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European Technical Assessment

**ETA-23/0198
of 29/03/2023**

General part

Technical Assessment Body issuing the European Technical Assessment

Instytut Techniki Budowlanej

Trade name of the construction product

R-GOK-II
R-GOK-II-PLUS
R-POK
R-POW

Product family to which the construction product belongs

Fasteners for flexible roof waterproofing systems

Manufacturer

RAWLPLUG S.A.
ul. Kwidzyńska 6
51-416 Wrocław
Poland

Manufacturing plant

Manufacturing Plant 3

This European Technical Assessment contains

43 pages including 3 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

European Assessment Document
EAD 030351-00-0402 "Systems of mechanically fastened flexible roof waterproofing sheets"

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Specific part

1 Technical description of the product

The R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW are mechanical fasteners for systems of mechanically fastened flexible roof waterproofing membranes. The fasteners comprise a screw made of galvanic coated carbon steel and a washer with or without integrated sleeve. The washers with integrated sleeve are made of plastic materials (polyamide or polypropylene) whereas the washers without integrated sleeve are made of galvanic coated carbon steel.

An illustration and the description of the products are given in Annex A.

The material properties, dimensions and tolerances not indicated in Annex A shall correspond to the information laid down in the technical information to this European Technical Assessment.

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

The performances given in Section 3 are only valid if the fasteners are used in compliance with the specifications and conditions given in Annex B.

The provisions made in this European Technical Assessment are based on an assumed working life of the products of 10 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

In order to use the fasteners for systems of mechanically fastened flexible roof waterproofing membranes according to EAD 030351-00-0402 a separate European Technical Assessment is necessary for the entire roof waterproofing system.

3 Performances of the product and references to the methods used for their assessment

3.1 Performance of the product

3.1.1 Safety and accessibility in use (BWR 4)

3.1.1.1 Fastener axial load

Fastener axial loads are given in Annex C1 to C7.

3.1.1.2 Resistance to fastener unwinding

The fasteners are considered to be safe against unwinding. Resistance to fastener unwinding was evaluated on the basis of the existing field experience of the manufacturer.

3.1.1.3 Mechanical resistance / brittleness of plastic fasteners

Plastic fasteners are resistant to impact and brittleness, after impact of weight from drop height $\geq 1,0$ m.

3.1.1.4 Resistance to corrosion of metallic fasteners

All elements made of coated carbon steel (screws and washers), subjected to 15 cycles of action of a humid atmosphere containing 2.0 l SO₂ do not show more than 15% surface corrosion.

3.1.1.5 Mechanical resistance after heat ageing of plastic fasteners

Plastic fasteners, after heat ageing, are resistant to impact and brittleness, after impact of weight from drop height $\geq 1,0$ m.

Plastic fasteners, after heat aging by the Charpy method, do not show a significant decline of mechanical resistance from the test results before heat ageing (difference $\leq 20\%$).

3.2 Methods used for the assessment

The assessment has been made in accordance with EAD 030351-00-0402.

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

According to Decision 98/143/EC of the European Commission the system 2+ of assessment and verification of constancy of performance applies (see Annex V to regulation (EU) No 305/2011).

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable European Assessment Document (EAD)

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at the Instytut Techniki Budowlanej.

For type testing the results of the tests performed as part of the assessment for the European Technical Assessment shall be used unless there are changes in the production line or plant. In such cases the necessary type testing has to be agreed between Instytut Techniki Budowlanej and the notified body.

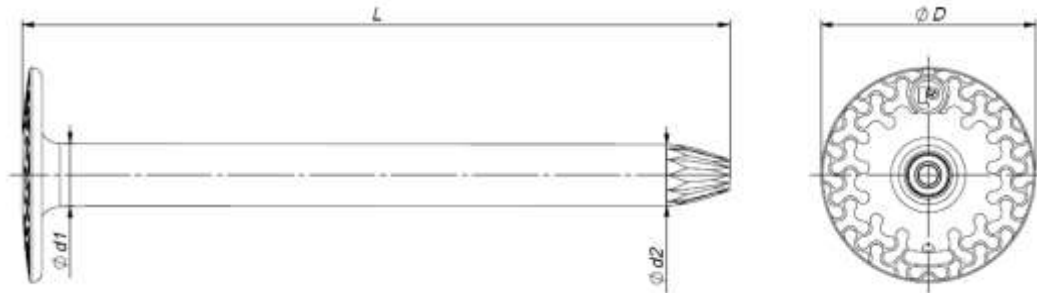
Issued in Warsaw on 29/03/2023 by Instytut Techniki Budowlanej



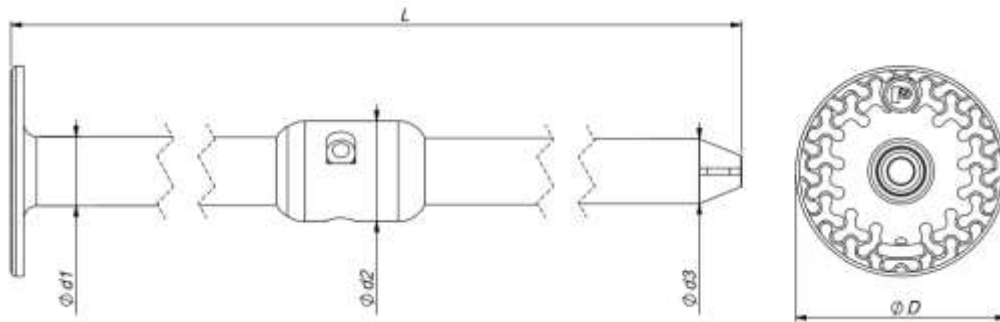
Anna Panek, MSc

Deputy Director of ITB

R-GOK-II



Dimensions, mm	
L	35 - 425
D	50
d1	14,7
d2	14,2



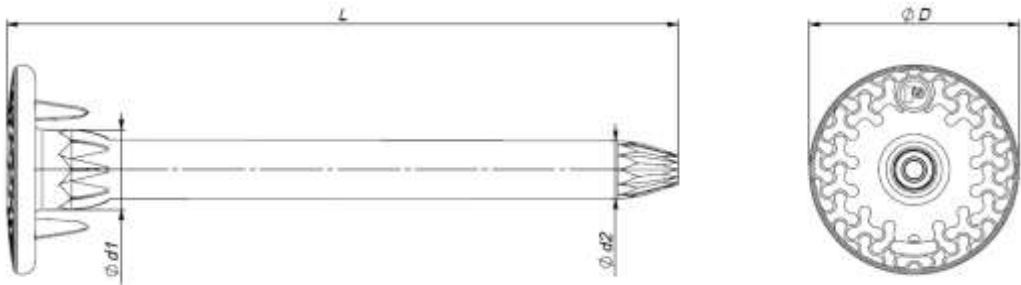
Dimensions, mm	
L	525 - 725
D	50
d1	16,5
d2	24,0
d3	15,5

R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW

Product description
R-GOK-II

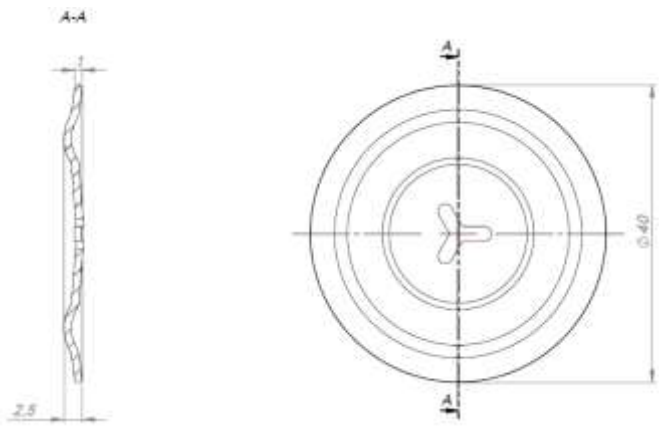
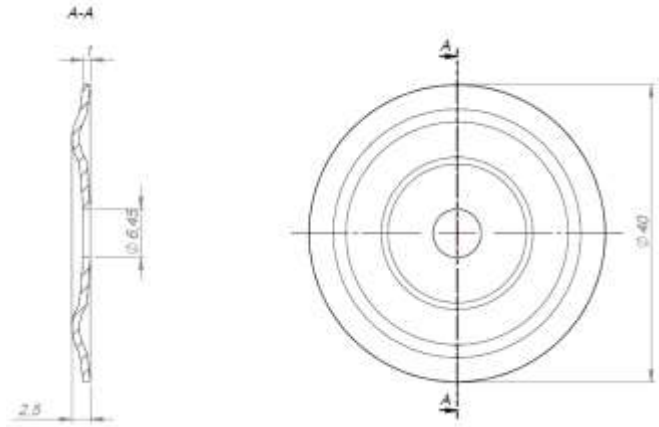
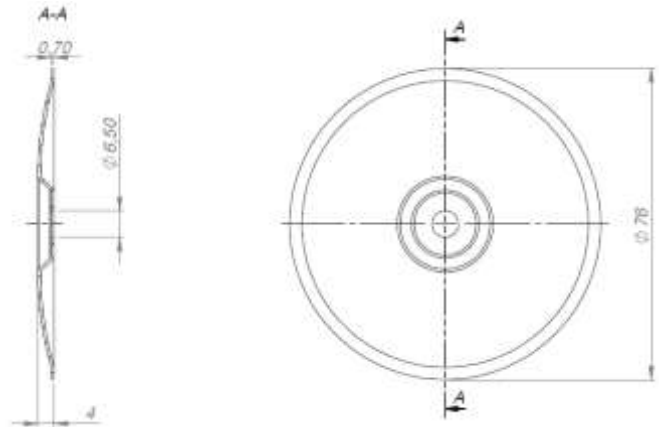
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R-GOK-II-PLUS

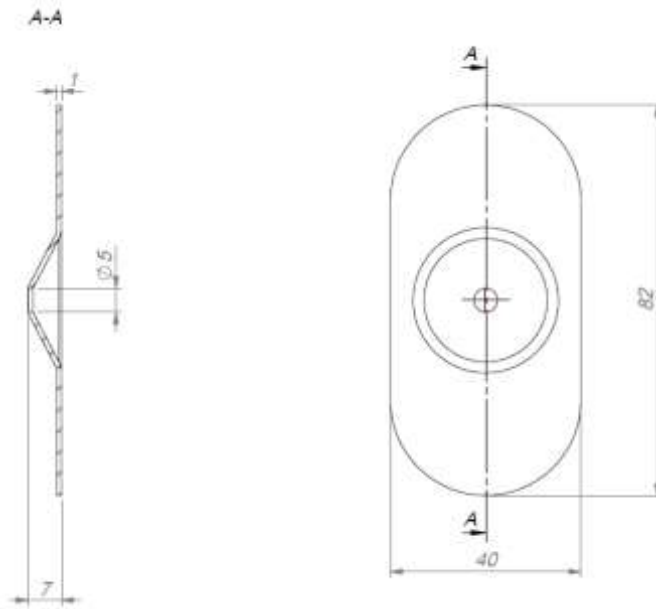


Dimensions, mm	
L	35 - 435
D	50
d	14,5
± 1,0	

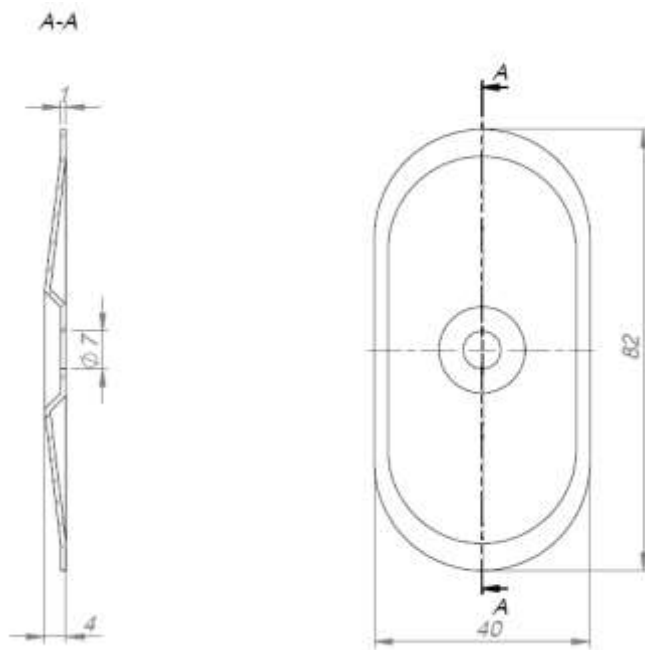
R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW	Annex A2 of European Technical Assessment ETA-23/0198
Product description R-GOK-II-PLUS	

<p>a) R-POK-040</p> 	<p>$D = 40 \pm 0,5 \text{ mm}$ $t = 1 \pm 0,05 \text{ mm}$</p>			
<p>b) R-POK-041</p> 	<p>$D = 40 \pm 0,05 \text{ mm}$ $d = 6,45 \pm 0,10 \text{ mm}$ $t = 1 \pm 0,05 \text{ mm}$</p>			
<p>c) R-POK-06</p> 	<p>$D = 76 (+0,15/-0,05) \text{ mm}$ $d = 6,5 \pm 0,1 \text{ mm}$ $t = 0,7 \pm 0,05 \text{ mm}$</p>			
<table border="1" style="width: 100%; text-align: center;"> <tbody> <tr> <td data-bbox="177 1803 1082 1892"> <p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p> </td> <td data-bbox="1082 1803 1418 2020" rowspan="2"> <p>Annex A3 of European Technical Assessment ETA-23/0198</p> </td> </tr> <tr> <td data-bbox="177 1892 1082 2020"> <p>Product description R-POK</p> </td> </tr> </tbody> </table>		<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p>	<p>Annex A3 of European Technical Assessment ETA-23/0198</p>	<p>Product description R-POK</p>
<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p>	<p>Annex A3 of European Technical Assessment ETA-23/0198</p>			
<p>Product description R-POK</p>				

a) R-POW-05



b) R-POW-07

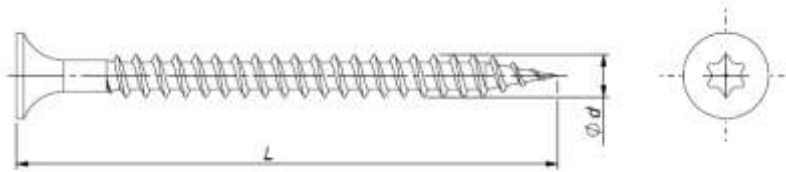


R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW

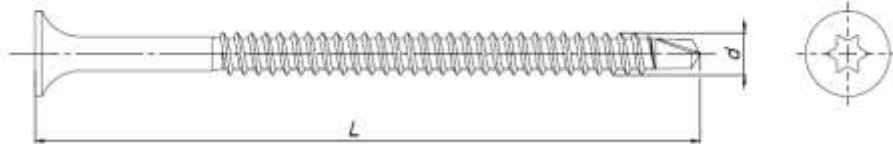
Product description
R-POW

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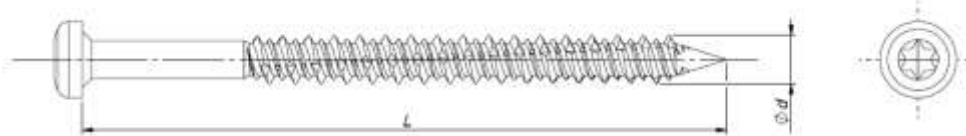
a) R-WO / R-WO-T



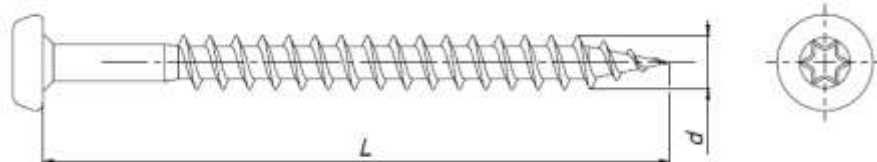
b) R-WX / R-WX-T



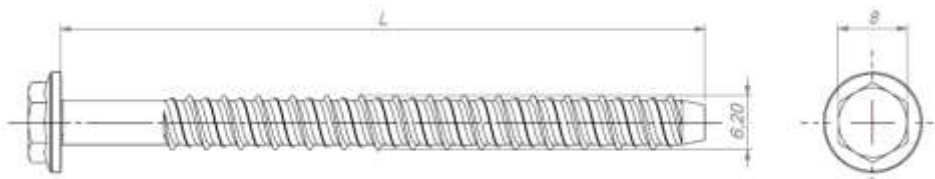
c) R-WBT / R-WBT-T



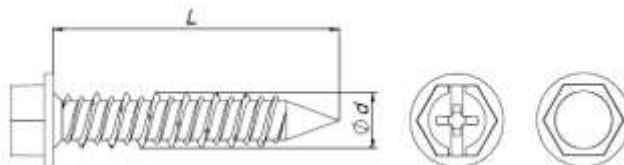
d) R-WW / R-WW-T



e) R-LX



f) R-WCS



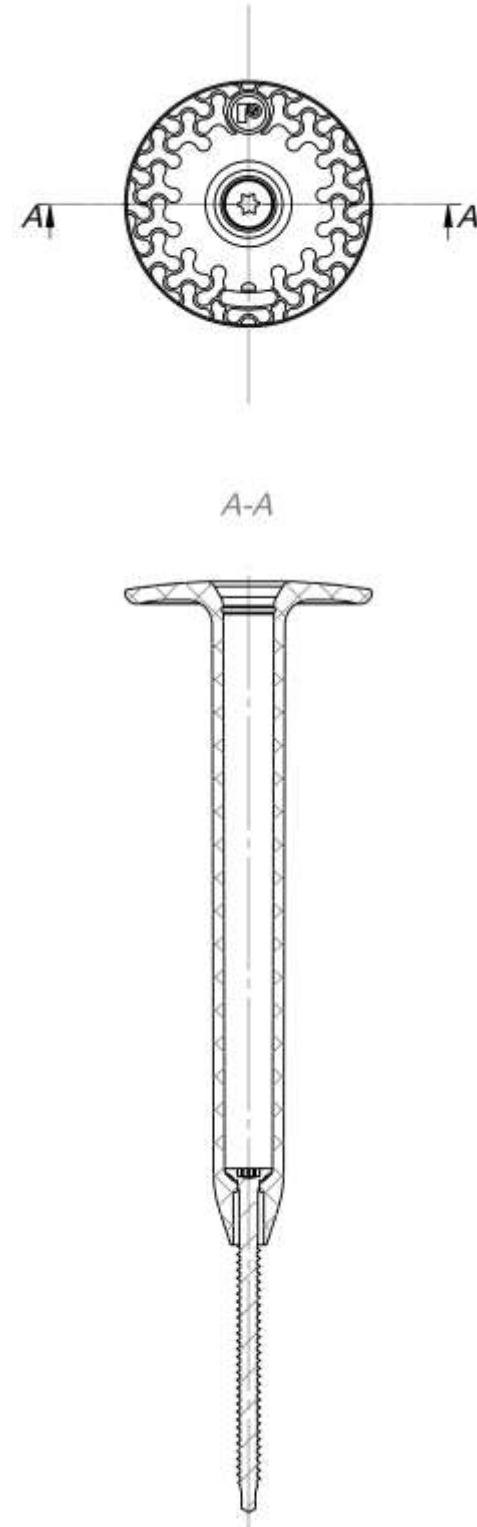
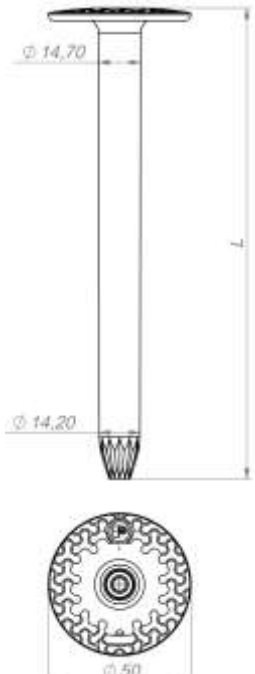
R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW

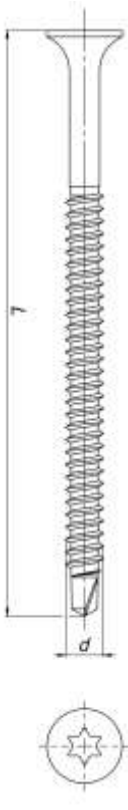
Product description
Screws

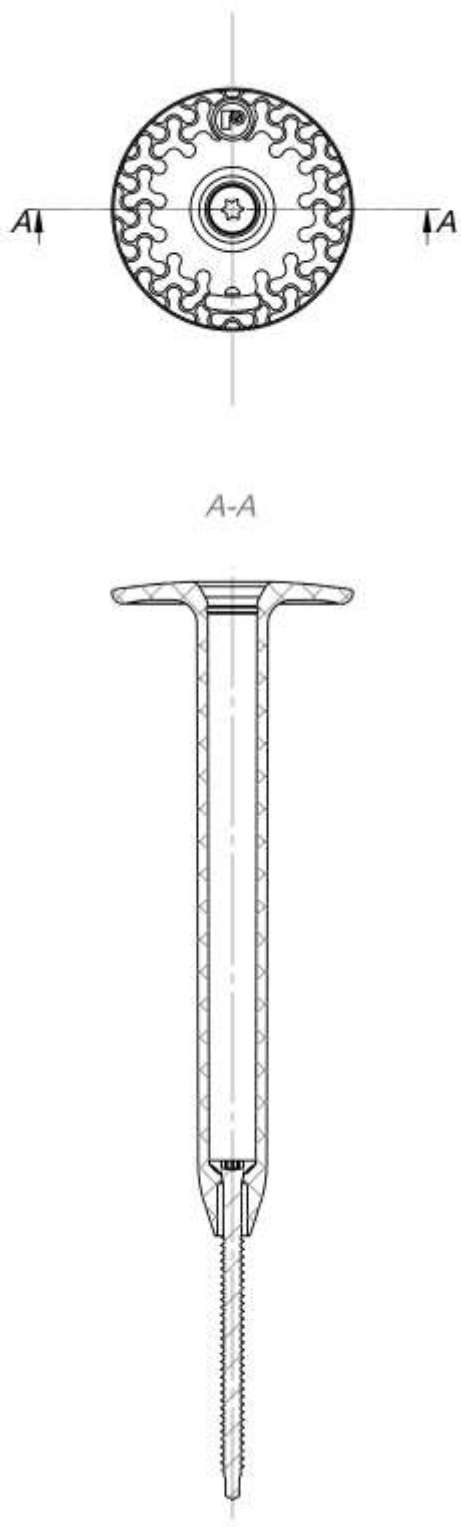
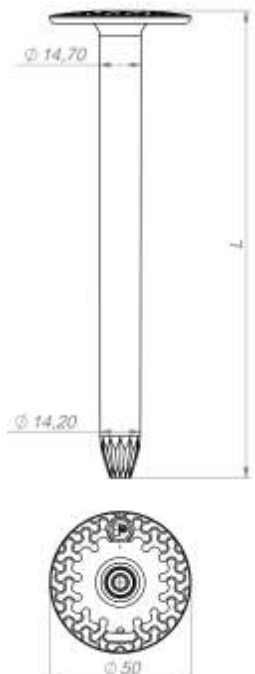
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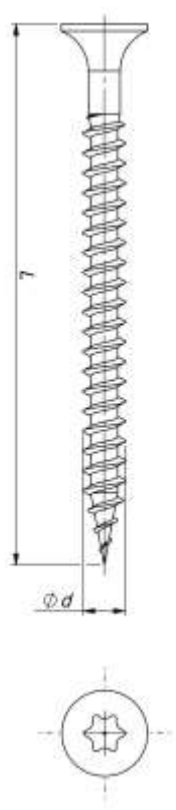
Screw	d, mm	L, mm
R-WO / R-WO-T	4,8	60 - 300
R-WX / R-WX-T	4,8	50 - 300
R-WBT	6,1	50 - 300
R-WW / R-WW-T	5,0	50 - 180
R-LX	6,2	35 - 250
R-WCS	6,3	28 - 260
	- 0,20 + 0,10	± 1

R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW	Annex A6 of European Technical Assessment ETA-23/0198
Product description Screws – dimensions	

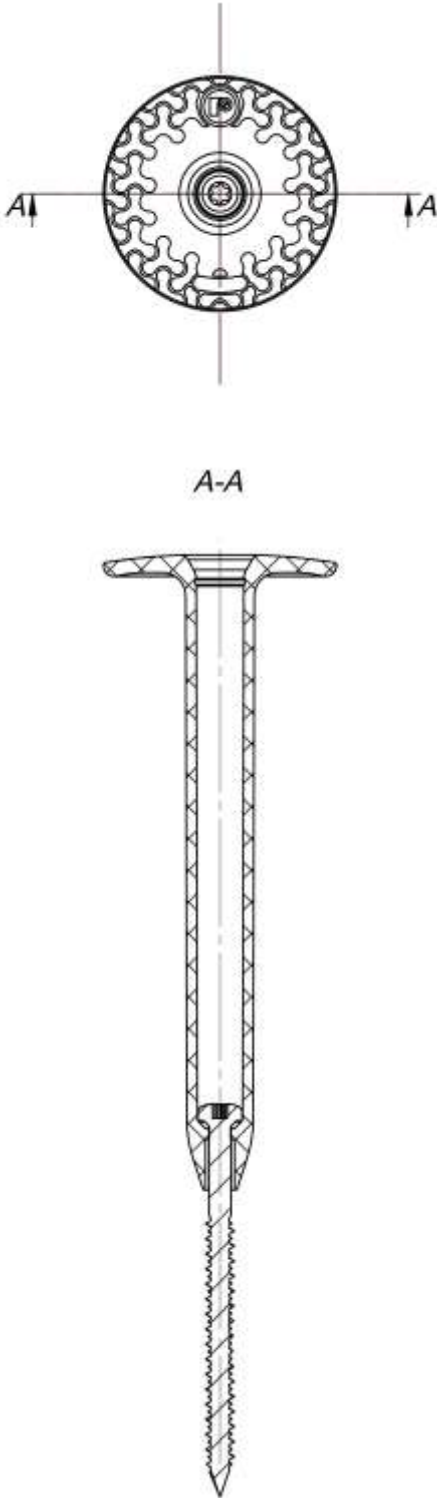

	
<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p> <p>Product description Combination 1: R-GOK II / R-WX</p>	<p>Annex A7 of European Technical Assessment ETA-23/0198</p>

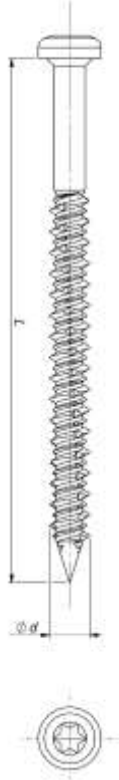


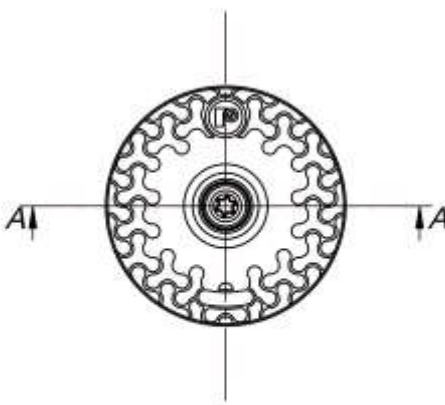

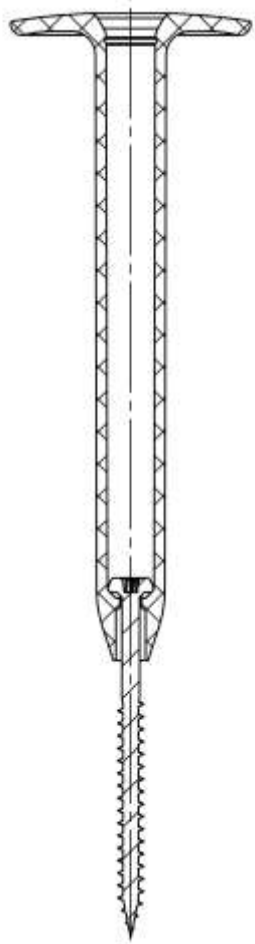
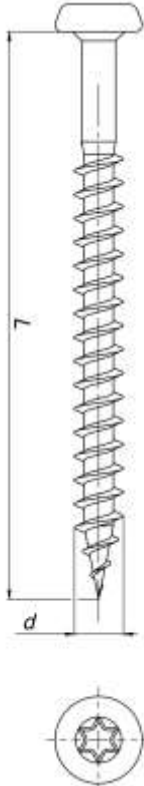
 <p>A technical drawing of a circular anchor head. The top part shows a top view with a central hole and a surrounding pattern of small holes. A horizontal line with arrows at both ends is labeled 'A-A'. Below this is a side view of the anchor body, showing a wide, flat top flange and a long, narrow stem with a textured surface. The stem ends in a pointed tip.</p>	 <p>A technical drawing of a smooth-shank anchor. The top part shows a side view with a wide, flat top flange and a long, narrow stem. The diameter of the top flange is labeled as $\varnothing 14,70$ and the diameter of the stem is labeled as $\varnothing 14,20$. The length of the stem is labeled as 'l'. Below this is a top view of the anchor head, showing a circular shape with a central hole and a surrounding pattern of small holes. The diameter of the top flange is labeled as $\varnothing 50$.</p>
<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p> <p>Product description Combination 2: R-GOK II / R- WO</p>	<p>Annex A8 of European Technical Assessment ETA-23/0198</p>

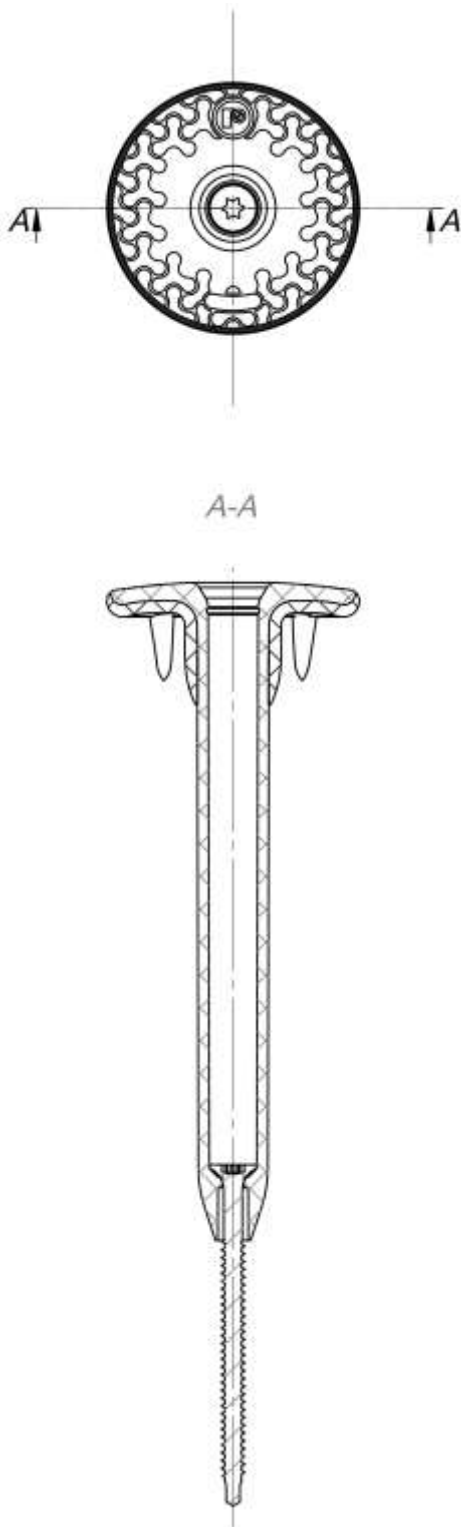

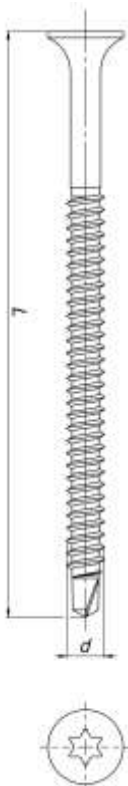


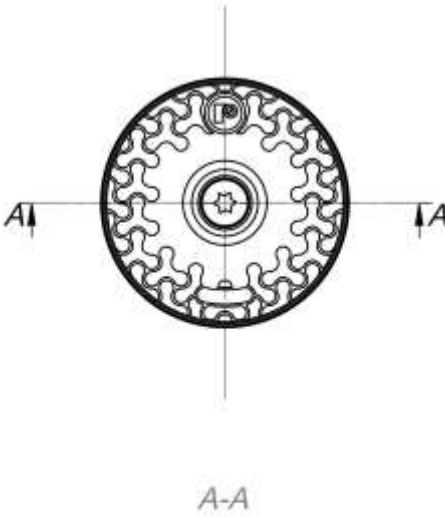

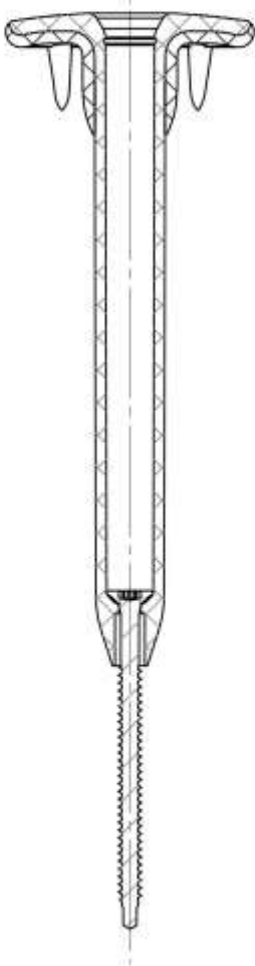
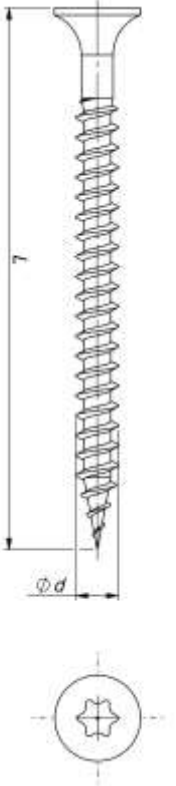
A technical drawing of a threaded anchor. The top part shows a side view of a threaded stem with a wide, flat top flange. The length of the stem is labeled as 'l' and the diameter of the stem is labeled as $\varnothing d$. Below this is a top view of the anchor head, showing a circular shape with a central hole and a surrounding pattern of small holes.

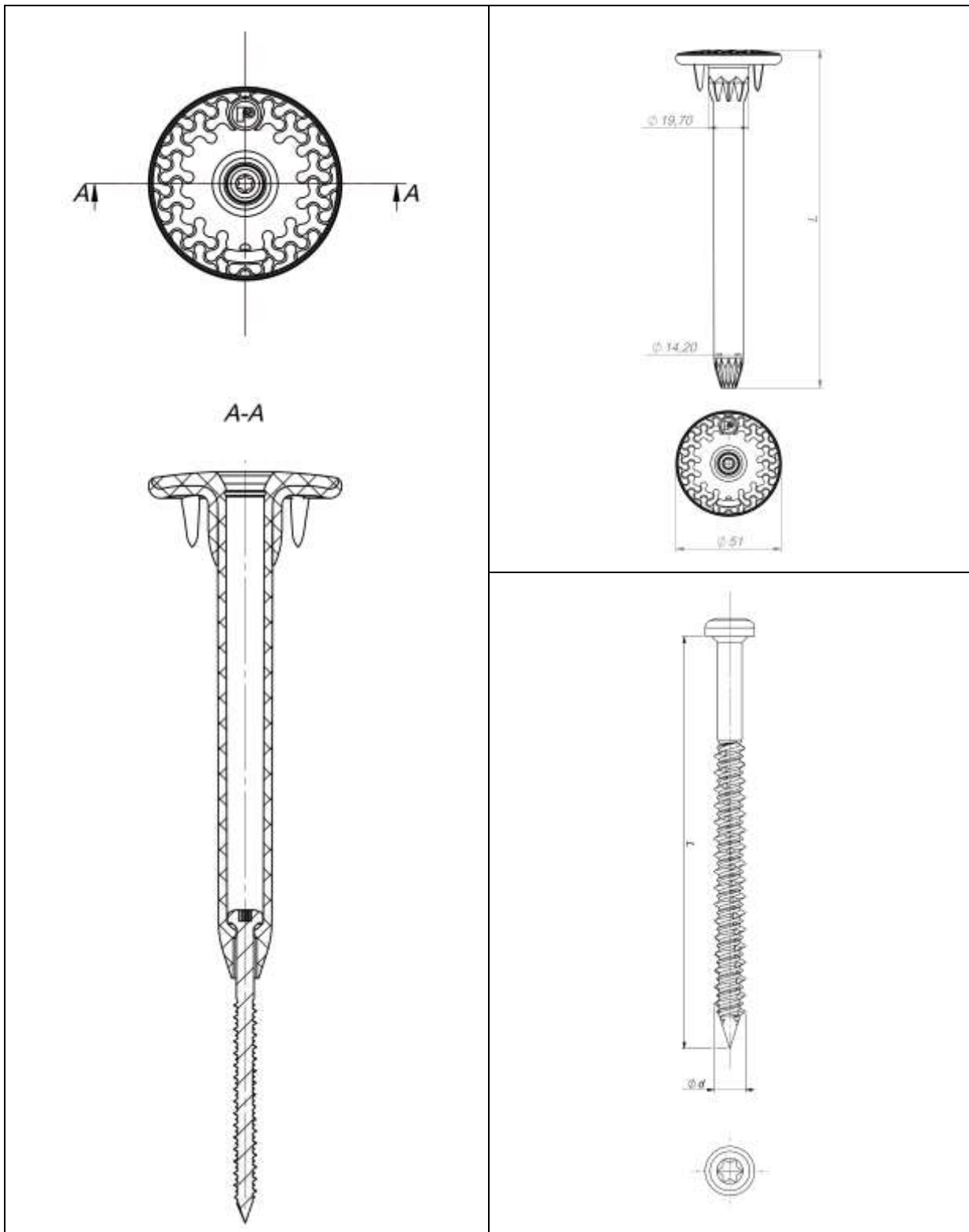
 <p style="text-align: center;">A-A</p>	
<p style="text-align: center;">R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p> <hr/> <p style="text-align: center;">Product description Combination 3: R-GOK II / R-WBT</p>	<p style="text-align: center;">Annex A9 of European Technical Assessment ETA-23/0198</p>



 <p style="text-align: center;">A-A</p>	
	
<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p>	
<p>Product description Combination 4: R-GOK II / R-WW</p>	<p>Annex A10 of European Technical Assessment ETA-23/0198</p>

	
<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p> <p>Product description Combination 5: R-GOK II PLUS / R-WX</p>	 <p>Annex A11 of European Technical Assessment ETA-23/0198</p>

	
	
<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p>	<p>Annex A12</p>
<p>Product description Combination 6: R-GOK II PLUS / R-WO</p>	<p>of European Technical Assessment ETA-23/0198</p>



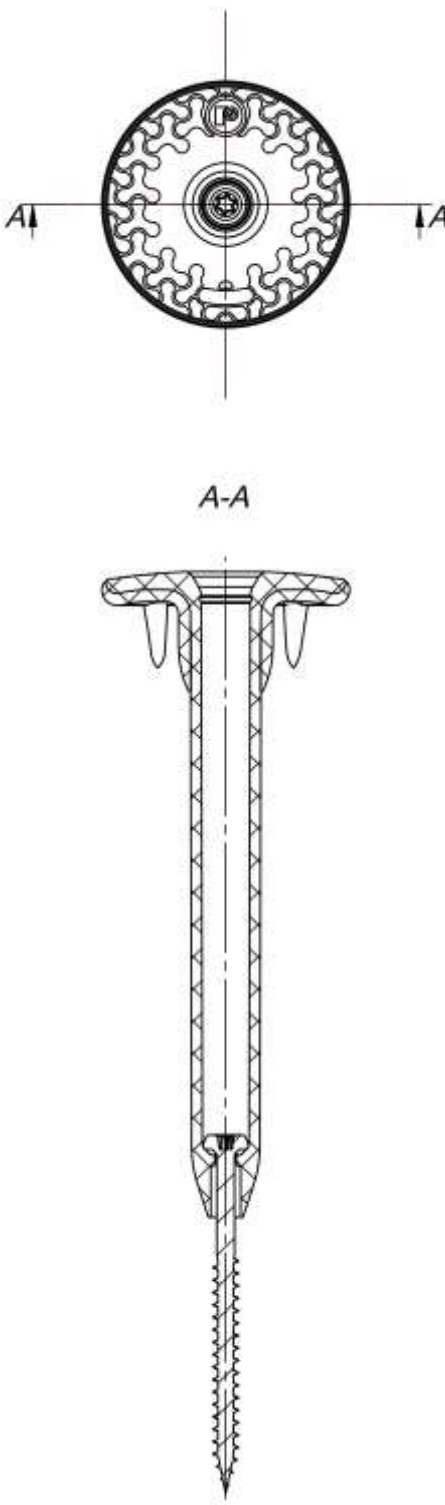

R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW

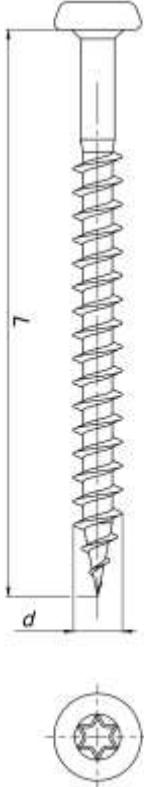
Product description

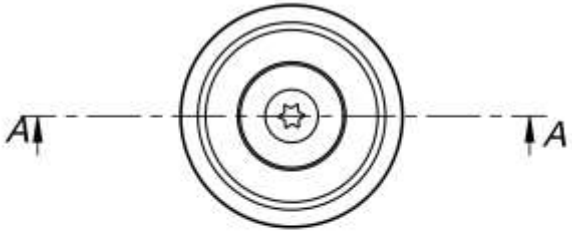
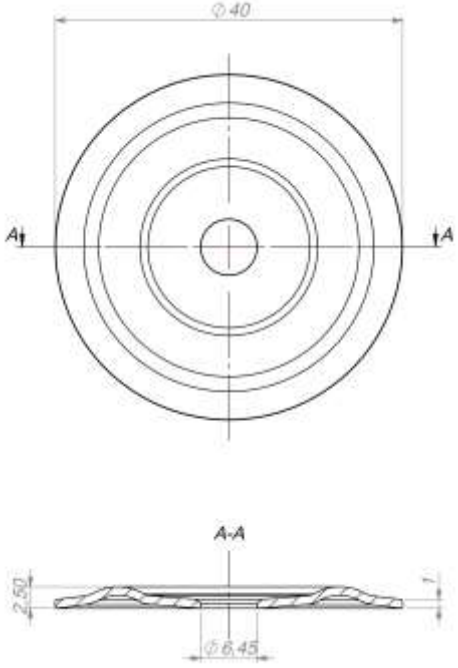
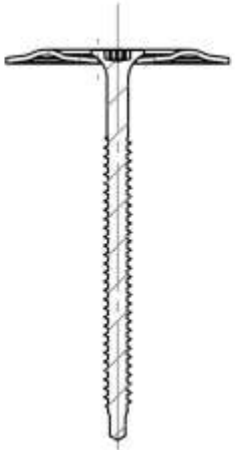
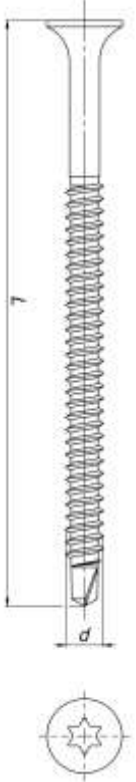
Combination 7: R-GOK II PLUS / R-WBT

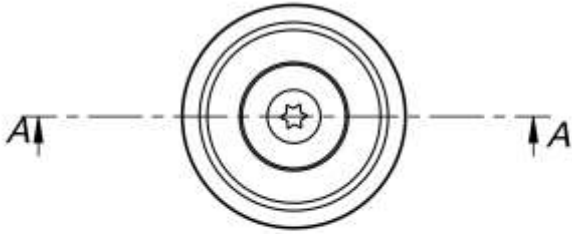
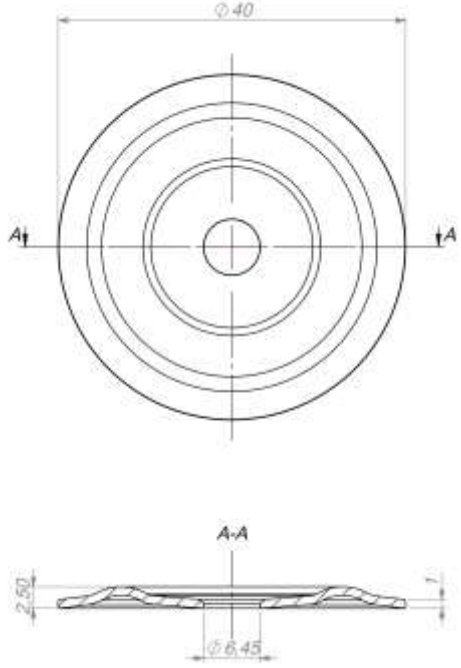
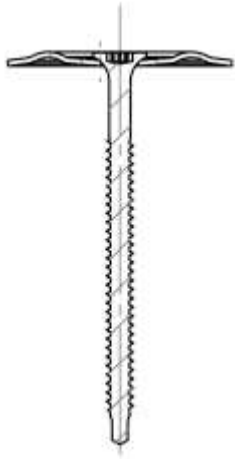
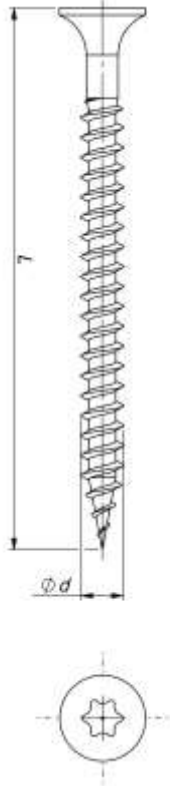
Annex A13

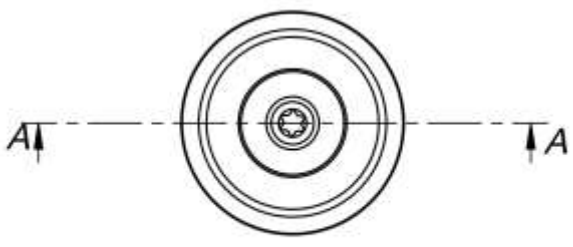
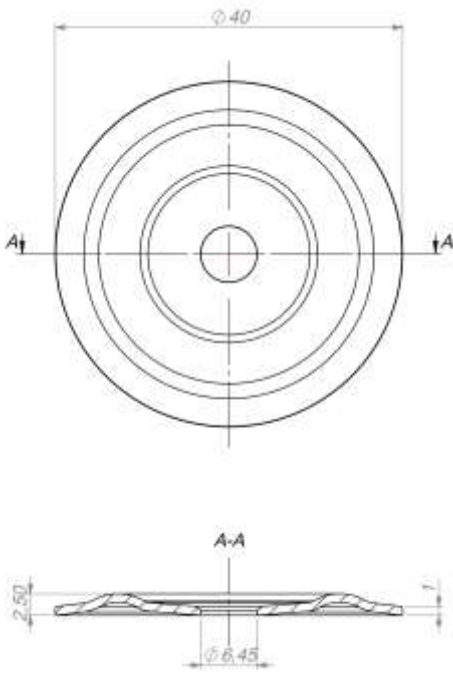
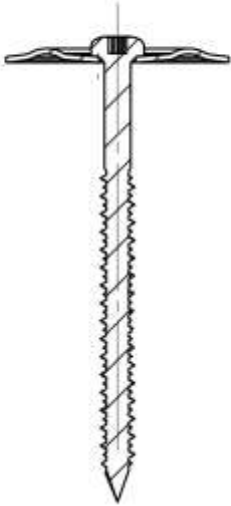
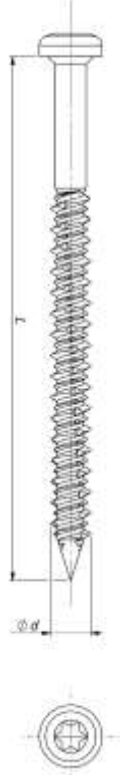
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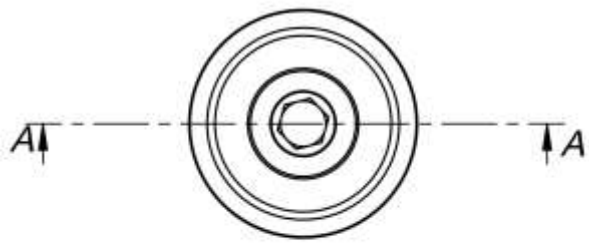
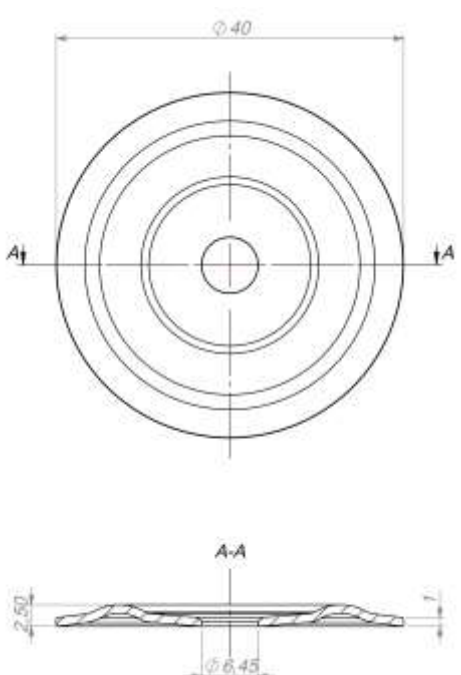
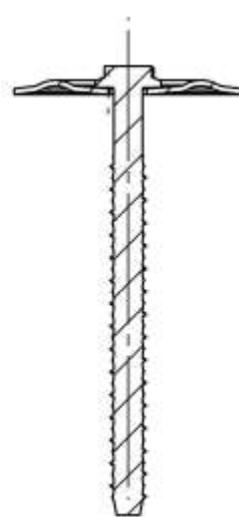
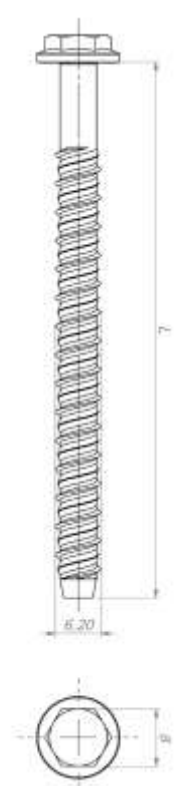
	
<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p> <p>Product description Combination 8: R-GOK II PLUS / R-WW</p>	<p>Annex A14 of European Technical Assessment ETA-23/0198</p>

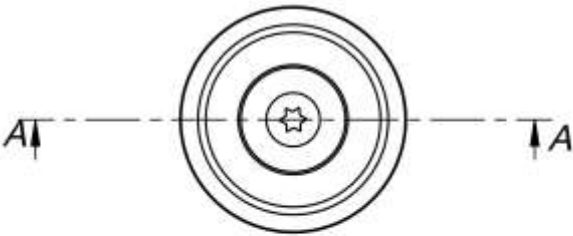
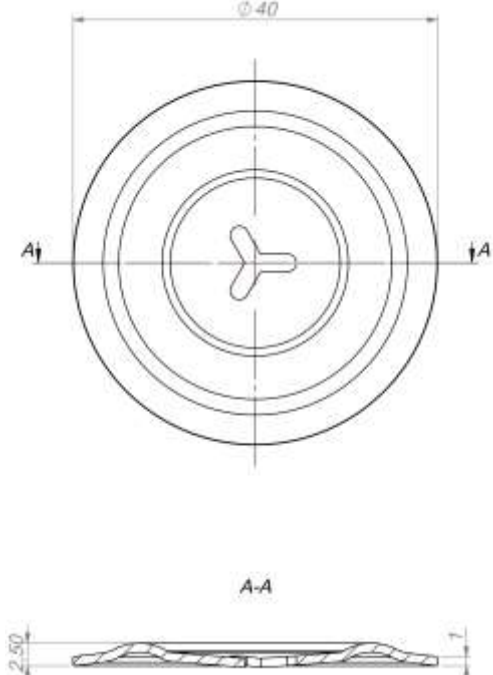

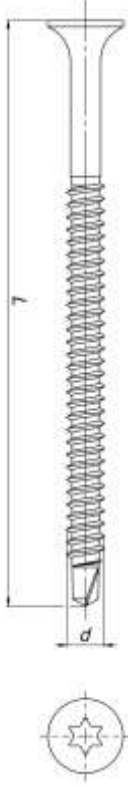


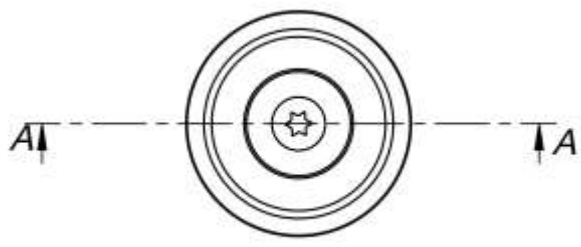
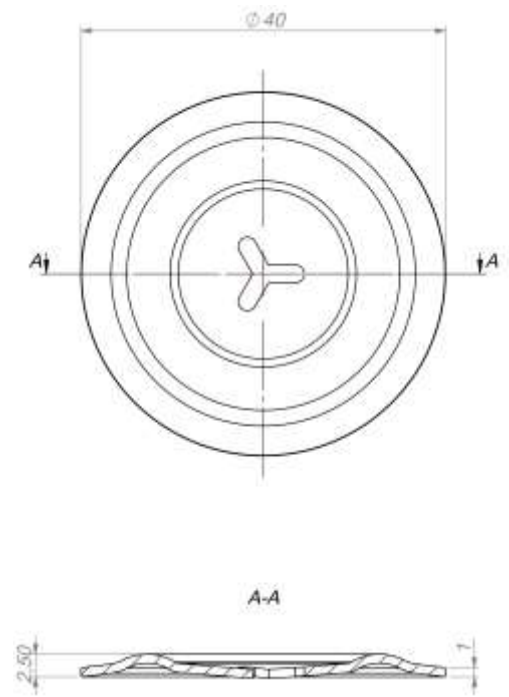
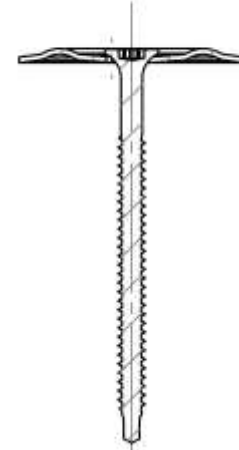
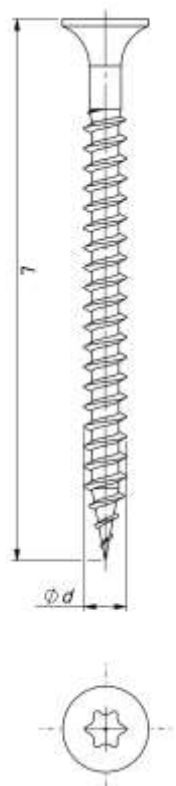
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<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p>	
<p>Product description Combination 9: R-POK-041 / R-WX</p>	<p>Annex A15 of European Technical Assessment ETA-23/0198</p>

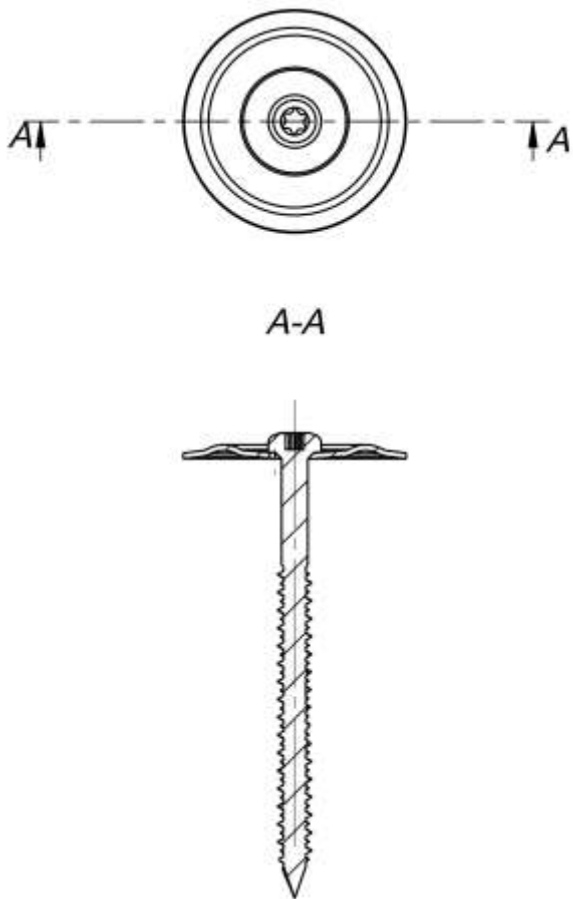
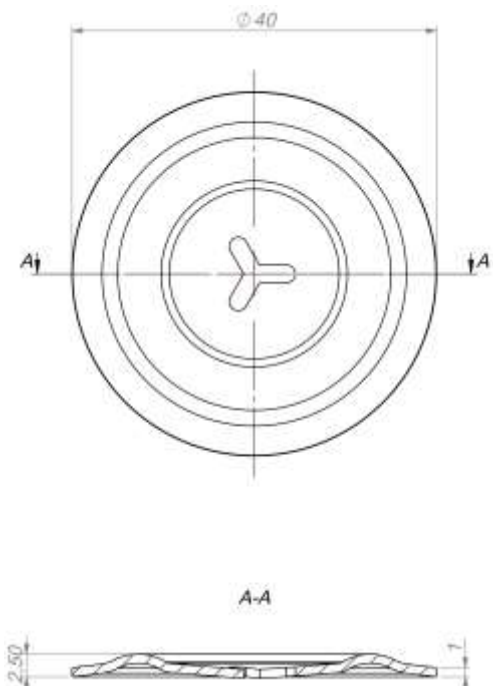
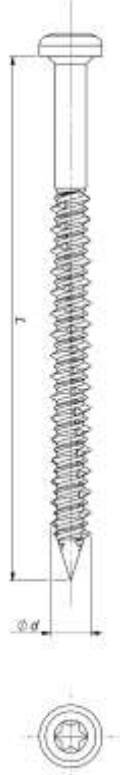
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<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p>	
<p>Product description Combination 10: R-POK-041 / R-WO</p>	<p>Annex A16 of European Technical Assessment ETA-23/0198</p>

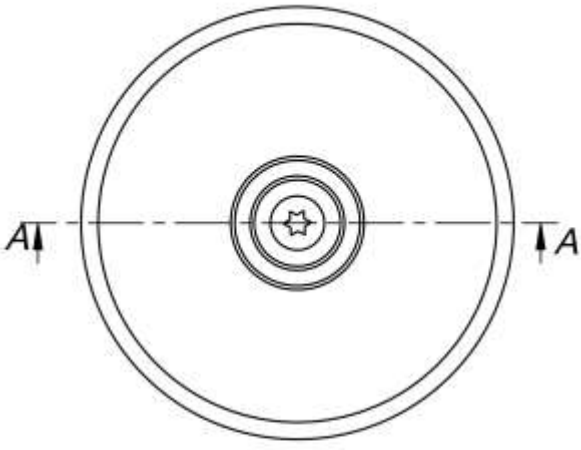
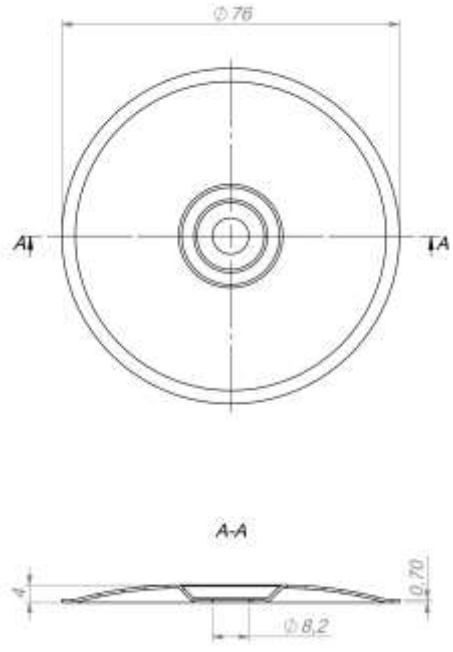
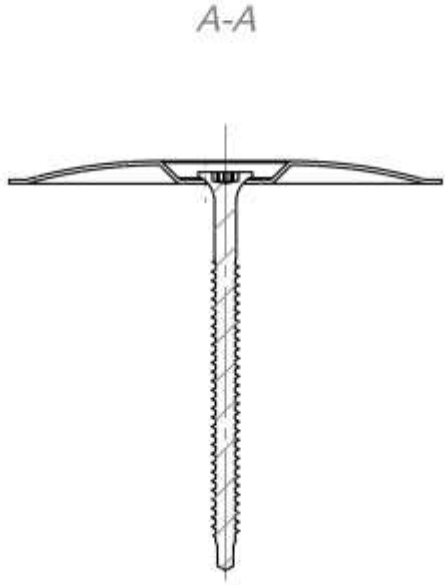
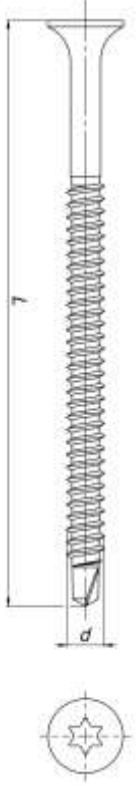
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<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p>	
<p>Product description Combination 11: R-POK-041 / R-WBT</p>	<p>Annex A17 of European Technical Assessment ETA-23/0198</p>

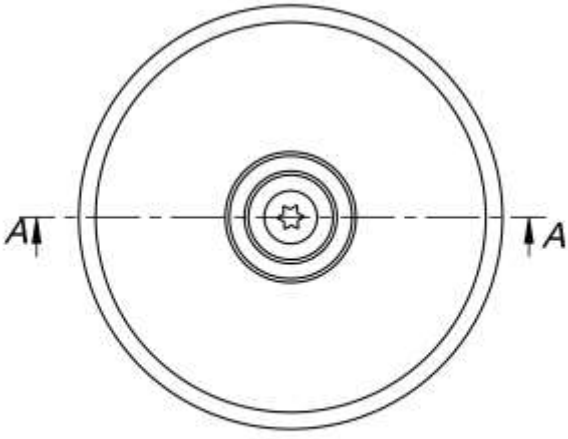
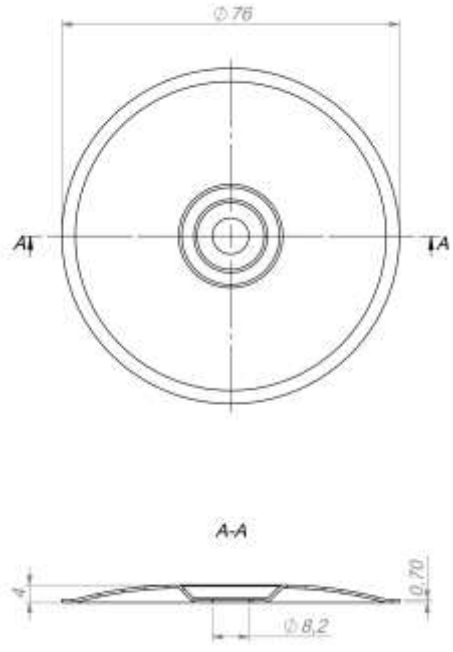
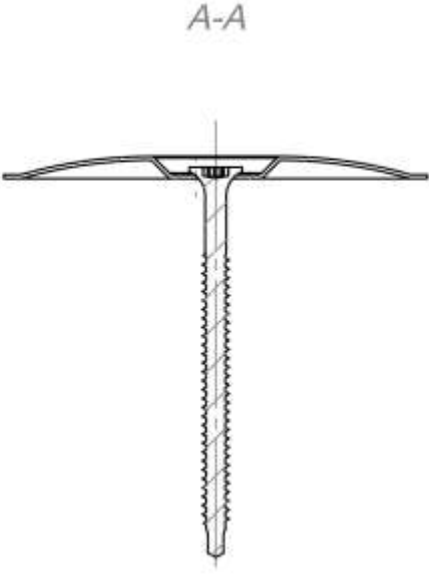
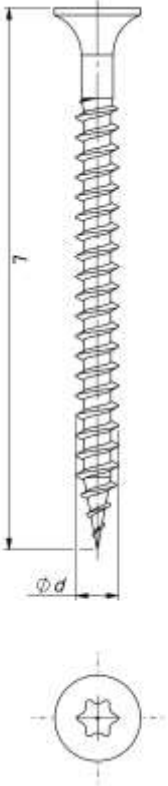
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<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p>	
<p>Product description Combination 12: R-POK-041 / R-LX</p>	<p>Annex A18 of European Technical Assessment ETA-23/0198</p>

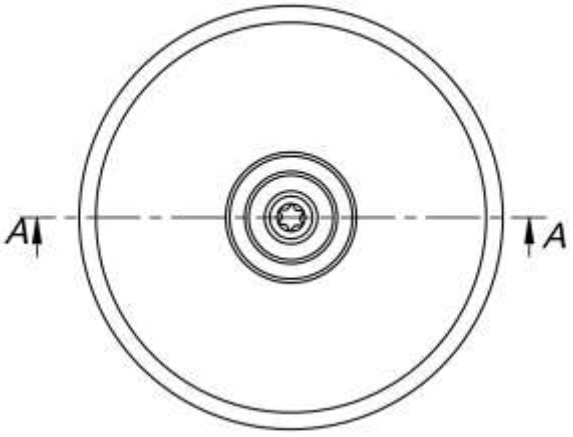
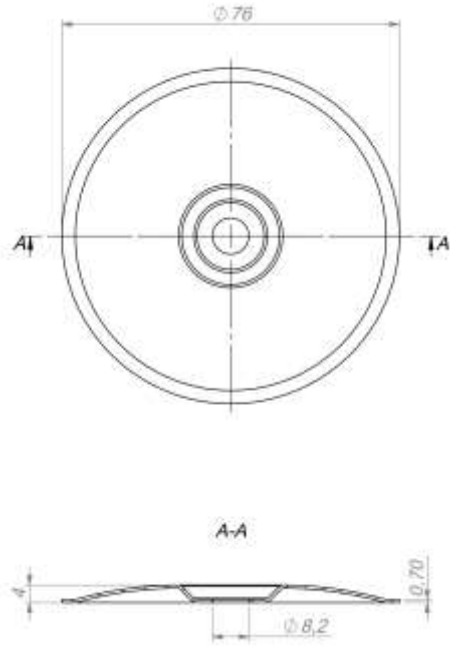
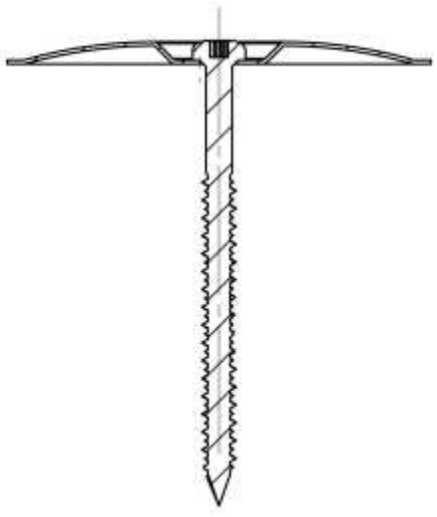
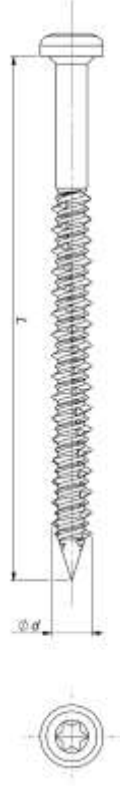
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<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p>	<p>Annex A19</p>
<p>Product description Combination 13: R-POK-040 / R-WX</p>	<p>of European Technical Assessment ETA-23/0198</p>

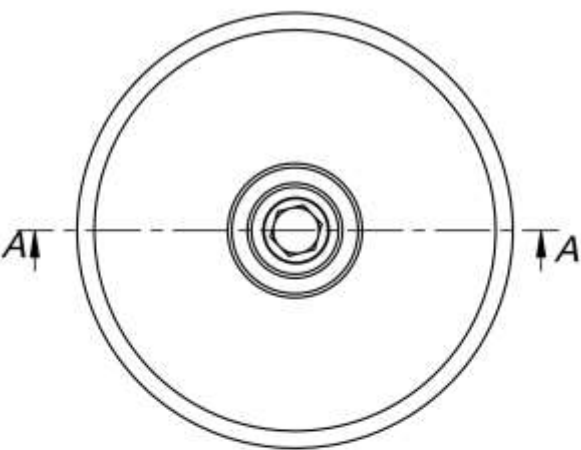
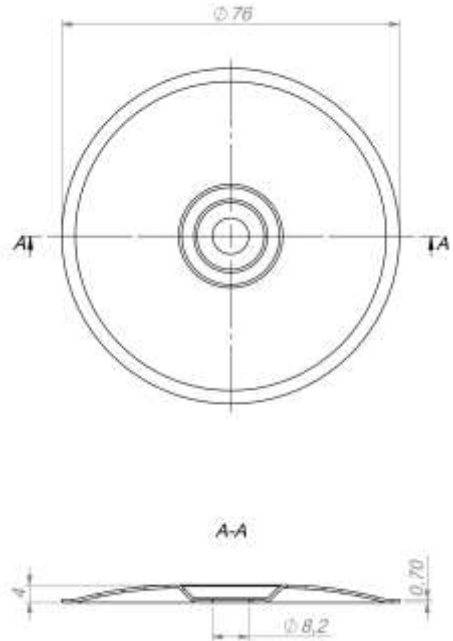
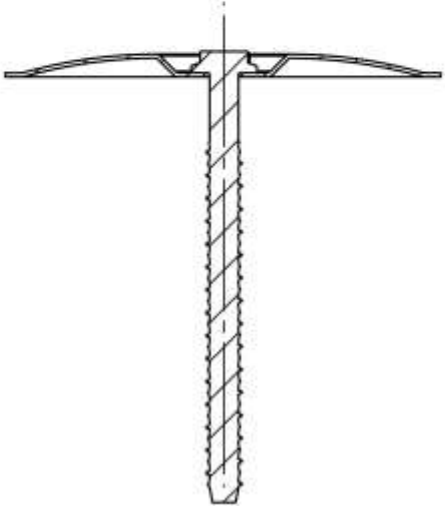
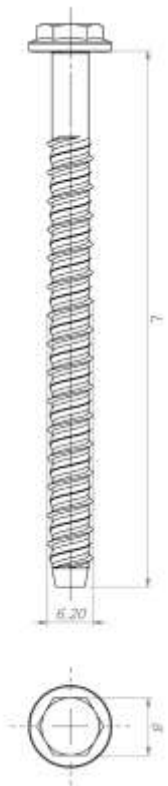
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<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p>	<p>Annex A20</p>
<p>Product description Combination 14: R-POK-040 / R-WO</p>	<p>of European Technical Assessment ETA-23/0198</p>

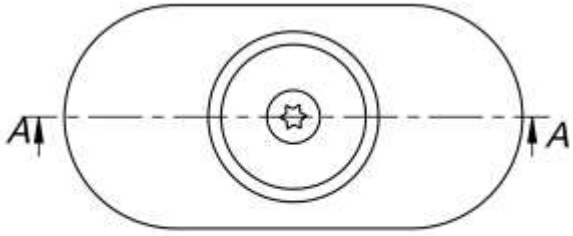
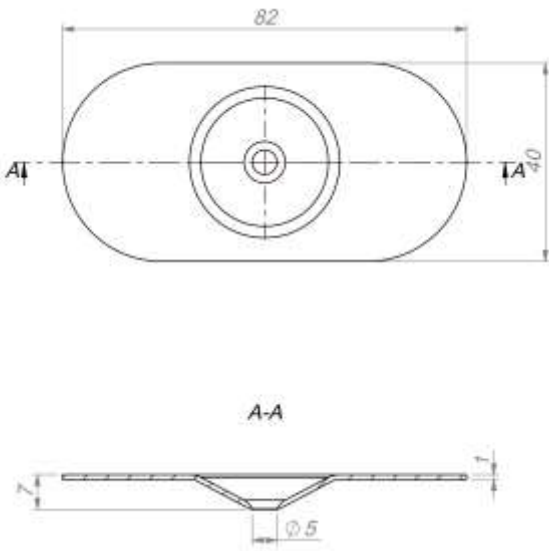
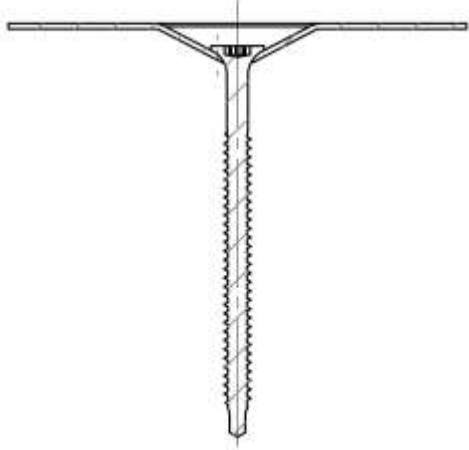
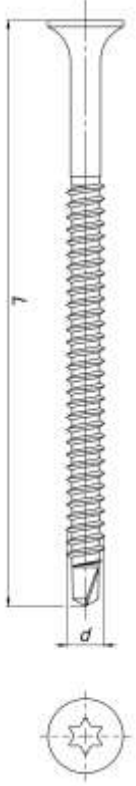
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	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td data-bbox="177 1792 1082 1881" style="text-align: center; vertical-align: middle;">R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</td> <td data-bbox="1082 1792 1414 2009" style="text-align: center; vertical-align: middle;">Annex A21 of European Technical Assessment ETA-23/0198</td> </tr> <tr> <td data-bbox="177 1881 1082 2009" style="text-align: center; vertical-align: middle;">Product description Combination 15: R-POK-040 / R-WBT</td> <td></td> </tr> </table>	R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW	Annex A21 of European Technical Assessment ETA-23/0198	Product description Combination 15: R-POK-040 / R-WBT	
R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW	Annex A21 of European Technical Assessment ETA-23/0198				
Product description Combination 15: R-POK-040 / R-WBT					

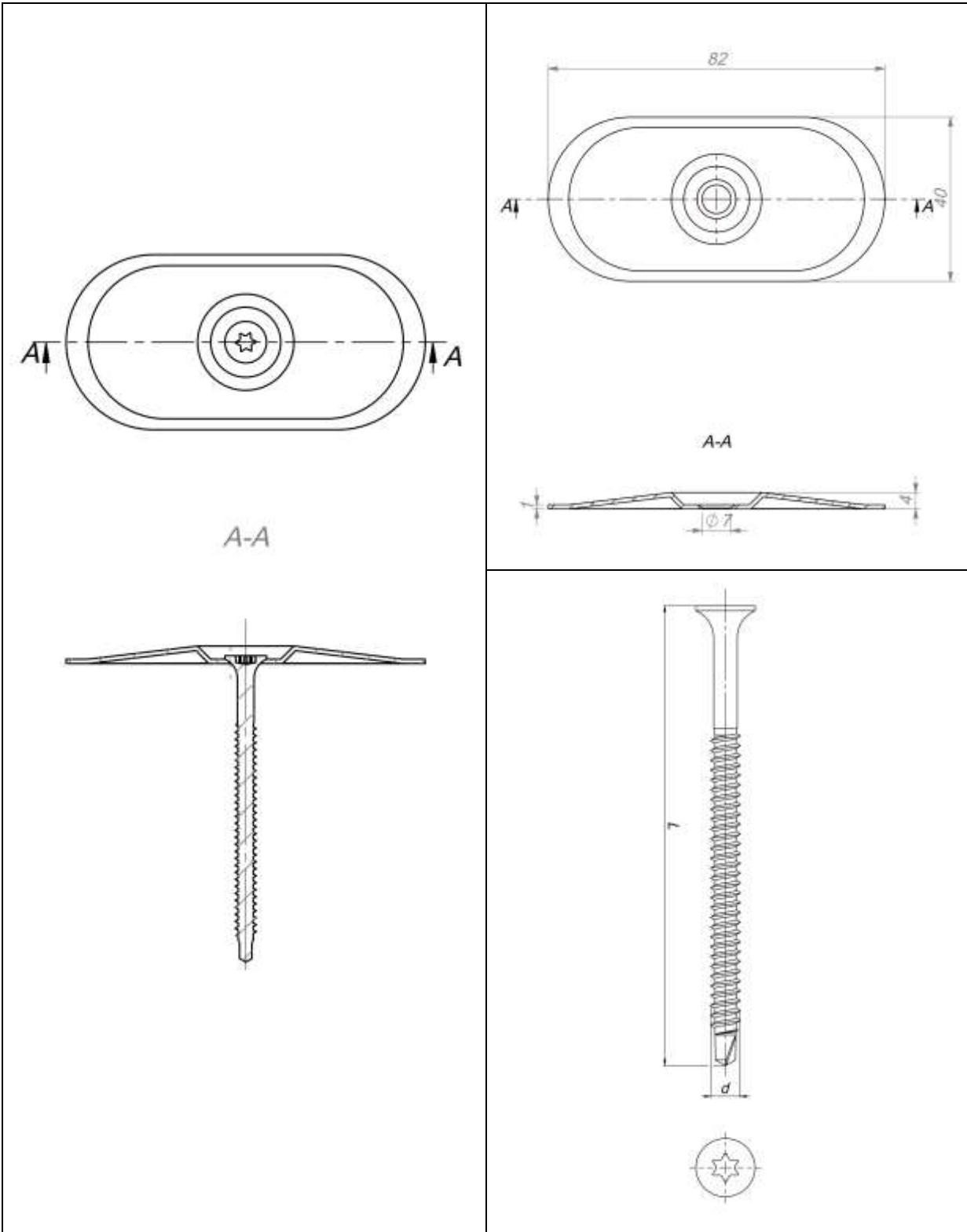
	
	
<p style="text-align: center;">R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p> <hr/> <p style="text-align: center;">Product description Combination 16: R-POK-06 / R-WX</p>	<p style="text-align: center;">Annex A22 of European Technical Assessment ETA-23/0198</p>

	
	
<p style="text-align: center;">R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p> <hr/> <p style="text-align: center;">Product description Combination 17: R-POK-06 / R-WO</p>	<p style="text-align: center;">Annex A23 of European Technical Assessment ETA-23/0198</p>

	
<p style="text-align: center;">A-A</p> 	
<p style="text-align: center;">R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p> <p style="text-align: center;">Product description Combination 18: R-POK-06 / R-WBT</p>	<p style="text-align: center;">Annex A24 of European Technical Assessment ETA-23/0198</p>

 <p style="text-align: center;">A-A</p>	
	
<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p>	<p>Annex A25</p>
<p>Product description Combination 19: R-POK-06 / R-LX</p>	<p>of European Technical Assessment ETA-23/0198</p>

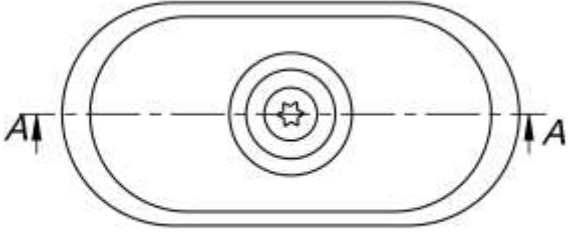
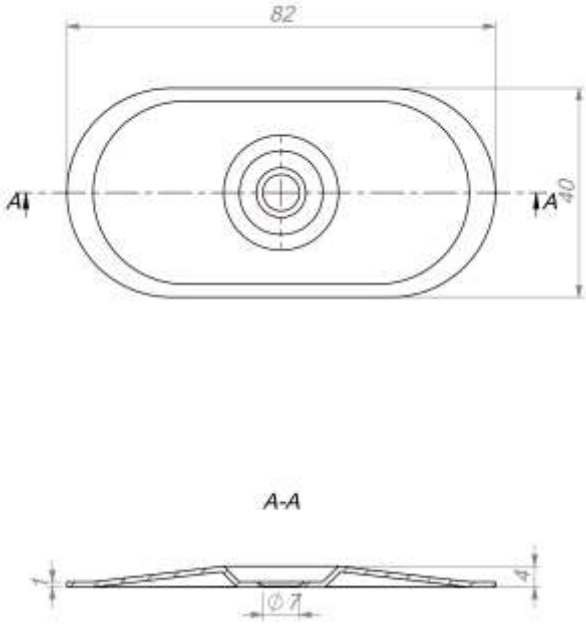
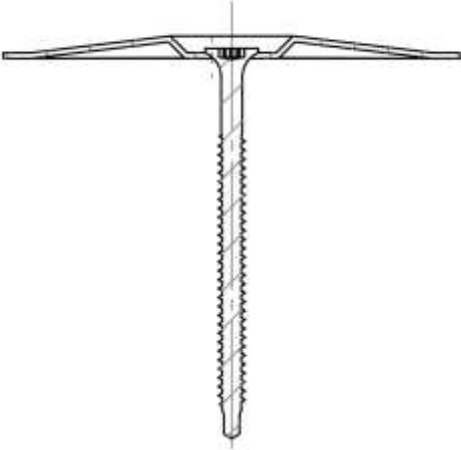
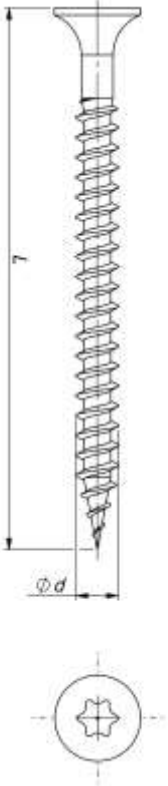
	
	
<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p>	<p>Annex A26</p>
<p>Product description Combination 20: R-POW-05 / R-WX</p>	<p>of European Technical Assessment ETA-23/0198</p>

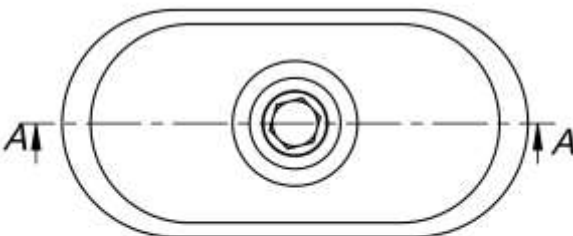
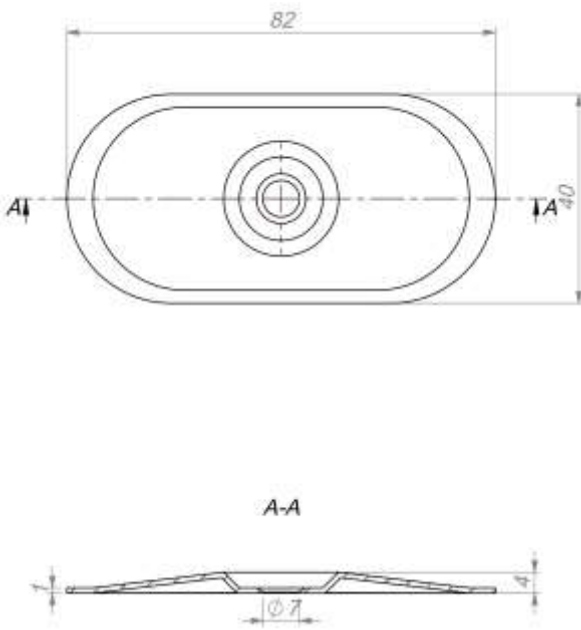
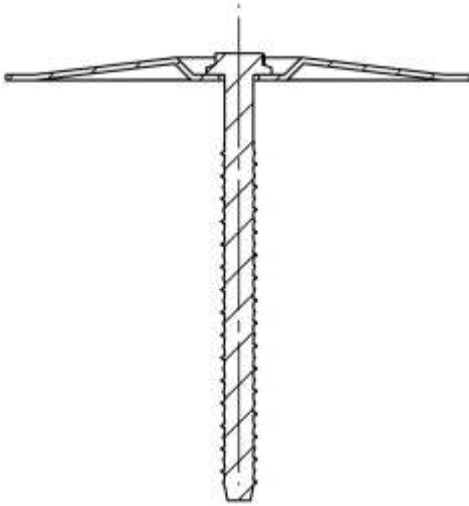
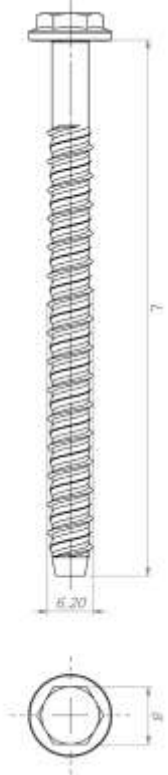


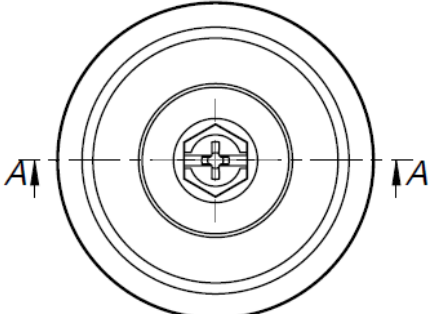
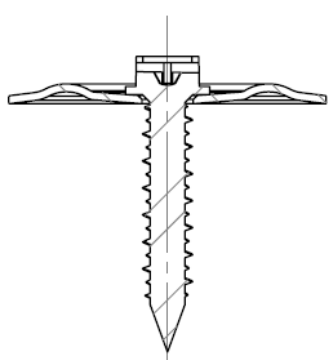
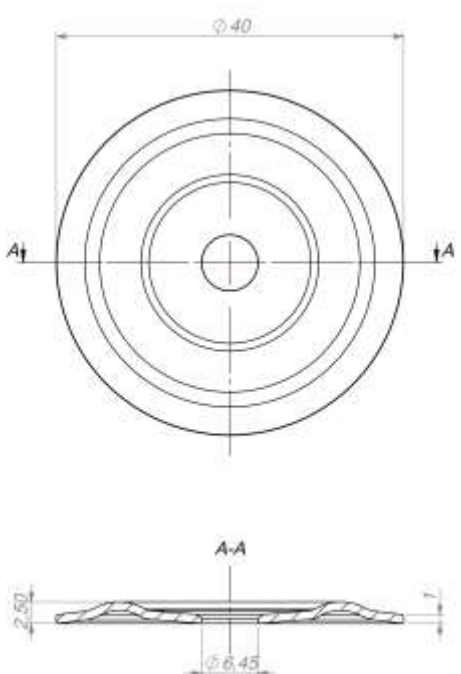
R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW

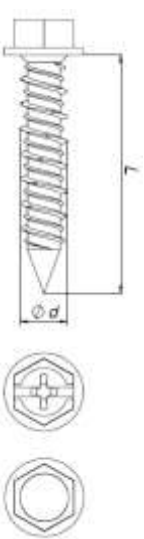
Product description
 Combination 21: R-POW-07 / R-WX

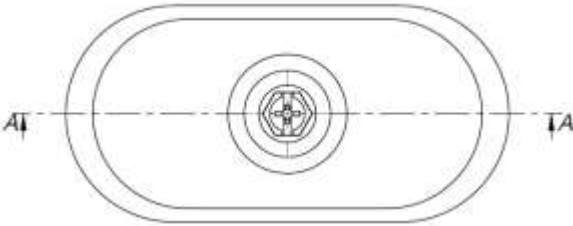
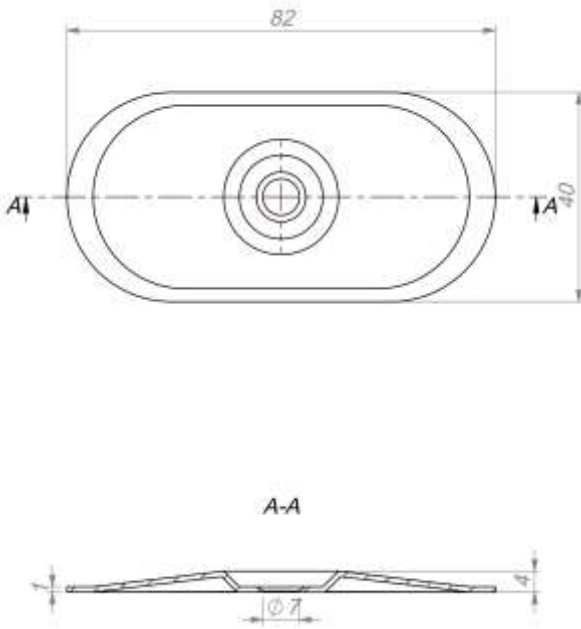
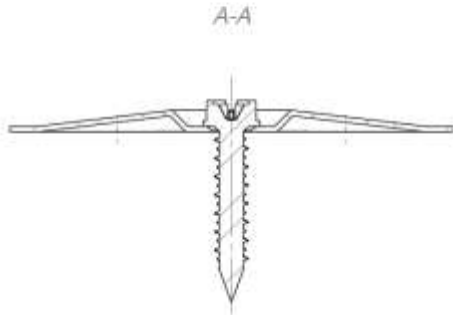
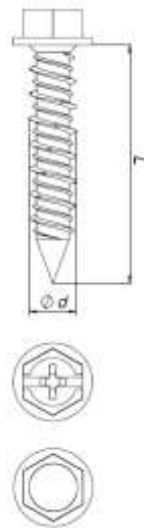
Annex A27
 of European
 Technical Assessment
 ETA-23/0198

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<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p>	
<p>Product description Combination 22: R-POW-07 / R-WO</p>	<p>Annex A28 of European Technical Assessment ETA-23/0198</p>

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<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p>	<p>Annex A29 of European Technical Assessment ETA-23/0198</p>				
<p>Product description Combination 23: R-POW-07 / R-LX</p>					

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<p style="text-align: center;">R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p> <p style="text-align: center;">Product description</p> <p style="text-align: center;">Combination 24: R-POK-41 / R-WCS</p>	<p style="text-align: center;">Annex A30</p> <p style="text-align: center;">of European Technical Assessment ETA-23/0198</p>



		
		
<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p>		<p>Annex A31 of European Technical Assessment ETA-23/0198</p>
<p>Product description Combination 25: R-POW-07 / R-WCS</p>		

Specifications of intended use

Anchorage subject to:

- Fastening of flexible roof waterproofing membranes according to EAD 030351-00-0402.

Base materials:

- Steel sheets
- Reinforced or unreinforced normal weight concrete, including prestressed hollow core slabs and channel slabs
- Timber structures
- OSB sheets
- Wood wool panels
- Particleboards

Installation

- The installation is carried out according to the manufacturer’s instructions. The manufacturer hands over the assembly instructions to the assembler.
- The conformity of the installed fasteners with this ETA is attested by the executing company.

<p>R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW</p>	<p>Annex B of European Technical Assessment ETA-23/0198</p>
<p>Intended use Specification</p>	

Steel sheets								
R-GOK-II R-GOK-II-PLUS		Characteristic values of axial load resistance, R_k [kN] (depends on thickness of steel sheet, t [mm])						
Fastener	Steel sheets acc. to EN 10346	$\geq 0,50$	$\geq 0,63$	$\geq 0,75$	$\geq 0,88$	$\geq 1,00$	$\geq 1,25$	$\geq 1,50$
R-WO / R-WO-T	S280GD	0,61	0,83	1,19	1,22	1,59	-	-
	S320GD	0,66	0,90	1,29	1,32	1,73	-	-
	S350GD	0,71	0,97	1,38	1,41	1,85	-	-
R-WX / R-WX-T	S280GD	-	0,74	1,00	1,08	1,50	1,86	1,88
	S320GD	-	0,80	1,08	1,17	1,62	1,88	1,88
	S350GD	-	0,87	1,16	1,26	1,74	1,88	1,88

Steel sheets								
R-POK-040 R-POK-041 R-POW-07		Characteristic values of axial load resistance, R_k [kN] (depends on thickness of steel sheet, t [mm])						
Fastener	Steel sheets acc. to EN 10346	$\geq 0,50$	$\geq 0,63$	$\geq 0,75$	$\geq 0,88$	$\geq 1,00$	$\geq 1,25$	$\geq 1,50$
R-WO / R-WO-T	S280GD	0,61	0,83	1,19	1,22	1,59	-	-
	S320GD	0,66	0,90	1,29	1,32	1,73	-	-
	S350GD	0,71	0,97	1,38	1,41	1,85	-	-
R-WX / R-WX-T	S280GD	-	0,74	1,00	1,08	1,50	1,86	1,88
	S320GD	-	0,80	1,08	1,17	1,62	1,88	1,88
	S350GD	-	0,87	1,16	1,26	1,74	2,17	3,04

Steel sheets								
R-POW-05		Characteristic values of axial load resistance, R_k [kN] (depends on thickness of steel sheet, t [mm])						
Fastener	Steel sheets acc. to EN 10346	$\geq 0,50$	$\geq 0,63$	$\geq 0,75$	$\geq 0,88$	$\geq 1,00$	$\geq 1,25$	$\geq 1,50$
R-WX / R-WX-T	S280GD	-	0,74	1,00	1,08	1,50	1,86	1,88
	S320GD	-	0,80	1,08	1,17	1,62	1,88	1,88
	S350GD	-	0,87	1,16	1,26	1,74	2,17	3,04

R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW	Annex C1 of European Technical Assessment ETA-23/0198
Characteristic values of axial load resistance	

Steel sheets								
R-POK-06		Characteristic values of axial load resistance, R_k [kN] (depends on thickness of steel sheet, t [mm])						
Fastener	Steel sheets acc. to EN 10346	$\geq 0,50$	$\geq 0,63$	$\geq 0,75$	$\geq 0,88$	$\geq 1,00$	$\geq 1,25$	$\geq 1,50$
R-WO / R-WO-T	S280GD	0,61	0,83	1,19	1,22	1,59	-	-
	S320GD	0,66	0,90	1,29	1,32	1,73	-	-
	S350GD	0,71	0,97	1,38	1,41	1,85	-	-
R-WX / R-WX-T	S280GD	-	0,74	1,00	1,08	1,50	1,86	1,88
	S320GD	-	0,80	1,08	1,17	1,62	1,88	1,88
	S350GD	-	0,87	1,16	1,26	1,74	2,17	2,54

Concrete				
R-GOK-II R-GOK-II-PLUS	Embedment depth [mm]	Drill hole diameter [mm]	Characteristic values of axial load resistance, R_k [kN] (depends on concrete class acc. to EN 206)	
Fastener			$\geq C12/15$	$\geq C20/25$
R-WBT	20	5,00	1,73	1,90
	30	5,00	1,90	1,90

Concrete				
R-POK-040	Embedment depth [mm]	Drill hole diameter [mm]	Characteristic values of axial load resistance, R_k [kN] (depends on concrete class acc. to EN 206)	
Fastener			$\geq C12/15$	$\geq C20/25$
R-WBT	20	5,00	1,73	2,48
	30	5,00	3,06	4,15

Concrete				
R-POK-041	Embedment depth [mm]	Drill hole diameter [mm]	Characteristic values of axial load resistance, R_k [kN] (depends on concrete class acc. to EN 206)	
Fastener			$\geq C12/15$	$\geq C20/25$
R-WBT R-LX R-WCS	20	5,00	1,73	2,48
	30	5,00	3,06	4,15

R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW	Annex C2 of European Technical Assessment ETA-23/0198
Characteristic values of axial load resistance	

Concrete				
R-POK-06	Embedment depth [mm]	Drill hole diameter [mm]	Characteristic values of axial load resistance, R_k [kN] (depends on concrete class acc. to EN 206)	
Fastener			$\geq C12/15$	$\geq C20/25$
R-WBT R-LX	20	5,00	1,73	2,24
	30	5,00	2,24	2,24

Concrete				
R-POW-07	Embedment depth [mm]	Drill hole diameter [mm]	Characteristic values of axial load resistance, R_k [kN] (depends on concrete class acc. to EN 206)	
Fastener			$\geq C12/15$	$\geq C20/25$
R-LX R-WCS	20	5,00	1,73	2,48
	30	5,00	2,93	2,93

Prestressed hollow core slabs Channel slabs				
R-GOK-II R-GOK-II-PLUS	Embedment depth [mm]	Drill hole diameter [mm]	Characteristic values of axial load resistance, R_k [kN] (depends on concrete class acc. to EN 206)	
Fastener			$\geq C16/20$	
R-WBT	20	5,00	1,59	
	30	5,00	1,90	

Prestressed hollow core slabs Channel slabs				
R-POK-040 R-POK-041	Embedment depth [mm]	Drill hole diameter [mm]	Characteristic values of axial load resistance, R_k [kN] (depends on concrete class acc. to EN 206)	
Fastener			$\geq C16/20$	
R-WBT	20	5,00	1,59	
	30	5,00	2,48	

Prestressed hollow core slabs Channel slabs				
R-POK-041 R-POW-07	Embedment depth [mm]	Drill hole diameter [mm]	Characteristic values of axial load resistance, R_k [kN] (depends on concrete class acc. to EN 206)	
Fastener			$\geq C16/20$	
R-LX R-WCS	20	5,00	1,59	
	30	5,00	2,48	

R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW	Annex C3 of European Technical Assessment ETA-23/0198
Characteristic values of axial load resistance	

Prestressed hollow core slabs Channel slabs			
R-POK-06	Embedment depth [mm]	Drill hole diameter [mm]	Characteristic values of axial load resistance, R_k [kN] (depends on concrete class acc. to EN 206)
Fastener			\geq C16/20
R-WBT	20	5,00	1,59
R-LX	30	5,00	2,24

Timber structures – wood class \geq C24 acc. to EN 14081-1		
R-GOK-II R-GOK-II-PLUS R-POK-040 R-POK-041 R-POK-06 R-POW-07	Embedment depth [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WO / R-WO-T	24	1,20

Timber structures – wood class \geq C24 acc. to EN 14081-1		
R-GOK-II R-GOK-II-PLUS R-POK-040 R-POK-041 R-POK-06	Embedment depth [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WBT	24	1,73

Timber structures – wood class \geq C24 acc. to EN 14081-1		
R-GOK-II R-GOK-II-PLUS	Embedment depth [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WW / R-WW-T	24	1,57

Timber structures – wood class \geq C24 acc. to EN 14081-1		
R-GOK-II R-GOK-II-PLUS R-POK-040 R-POK-041 R-POK-06 R-POW-07	Embedment depth [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WO / R-WO-T	24	1,20

R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW	Annex C4 of European Technical Assessment ETA-23/0198
Characteristic values of axial load resistance	

Timber structures – wood class ≥ C24 acc. to EN 14081-1		
R-GOK-II R-GOK-II-PLUS R-POK-040 R-POK-041 R-POK-06	Embedment depth [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WBT	24	1,73
Timber structures – wood class ≥ C24 acc. to EN 14081-1		
R-GOK-II R-GOK-II-PLUS	Embedment depth [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WW / R-WW-T	24	1,57
OSB sheets acc. to EN 300, density ≥ 650 kg/m³		
R-GOK-II R-GOK-II-PLUS R-POK-040 R-POK-041 R-POK-06 R-POW-07	Embedment depth (thickness of OSB) [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WO / R-WO-T	18	0,88
OSB sheets acc. to EN 300, density ≥ 650 kg/m³		
R-GOK-II R-GOK-II-PLUS R-POK-040 R-POK-041 R-POK-06	Embedment depth (thickness of OSB) [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WBT	18	1,31
OSB sheets acc. to EN 300, density ≥ 650 kg/m³		
R-GOK-II R-GOK-II-PLUS	Embedment depth (thickness of OSB) [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WW / R-WW-T	18	1,40
R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW		Annex C5 of European Technical Assessment ETA-23/0198
Characteristic values of axial load resistance		

Wood wool panels MEB Green Suprema GB 600 acc. to EN 13168, density $\geq 600 \text{ kg/m}^3$		
R-GOK-II R-GOK-II-PLUS R-POK-040 R-POK-041 R-POK-06 R-POW-05	Embedment depth [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WO / R-WO-T	25	0,28
R-WBT	25	0,29

Wood wool panels MEB Green Suprema GB 600 acc. to EN 13168, density $\geq 600 \text{ kg/m}^3$		
R-POW-07	Embedment depth [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WO / R-WO-T	25	0,28

Wood-based panels MEB Green Suprema GB 1050 acc. to EN 13986, density $\geq 1050 \text{ kg/m}^3$		
R-GOK-II R-GOK-II-PLUS R-POK-040 R-POK-041 R-POK-06 R-POW-05	Embedment depth [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WO / R-WO-T	18	0,92
R-WBT	18	0,75

Wood-based panels MEB Green Suprema GB 1050 acc. to EN 13986, density $\geq 1050 \text{ kg/m}^3$		
R-POW-07	Embedment depth [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WO / R-WO-T	18	0,92

Wood-based panels MEB Green Suprema GB 1050 acc. to EN 13986, density $\geq 1050 \text{ kg/m}^3$		
R-GOK-II R-GOK-II-PLUS R-POK-040 R-POK-041 R-POK-06 R-POW-05	Embedment depth [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WO / R-WO-T	18	0,92
R-WBT	18	0,75

R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW	Annex C6 of European Technical Assessment ETA-23/0198
Characteristic values of axial load resistance	

Wood-based panels MEB Green Suprema GB 1050 acc. to EN 13986, density $\geq 1050 \text{ kg/m}^3$		
R-POW-07	Embedment depth [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WO / R-WO-T	18	0,92

Wood-based panels MIAMI ECO BOARD acc. to EN 13986, density $\geq 1300 \text{ kg/m}^3$		
R-GOK-II R-GOK-II-PLUS R-POK-040 R-POK-041 R-POK-06 R-POW-05	Embedment depth [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WO / R-WO-T	20	1,69
R-WBT	20	1,62

Wood-based panels MIAMI ECO BOARD acc. to EN 13986, density $\geq 1300 \text{ kg/m}^3$		
R-POW-07	Embedment depth [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WO / R-WO-T	20	1,69

Particleboards MFP acc. to EN 312, density $\geq 740 \text{ kg/m}^3$		
R-GOK-II R-GOK-II-PLUS R-POK-040 R-POK-041 R-POK-06 R-POW-05	Embedment depth [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WO / R-WO-T	22	1,85
R-WBT	22	1,85

Particleboards MFP acc. to EN 312, density $\geq 740 \text{ kg/m}^3$		
R-POW-07	Embedment depth [mm]	Characteristic values of axial load resistance, R_k [kN]
Fastener		
R-WO / R-WO-T	22	1,85

R-GOK-II, R-GOK-II-PLUS, R-POK and R-POW	Annex C7 of European Technical Assessment ETA-23/0198
Characteristic values of axial load resistance	