 673 2S**	**1 x 60**	**CFS-S ACR**	**1 – 5**	**10**	**-**	**-**	**All cable types currently and commonly used in building practice in Europe with a maximum outer diameter of 21 mm, subject to electro-technical rules. All cables are installed perpendicular to the supporting construction.**					**CFS-CT**	**1.0**	**350**	**LI**	**EI 60**	**E 60**

Pos.	Sealing system							Cable					Cable insulation				Classifications	
	Aperture part					Service part		Bundle diameter [mm]	Type	Number	Cable diameter [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal												
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers											
								Non-sheathed cables (wires) and waveguides are not covered. Cable carriers can penetrate the supporting construction.										
-	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-	-	All cable types currently and commonly used in building practice in Europe with a maximum outer diameter of 28 mm for coaxial cables and a maximum outer diameter of 80 mm for all other cables, subject to electro-technical rules. All cables are installed perpendicular to the supporting construction. Cables of a diameter not greater than 21 mm can be installed in a tied cable bundle with a maximum outer bundle diameter of 100 mm. Rigid plastic conduits up to an outer diameter of 16 mm. All non-sheathed cables (wires) currently and commonly used in building practice in Europe with a maximum outer diameter of 24. Non-sheathed cables (wires) and waveguides are not covered. Cable carriers can penetrate the supporting construction.					CFS-CT	1.0	350	LI	EI 45	E 60
-	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	10	-		Rigid metal conduits up to an outer diameter of 16 mm.					CFS-CT	1.0	350	LI	EI 30	E 60

warringtonfire
Proud to be part of element

3.2.5 Hilti coated board CP 673 2S in combination with Hilti Firestop Putty Disc CFS-D 25

Flexible and rigid wall constructions (thickness ≥ 100 mm)

Cables

Pos.	Sealing system								Cable					Cable insulation				Classifications	
	Aperture part					Service part			Bundle diameter [mm]	Type	Number	Cable diameter [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	Outder diameter [mm]	Thickness [mm]											
17463A s8-d52	CP 673 2S	1 x 60	-	-	-	CFS-D 25	60	3	-	A1	1	14	-	-	-	-	-	EI 60	E 60
17463A s8-d53	CP 673 2S	1 x 60	-	-	-	CFS-D 25	60	3	-	A2	1	14	-	-	-	-	-	EI 60	E 60
17463A s8-d54	CP 673 2S	1 x 60	-	-	-	CFS-D 25	60	3	-	A3	1	13	-	-	-	-	-	EI 60	E 60
17463A s8-d55	CP 673 2S	1 x 60	-	-	-	CFS-D 25	60	3	-	B	1	21	-	-	-	-	-	EI 30	E 60
17463A s8-d56	CP 673 2S	1 x 60	-	-	-	CFS-D 25	60	3	-	F	1	17	-	-	-	-	-	EI 60	E 60
-	**CP 673 2S**	**1 x 60**	**-**	**-**	**-**	**CFS-D 25**	**60**	**3**	**A single cable: - cable diameter ≤ 14 mm and; - total conductor section ≤ 7.5 mm² (eg. 5 x 1.5 mm²) and; - cable density: ≤ 4.87% (overall crosse section of the cable in relation to the cross sections of the conductors). The cable is installed perpendicular to the supporting construction. Cable carriers cannot penetrate the supporting construction.**					**-**	**-**	**-**	**-**	**EI 60**	**E 60**
-	**CP 673 2S**	**1 x 60**	**-**	**-**	**-**	**CFS-D 25**	**60**	**3**	**A single cable: - cable diameter ≤ 19 mm and; - total conductor section: ≤ 95 mm² and; - cable density: ≤ 33.5% (overall crosse section of the cable in relation to the cross sections of the conductors). The cable is installed perpendicular to the supporting construction. Cable carriers cannot penetrate the supporting construction.**									**EI 30**	**E 60**

3.2.6 Hilti coated board CP 673 2S in combination with Hilti Firestop Bandage CFS-B + Acrylic sealant CFS-S ACR

Flexible and rigid wall constructions (thickness ≥ 100 mm)

Single layer PE pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20822A dw1.6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PE80	Geberit EN 1519-1	PE80	≤ 32	3.0	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20822A dw1.7	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PE80	Geberit EN 1519-1	PE80	≤ 90	3.5	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20822A dw1.8	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PE80	Geberit EN 1519-1	PE80	≤ 125	4.8	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**PE80**	**Geberit** EN 1519-1	**PE80**	**≤ 32 - 125**	**3.0, 3.5, 4.8[(1)] till 4.8**	**U/C**	**-**	**-**	**-**	**-**	**EI 60 U/C**	**E 60 U/C**

Covered pipe materials: Single layer PE pipes in accordance with EN 1519-1, EN 12666-1, EN 12201-2 and EN ISO 15494, PE-X pipes in accordance with EN ISO 15875-2, ABS pipes in accordance with EN 1455-1 and EN ISO 15493 as well as SAN+PVC pipes in accordance with ISO 19220.

(1) Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Single layer PVC pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20822A dw1.1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PVC-U	Lareter EN1452-2	SDR21	≤ 32	1.6	U/C	-	-	-	-	**EI 30 U/C**	**E 60 U/C**

Covered pipe materials: Single layer PVC-U pipes in accordance with EN 1329-1, EN 1453-1, EN ISO 15493 and EN ISO 1452-2 and PVC-C pipes in accordance with EN 1566-1, EN ISO 15493 and EN ISO 15877-2.

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20834A dw1.4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PVC-U	Georg Fischer DIN 8061/62	Dekadur SDR21	≤ 40	1.9	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20834A dw2.1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PVC-U	Georg Fischer DIN 8061/62	Dekadur SDR21	≤ 40	1.9	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20822A dw1.3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PVC-U	Georg Fischer DIN 8061/62	Dekadur	≤ 110	2.2	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20822A dw1.4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PVC-U	Georg Fischer DIN 8061/62	Dekadur	≤ 125	2.5	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20834A dw2.5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PVC-U	Georg Fischer DIN 8061/62	Dekadur SDR21	≤ 125	6.0	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**PVC-U**	**Georg Fischer DIN 8061/62**	**Dekadur SDR21**	**≤ 40 - 125**	**1.9, 2.2, 2.5 6.0[(1)] till 6.0**	**U/C**	**-**	**-**	**-**	**-**	**EI 60 U/C**	**E 60 U/C**

(1) Interpolation between minimum pipe wall thickness in relation to pipe diameter.

warringtonfire
Proud to be part of element

Single layer PP pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20822A dw1.10	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-H	Ostendorf-OSMA EN 1451-1	HTEM	≤ 32	1.8	U/C					**EI 60 U/C**	**E 60 U/C**
20822A dw2.11	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-H100	Georg Fischer EN 1451-1	Progef	≤ 63	1.8	U/C					**EI 60 U/C**	**E 60 U/C**
20822A dw2.12	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Ostendorf-OSMA EN 1451-1	HT-System plus	≤ 75	1.9	U/C					**EI 60 U/C**	**E 60 U/C**
20822A dw2.13	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Ostendorf-OSMA EN 1451-1	HT-System plus	≤ 125	3.1	U/C					**EI 60 U/C**	**E 60 U/C**
20822A dw2.14	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-H100	Georg Fischer EN 1451-1	Progef	≤ 125	7.1	U/C					**EI 60 U/C**	**E 60 U/C**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**PP**	**Ostendorf-OSMA** EN 1451-1	**HT-System plus**	**≤ 32 - 125**	**1.8, 1.8, 1.9, 3.1(1) till 7.1**	**U/C**					EI 60 U/C	E 60 U/C

Covered pipe materials: Single layer PP pipes in accordance with EN 1451-1, EN ISO 15874 and EN ISO 15494.

(1) Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Single layer PP pipes with PE insulation

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20834A dw1.16	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-RCT	FV Plast EN ISO 15874	Hot	≤ 25	3.5	U/C	Tubex Standard 25x6	6.0	≥ 220	LS	**EI 60 U/C**	**E 60 U/C**
20822A dw1.17	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-RCT	FV Plast EN ISO 15874	Hot	≤ 25	3.5	U/C	Tubex Standard 25x10	10.0	≥ 220	LS	**EI 60 U/C**	**E 60 U/C**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**PP-RCT**	**FV Plast EN ISO 15874**	**Hot**	**≤ 25**	**3.5**	**U/C**	**Tubex Standard**	**6.0 - 10.0**	**≥ 220**	**LS**	EI 60 U/C	E 60 U/C
20822A dw1.19	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-RCT	FV Plast EN ISO 15874	Uni	≤ 50	4.6	U/C	Tubex Standard 52x10	10.0	≥ 220	LS	**EI 60 U/C**	**E 60 U/C**
20822A dw1.18	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-RCT	FV Plast EN ISO 15874	Uni	≤ 50	4.6	U/C	Tubex Standard 52x15	15.0	≥ 220	LS	**EI 60 U/C**	**E 60 U/C**
20822A dw1.9	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-RCT	FV Plast EN ISO 15874	Hot	≤ 50	6.9	U/C	Tubex Standard 52x10	10.0	≥ 220	LS	**EI 60 U/C**	**E 60 U/C**
20822A dw1.2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-RCT	FV Plast EN ISO 15874	Hot	≤ 50	6.9	U/C	Tubex Standard 52x15	15.0	≥ 220	LS	**EI 60 U/C**	**E 60 U/C**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**PP-RCT**	**FV Plast EN ISO 15874**	**Uni Hot**	**≤ 25 - 50**	**3.5, 4.6(1) till 6.9**	**U/C**	**Tubex Standard**	**10.0 – 15.0**	**≥ 220**	**LS**	EI 60 U/C	E 60 U/C

(1) Interpolation between minimum pipe wall thickness in relation to pipe diameter.

warringtonfire
Proud to be part of element

Cu pipes with AF insulation

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20822A dw2.20	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	-	-	≤ 10	1.0 till ∞	C/U	Armaflex AF1	7.5	full	CS	EI 30 C/U	E 60 C/U
20822A dw2.21	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	-	-	≤ 10	1.0 till ∞	C/U	Armaflex AF4	15.5	full	CS	EI 30 C/U	E 60 C/U
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**Cu**	**-**	**-**	**≤ 10**	**1.0 till ∞**	**C/U**	**Armaflex AF1 - AF4**	**7.5 - 15.5**	**full**	**CS**	EI 30 C/U	E 60 C/U
20822A dw2.22	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	-	-	≤ 18	1.0 till ∞	C/U	Armaflex AF1	8.5	full	CS	EI 30 C/U	E 60 C/U
20822A dw2.23	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	-	-	≤ 18	1.0 till ∞	C/U	Armaflex AF6	33.5	full	CS	EI 60 C/U	E 60 C/U
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**Cu**	**-**	**-**	**≤ 18**	**1.0 till ∞**	**C/U**	**Armaflex AF1 – AF6**	**8.5 - 33.5**	**full**	**CS**	EI 30 C/U	E 60 C/U
20822A dw1.24	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	-	-	≤ 28	1.0 till ∞	C/U	Armaflex AF2	12.5	full	CS	EI 30 C/U	E 60 C/U
20822A dw1.25	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	-	-	≤ 28	1.0 till ∞	C/U	Armaflex AF6	35.0	full	CS	EI 60 C/U	E 60 C/U
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**Cu**	**-**	**-**	**≤ 28**	**1.0 till ∞**	**C/U**	**Armaflex AF2 – AF6**	**12.5 -35.5**	**full**	**CS**	EI 30 C/U	E 60 C/U
20822A dw2.26	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	-	-	≤ 54	2.0 till ∞	C/U	Armaflex AF3	17.0	full	CS	EI 30 C/U	E 60 C/U
20822A dw2.27	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	-	-	≤ 54	2.0 till ∞	C/U	Armaflex AF6	38.0	full	CS	EI 30 C/U	E 60 C/U
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**Cu**	**-**	**-**	**≤ 54**	**2.0** till ∞	**C/U**	**Armaflex AF3 - AF6**	**17.0 -38.0**	**full**	**CS**	EI 30 C/U	E 60 C/U

Cu pipes with AF insulation and additional glass wool insulation

Pos.	Sealing system							Pipe						Pipe insulation				Additional pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Ø [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal																	
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers																
20834A dw1.20	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 10	1 till ∞	C/U	Armaflex AF1	7.5	full	CS	ML-3	30.0	≥ 30	LI	EI 60 C/U	E 60 C/U
20834A dw1.21	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 10	1 till ∞	C/U	Armaflex AF4	15.5	full	CS	ML-3	30.0	≥ 30	LI	EI 60 C/U	E 60 C/U
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**1**	**Cu**	**-**	**-**	**≤ 10**	**1 till ∞**	**C/U**	**Armaflex AF1-AF4**	**7.5 – 15.5**	**full**	**CS**	**ML-3**	**30.0**	**≥ 30**	**LI**	EI 60 C/U	E 60 C/U
20834A dw1.22	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 18	1 till ∞	C/U	Armaflex AF1	8.0	full	CS	ML-3	30.0	≥ 30	LI	EI 60 C/U	E 60 C/U
20834A dw1.24	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 28	1 till ∞	C/U	Armaflex AF2	12.5	full	CS	ML-3	30.0	≥ 30	LI	EI 60 C/U	E 60 C/U
20834A dw1.25	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 28	1 till ∞	C/U	Armaflex AF6	35.0	full	CS	ML-3	30.0	≥ 30	LI	EI 60 C/U	E 60 C/U
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**1**	**Cu**	**-**	**-**	**≤ 28**	**1 till ∞**	**C/U**	**Armaflex AF2-AF6**	**12.5 - 35.0**	**full**	**CS**	**ML-3**	**30.0**	**≥ 30**	**LI**	EI 60 C/U	E 60 C/U
20834A dw1.26	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 54	1.5 till ∞	C/U	Armaflex AF3	17.0	full	CS	ML-3	30.0	≥ 30	LI	EI 60 C/U	E 60 C/U
20834A dw2.27	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 54	1.5 till ∞	C/U	Armaflex AF6	38.0	full	CS	ML-3	30.0	≥ 30	LI	EI 60 C/U	E 60 C/U
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**1**	**Cu**	**-**	**-**	**≤ 54**	**1.5 till ∞**	**C/U**	**Armaflex AF3-AF6**	**17.0 - 38.0**	**full**	**CS**	**ML-3**	**30.0**	**≥ 30**	**LI**	EI 60 C/U	E 60 C/U

Fe pipes with AF insulation and additional glass wool insulation

Pos.	Sealing system							Pipe						Pipe insulation				Additional pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.	Insulation type	Thick-ness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal																	
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers																
20834A dw1.2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Fe	-	-	≤ 114.3	2 till ∞	C/U	Armaflex AF-3	18.5	full	CS	ML-3	30.0	≥ 30	LI	EI 30 C/U	E 60 C/U
20834A dw2.40	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Fe	-	-	≤ 114.3	2 till ∞	C/U	Armaflex AF-6	43.0	full	CS	ML-3	30.0	≥ 30	LI	EI 60 C/U	E 60 C/U
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**1**	**Fe**	**-**	**-**	**≤ 114.3**	**2** till ∞	**C/U**	**Armaflex AF3 - AF6**	**18.5 - 43.0**	**full**	**CS**	**ML-3**	**30.0**	**≥ 30**	**LI**	EI 30 C/U	E 60 C/U

warringtonfire
Proud to be part of element

Conduits with or without cables

Pos.	Sealing system							Conduit									Cable			Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wave height [mm]	Infill	Rigid or flexible	Length on both sides [mm]	End config	Type	Number	Cable diameter [mm]		
	Seal		Annular sealant			Seal															
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers														
20822A dw2.31-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	40	4.95	cable	flexible-pliable	350	U/U	B	1	21	EI 45 U/U	E 60 U/U
20822A dw2.31-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	40	4.95	cable	flexible-pliable	350	U/U	B	1	21		
20822A dw2.31-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	40	4.95	cable	flexible-pliable	350	U/U	B	1	21		
20822A dw2.31-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20822A dw2.31-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20822A dw2.31-6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20822A dw2.31-7	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20822A dw2.31-8	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20822A dw2.31-9	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20822A dw2.31-10	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20822A dw2.32-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	40	4.95	empty	flexible-pliable	350	U/U	-	-	-		
20822A dw2.32-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	40	4.95	empty	flexible-pliable	350	U/U	-	-	-		
20822A dw2.32-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	40	4.95	empty	flexible-pliable	350	U/U	-	-	-		
20822A dw2.32-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	350	U/U	-	-	-		
20822A dw2.32-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	350	U/U	-	-	-		
20822A dw2.32-6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	350	U/U	-	-	-		
20822A dw2.32-7	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	350	U/U	-	-	-		
20822A dw2.32-8	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	350	U/U	-	-	-		
20822A dw2.32-9	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	350	U/U	-	-	-		
20822A dw2.32-10	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	350	U/U	-	-	-		
-	**CP 673 2S**	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**All bundles including flexible or pliable (or mixture) plastic conduits up to an outer conduit diameter of 40 mm including cables or empty. Outer diameter of the bundle: ≤ 100 mm. Projecting length of the conduits on both sides of the coated board seal: ≥ 350 mm. The ends of the conduits can be open or closed. All sizes of cables currently and commonly used in building practice in Europe including optical fibre cables fitting into the conduit may be used in practice, subject to electro-technical rules. Coaxial cables may be used up to a diameter of 28 mm. Non-sheathed cables (wires) are not covered. Cable carriers cannot penetrating the boated board seal.**										**EI 45 U/U**	**E 60 U/U**

Pos.	Sealing system							Conduit									Cable			Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wave height [mm]	Infill	Rigid or flexible	Length on both sides [mm]	End config	Type	Number	Cable diameter [mm]		
	Seal		Annular sealant			Seal															
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers														
20834A dw1.31-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	40	4.95	cable	flexible-pliable	350	U/U	B	1	21	EI 0 U/U	E 60 U/U
20834A dw1.31-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	40	4.95	cable	flexible-pliable	350	U/U	B	1	21		
20834A dw1.31-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	40	4.95	cable	flexible-pliable	350	U/U	B	1	21		
20834A dw1.31-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20834A dw1.31-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20834A dw1.31-6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20834A dw1.31-7	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20834A dw1.31-8	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20834A dw1.31-9	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20834A dw1.31-10	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20834A dw1.32-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	40	4.95	empty	flexible-pliable	350	U/U	-	-	-		
20834A dw1.32-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	40	4.95	empty	flexible-pliable	350	U/U	-	-	-		
20834A dw1.32-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	40	4.95	empty	flexible-pliable	350	U/U	-	-	-		
20834A dw1.32-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	350	U/U	-	-	-		
20834A dw1.32-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	350	U/U	-	-	-		
20834A dw1.32-6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	350	U/U	-	-	-		
20834A dw1.32-7	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	350	U/U	-	-	-		
20834A dw1.32-8	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	350	U/U	-	-	-		
20834A dw1.32-9	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	350	U/U	-	-	-		
20834A dw1.32-10	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	350	U/U	-	-	-		

warringtonfire
Proud to be part of element

Pos.	Sealing system							Conduit									Cable			Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wave height [mm]	Infill	Rigid or flexible	Length on both sides [mm]	End config	Type	Number	Cable diameter [mm]		
	Seal		Annular sealant			Seal															
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers														
20834A dw2.31-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	40	4.95	cable	flexible-pliable	350	U/U	B	1	21		
20834A dw2.31-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	40	4.95	cable	flexible-pliable	350	U/U	B	1	21		
20834A dw2.31-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	40	4.95	cable	flexible-pliable	350	U/U	B	1	21		
20834A dw2.31-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20834A dw2.31-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20834A dw2.31-6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20834A dw2.31-7	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20834A dw2.31-8	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20834A dw2.31-9	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
20834A dw2.31-10	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	350	U/U	A1	1	14		
-	**CP 673 2S**	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**1**	**All bundles including flexible or pliable (or mixture) plastic conduits up to an outer conduit diameter of 40 mm including cables or empty. Outer diameter of the bundle: ≤ 100 mm. Projecting length of the conduits on both sides of the coated board seal: ≥ 350 mm. The ends of the conduits can be open or closed. All sizes of cables currently and commonly used in building practice in Europe including optical fibre cables fitting into the conduit may be used in practice, subject to electro-technical rules. Coaxial cables may be used up to a diameter of 28 mm. Non-sheathed cables (wires) are not covered. Cable carriers cannot penetrating the boated board seal.**											**EI 0 U/U**	**E 60 U/U**

Klimasplit systems

Pos.	Sealing system							Pipe						Pipe insulation				Cable		Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.	Type	Cable diameter [mm]		
	Seal		Annular sealant			Seal															
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers														
20834A dw1.29-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	HME	Sanco	6	1	C/U	Armaflex AF-1	9	full	CS	-	-		
20834A dw1.29-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	HME	Sanco	10	1	C/U	Armaflex AF-1	9	full	CS	-	-		
20834A dw1.29-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PVC-U	Georg Fischer	Dekadur	20	1.5	U/U	-	-	-	-	-	-	**EI 60**	**E 60**
20834A dw1.29-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	-	-	-	-	-	-	-	-	-	-	1xA1	14		
20834A dw1.29-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	-	-	-	-	-	-	-	-	-	-	1xA1	14		

Pos.	Sealing system							Pipe						Pipe insulation				Cable		Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.	Type	Cable diameter [mm]		
	Seal		Annular sealant			Seal															
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers														
20834A dw1.30-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	HME	Sanco	12	1	C/U	Armaflex AF-1	8	full	CS	-	-		
20834A dw1.30-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	HME	Tectube	18	1	C/U	Armaflex AF-1	8	full	CS	-	-		
20834A dw1.30-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PVC-U	Georg Fischer	Dekadur	20	1.5	U/U	-	-	-	-	-	-	**EI 30**	**E 60**
20834A dw1.30-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	-	-	-	-	-	-	-	-	-	-	1xA1	14		
20834A dw1.30-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	-	-	-	-	-	-	-	-	-	-	1xA1	14		

warringtonfire
Proud to be part of element

Rigid floor constructions (thickness ≥ 150 mm)

Single layer PE pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20823A rf4.6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PE80	Geberit EN 1519-1	PE80	≤ 32	3.0	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20823A rf4.7	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PE80	Geberit EN 1519-1	PE80	≤ 90	3.5	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20823A rf4.8	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PE80	Geberit EN 1519-1	PE80	≤ 125	4.8	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**PE80**	**Geberit EN 1519-1**	**PE80**	**≤ 32 - 125**	**3.0, 3.5, 4.8(1) till 4.8**	**U/C**	**-**	**-**	**-**	**-**	EI 60 U/C	E 60 U/C

Covered pipe materials: Single layer PE pipes in accordance with EN 1519-1, EN 12666-1, EN 12201-2 and EN ISO 15494, PE-X pipes in accordance with EN ISO 15875-2, ABS pipes in accordance with EN 1455-1 and EN ISO 15493 as well as SAN+PVC pipes in accordance with ISO 19220.

(1) Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Single layer PVC pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thick-ness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20823A rf1.1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PVC-U	Lareter EN1452-2	SDR21	≤ 32	1.6	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**

Covered pipe materials: Single layer PVC-U pipes in accordance with EN 1329-1, EN 1453-1, EN ISO 15493 and EN ISO 1452-2 and PVC-C pipes in accordance with EN 1566-1, EN ISO 15493 and EN ISO 15877-2.

(1) Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thick-ness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20823A rf1.3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PVC-U	Georg Fischer DIN 8061/62	Dekadur	≤ 110	2.2	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20823A rf1.4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PVC-U	Georg Fischer DIN 8061/62	Dekadur	≤ 125	3.7	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20823A rf1.5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PVC-U	Georg Fischer DIN 8061/62	Dekadur SDR21	≤ 125	6.0	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20835A rf3.5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PVC-U	Georg Fischer DIN 8061/62	Dekadur SDR21	≤ 125	6.0	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
20835A rf4.5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PVC-U	Georg Fischer DIN 8061/62	Dekadur SDR21	≤ 125	6.0	U/C	-	-	-	-	**EI 60 U/C**	**E 60 U/C**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**PVC-U**	**Georg Fischer DIN 8061/62**	**Dekadur SDR21**	**≤ 110 - 125**	**2.2, 3.7, 6.0(1) till 6.0**	**U/C**	**-**	**-**	**-**	**-**	EI 60 U/C	E 60 U/C

(1) Interpolation between minimum pipe wall thickness in relation to pipe diameter.

warringtonfire
Proud to be part of element

Single layer PP pipes

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thick-ness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20823A rf5.10	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Ostendorf-OSMA EN 1451-2	HT-System plus	≤ 32	1.8	U/C	-	-	-	-	EI 60 U/C	E 60 U/C
20823A rf5.12	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Ostendorf-OSMA EN 1451-2	HT-System plus	≤ 75	1.9	U/C	-	-	-	-	EI 60 U/C	E 60 U/C
20823A rf6.25	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Ostendorf-OSMA EN 1451-2	HT-System plus	≤ 110	2.7	U/U	-	-	-	-	EI 60 U/U	E 60 U/U
20823A rf5.13	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Ostendorf-OSMA EN 1451-2	HT-System plus	≤ 125	3.1	U/C	-	-	-	-	EI 60 U/C	E 60 U/C
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**PP**	**Ostendorf-OSMA EN 1451-2**	**HT-System plus**	**≤ 32 - 125**	**1.8, 1.9, 2.7, 3.1[(1)] till 3.1**	**U/C**	**-**	**-**	**-**	**-**	EI 60 U/C	E 60 U/C

Covered pipe materials: Single layer PP pipes in accordance with EN 1451-1, EN ISO 15874 and EN ISO 15494.

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

Single layer PP pipes with PE insulation

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20823A rf7.27	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-RCT	FV Plast EN ISO 15874	Hot	≤ 20	2.3	U/U	Tubex Standard 22x6	6.0	≥ 220	LS	EI 60 U/U	E 60 U/U
20823A rf7.28	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-RCT	FV Plast EN ISO 15874	Hot	≤ 20	2.3	U/U	Tubex Standard 22x10	10.0	≥ 220	LS	EI 60 U/U	E 60 U/U
20835A rf4.22	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-RCT	FV Plast EN ISO 15874	Hot	≤ 25	3.5	U/U	Tubex Standard 25x6	6.0	≥ 220	LS	EI 60 U/U	E 60 U/U
20823A rf5.11	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-RCT	FV Plast EN ISO 15874	Hot	≤ 25	3.5	U/U	Tubex Standard 25x10	10.0	≥ 220	LS	EI 60 U/U	E 60 U/U
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**PP-RCT**	**FV Plast EN ISO 15874**	**Hot**	**≤ 20 - 25**	**2.3, 3.5[(1)] till 3.5**	**U/U**	**Tubex Standard**	**6.0 - 10.0**	**≥ 220**	**LS**	EI 60 U/U	E 60 U/U
20823A rf4.9	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-RCT	FV Plast EN ISO 15874	Hot	≤ 50	6.9	U/U	Tubex Standard 52x10	10.0	≥ 220	LS	EI 60 U/U	E 60 U/U
20823A rf5.14	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-RCT	FV Plast EN ISO 15874	Hot	≤ 50	6.9	U/U	Tubex Standard 52x15	15.0	≥ 220	LS	EI 60 U/U	E 60 U/U
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**PP-RCT**	**FV Plast EN ISO 15874**	**Hot**	**≤ 50**	**6.9**	**U/U**	**Tubex Standard**	**10.0 - 15.0**	**≥ 220**	**LS**	EI 60 U/U	E 60 U/U
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**PP-RCT**	**FV Plast EN ISO 15874**	**Hot**	**≤ 20 - 50**	**2.3, 3.5, 6.9[(1)] till 6.9**	**U/U**	**Tubex Standard**	**10.0**	**≥ 220**	**LS**	EI 60 U/U	E 60 U/U
20823A rf7.30	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-RCT	FV Plast EN ISO 15874	Uni	≤ 50	4.6	U/U	Tubex Standard 52x10	10.0	≥ 220	LS	EI 60 U/U	E 60 U/U
20823A rf7.29	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP-RCT	FV Plast EN ISO 15874	Uni	≤ 50	4.6	U/U	Tubex Standard 52x15	15.0	≥ 220	LS	EI 60 U/U	E 60 U/U
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**PP-RCT**	**FV Plast EN ISO 15874**	**Uni**	**≤ 50**	**4.6**	**U/U**	**Tubex Standard**	**10.0 - 15.0**	**≥ 220**	**LS**	EI 60 U/U	E 60 U/U

[(1)] Interpolation between minimum pipe wall thickness in relation to pipe diameter.

warringtonfire
Proud to be part of element

Cu pipes with AF insulation

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thick-ness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20823A rf9.31	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	-	-	≤ 10	1.0 till ∞	C/U	Armaflex AF1	7.5	full	CS	**EI 60 C/U**	**E 60 C/U**
20823A rf9.32	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	-	-	≤ 10	1.0 till ∞	C/U	Armaflex AF4	15.5	full	CS	**EI 60 C/U**	**E 60 C/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**Cu**	**-**	**-**	**≤ 10**	**1.0** till ∞	**C/U**	**Armaflex AF1-AF4**	**7.5 - 15.5**	**full**	**CS**	**EI 60 C/U**	**E 60 C/U**
20823A rf9.33	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	-	-	≤ 18	1.0 till ∞	C/U	Armaflex AF1	8.5	full	CS	**EI 30 C/U**	**E 60 C/U**
20823A rf9.34	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	-	-	≤ 18	1.0 till ∞	C/U	Armaflex AF6	33.5	full	CS	**EI 60 C/U**	**E 60 C/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**Cu**	**-**	**-**	**≤ 18**	**1.0 till ∞**	**C/U**	**Armaflex AF1-AF6**	**8.5 - 33.5**	**full**	**CS**	**EI 30 C/U**	**E 60 C/U**
20823A rf9.35	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	-	-	≤ 28	1.0 till ∞	C/U	Armaflex AF2	12.5	full	CS	**EI 30 C/U**	**E 60 C/U**
20823A rf9.36	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	-	-	≤ 28	1.0 till ∞	C/U	Armaflex AF6	35.0	full	CS	**EI 60 C/U**	**E 60 C/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**Cu**	**-**	**-**	**≤ 28**	**1.0 till ∞**	**C/U**	**Armaflex AF2-AF6**	**12.5 - 35.0**	**full**	**CS**	**EI 30 C/U**	**E 60 C/U**
20823A rf9.37	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	-	-	≤ 54	2.0 till ∞	C/U	Armaflex AF3	17.0	full	CS	**EI 30 C/U**	**E 60 C/U**
20823A rf9.38	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	-	-	≤ 54	2.0 till ∞	C/U	Armaflex AF6	38.0	full	CS	**EI 30 C/U**	**E 60 C/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**Cu**	**-**	**-**	**≤ 54**	**2.0** till ∞	**C/U**	**Armaflex AF3-AF6**	**17.0 - 38.0**	**full**	**CS**	**EI 30 C/U**	**E 60 C/U**

Pos.	Sealing system							Pipe						Pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thick-ness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal													
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers												
20835A rf4.38	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 54	1.5 till ∞	C/U	Armaflex AF-6	38.0	full	CS	**EI 60 C/U**	**E 60 C/U**

Cu pipes with AF insulation and additional glass wool insulation

Pos.	Sealing system							Pipe						Pipe insulation				Additional pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.	Insulation type	Thick-ness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal																	
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers																
20835A rf8.31	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 10	1.0 till ∞	C/U	Armaflex AF1	7.5	full	CS	ML-3	30.0	≥ 30	LI	**EI 30 C/U**	**E 60 C/U**
20835A rf8.32	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 10	1.0 till ∞	C/U	Armaflex AF4	15.5	full	CS	ML-3	30.0	≥ 30	LI	**EI 60 C/U**	**E 60 C/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**1**	**Cu**	**-**	**-**	**≤ 10**	**1.0** till ∞	**C/U**	**Armaflex AF1 - AF4**	**7.5 - 15.5**	**full**	**CS**	**ML-3**	**30.0**	≥ 30	**LI**	**EI 30 C/U**	**E 60 C/U**
20835A rf8.33	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 18	1.0 till ∞	C/U	Armaflex AF1	8.5	full	CS	ML-3	30.0	≥ 30	LI	**EI 30 C/U**	**E 60 C/U**
20835A rf8.34	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 18	1.0 till ∞	C/U	Armaflex AF6	33.5	full	CS	ML-3	30.0	≥ 30	LI	**EI 60 C/U**	**E 60 C/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**1**	**Cu**	**-**	**-**	**≤ 18**	**1.0 till ∞**	**C/U**	**Armaflex AF1 - AF6**	**8.5 - 33.5**	**full**	**CS**	**ML-3**	**30.0**	**≥ 30**	**LI**	**EI 30 C/U**	**E 60 C/U**
20835A rf1.35	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 28	1.0 till ∞	C/U	Armaflex AF2	12.5	full	CS	ML-3	30.0	≥ 30	LI	**EI 60 C/U**	**E 60 C/U**
20835A rf1.36	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 28	1.0 till ∞	C/U	Armaflex AF6	35.0	full	CS	ML-3	30.0	≥ 30	LI	**EI 60 C/U**	**E 60 C/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**1**	**Cu**	**-**	**-**	**≤ 28**	**1.0** till ∞	**C/U**	**Armaflex AF2 - AF6**	**12.5 - 35.0**	**full**	**CS**	**ML-3**	**30.0**	≥ 30	**LI**	**EI 60 C/U**	**E 60 C/U**
20835A rf1.37	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 54	1.5 till ∞	C/U	Armaflex AF3	17.0	full	CS	ML-3	30.0	≥ 30	LI	**EI 60 C/U**	**E 60 C/U**
20835A rf1.38	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 54	1.5 till ∞	C/U	Armaflex AF6	38.0	full	CS	ML-3	30.0	≥ 30	LI	**EI 60 C/U**	**E 60 C/U**
20835A rf3.38	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	-	-	≤ 54	1.5 till ∞	C/U	Armaflex AF6	38.0	full	CS	ML-3	30.0	≥ 30	LI	**EI 60 C/U**	**E 60 C/U**
	CP 673 2S	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**1**	**Cu**	**-**	**-**	**≤ 54**	**1.5** till ∞	**C/U**	**Armaflex AF3 - AF6**	**17.0 - 38.0**	**full**	**CS**	**ML-3**	**30.0**	≥ 30	**LI**	**EI 60 C/U**	**E 60 C/U**

warringtonfire
Proud to be part of element

Fe pipes with AF insulation and additional glass wool insulation

Pos.	Sealing system							Pipe						Pipe insulation				Additional pipe insulation				Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.	Insulation type	Thick-ness [mm]	Length on both sides [mm]	Config.		
	Seal		Annular sealant			Seal																	
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers																
20835A rf3.40	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Fe	-	-	≤ 114.3	2.0.	C/U	Armaflex AF6	43.0	full	CS	ML-3	30.0	≥ 30	LI	**EI 30 C/U**	**E 60 C/U**
20835A rf4.40	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Fe	-	-	≤ 114.3	2.0	C/U	Armaflex AF6	43.0	full	CS	ML-3	30.0	≥ 30	LI	**EI 30 C/U**	**E 60 C/U**

Conduits with or without cables

Pos.	Sealing system							Conduit								Cable			Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wave height [mm]	Infill	Rigid or flexible	End config.	Type	Number	Cable diameter [mm]		
	Seal		Annular sealant			Seal														
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers													
20823A rf10.41-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	40	4.95	empty	flexible-pliable	U/U	-	-	-	**EI 60 U/U**	**E 60 U/U**
20823A rf10.41-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	40	4.95	empty	flexible-pliable	U/U	-	-	-		
20823A rf10.41-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	40	4.95	empty	flexible-pliable	U/U	-	-	-		
20823A rf10.41-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	U/U	-	-	-		
20823A rf10.41-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	U/U	-	-	-		
20823A rf10.41-6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	U/U	-	-	-		
20823A rf10.41-7	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	U/U	-	-	-		
20823A rf10.41-8	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	U/U	-	-	-		
20823A rf10.41-9	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	U/U	-	-	-		
20823A rf10.41-10	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	U/U	-	-	-		
20823A rf10.40-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	40	4.95	cable	flexible-pliable	U/U	B	1	21		
20823A rf10.40-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	40	4.95	cable	flexible-pliable	U/U	B	1	21		
20823A rf10.40-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	40	4.95	cable	flexible-pliable	U/U	B	1	21		
20823A rf10.40-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	U/U	A1	1	14		
20823A rf10.40-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	U/U	A1	1	14		
20823A rf10.40-6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	U/U	A1	1	14		
20823A rf10.40-7	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	U/U	A1	1	14		
20823A rf10.40-8	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	U/U	A1	1	14		
20823A rf10.40-9	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	U/U	A1	1	14		
20823A rf10.40-10	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	U/U	A1	1	14		
-	**CP 673 2S**	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**2**	**All bundles including flexible or pliable (or mixture) plastic conduits up to an outer conduit diameter of 40 mm including cables or empty. Outer diameter of the bundle: ≤ 100 mm. Projecting length of the conduits on both sides of the coated board seal: ≥ 350 mm. The ends of the conduits can be open or closed. All sizes of cables currently and commonly used in building practice in Europe including optical fibre cables fitting into the conduit may be used in practice, subject to electro-technical rules. Coaxial cables may be used up to a diameter of 28 mm. Non-sheathed cables (wires) are not covered. Cable carriers cannot penetrating the boated board seal.**								**EI 60 U/U**	**E 60 U/U**

warringtonfire
Proud to be part of element

Pos.	Sealing system							Conduit								Cable			Classifications	
	Aperture part					Service part		Material	Trade or pipe standard	Type	Diameter [mm]	Wave height [mm]	Infill	Rigid or flexible	End config.	Type	Number	Cable diameter [mm]		
	Seal		Annular sealant			Seal														
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers													
20835A rf2.40-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	40	4.95	cable	flexible-pliable	U/U	B	1	21	EI 60 U/U	E 60 U/U
20835A rf2.40-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	40	4.95	cable	flexible-pliable	U/U	B	1	21		
20835A rf2.40-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	40	4.95	cable	flexible-pliable	U/U	B	1	21		
20835A rf2.40-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	U/U	A3	1	14		
20835A rf2.40-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	U/U	A3	1	14		
20835A rf2.40-6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	U/U	A3	1	14		
20835A rf2.40-7	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	U/U	A3	1	14		
20835A rf2.40-8	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	U/U	A3	1	14		
20835A rf2.40-9	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	U/U	A3	1	14		
20835A rf2.40-10	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	cable	flexible-pliable	U/U	A3	1	14		
20835A rf2.41-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	40	4.95	empty	flexible-pliable	U/U	-	-	-		
20835A rf2.41-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	40	4.95	empty	flexible-pliable	U/U	-	-	-		
20835A rf2.41-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	40	4.95	empty	flexible-pliable	U/U	-	-	-		
20835A rf2.41-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	U/U	-	-	-		
20835A rf2.41-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	U/U	-	-	-		
20835A rf2.41-6	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	U/U	-	-	-		
20835A rf2.41-7	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	U/U	-	-	-		
20835A rf2.41-8	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	U/U	-	-	-		
20835A rf2.41-9	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	U/U	-	-	-		
20835A rf2.41-10	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PP	Pipelife	Preflex	20	2.95	empty	flexible-pliable	U/U	-	-	-		
-	**CP 673 2S**	**1 x 60**	**CFS-S ACR**	**1 – 5**	**60**	**CFS-B**	**1**	**All bundles including flexible or pliable (or mixture) plastic conduits up to an outer conduit diameter of 40 mm including cables or empty. Outer diameter of the bundle: ≤ 100 mm. Projecting length of the conduits on both sides of the coated board seal: ≥ 350 mm. The ends of the conduits can be open or closed. All sizes of cables currently and commonly used in building practice in Europe including optical fibre cables fitting into the conduit may be used in practice, subject to electro-technical rules. Coaxial cables may be used up to a diameter of 28 mm. Non-sheathed cables (wires) are not covered. Cable carriers cannot penetrating the boated board seal.**									**EI 60 U/U**	**E 60 U/U**

warringtonfire
Proud to be part of element

Klimasplit systems

Pos.	Sealing system							Pipe						Pipe insulation				Cable		Classifications	
	Aperture part					Service part															
	Seal		Annular sealant			Seal															
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers	Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.	Type	Cable diameter [mm]		
20835A rf2.39-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	HME	Tectube	12	1	C/U	Armaflex AF-1	7.5	full	CS	-	-	**EI 60**	**E 60**
20835A rf2.39-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	HME	Tectube	18	1	C/U	Armaflex AF-1	8.0	full	CS	-	-		
20835A rf2.39-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PVC-U	Georg Fischer	Dekadur	20	1.5	U/U	-	-	-	-	-	-		
20835A rf2.39-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	-	-	-	-	-	-	-	-	-	-	A3	14		
20835A rf2.39-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	-	-	-	-	-	-	-	-	-	-	A3	14		

Pos.	Sealing system							Pipe						Pipe insulation				Cable		Classifications	
	Aperture part					Service part															
	Seal		Annular sealant			Seal															
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers	Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.	Type	Cable diameter [mm]		
20835A rf2.38-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	EN 10217-1	-	6	1	C/U	Armaflex AF-1	7.0	full	CS	-	-	**EI 60**	**E 60**
20835A rf2.38-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	Cu	HME	Tectube	10	1	C/U	Armaflex AF-1	7.0	full	CS	-	-		
20835A rf2.38-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	PVC-U	Georg Fischer	Dekadur	20	1.5	U/U	-	-	-	-	-	-		
20835A rf2.38-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	-	-	-	-	-	-	-	-	-	-	A3	14		
20835A rf2.38-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	1	-	-	-	-	-	-	-	-	-	-	A3	14		

Pos.	Sealing system							Pipe						Pipe insulation				Cable		Classifications	
	Aperture part					Service part															
	Seal		Annular sealant			Seal															
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers	Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.	Type	Cable diameter [mm]		
20823A rf10.38-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	EN 10217-1	-	6	1	C/U	Armaflex AF-1	7.0	full	CS	-	-	**EI 30**	**E 60**
20823A rf10.38-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	EN 10217-1	-	10	1	C/U	Armaflex AF-1	7.0	full	CS	-	-		
20823A rf10.38-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PVC-U	Lareter	SDR13,6	20	1.5	U/U	-	-	-	-	-	-		
20823A rf10.38-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	-	-	-	-	-	-	-	-	-	-	A1	14		
20823A rf10.38-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	-	-	-	-	-	-	-	-	-	-	A1	14		

Pos.	Sealing system							Pipe						Pipe insulation				Cable		Classifications	
	Aperture part					Service part															
	Seal		Annular sealant			Seal															
	Type	Total Thickness [mm]	Type	Gap width [mm]	Layer Thickness [mm]	Type	No. of layers	Material	Trade or pipe standard	Type	Diameter [mm]	Wall thickness [mm]	End config.	Insulation type	Thickness [mm]	Length on both sides [mm]	Config.	Type	Cable diameter [mm]		
20823A rf10.39-1	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	EN 10217-1	-	12	1	C/U	Armaflex AF-1	7.5	full	CS	-	-	**EI 30**	**E 60**
20823A rf10.39-2	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	Cu	EN 10217-1	-	18	1	C/U	Armaflex AF-1	8.0	full	CS	-	-		
20823A rf10.39-3	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	PVC-U	Lareter	SDR13,6	20	1.5	U/U	-	-	-	-	-	-		
20823A rf10.39-4	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	-	-	-	-	-	-	-	-	-	-	A1	14		
20823A rf10.39-5	CP 673 2S	1 x 60	CFS-S ACR	1 – 5	60	CFS-B	2	-	-	-	-	-	-	-	-	-	-	A1	14		

3.3 Field of direct application

This classification is valid for the following end use applications according to 1366-3:2021.

The results of the fire test are directly applicable to similar constructions where one or more of the changes listed below are made and the construction continues to comply with the appropriate design code for its stiffness and stability.

3.3.1 Orientation

The results are applicable as tested, in a wall or floor.

3.3.2 Supporting construction

3.3.2.1 Flexible wall constructions

Test results obtained with the standard double-sided flexible wall constructions may be used for all double-sided flexible wall constructions (with and without insulation) of the same or higher fire resistance classification in accordance with EN 13501-2 with a lining made of gypsum boards in accordance with EN 520 or Calcium Silicate boards which are CE marked based on an ETA for the application as lining of flexible walls, if their construction is in accordance with the rules given below.

- Flexible wall construction as tested;
- Flexible wall constructions with the same or higher number of board layers of the same or higher board thickness on each side of the wall, with insulation of any type or without insulation;
- Flexible wall constructions with timber studs, constructed with at least the same number of layers as given in Table 2 of EN 1366-3:2021, no part of the penetration seal closer than 100 mm to any stud or nogging piece, the cavity closed between the penetration seal and the stud/nogging piece with minimum 100 mm of insulation of class A1 or A2 in accordance with EN 13501-1;
- Rigid wall constructions with an overall thickness equal to or greater than 100 mm and a minimum density of 350 kg/m³.
- Sandwich panel constructions and one-sided flexible wall constructions are not covered. Penetration seals in sandwich panel constructions shall be tested on a case by case basis.

3.3.2.2 Rigid floor constructions

The test results from the rigid floor may be applied to a concrete or masonry floor of a thickness equal to or greater than 150 mm and a density equal or greater than 550 kg/m³.

3.3.3 Services

Single pipes can be installed in an angle of 90° to the supporting construction.

The pipes tested with pipe end configuration U/U covers U/C, C/U and C/C pipe end situations as well.

The pipes tested with pipe end configuration U/C covers C/U and C/C pipe end situations as well.

The pipes tested with pipe end configuration C/U covers C/C pipe end situations as well.

Metal pipe material cover pipe materials with a thermal conductivity lower than that tested. Copper (Cu) pipes cover steel (Fe) pipes and cast iron pipes but not vice versa. Steel (Fe) pipes and cast iron pipes but not vice versa.

3.3.4 Seal type

The seal types defined in § 3.2 need to be respected.

3.3.5 Distances

The minimum distance between different coated board seals CP 673 2S is 100 mm.

All services with their penetration sealing system can be installed in the coated board seal in single, linear or cluster arrangement with a minimum distance of 50 mm to other penetration seals/services and with a minimum distance of 50 mm to the coated board seal edge.

Cables or cable carriers can be installed with a minimum distance of 0 mm to the coated board seal edge. The minimum distance between cable carriers is 0 mm.

The minimum distance between single conduits and cables in conduit and cable bundles is 0 mm.

SIGNED

Tomas Ghysens (Signature)
Project Assistant
Ghent
2022.07.14 16:38:10 +02'00'

APPROVED

Peter Tack (Signature)
Project leader
Ghent
2022.07.15 09:56:09 +02'00'

This document is the original version of the classification report and is written in English.