

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-15/0515
of 23 September 2015

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 System RK I/ RK I light"

Product family
to which the construction product belongs

Pipe collar

Manufacturer

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

Manufacturing plant

Rolf Kuhn GmbH
Jägersgrund 10
57339 Erndtbrück
DEUTSCHLAND

This European Technical Assessment
contains

12 pages including 8 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

Guideline for European technical approval of "Fire
Stopping and Fire Sealing Products", ETAG 026 Part 2:
"Penetration Seals",
used as European Assessment Document (EAD)
according to Article 66 Paragraph 3 of Regulation (EU)
No 305/2011.

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Specific part

1 Technical description of the product

"Würth System RK I/ RK I light" is a pipe collar consisting of a pipe collar enclosure and a fire-protective inlay.

The pipe collar enclosure shall be made of steel sheet and be sufficiently protected against corrosion. The fire-protective inlay shall be made of an intumescent material which expands under heat exposure.

The pipe collar shall have the dimensions stated in Annexes 2 to 4.

Detailed specifications and fire safety related performance criteria for the construction products are given in Annex 1.

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

"Würth System RK I/ RK I light" is designed to form part of a pipe penetration seal for plastic pipes.

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

Within the scope of this ETA the fire resistance of a pipe seal was demonstrated that consisted of two pipes collars (for wall installations) or one pipe collar (for floor installations) and a joint sealing.

More detailed information and data on the verified penetration seals are given in Annexes 5 to 8. The performances given in Section 3 relate exclusively to these penetration seals (e.g. with respect to the design and arrangement of the penetration seals' 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

Essential characteristic (BWR 2)	Performance
Reaction to fire	Pipe collar enclosure: Class A1 in accordance with Commission Decision 96/603/EC (as amended) Inlay: Class E in accordance with EN 13501-1
Fire resistance of a penetration seal ¹	Class EI 120-U/U or EI 180-U/C or EI 240-U/C in accordance with EN 13501-2

¹ The fire resistance depends on how the penetration seal is designed and/or installed and on the penetrating pipes: Annexes 5 to 8 include details on the penetration seals for which the fire resistance indicated was demonstrated.

English translation prepared by DIBt

3.2 General aspects

Testing the essential characteristics includes the verification of durability.

In end-use applications, the construction products described in section 1 may be used in accordance with the provisions applying to use category X (external use) without significant changes in the characteristics relevant for fire protection to be expected.

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

In accordance with the guideline for European technical approval of "Fire Stopping and Fire Sealing Products", ETAG 026 Part 2: "Penetration Seals", January 2008, used as European Assessment Document (EAD), the applicable European legal act is: 1999/454/EC.

The system to be applied is: 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 23. September 2015 by Deutsches Institut für Bautechnik

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Head of Department

beglaubigt:
Nadja Bisemeier

The factory manufactured construction product pipe collar „Würth System RK I / RK I light“ consists of a pipe collar steel housing and an insert of an intumescent building material which is incorporated in multiple layers in the pipe collar housing.

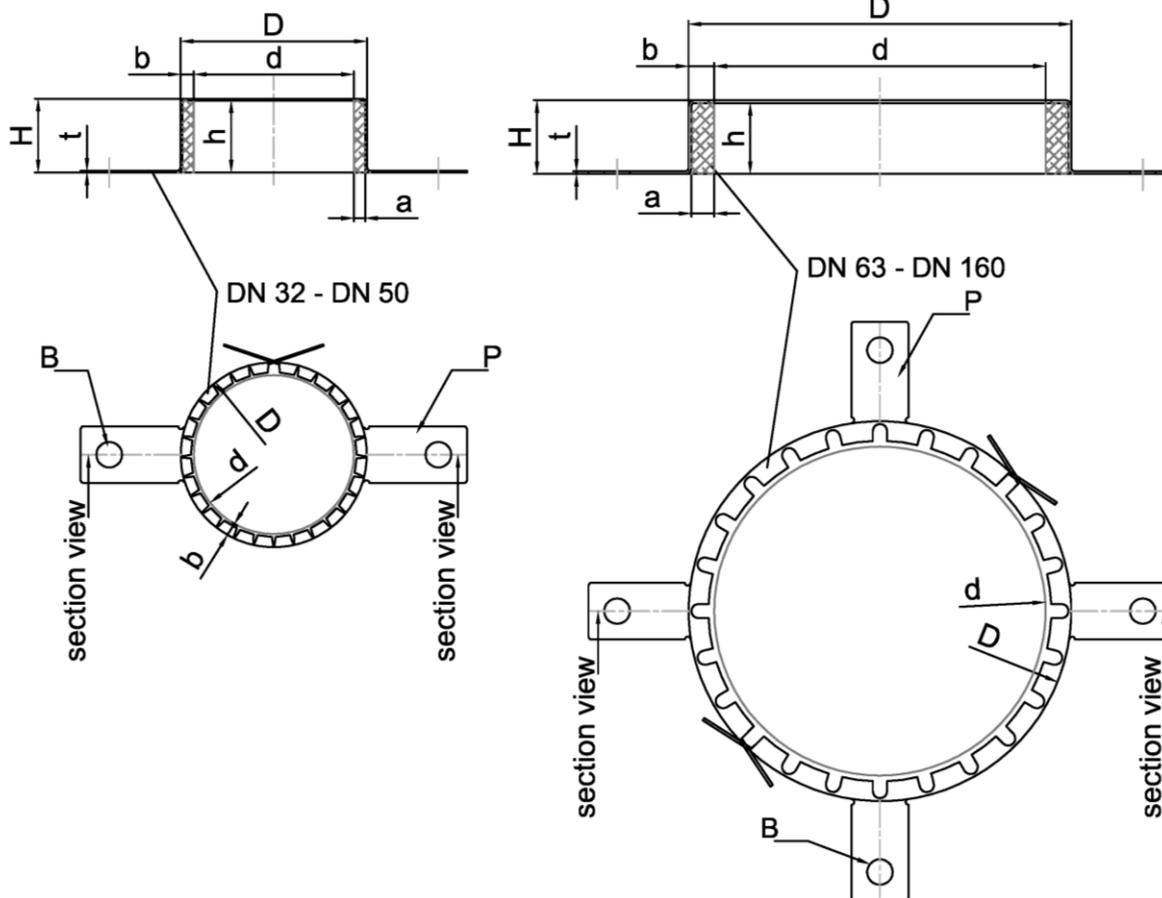
Properties and performance criteria of the components of the construction products

Component	Description
“Pipe collar housing”	Dimensions: See Annex 1-3 Material: Sheet steel Classification of fire behavior: Class A1 according to the commission decision 96/603/EC (in the amended version)
“Insert”	Dimensions: See Annex 1-3 Material: Intumescent building material according to ETA-10/0117 Classification of fire behavior according to EN 13501-1: Class E

"Würth System RK I/ RK I light"

Description of the construction products, properties and performances

Annex 1



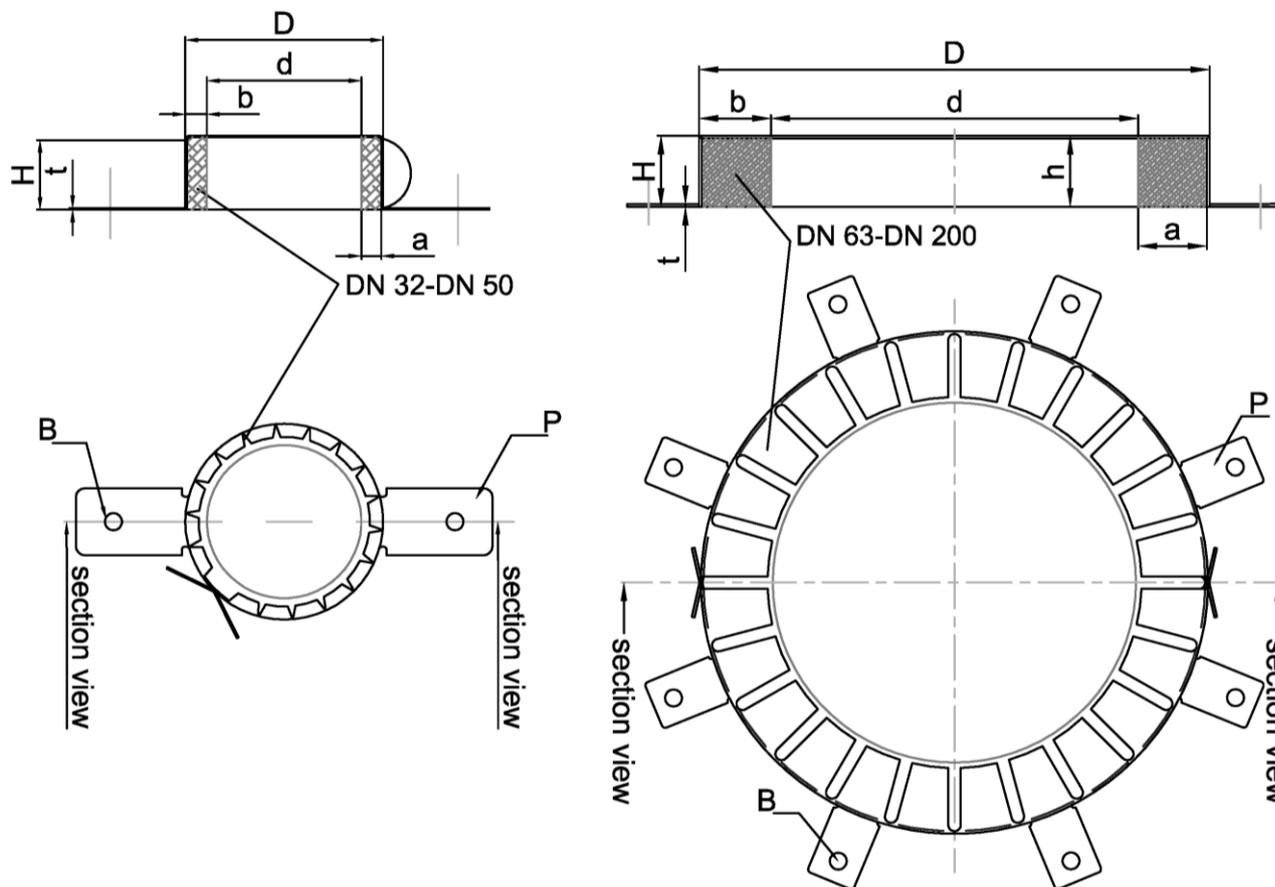
Pipe collar "Würth System RK I / RK I light"
in the dimensions RK I light

dA [mm]	d [mm]	D [mm]	b [mm]	t [mm]	H [mm]	P [Stck]	h [mm]	a [mm]	B [mm]
32	38	47	4,6	0,6	26,0	2	25,0	4,0 -0/+0,8	9,0
40	46	55	4,6	0,6	26,0	2	25,0	4,0 -0/+0,8	9,0
50	56	65	4,6	0,6	26,0	2	25,0	4,0 -0/+0,8	9,0
63	69	82	6,6	0,6	26,0	4	25,4	6,0 -0/+1,0	9,0
75	81	94	6,6	0,6	26,0	4	25,4	6,0 -0/+1,0	9,0
90	96	114	9,0	1,0	26,6	4	25,4	8,0 -0/+1,5	9,0
110	116	134	9,0	1,0	26,6	4	25,4	8,0 -0/+1,5	9,0
125	132	150	9,0	1,0	26,6	4	38,0	10 -0/+2,0	9,0
140	144	168	12	1,0	40,0	4	38,0	10 -0/+2,0	9,0
160	164	188	12	1,0	40	4	38,0	10 -0/+2,0	9,0

"Würth System RK I / RK I light"

Design of the pipe collar in the size RK I light

Annex 2



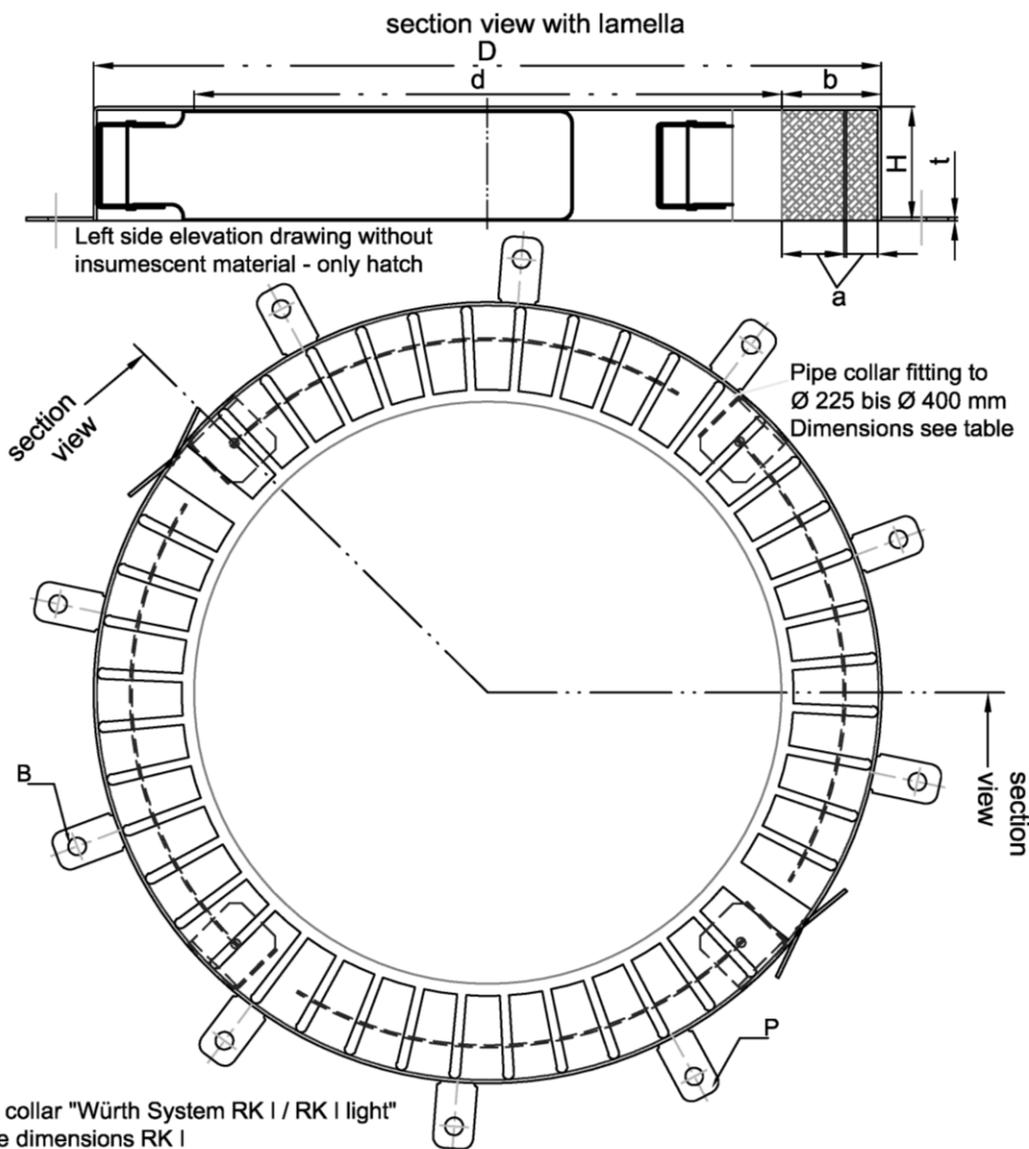
Pipe collar "Würth System RK I / RK I light"
in the dimensions RK I

dA [mm]	d [mm]	D [mm]	b [mm]	t [mm]	H [mm]	P [Stck]	h [mm]	a [mm]	B [mm]
32	36	50	7,0	0,6	26,0	2	25,4	6,4 $\pm 0,5$	6,0
40	44	58	7,0	0,6	26,0	2	25,4	6,4 $\pm 0,5$	6,0
50	54	68	7,0	0,6	26,0	2	25,4	6,4 $\pm 0,5$	6,0
63	67	94	13,5	0,6	26,0	4	25,4	12,8 $\pm 1,0$	6,0
75	79	106	13,5	0,6	26,0	4	25,4	12,8 $\pm 1,0$	6,0
90	94	132	18,3	1,1	26,6	4	25,4	17,1 $\pm 1,0$	9,0
110	114	155	20,5	1,1	26,6	4	25,4	19,2 $\pm 1,5$	9,0
125	129	172	20,5	1,1	40,0	4	38,1	19,2 -0/+1,5	9,0
140	144	200	28,0	1,1	40,0	4	38,1	25,6 -0/+2,0	9,0
160	164	220	28,0	1,1	40,0	4	38,1	25,6 -0/+2,0	9,0
180	184	264	40,0	1,5	40,0	8	38,1	38,4 $\pm 3,0$	9,0
200	204	284	40,0	1,5	40,0	8	38,1	38,4 $\pm 3,0$	9,0

"Würth System RK I / RK I light"

Design of the pipe collar in the size RK I

Annex 3



dA [mm]	d [mm]	D [mm]	b [mm]	t [mm]	H [mm]	P [Stck]	h [mm]	a [mm]	B [mm]
225	239	328	44,5	1,5 / 1,0	51,5	10	50	42,0 \pm 3,0	8,0
250	264	353	44,5	1,5 / 1,0	51,5	10	50	42,0 \pm 3,0	8,0
280	289	378	44,5	1,5 / 1,0	51,5	12	50	42,0 \pm 3,0	8,0
300	314	403	44,5	1,5 / 1,0	51,5	12	50	42,0 \pm 3,0	8,0
315	328	417	44,5	1,5 / 1,0	51,5	12	50	42,0 \pm 3,0	8,0
355	370	459	44,5	1,5 / 1,0	51,5	12	50	42,0 \pm 3,0	8,0
400	415	504	44,5	1,5 / 1,0	51,5	12	50	42,0 \pm 3,0	8,0

"Würth System RK I / RK I light"

Design of the pipe collar in the size RK I

Annex 4

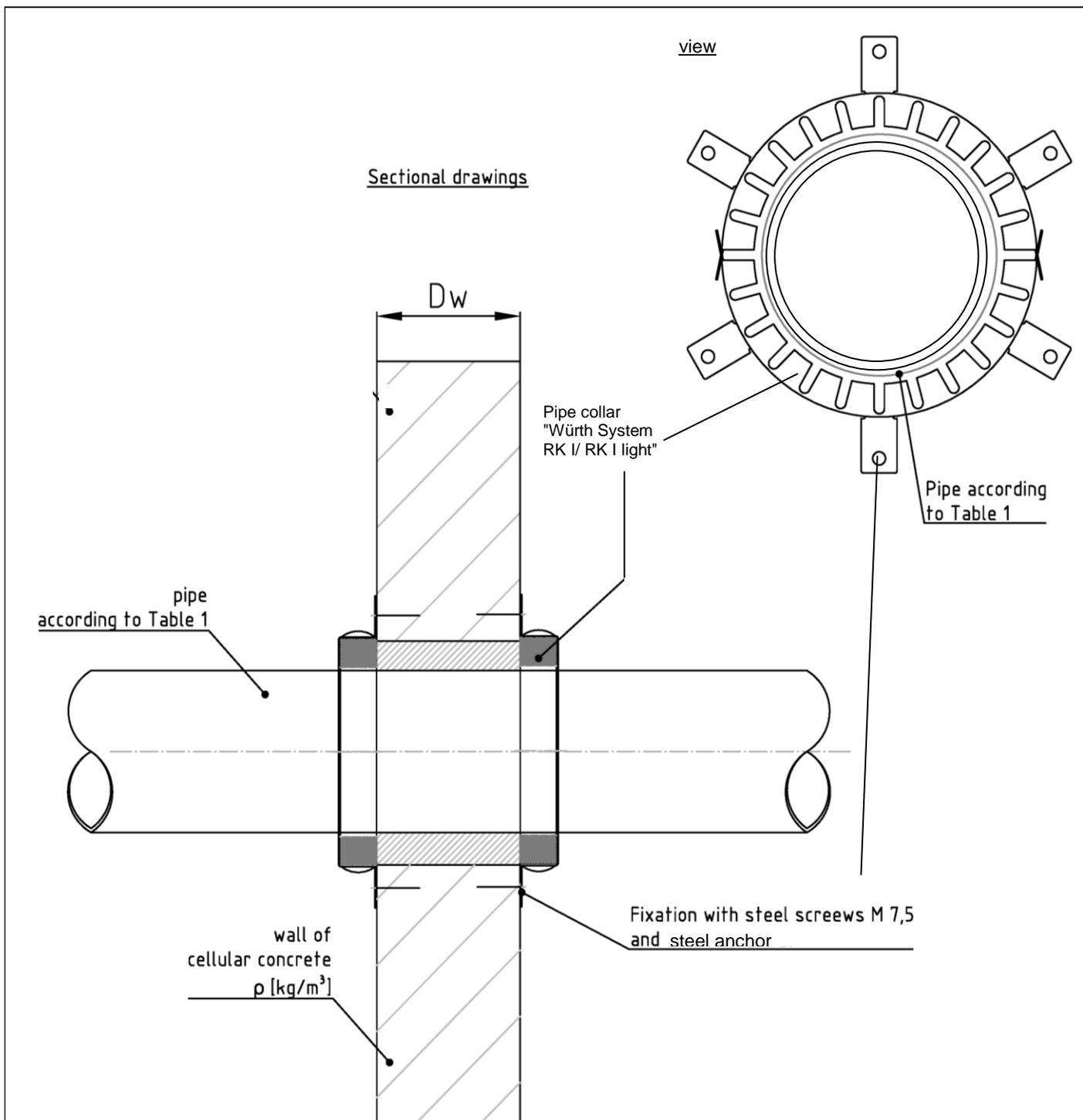


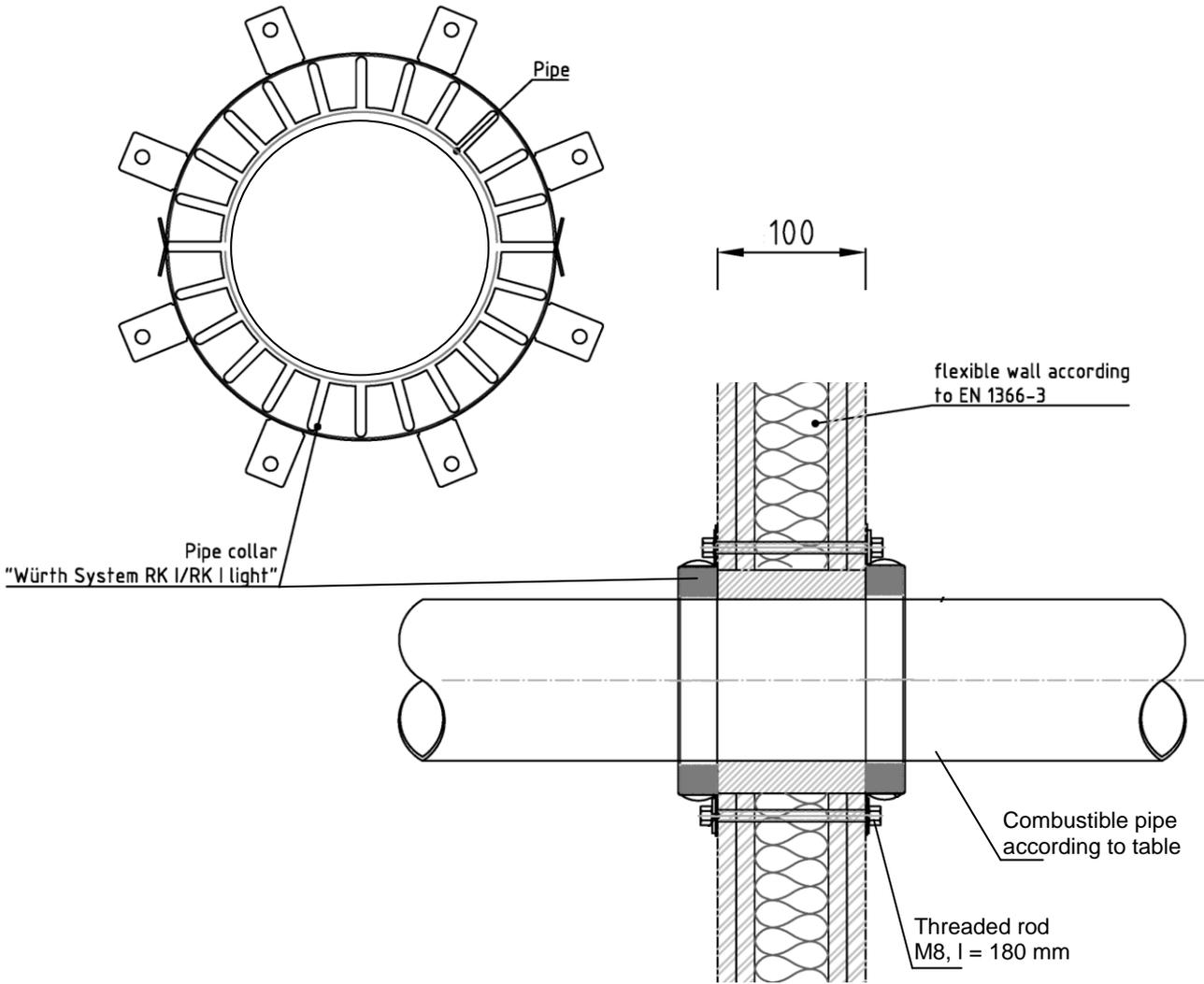
Tabelle 1

Type of pipe	Ø [mm]	s [mm]	Pipe collar size	ρ_{Wand}	D_w [mm]	Classification
PVC	200	9,6	RK I 200	500 kg/m ³	100	EI 240-U/C

"Würth System RK I/ RK I light"

Example for a pipe sealing of fire resistance class EI 240-U/C, using pipe collar "Würth System RK I/ RK I light", in the size RK I, Ø 200

Annex 5



Flexible wall

CW 50x50x0,6 u. UW 50x40x0,6 according to DIN 18182-01
2 x 12,5 mm gypsum board F / EN 520-G25/2,5 according to EN 520 two layers on both sides
40 mm mineral wool insulation, ρ 100kg/m³, melting point $\geq 1000^\circ$ C, A1 according to EN 13501-1

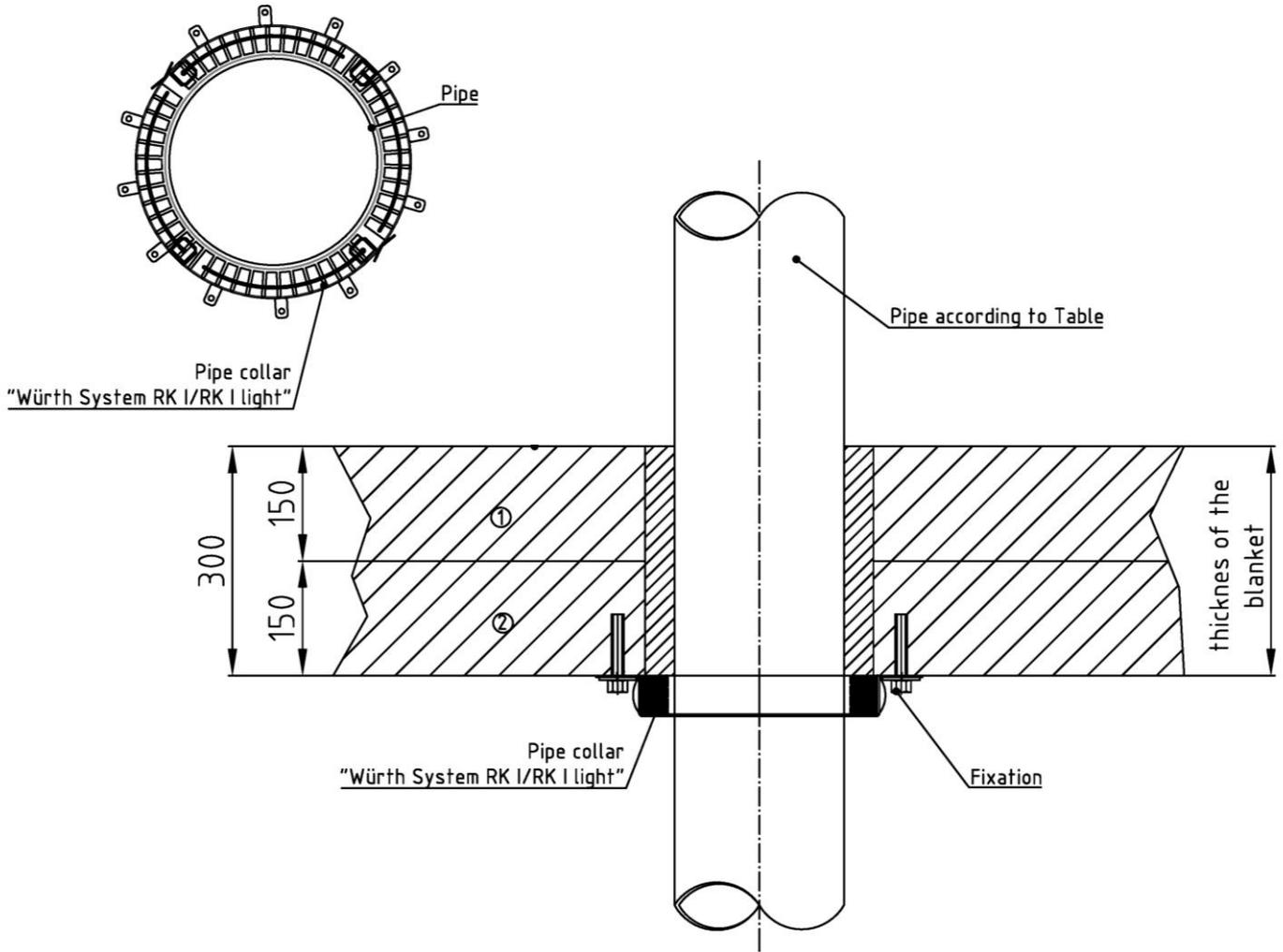
Pipe			
Type of pipe	Ø [mm]	s [mm]	Pipe collar size
Coolfit	180	/	RK I 180

"Würth System RK I/ RK I light"

Example for a pipe sealing of fire resistance class EI 120-U/C, using pipe collar "Würth System RK I/ RK I light", in the size RK I, Ø 180

Annex 6

English translation prepared by DIBt



Blanket

- 1 Aerated concrete blocks d = 150 mm; 600 - 650 kg/m³
- 2 Aerated concrete panels d = 150 mm; 450 - 500 kg/m³

Pipe			
Type of pipe	Ø [mm]	s [mm]	Pipe collar size
PVC	400	11,7	RK I 400

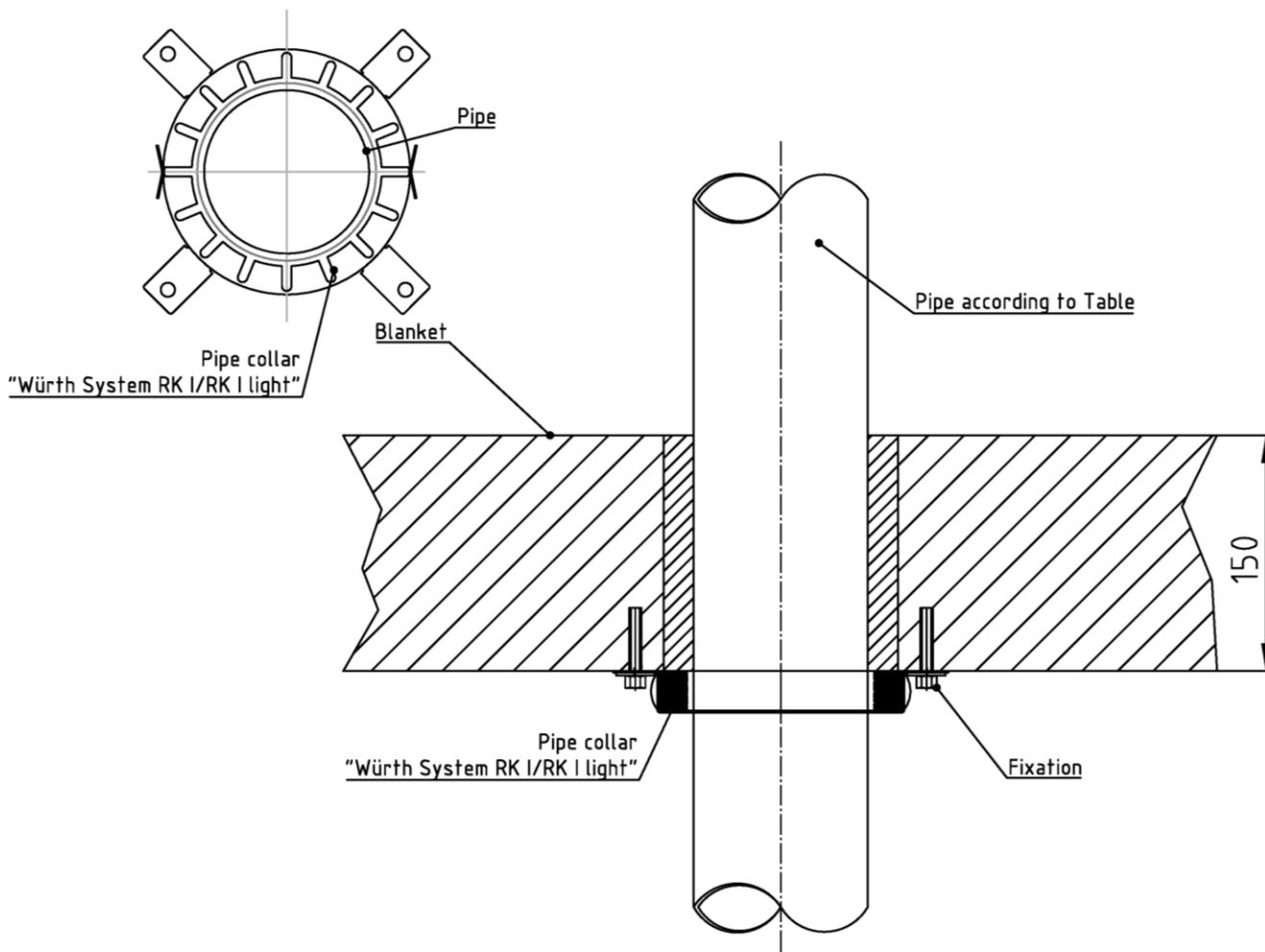
Fixation:

Screws MMS-P 7,5 x 45
and
metal multipurpose anchors 8 x 38

"Würth System RK I/ RK I light"

Example for a pipe sealing of fire resistance class EI 180 EI-U/C or E 240-U/C, using pipe collar "Würth System RK I/ RK I light", in the size RK I, Ø 200

Annex 7



Blanket
Aerated concrete according to EN 1366-3

Type of pipe	Pipe		
	Ø [mm]	s [mm]	Pipe collar size
PP	110	2,7	RK I light 110

Fixation:
Screws MMS-P 7,5 x 45
and
metal multipurpose anchors 8 x 38

"Würth System RK I/ RK I light"

Example for a pipe sealing of fire resistance class EI 120-U/U, using pipe collar "Würth System RK I/ RK I light", in the size RK I light, Ø 110

Annex 8