

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-13/0695
of 29 March 2018

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

"Würth Kabel-Röhre, Typ KR" and "Würth-Kabelröhre,
Typ KT"

Product family
to which the construction product belongs

product for cable penetration seals

Manufacturer

Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße 12-17
74653 Künzelsau
DEUTSCHLAND

Manufacturing plant

Werk 14

This European Technical Assessment
contains

13 pages including 9 annexes which form an integral part
of this assessment

This European Technical Assessment is
issued in accordance with Regulation (EU)
No 305/2011, on the basis of

EAD 350454-00-1104

This version replaces

ETA-13/0695 issued on 28 June 2013

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Specific part

1 Technical description of the product

The construction products consist of PVC-U half-pipes and an inlay made of an intumescent material which expands under heat exposure.

- In the case of the construction product "Würth Kabelröhre, Typ KR", design variant 1, two half-pipes are joined by means of a click fastener to form a pipe sleeve. The inlay is bonded into the half-pipes (see Annex 3).
- In the case of the construction product "Würth Kabelröhre, Typ KR", design variant 2, two half-pipes are joined by means of a fastener taking the shape of an H profile to form a pipe sleeve. The half-pipes are coated with the inlay (see Annex 3).
- The construction product "Würth Kabelröhre, Typ KT" consists of a half-pipe. The inlay is bonded into the half-pipe. The inlay overlaps the half-pipe by about the half-pipe's diameter. This overlap is used to form the bottom (see Annex 4).

Detailed specifications (e.g. dimensions) of the fire safety related performance criteria for the construction products are given in Annexes 1 to 4. Detailed information on the construction products' components are deposited with Deutsches Institut für Bautechnik.

NOTE:

The characteristics listed are suitable both for identifying the construction products as well as for performing the manufacturer's factory production control.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The construction products "Würth Kabelröhre, Typ KR" and "Würth Kabelröhre, Typ KT" shall be used as part of cable penetration seals.

Cable penetration seals are used to seal openings in fire-resistant walls or floors, which are penetrated by cables. Their aim is to preserve the walls' or floors' fire resistance in the area of the penetrations.

Within the framework of this ETA, the fire resistance was demonstrated for cable penetration seals consisting of two half-pipes of the type "Würth Kabelröhre, Typ KR" (for floor and wall installations) and for cable penetration seals consisting of one half-pipe of the type "Würth Kabelröhre, Typ KT" (for wall installations).

The cable penetration seals had a closure made of a flexible foam on both sides for "Würth Kabelröhre, Typ KR" pipe sleeves or one side for "Würth Kabelröhre, Typ KT" half-pipes.

After inserting the foam into the remaining openings, this closure was sealed from the outside with an ablative fire stopping product.

In addition, the joints between the pipe sleeve or the half-pipe and the surrounding component were sealed.

The construction products "Würth Kabelröhre, Typ KR" and "Würth Kabelröhre, Typ KT" may be used for penetration seals of use category X (use at conditions exposed to weathering – rain, UV, frost) provided that the other components of the penetration seal meet the durability requirements. The resistance to fire of the penetration seals shall be verified on a case-by case basis.

The performance specified in Section 3, however, can only be assumed if the penetration seals, which were manufactured using the construction products "Würth Kabelröhre, Typ KR" or "Würth Kabelröhre, Typ KT", are exposed to dry internal conditions or internal conditions with high humidity. In both cases, the temperature may not fall below 0°C (category Z₁).

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More detailed information and data on the verified penetration seals are given in Annexes 2 to 9.

The performance specified in Section 3 relates only to these penetration seals (e.g. with respect to the design and arrangement of the penetration seal components and the type and position of the services).

3 Performance of the product and references to the methods used for its assessment

3.1 Intended use: use in penetration seals

3.2 Safety in case of fire (BWR 2)

| Essential characteristic | Performance |
|---|--|
| Resistance to fire of a penetration seal containing the product | The resistance to fire depends on the design and installation of the penetration seal and on the other components forming the penetration seal. More details on the tested cable penetration seals and the related fire resistance cases are given in Annexes 1 to 9 |

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD No. 350454-000-1104 the applicable European legal act is: 1999/454/EC.

The system to be applied is: system 1.

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 29 March 2018 by Deutsches Institut für Bautechnik

Prof. Gunter Hoppe
Head of Department

beglaubigt:
Bisemeier

The factory manufactured construction products of the type "Würth Kabelröhre, Typ KR" and "Würth Kabelröhre, Typ KT" consist of PVC-U half-pipes and an inlay made of an intumescent material. They are used to seal openings in fire-resistant walls and floors.

Properties and performance criteria of the components of the construction products of the type "Würth Kabelröhre, Typ KR" and "Würth Kabelröhre, Typ KT"

| Component | Description |
|---|--|
| "Half-pipe" (with glued groove bar or click fastener) | Dimensions: Ø 116,4; s = 3,2 mm; l = 150 mm, 200 mm or 300 mm Material: PVC-U according to EN 1452 |
| "Inlay" for "Würth Kabelröhre, Typ KR", design variant 1 and "Würth Kabelröhre, Typ KT" | Thickness = 1,5 mm (dry layer thickness) Material: intumescent material* Classification of fire behavior according to EN 13501-1: E |
| "Inlay" for "Würth Kabelröhre, Typ KR", design variant 2 | Thickness = 1,5 mm (dry layer thickness) Material: intumescent material* Classification of fire behavior according to EN 13501-1: B-s1, d0 |

The properties listed can be used both for the identification of the construction product and for the implementation of the factory production control of the manufacturer.

Implementation details for the factory production control are included in the inspection plan..

* The composition of the materials is deposited at DIBt.

Description of the additional ingredients of the tested sealings

| | |
|--|---|
| "Closure" (for closing the pipe sleeve) | thickness = 40 mm; diameter corresponding to the pipe diameter; material: flexible foam of the type "Basotect" or "Basotect G"; BASF AG Classification of fire behavior acc. to EN 13501-1: C-s1, d0 |
| "Sealing" | thickness ≥ 0,5 mm (dry layer thickness) material: intumescent material of the type "Würth Ablationsbeschichtung I" acc. to ETA-17/0105 Classification of fire behavior according to EN 13501-1: E |
| 50 mm thick mineral wood plates | "Rockwool Hardrock 040" Deutsche Rockwool Mineralwoll GmbH, 45866 Gladbeck, Germany; acc. to EN 13162 Classification of fire behavior acc. to EN 13501-1: A1 |
| Mineral wool | "Rockwool Lose Wolle RL"; Deutsche Rockwool Mineralwoll GmbH, 45866 Gladbeck, Germany; acc. to EN 14303 Classification of fire behavior acc. to EN 13501-1: Class A1 |
| 32 mm thick system floor plates | "GIFAfloor FHB" Knauf Classification of fire behavior acc. to EN 13501-1: A1 |
| "Würth Brandschutzzement MG III" | Cement mortar acc. to EN 998-2 Classification of fire behavior acc. to EN 13501-1: Class A1 |
| "Würth Brandschutzmörtel" | Fire protection mortar* Acc. to allgemeiner bauaufsichtlicher Zulassung No. Z-19.15-1333 |
| "Kabelwickel" | "Brandschutzgewebe DBU" acc. to ETA-13/0165 Classification of fire behavior acc. to EN 13501-1: Class B-s1,d0 |

* The composition of the materials is deposited at DIBt.

| | |
|---|---------|
| "Würth Kabel-Röhre, Typ KR" und "Würth-Kabelröhre, Typ KT" | Annex 1 |
| Description of the construction products, properties and performances | |

Performances of tested penetration seals, comprising the construction product "Würth Kabelröhre, Typ KR" or "Würth Kabelröhre, Typ KT"

| | Essential requirement | Test method | Construction of the sample | Performance acc. to EN 13501-2 |
|---|-----------------------|-------------|---|--------------------------------|
| 1 | Resistance to fire | EN 1366-3 | Cable penetration seal containing the product "Würth Kabelröhre, Typ KR" used in a 100 mm thick flexible wall; design and layout of the penetration seal acc. to annex 6* | EI 90 |
| 2 | Resistance to fire | EN 1366-3 | Cable penetration seal containing the product "Würth Kabelröhre, Typ KR" used in a 150 mm thick rigid floor; design and layout of the penetration seal acc. to annex 6* | EI 120 |
| 3 | Resistance to fire | EN 1366-3 | Cable penetration seal containing the product "Würth Kabelröhre, Typ KR" used in a 100 mm thick flexible wall; design and layout of the penetration seal acc. to annex 7* | EI 90 |
| 4 | Resistance to fire | EN 1366-3 | Cable penetration seal containing the product "Würth Kabelröhre, Typ KR" used in a 150 mm thick rigid floor; design and layout of the penetration seal acc. to annex 7* | EI 90 |
| 5 | Resistance to fire | EN 1366-3 | Cable penetration seal containing the product "Würth Kabelröhre, Typ KT"; design and layout of the penetration seal acc. to annex 9* | EI 90 resp. EI 120 |

* Illustrations without guarantee for completeness

The tested/ illustrated seals are only examples for the use.

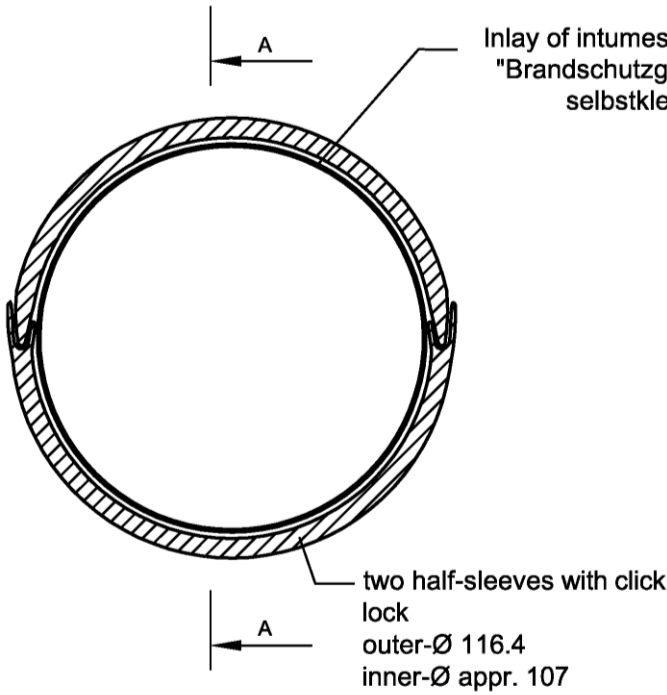
The use of the construction products "Würth Kabelröhre, Typ KR" and "Würth Kabelröhre, Typ KT" in penetration seals shall be in accordance with national requirements for planning, design and execution and in accordance with the installation instruction of the manufacturer.

"Würth Kabel-Röhre, Typ KR" und "Würth-Kabelröhre, Typ KT"

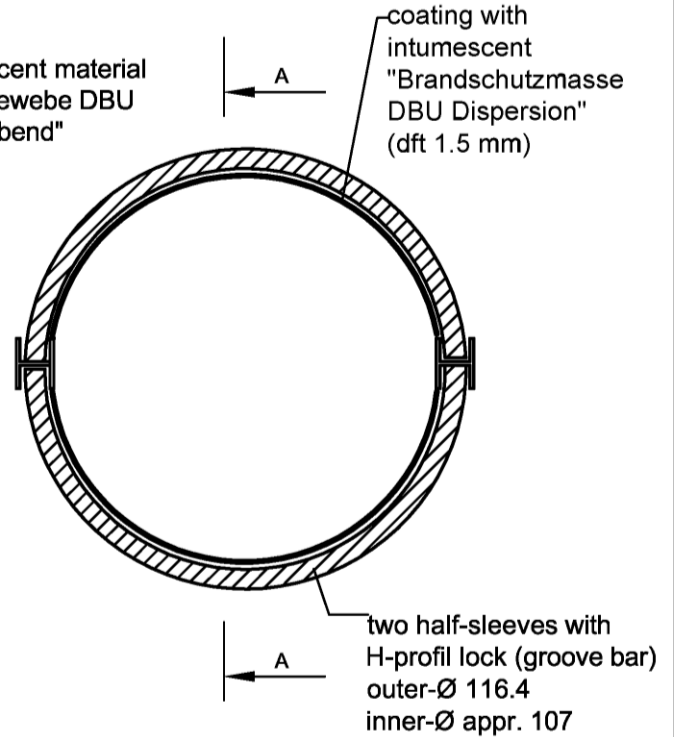
Description of the construction products, properties and performances

Annex 2

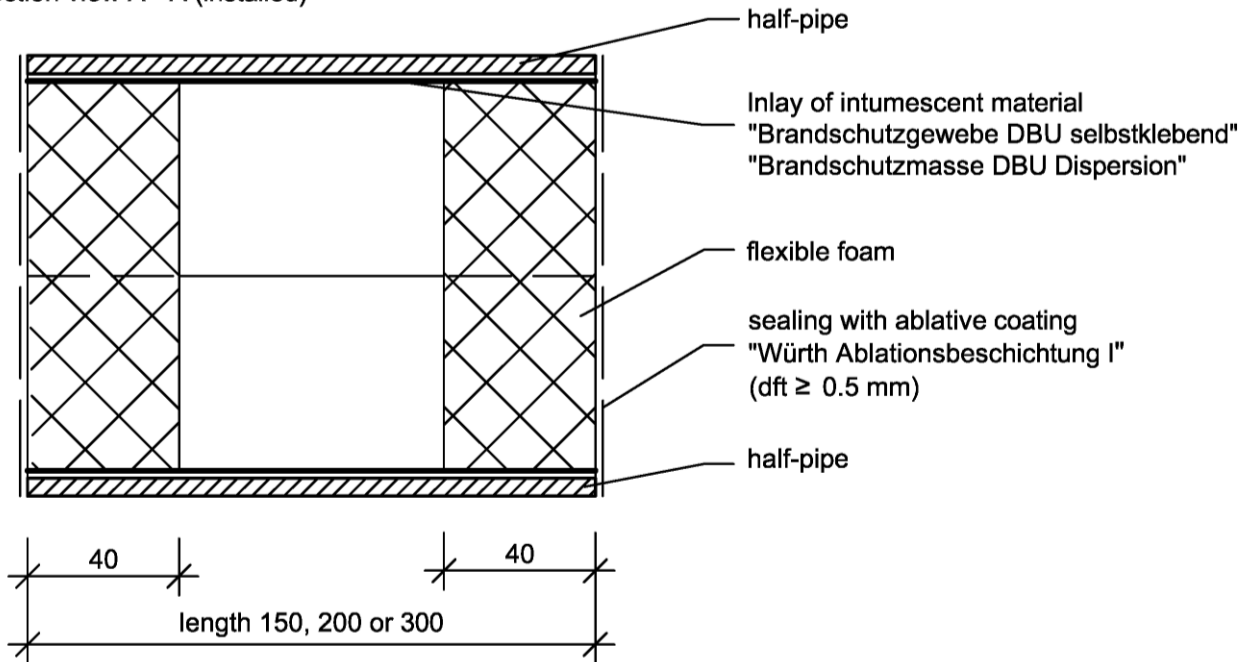
**"Würth Kabelröhre, Typ KR"
version 1**



**"Würth Kabelröhre, Typ KR"
version 2**



section view A - A (installed)



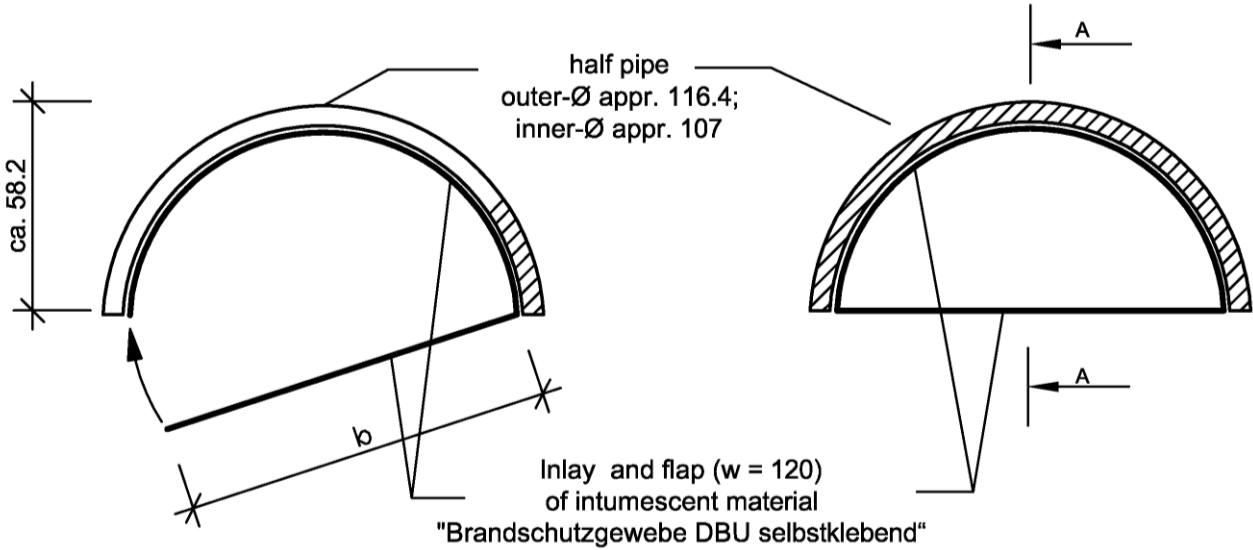
dimensions in mm

"Würth Kabel-Röhre, Typ KR" and "Würth-Kabelröhre, Typ KT"

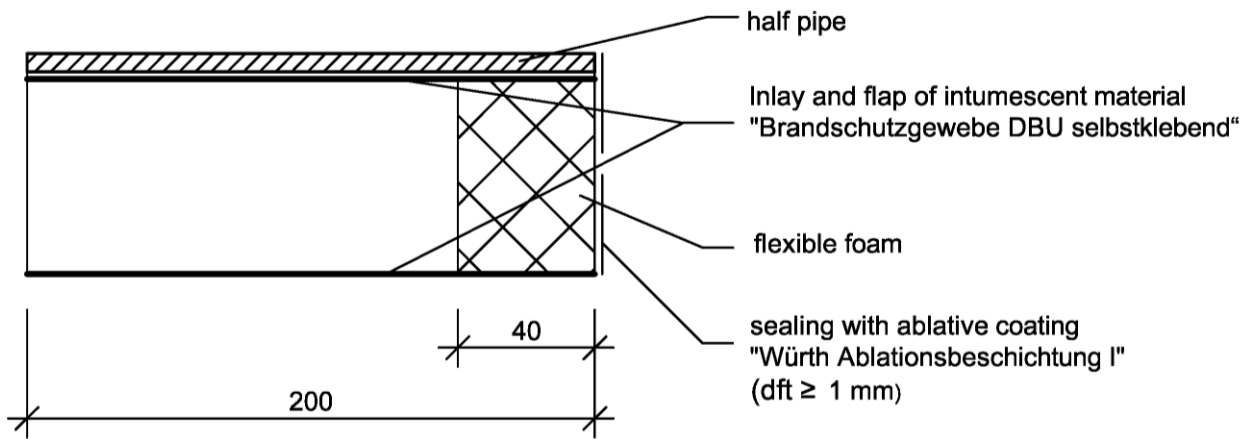
Construction of pipe sleeve "Würth Kabelröhre, Typ KR", variants 1 and 2

Annex 3

"Würth Kabelröhre, Typ KT"



section view A - A (installed)



closing and sealing are needed on one side only!

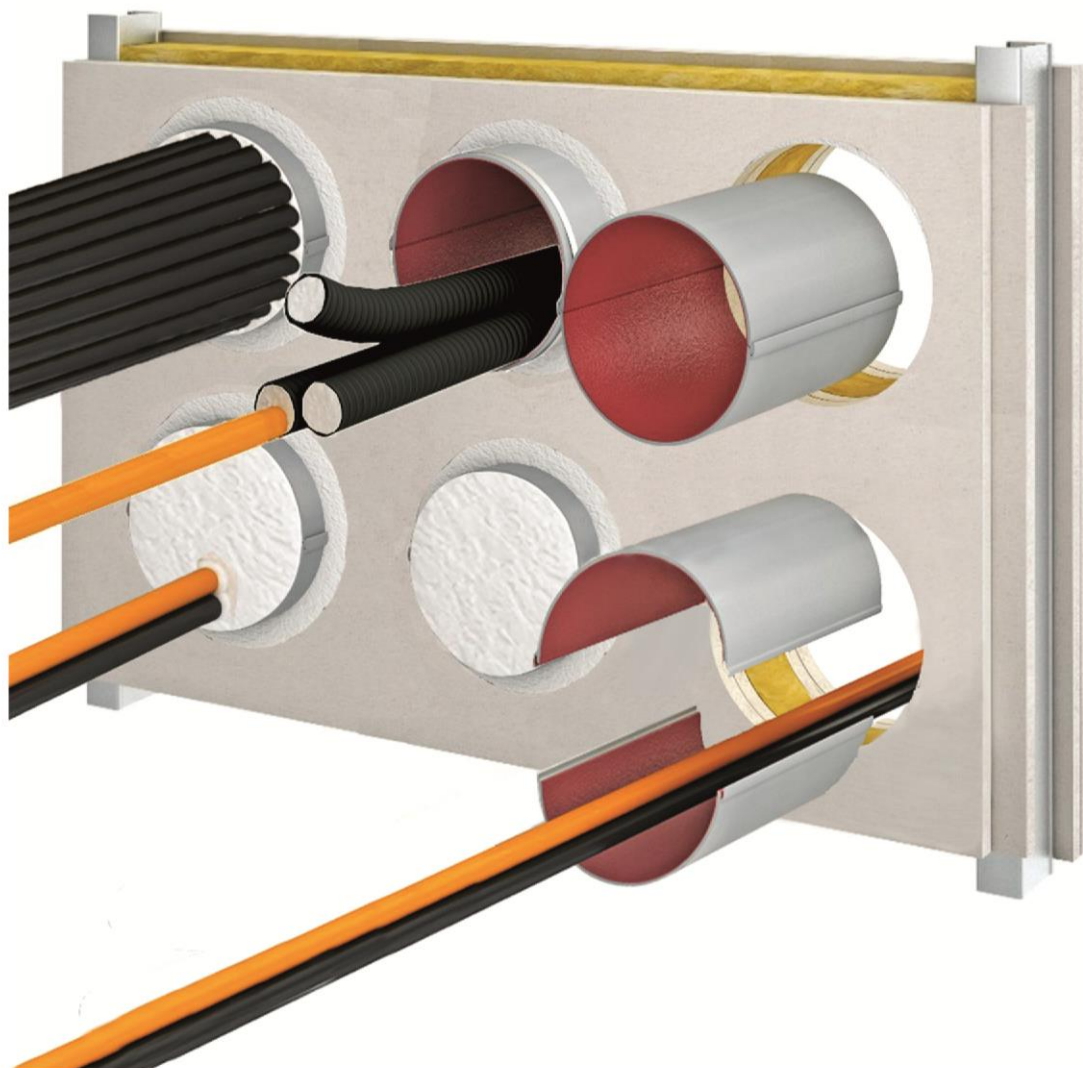
dimensions in mm

"Würth Kabel-Röhre, Typ KR" and "Würth-Kabelröhre, Typ KT"

Construction of pipe sleeve "Würth Kabelröhre, Typ KT"

Annex 4

"Würth Kabelröhre, Typ KR"



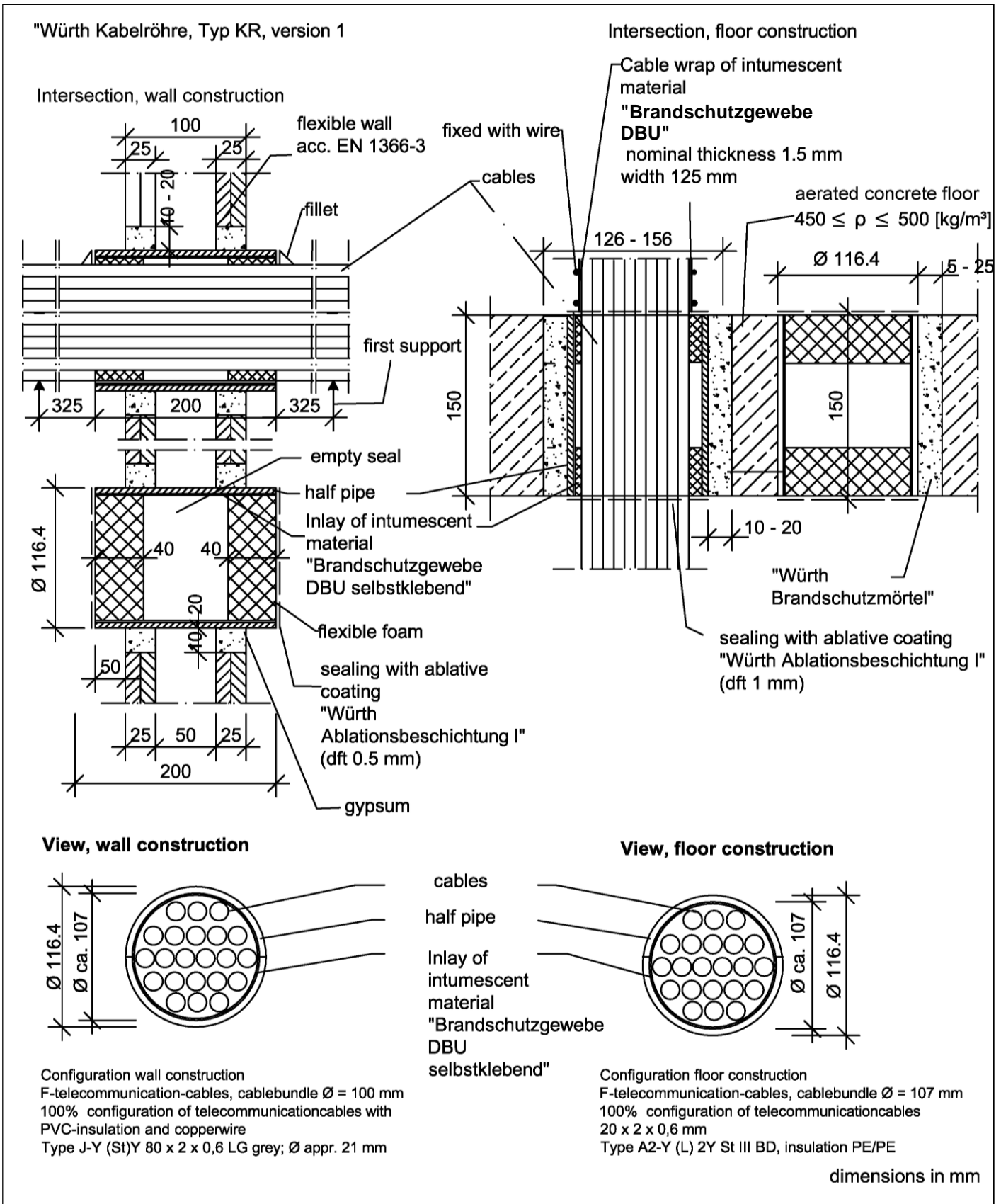
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"Würth Kabel-Röhre, Typ KR" and "Würth-Kabelröhre, Typ KT"

Schematic representation of the built-in pipe sleeves type "Würth Kabelröhre, Typ KR"

Annex 5

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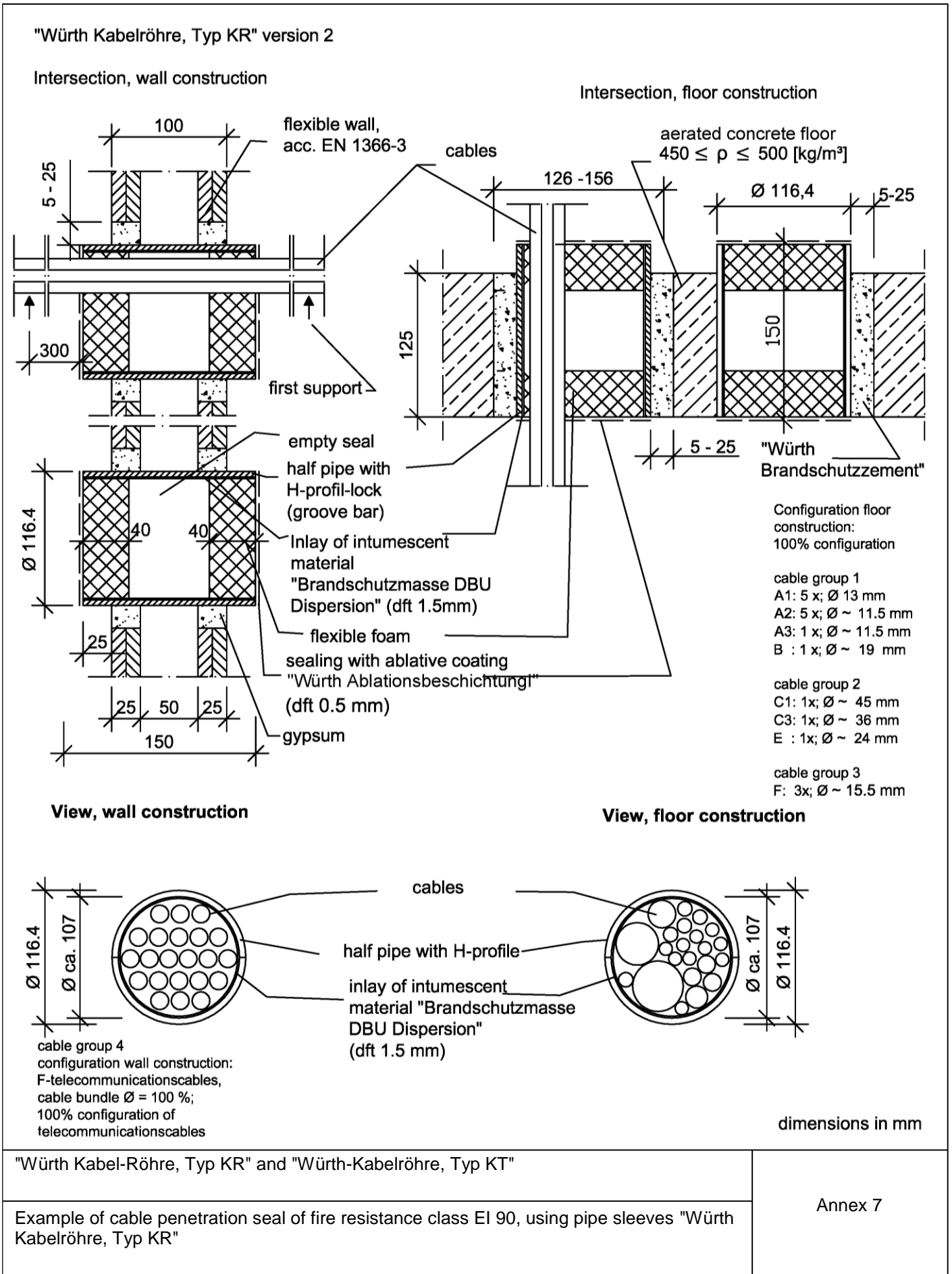
electronic copy of the eta by dibt: eta-13/0695

"Würth Kabel-Röhre, Typ KR" and "Würth-Kabelröhre, Typ KT"

Example for cable seals of fire resistance class EI 90 (wall) and EI 120 (floor), using the pipe sleeve "Würth Kabelröhre, Typ KR"

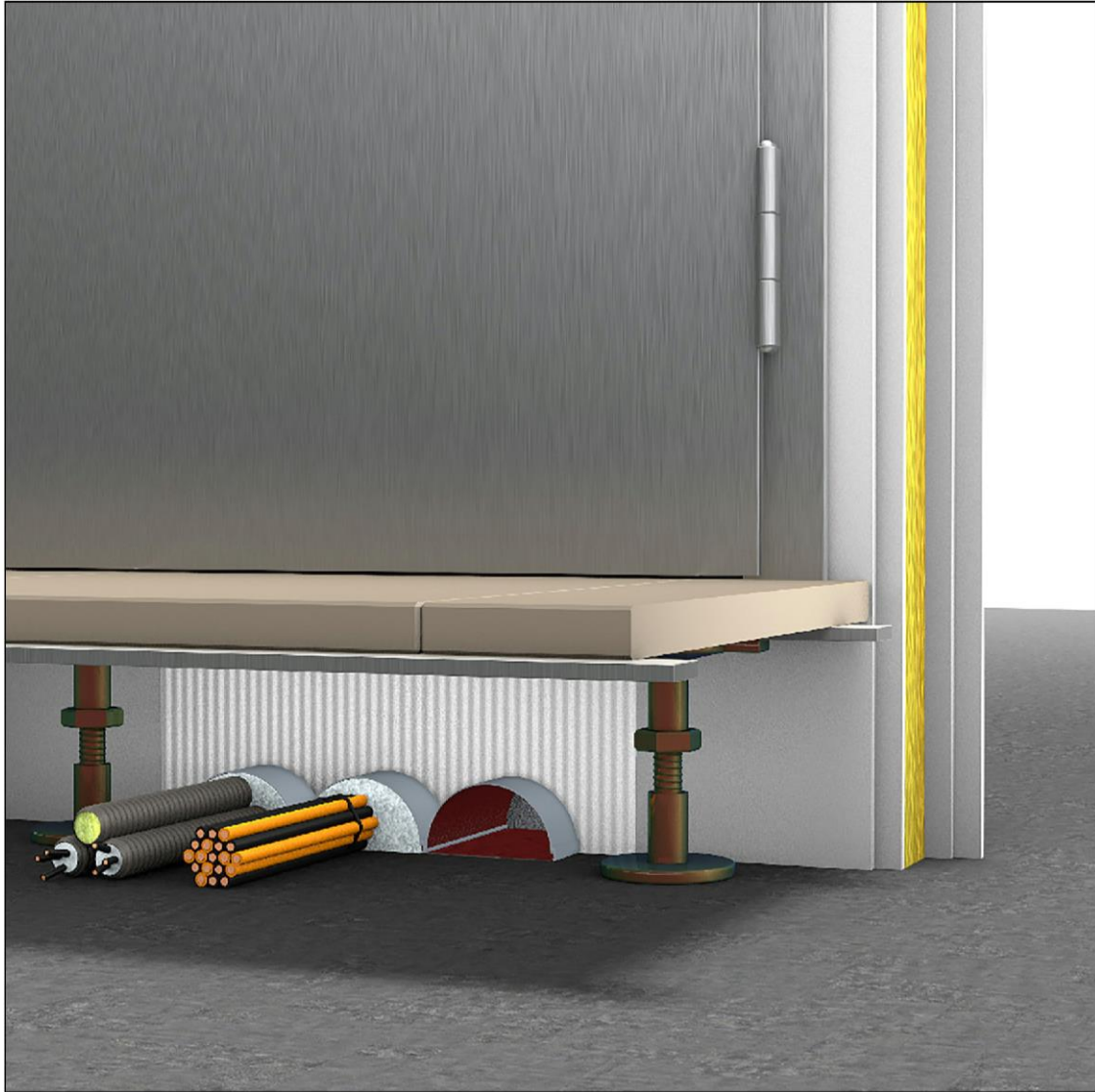
Annex 6

English translation prepared by DIBt



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Halfpipe "Würth Kabelröhre, Typ KT"



"Würth Kabel-Röhre, Typ KR" and "Würth-Kabelröhre, Typ KT"

Schematic representation of the built-in pipe sleeves type "Würth Kabelröhre, Typ KT"

Annex 8

English translation prepared by DIBt

"Würth Kabelröhre, Typ KT"

View

Example 1 (EI 90)
configuration:
1 x C2-cable 4 x 95²
1 x E-cable 1 x 185²

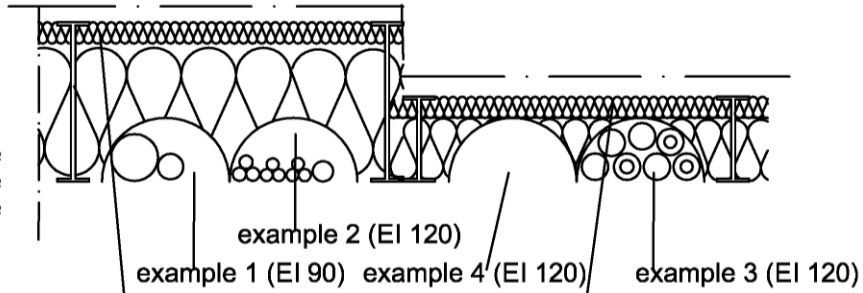
Example 2 (EI 120)
3 x A1-cable 5 x 1.5²
3 x A2-cable 5 x 1.5²
3 x A3-cable 5 x 1.5²
1 x B-cable 1 x 95²

Example 3 (EI 120)
conduit with 1 x A1-cable 5 x 1.5²
conduit with 1 x A2-cable 5 x 1.5²
conduit with 1 x A3-cable 5 x 1.5²
conduit empty
conduit empty
(conduits one sided sealed with "Würth Ablationsbeschichtung I")

Example 4 (EI 120)
blank seal

variant "high opening"

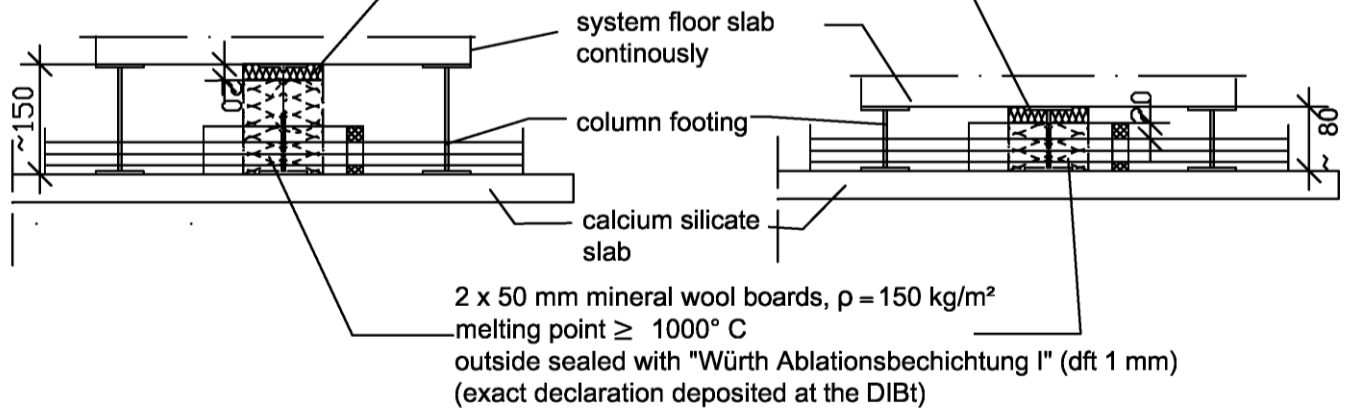
variant "low opening"



mineral wool
(A1 acc. EN 13501-1,
melting point $\geq 1000^{\circ}\text{C}$)

variant "high opening"

variant "low opening"



dimensions in mm

"Würth Kabel-Röhre, Typ KR" and "Würth-Kabelröhre, Typ KT"

Example of penetration seals of fire resistance EI 90 resp. EI 120, using the pipe sleeves "Würth Kabelröhre, Typ KT"

Annex 9