



INSTYTUT TECHNIKI BUDOWLANEJ



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## European Technical Assessment

**ETA-15/0578**  
**of 30/06/2023**



### General Part

**Technical Assessment Body issuing the European Technical Assessment**

Instytut Techniki Budowlanej

**Trade name of the construction product**

Wkręt-Met Flat Roof Fasteners

**Product family to which the construction product belongs**

Fasteners for flexible roof waterproofing sheets

**Manufacturer**

Wkręt-met Sp. z o.o.  
ul. Wincentego Witosa 170/176  
Kućnica Kiedrzyńska  
PL 42-233 Mykanów  
Poland

**Manufacturing plants**

PLANT 1, PLANT 2

**This European Technical Assessment contains**

52 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"

**This version replaces**

ETA-15/0578 issued on 30/09/2015

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## Specific Part

### 1 Technical description of the product

Wkręt-Met Flat Roof Fasteners are mechanical fasteners for flexible roof waterproofing systems. The fasteners comprise a screw (with or without expansion sleeve) and a washer or washer with integral sleeve. Screws and washers (without sleeve) are made of stainless steel or carbon steel protected by ceramic coating. Washers with integrated sleeve are made of plastic material: polypropylene (PP), polyethylene (PE) or polyamide (PA). Expansion sleeve is made of polyamide (PA).

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 ETA is necessary for the entire roof waterproofing system.

### 3 Performance of the product and references to the methods used for its 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 C5.

###### 3.1.1.2 Resistance to fastener unwinding

The fasteners are considered to be safe against unwinding. This 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

The screws made of coated carbon steel, subjected to 15 cycles of action of a humid atmosphere containing 2.0 l SO<sub>2</sub> 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  $\leq 20\%$ ).

### 3.1 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 in the applicable European Assessment Document (EAD)

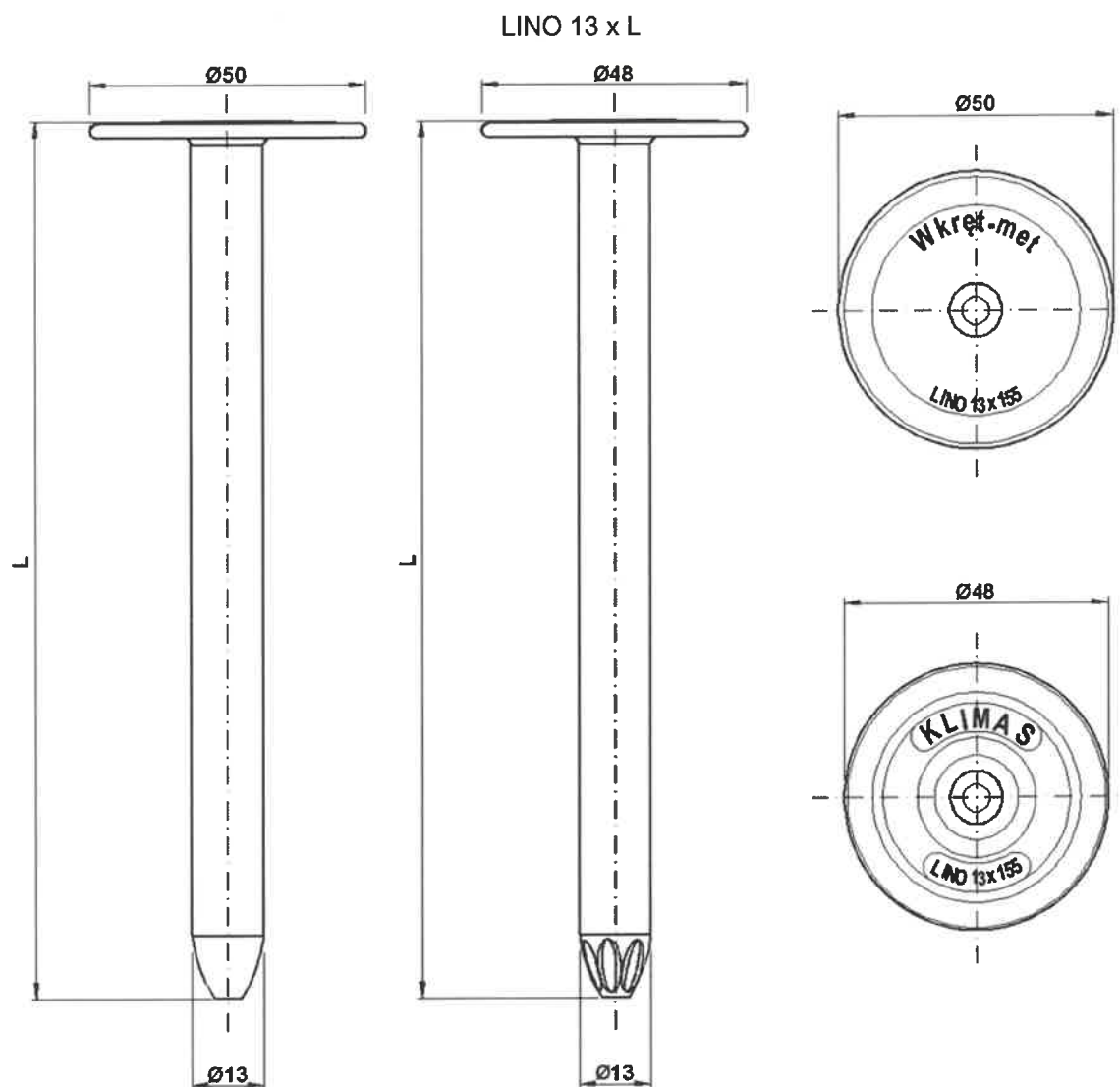
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited in Instytut Techniki Budowlanej.

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 30/06/2023 by Instytut Techniki Budowlanej



Anna Panek, MSc  
Deputy Director of ITB

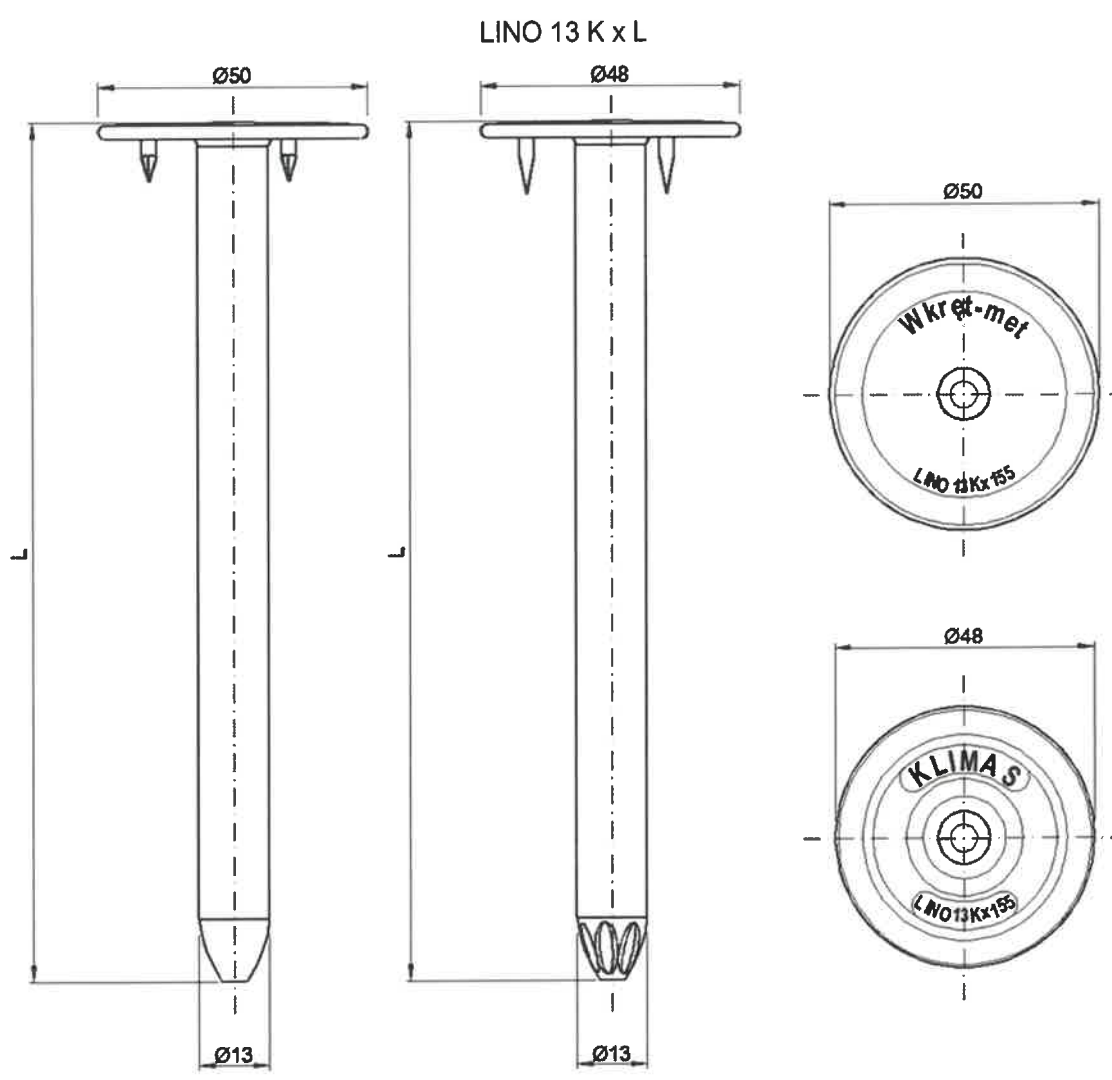


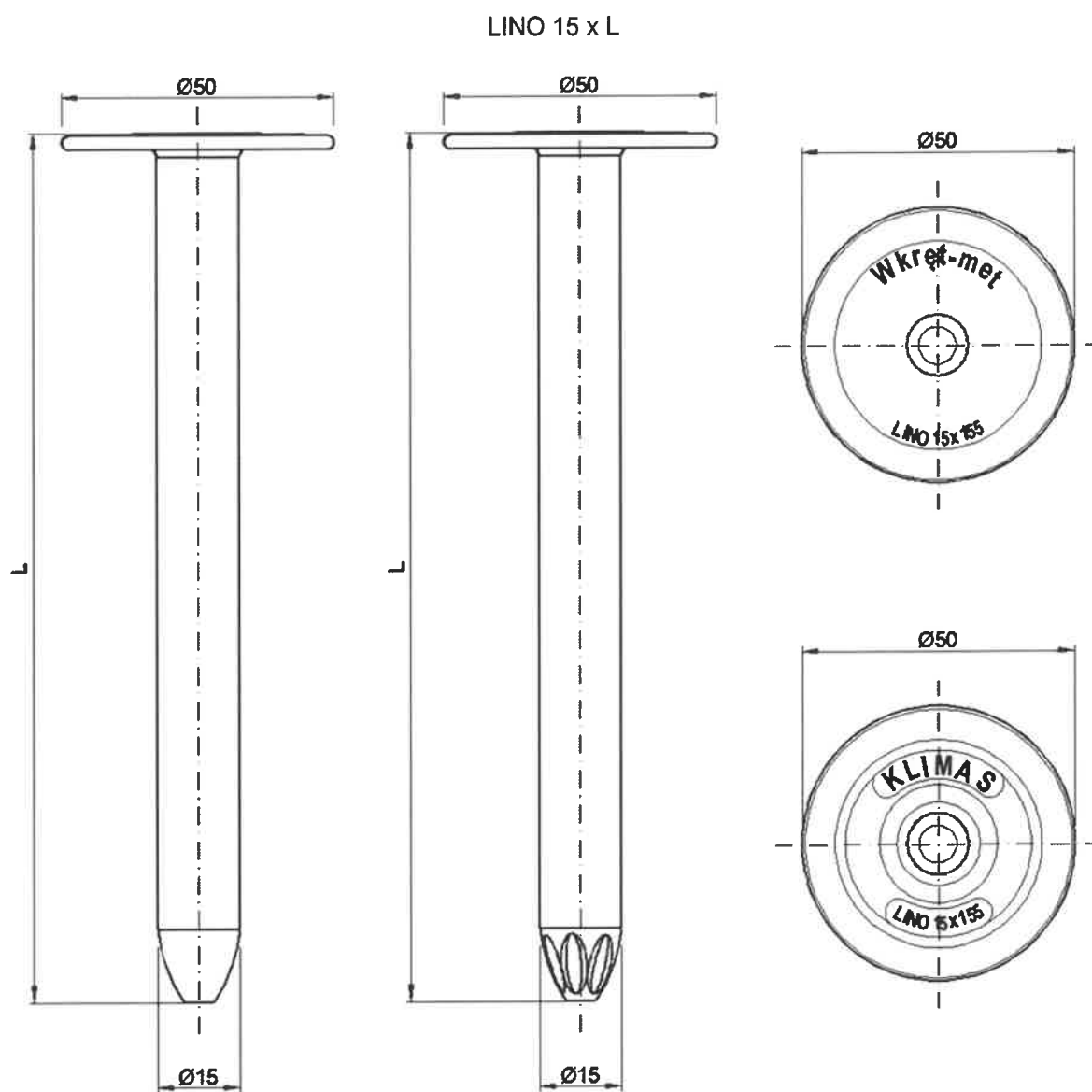
**Wkręt-Met Flat Roof Fasteners**

Plastic sleeves LINO 13

**Annex A1**

of European  
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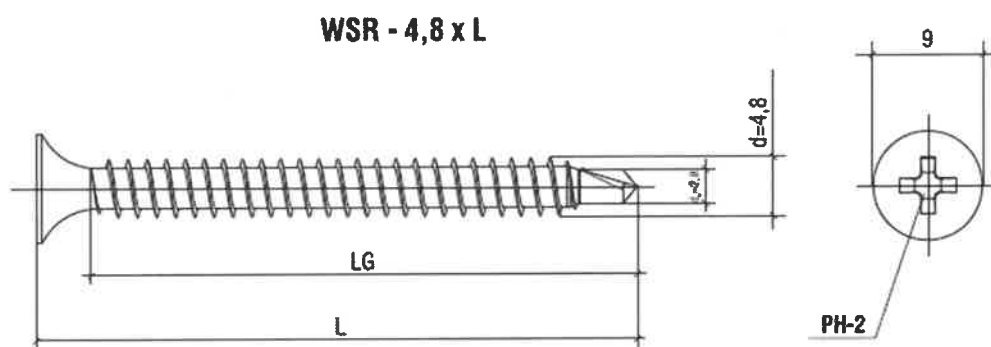
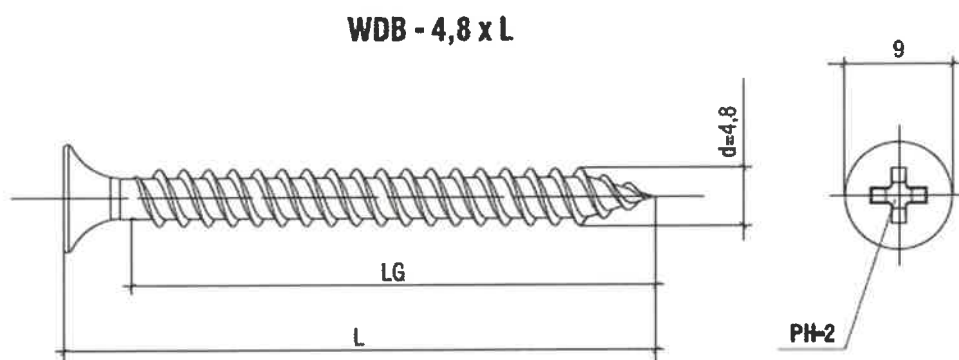
	
<b>Wkręt-Met Flat Roof Fasteners</b>	<b>Annex A2</b> of European Technical Assessment ETA-15/0578
Plastic sleeves LINO 13 K	



### Wkręt-Met Flat Roof Fasteners

Plastic sleeves LINO 15

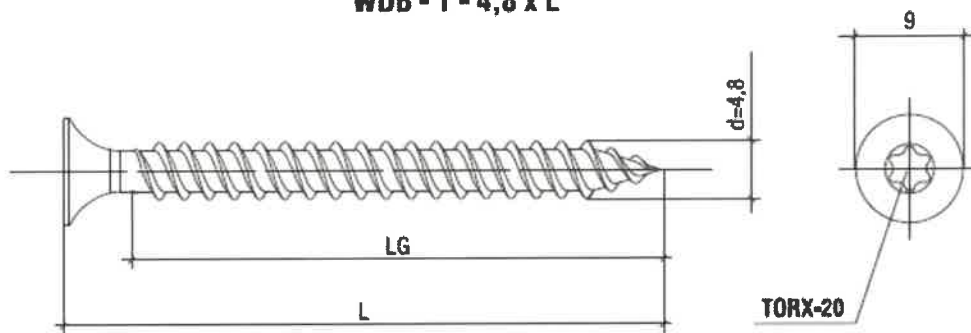
**Annex A3**  
of European  
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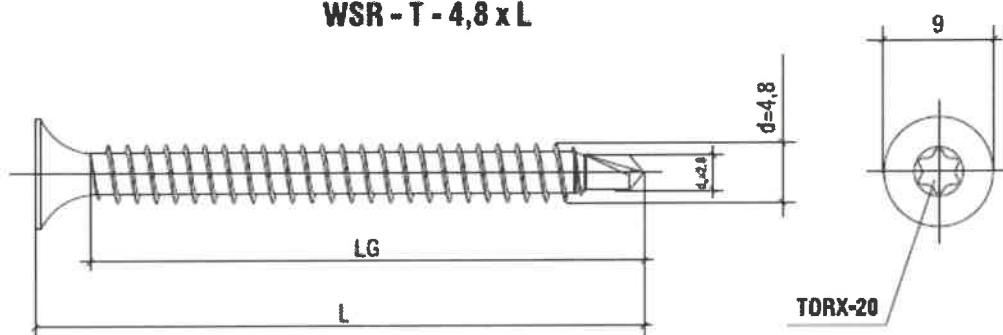
Wkręt-Met Flat Roof Fasteners	Annex A4 of European Technical Assessment ETA-15/0578
Self-tapping screw WDB-4,8×L Self-drilling screw WSR-4,8×L	



**WDB - T - 4,8 x L**



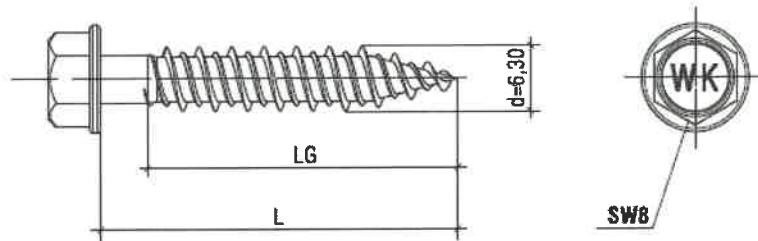
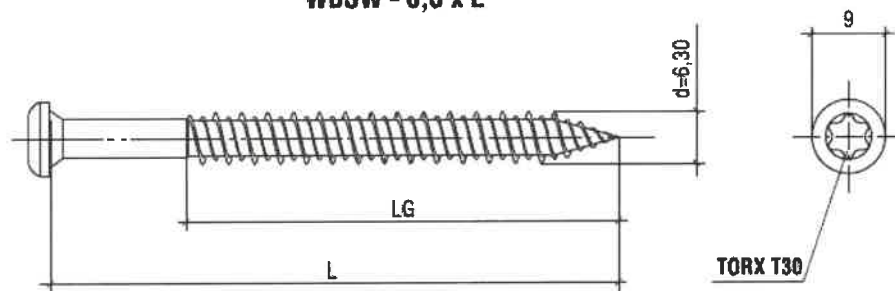
**WSR - T - 4,8 x L**



**Wkręt-Met Flat Roof Fasteners**

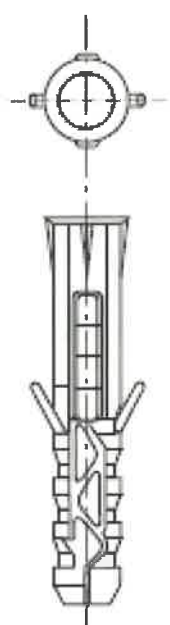
Self-tapping screw WDB-T-4,8xL  
Self-drilling screw WSR-T-4,8xL

**Annex A5**  
of European  
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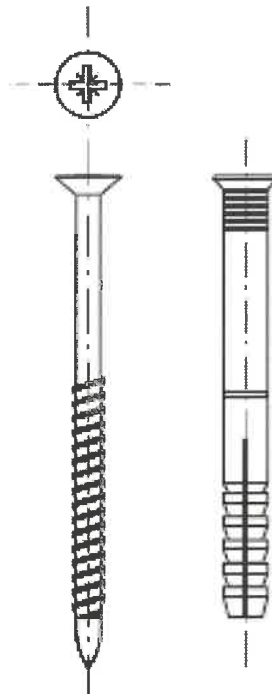
**WB6 - 6,3 × L****WBSW - 6,3 × L****Wkręt-Met Flat Roof Fasteners**

Self-tapping screw WB6-6,3×L  
 Self-tapping screw WBSW-6,3×L

**Annex A6**  
 of European  
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**KNX 8 x 50**

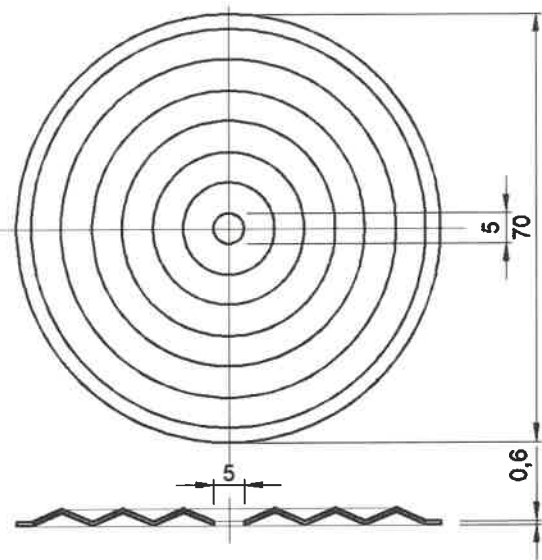


**SMN 6 x 50  
SMN 8 x 60**

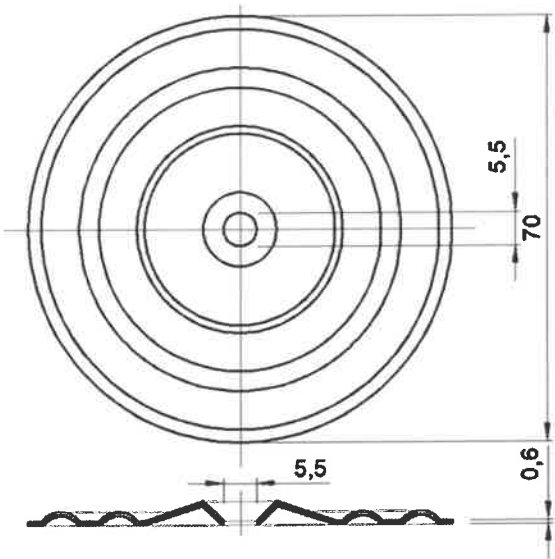
# **Wkręt-Met Flat Roof Fasteners**

Expansion sleeve KNX 8 x 50  
Self-tapping screw with expansion sleeve SMN 6 x 50 and SMN 8 x 60

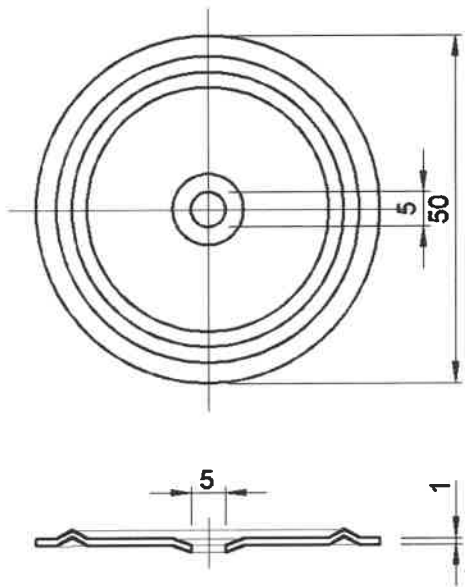
**Annex A7**  
of European  
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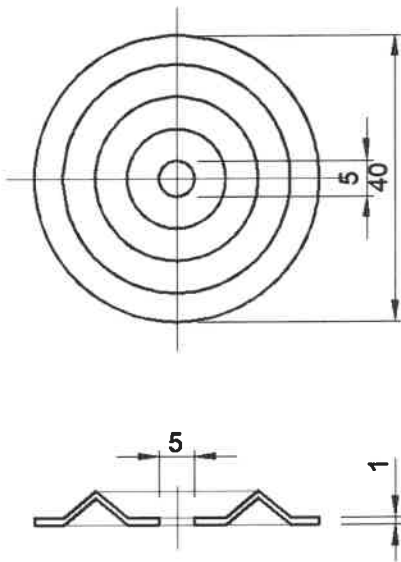
**KD-01**



**KD-02-W-5,5**



**KD-05**

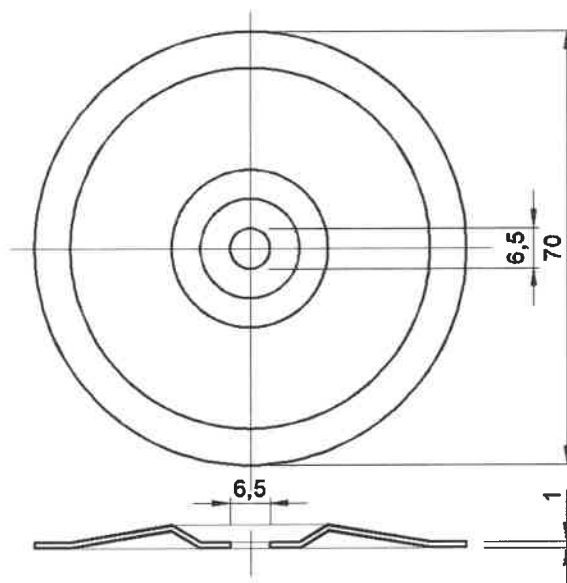
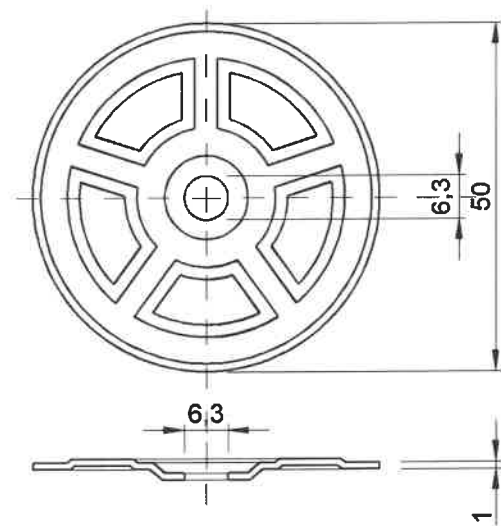
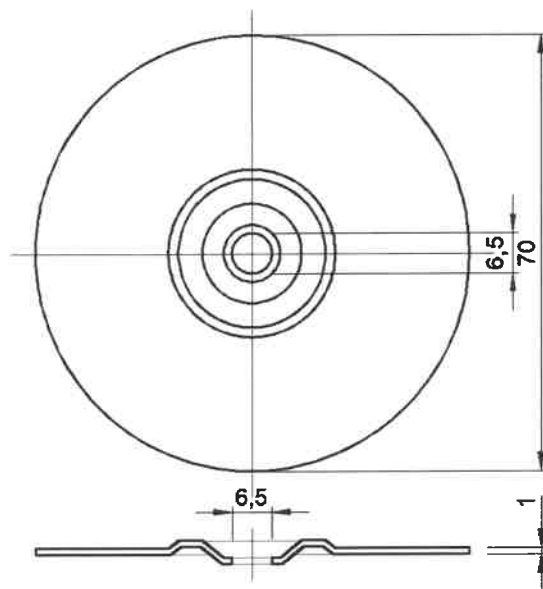
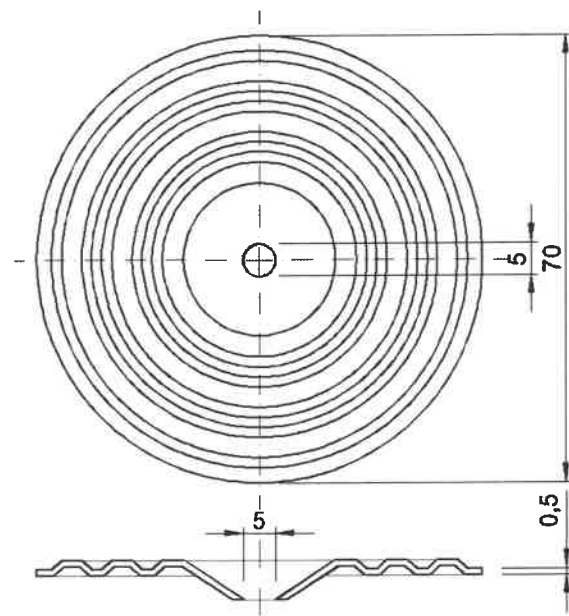


**KD-04-W5**

**Wkręt-Met Flat Roof Fasteners**

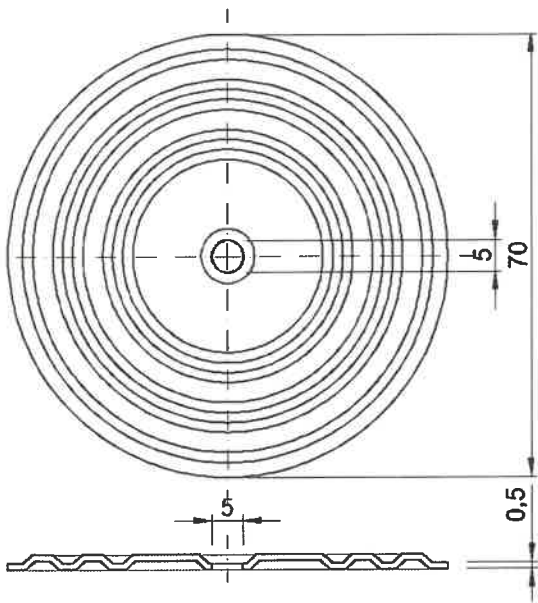
Steel washer pads KD-01, KD-02-W-5,5 KD-05 and KD-04-W5

**Annex A8**  
of European  
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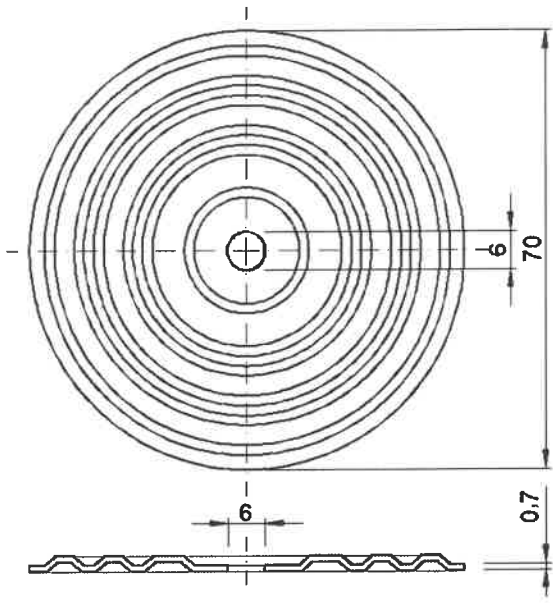

**KD-07-WW**

**KD-05-W6**

**KD-07-N65**

**KD-07-WG5**
**Wkręt-Met Flat Roof Fasteners**

Steel washer pads KD-07-WW, KD-05-W6, KD-07-N65  
and KD-07-WG5

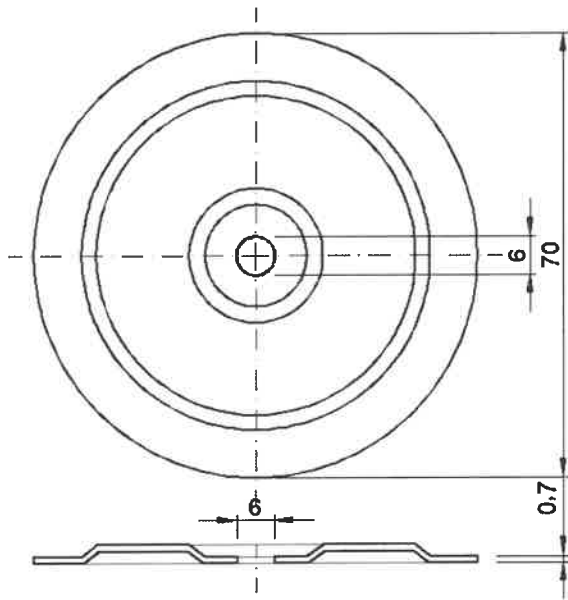
**Annex A9**  
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**KD-07-W5**



**KD-07-W6**

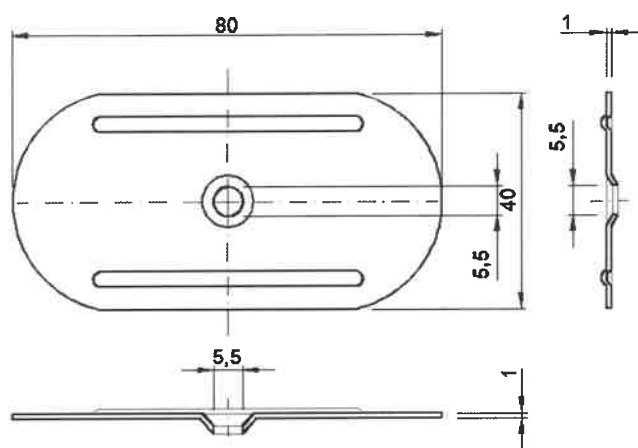


**KD-07-H6**

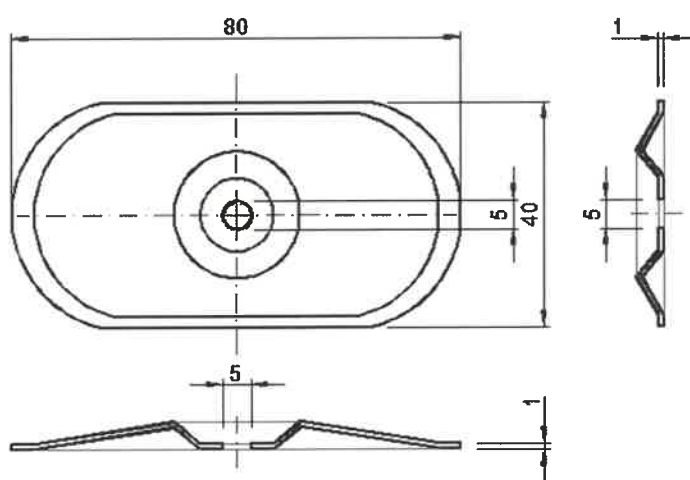
**Wkręt-Met Flat Roof Fasteners**

Steel washer pads KD-07-W5, KD-07-W6 and KD-07-H6

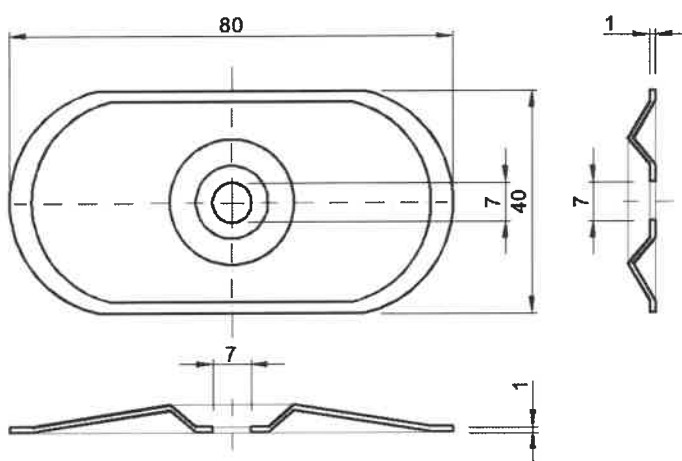
**Annex A10**  
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**KD-03-P**



**KD-03-W5**



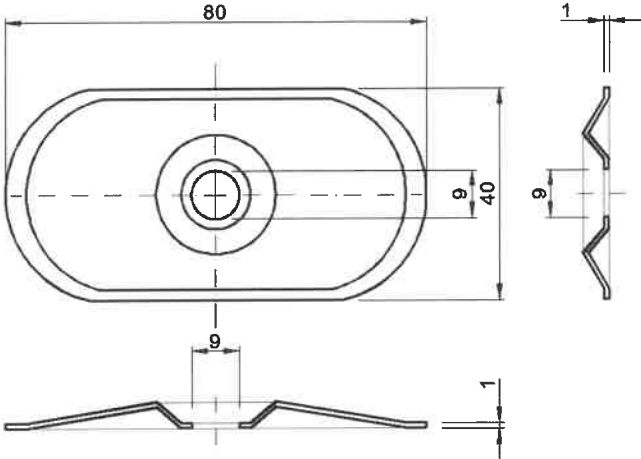
**KD-03-W7**

### Wkręt-Met Flat Roof Fasteners

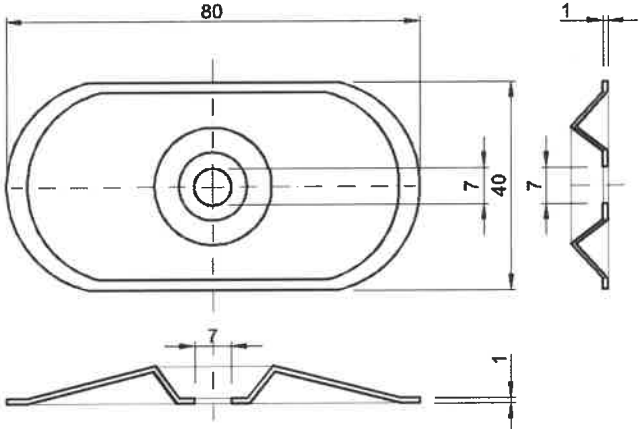
Steel washer pads KD-03-P, KD-03-W5 and KD-03-W7

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of European  
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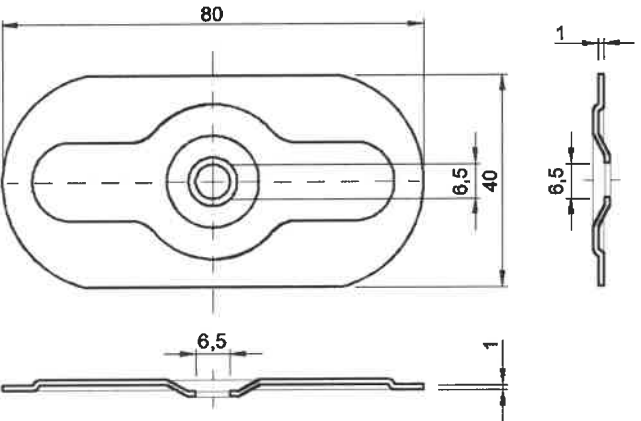




**KD-03-W9**



**KD-03-WW7**



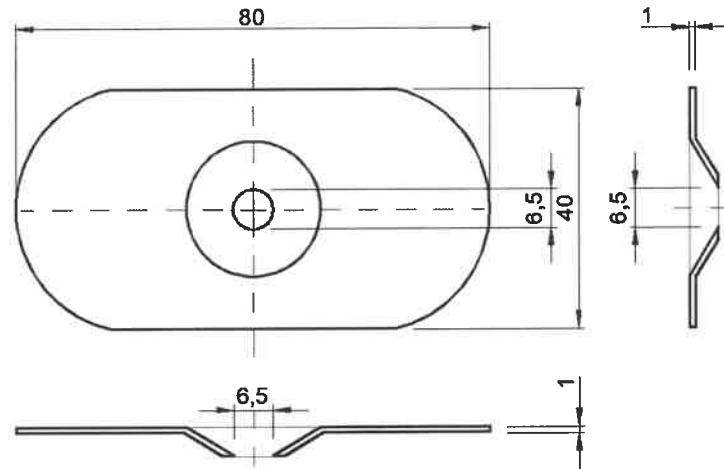
**KD-03-N65**

**Wkręt-Met Flat Roof Fasteners**

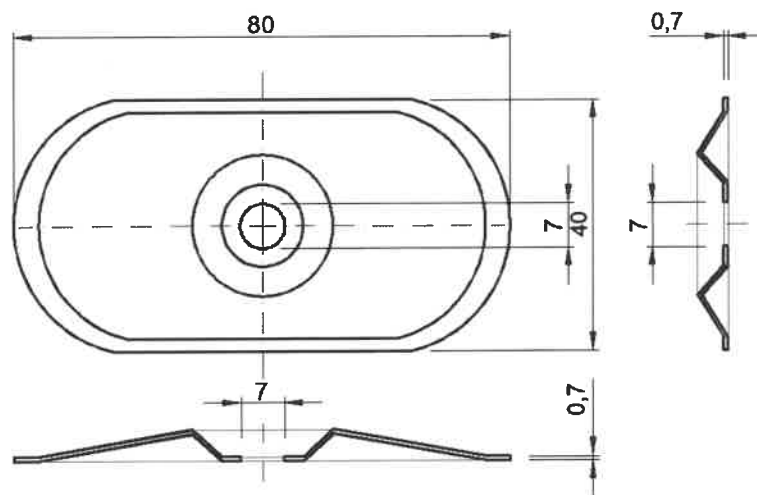
Steel washer pads KD-03-W9, KD-03-WW7 and KD-03-N65

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**KD-03-G65**

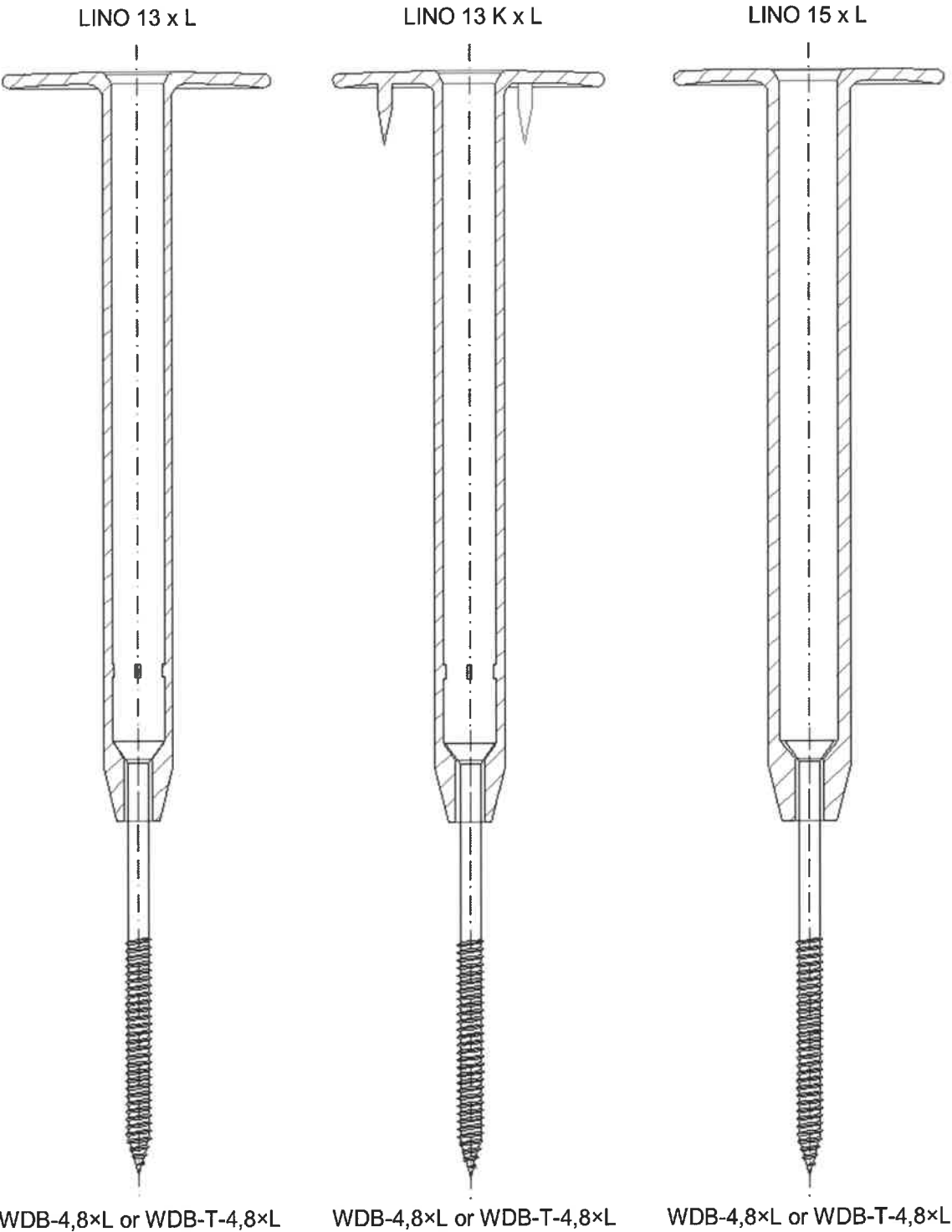


**KD-03-W7E**

### Wkręt-Met Flat Roof Fasteners

Steel washer pads KD-03-G65 and KD-03-W7E

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of European  
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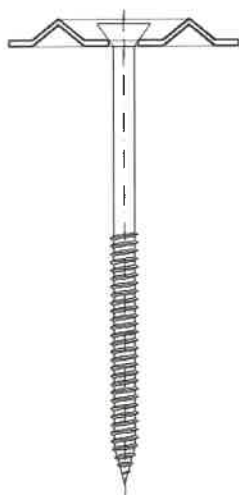
**Wkręt-Met Flat Roof Fasteners**

LINO 13 and WDB-4,8xL or WDB-T-4,8xL  
LINO 13 K and WDB-4,8xL or WDB-T-4,8xL  
LINO 15 and WDB-4,8xL or WDB-T-4,8xL

**Annex A14**

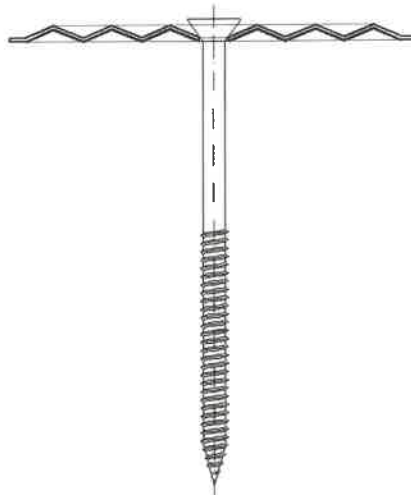
of European  
Technical Assessment  
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KD-04-W5



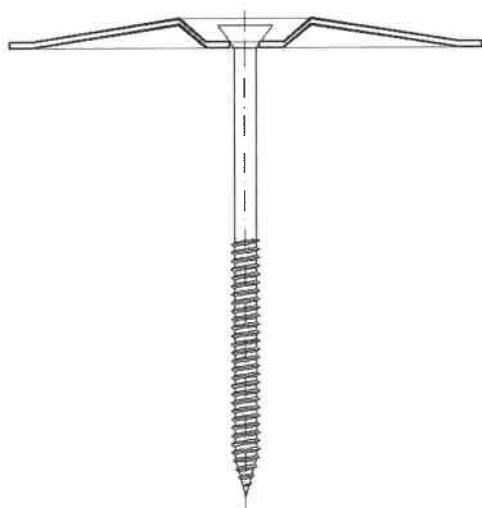
WDB-4,8×L or WDB-T-4,8×L

KD-01



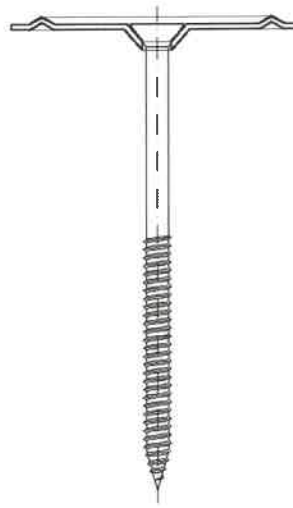
WDB-4,8×L or WDB-T-4,8×L

KD-03-W5



WDB-4,8×L or WDB-T-4,8×L

KD-05

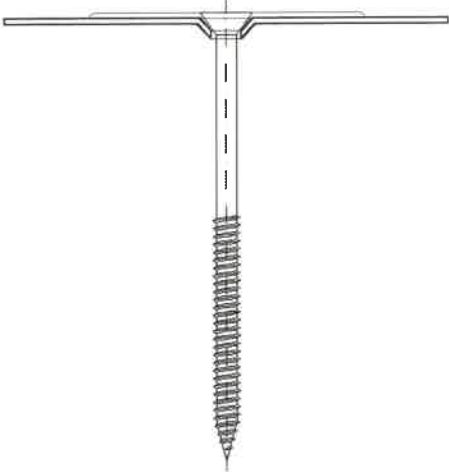
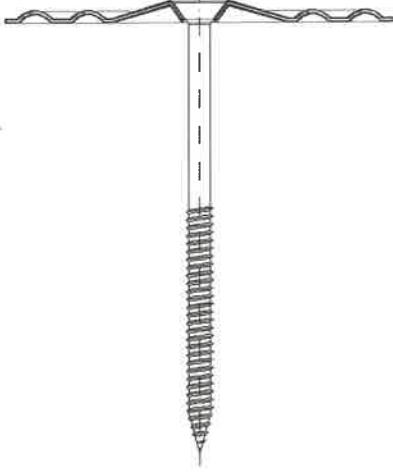
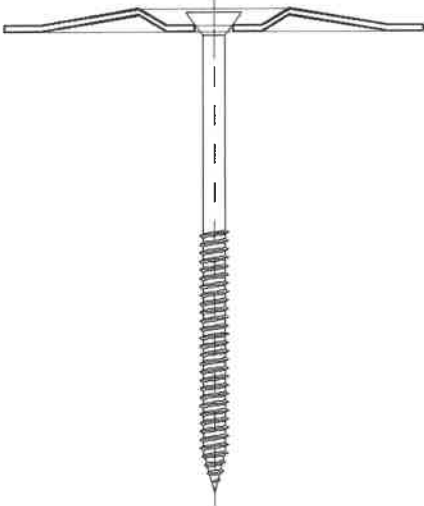
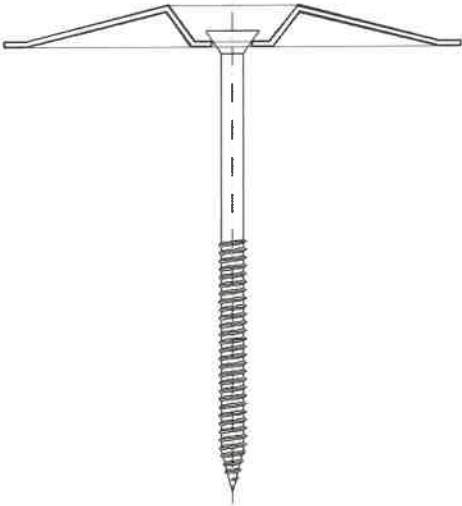


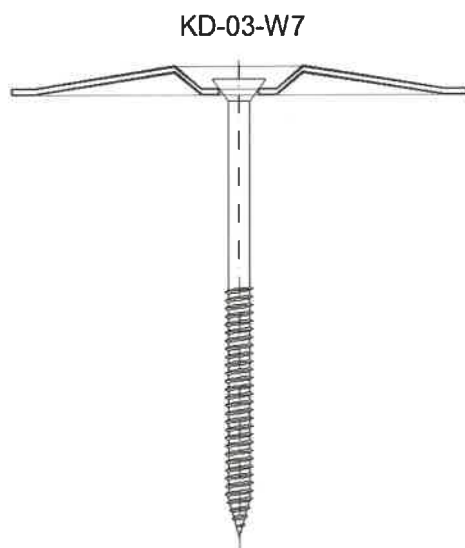
WDB-4,8×L or WDB-T-4,8×L

### Wkręt-Met Flat Roof Fasteners

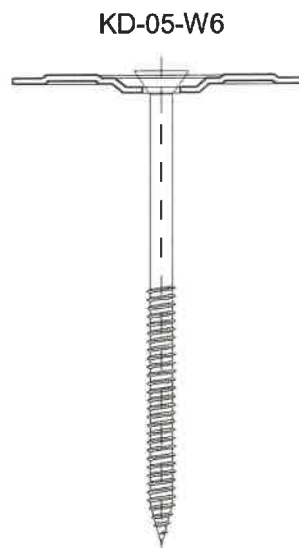
KD-04-W5 and WDB-4,8×L or WDB-T-4,8×L  
KD-01 and WDB-4,8×L or WDB-T-4,8×L  
KD-03-W5 and WDB-4,8×L or WDB-T-4,8×L  
KD-05 and WDB-4,8×L or WDB-T-4,8×L

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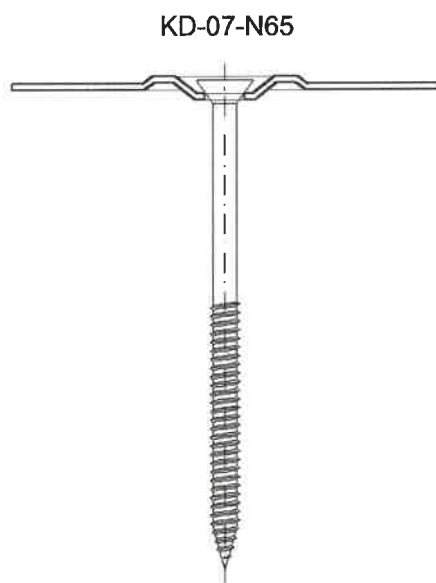
<div><div><div>KD-03-P</div><div>WDB-4,8×L or WDB-T-4,8×L</div></div><div><div>KD-02-W-5,5</div><div>WDB-4,8×L or WDB-T-4,8×L</div></div></div>	
<div><div><div>KD-07-WW</div><div>WDB-4,8×L or WDB-T-4,8×L</div></div><div><div>KD-03-WW7</div><div>WDB-4,8×L or WDB-T-4,8×L</div></div></div>	
<div>Wkręt-Met Flat Roof Fasteners</div>	<div>Annex A16 of European Technical Assessment ETA-15/0578</div>
<div>KD-03-P and WDB-4,8×L or WDB-T-4,8×L KD-02-W5,5 and WDB-4,8×L or WDB-T-4,8×L KD-07-WW and WDB-4,8×L or WDB-T-4,8×L KD-03-WW7 and WDB-4,8×L or WDB-T-4,8×L</div>	



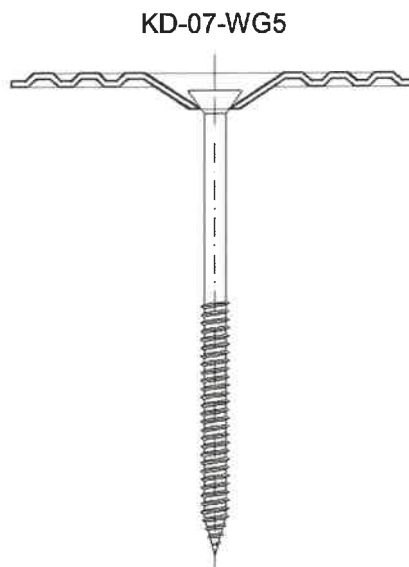
WDB-4,8×L or WDB-T-4,8×L



WDB-4,8×L or WDB-T-4,8×L



WDB-4,8×L or WDB-T-4,8×L



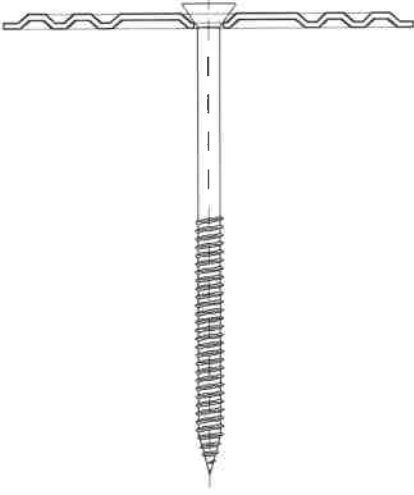
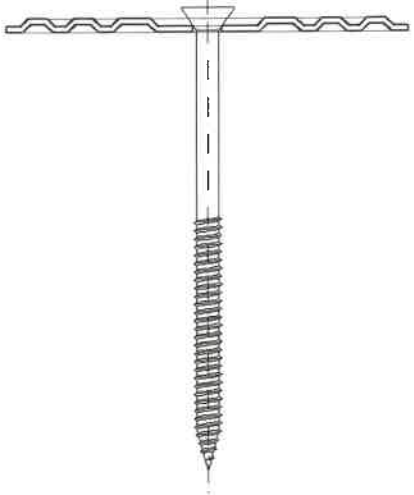
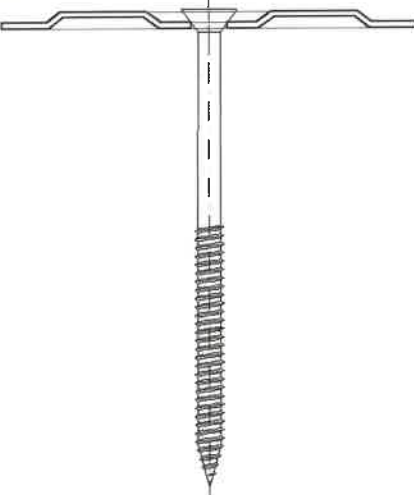
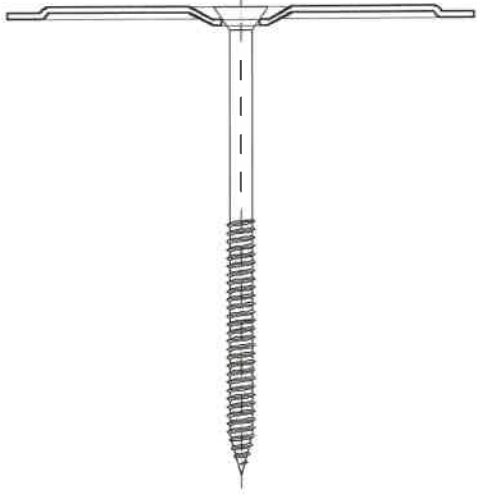
WDB-4,8×L or WDB-T-4,8×L

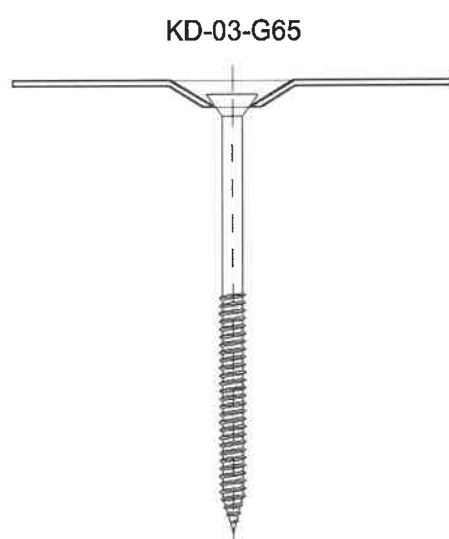
### Wkręt-Met Flat Roof Fasteners

KD-03-W7 and WDB-4,8×L or WDB-T-4,8×L  
KD-05-W6 and WDB-4,8×L or WDB-T-4,8×L  
KD-07-N65 and WDB-4,8×L or WDB-T-4,8×L  
KD-07-WG5 and WDB-4,8×L or WDB-T-4,8×L

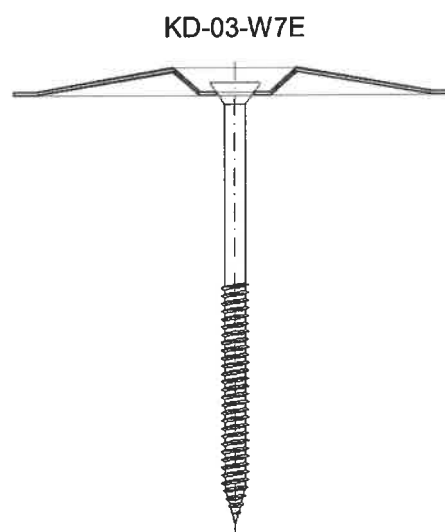
### Annex A17

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<p style="text-align: center;">KD-07-H6</p>  <p style="text-align: center;">WDB-4,8×L or WDB-T-4,8×L</p>	<p style="text-align: center;">KD-03-N65</p>  <p style="text-align: center;">WDB-4,8×L or WDB-T-4,8×L</p>
<p style="text-align: center;"><b>Wkręt-Met Flat Roof Fasteners</b></p> <p style="text-align: center;">KD-07-W5 and WDB-4,8×L or WDB-T-4,8×L          KD-07-W6 and WDB-4,8×L or WDB-T-4,8×L          KD-07-H6 and WDB-4,8×L or WDB-T-4,8×L          KD-03-N65 and WDB-4,8×L or WDB-T-4,8×L</p>	
<p style="text-align: center;"><b>Annex A18</b>          of European          Technical Assessment          ETA-15/0578</p>	



WDB-4,8×L or WDB-T-4,8×L

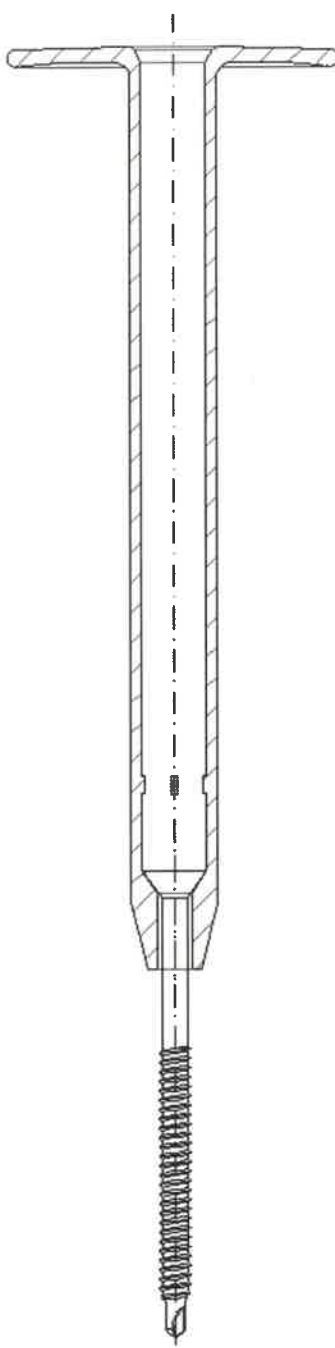
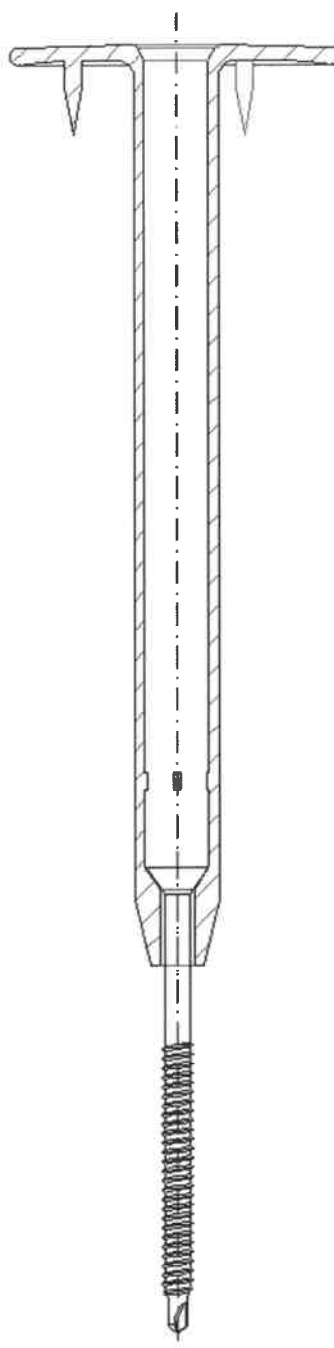
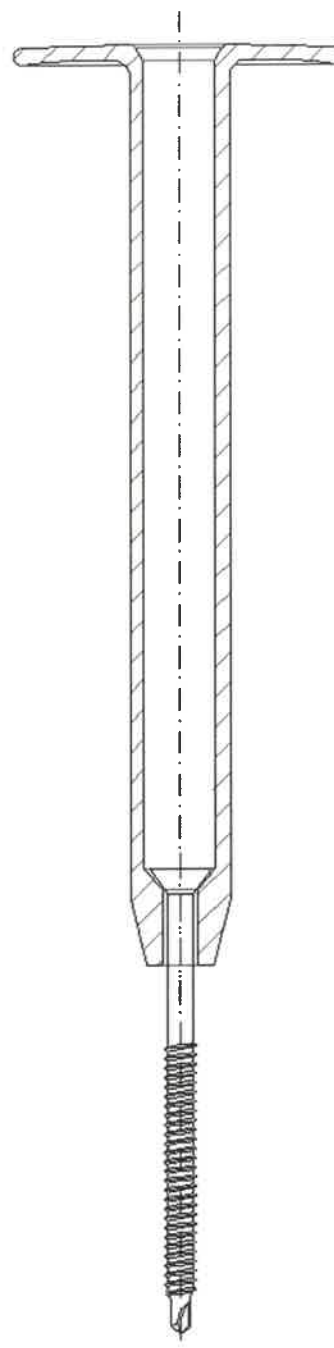


WDB-4,8×L or WDB-T-4,8×L

### Wkręt-Met Flat Roof Fasteners

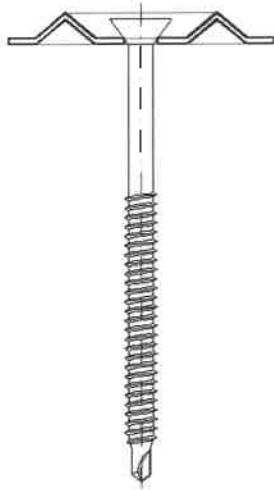
KD-03-G65 and WDB-4,8×L or WDB-T-4,8×L  
KD-03-W7E and WDB-4,8×L or WDB-T-4,8×L

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<p>LINO 13 x L</p> 	<p>LINO 13 K x L</p> 	<p>LINO 15 x L</p> 	
<p>WSR-4,8xL or WSR-T-4,8xL</p>	<p>WSR-4,8xL or WSR-T-4,8xL</p>	<p>WSR-4,8xL or WSR-T-4,8xL</p>	
<p><b>Wkręt-Met Flat Roof Fasteners</b></p>			<p><b>Annex A20</b> of European Technical Assessment ETA-15/0578</p>
<p>LINO 13 and WSR-4,8xL or WSR-T-4,8xL LINO 13 K and WSR-4,8xL or WSR-T-4,8xL LINO 15 and WSR-4,8xL or WSR-T-4,8xL</p>			

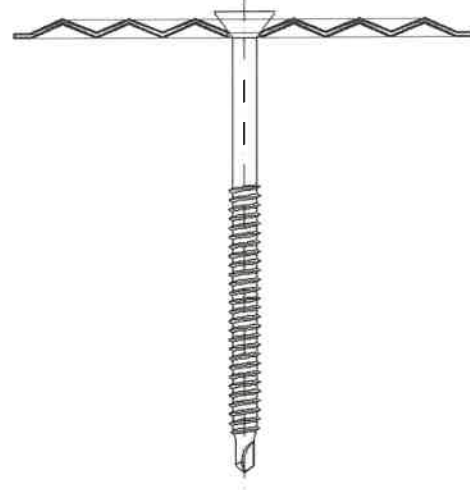


KD-04-W5



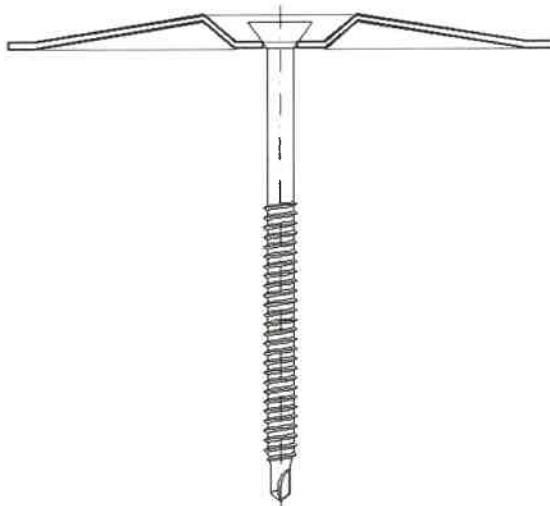
WSR-4,8×L or WSR-T-4,8×L

KD-01



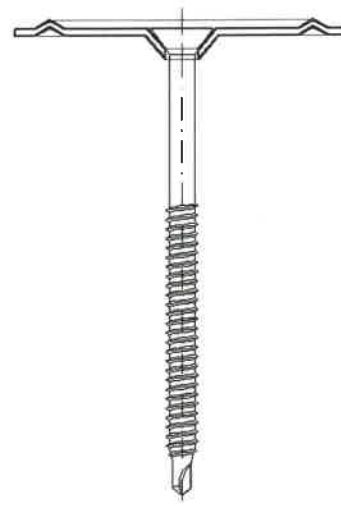
WSR-4,8×L or WSR-T-4,8×L

KD-03-W5



WSR-4,8×L or WSR-T-4,8×L

KD-05

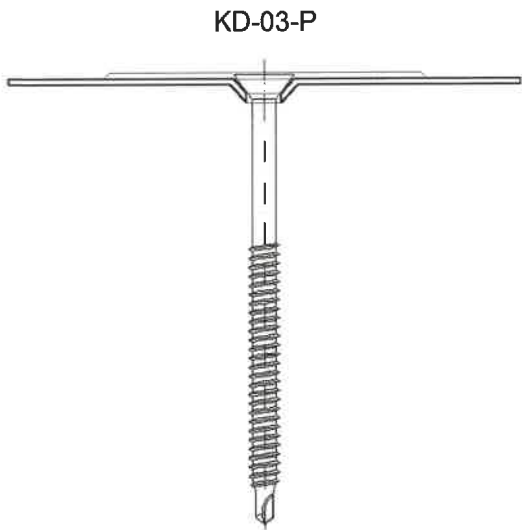


WSR-4,8×L or WSR-T-4,8×L

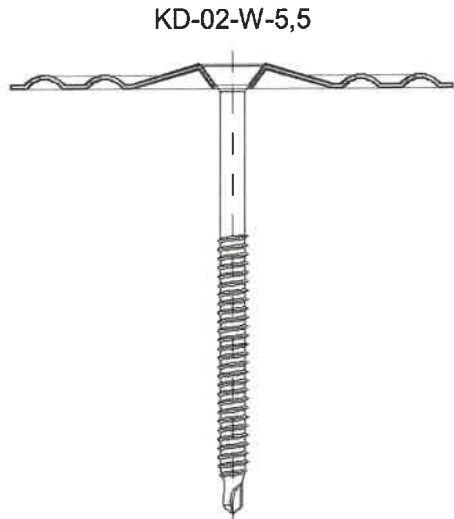
### Wkręt-Met Flat Roof Fasteners

KD-04-W5 and WSR-4,8×L or WSR-T-4,8×L  
KD-01 and WSR-4,8×L or WSR-T-4,8×L  
KD-03-W5 and WSR-4,8×L or WSR-T-4,8×L  
KD-05 and WSR-4,8×L or WSR-T-4,8×L

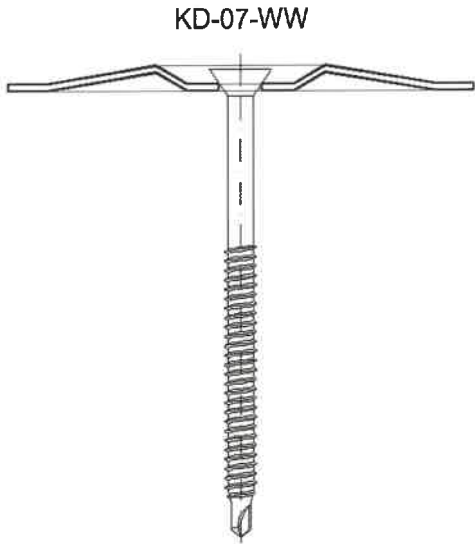
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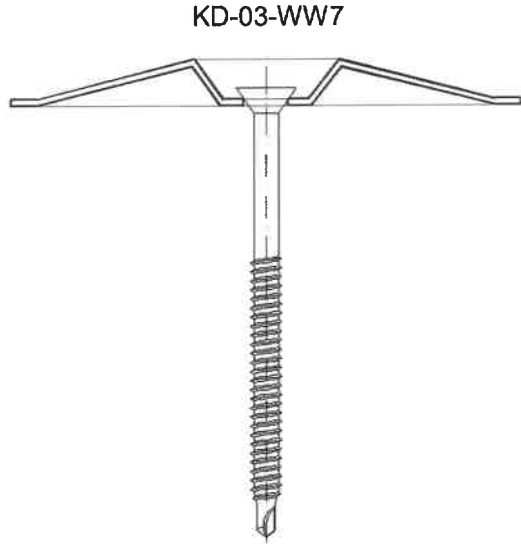
WSR-4,8×L or WSR-T-4,8×L



WSR-4,8×L or WSR-T-4,8×L



WSR-4,8×L or WSR-T-4,8×L

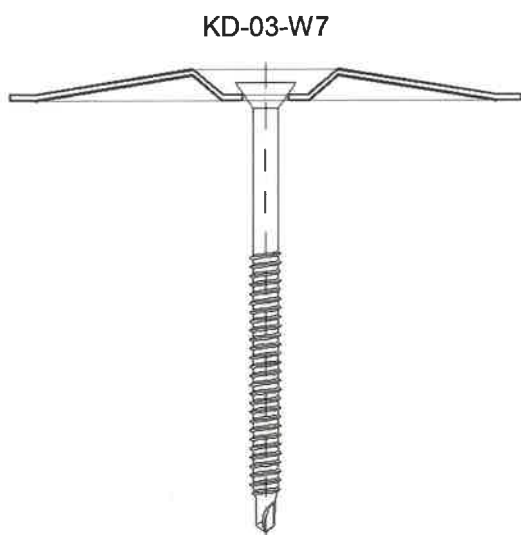


WSR-4,8×L or WSR-T-4,8×L

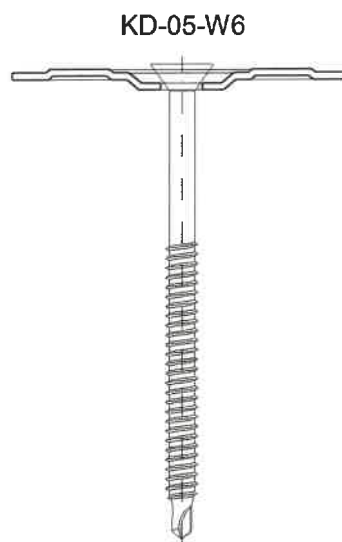
**Wkręt-Met Flat Roof Fasteners**

KD-03-P and WSR-4,8×L or WSR-T-4,8×L  
KD-02-W-5,5 and WSR-4,8×L or WSR-T-4,8×L  
KD-07-WW and WSR-4,8×L or WSR-T-4,8×L  
KD-03-WW7 and WSR-4,8×L or WSR-T-4,8×L

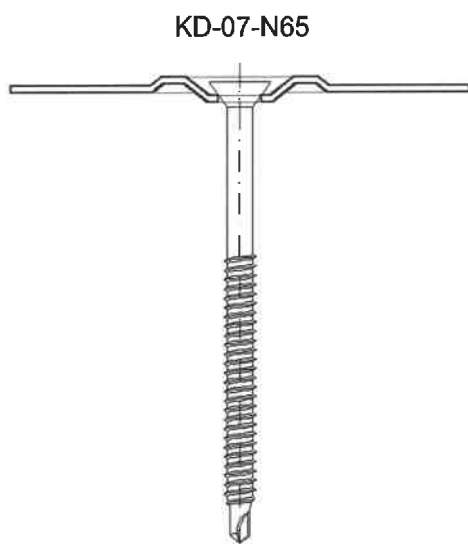
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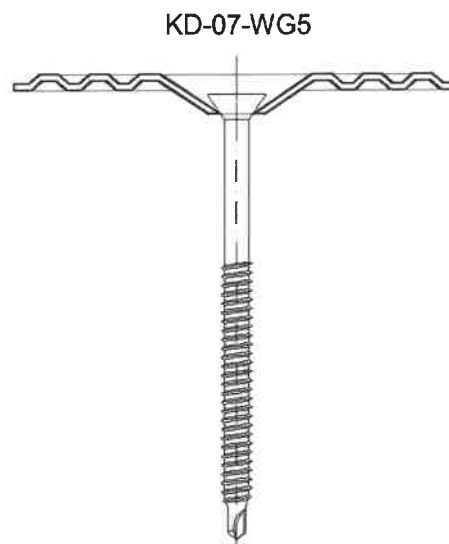
WSR-4,8×L or WSR-T-4,8×L



WSR-4,8×L or WSR-T-4,8×L



WSR-4,8×L or WSR-T-4,8×L

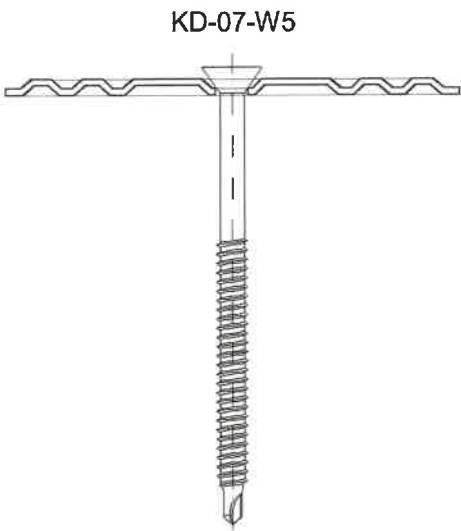


WSR-4,8×L or WSR-T-4,8×L

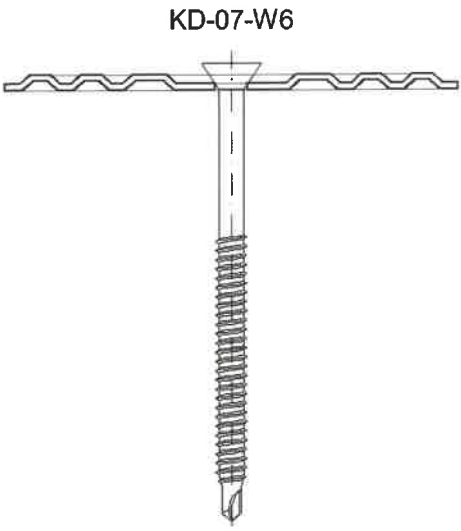
### Wkręt-Met Flat Roof Fasteners

KD-03-W7 and WSR-4,8×L or WSR-T-4,8×L  
KD-05-W6 and WSR-4,8×L or WSR-T-4,8×L  
KD-07-N65 and WSR-4,8×L or WSR-T-4,8×L  
KD-07-WG5 and WSR-4,8×L or WSR-T-4,8×L

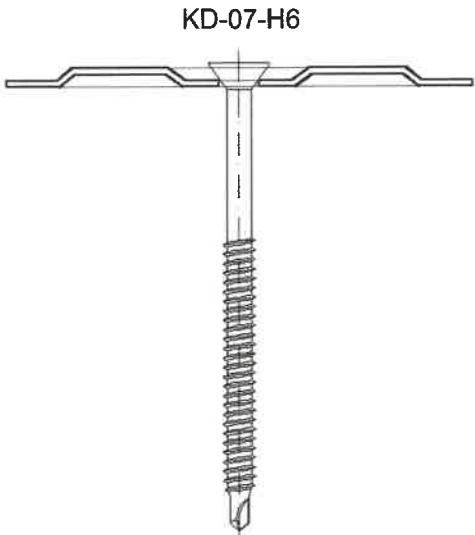
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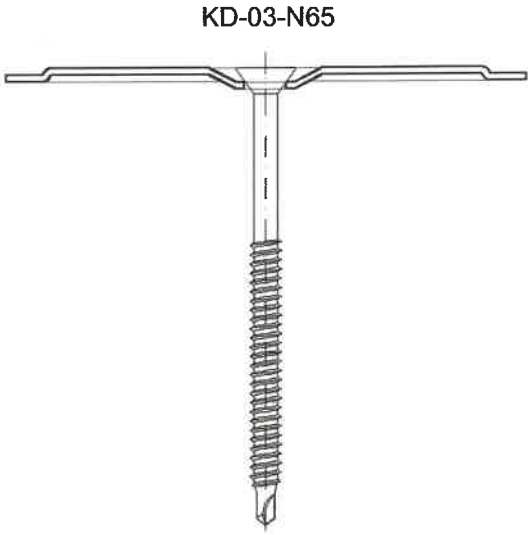
WSR-4,8×L or WSR-T-4,8×L



WSR-4,8×L or WSR-T-4,8×L



WSR-4,8×L or WSR-T-4,8×L

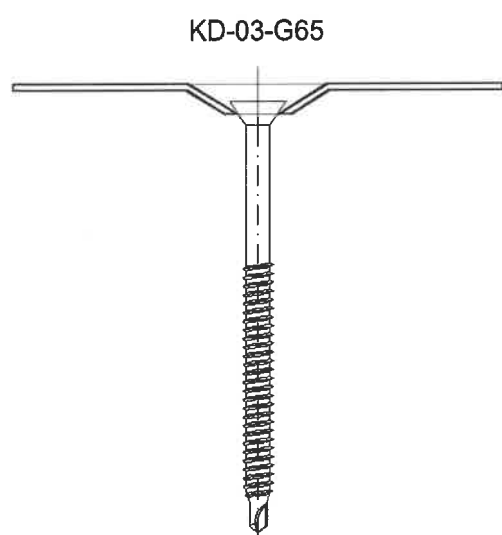


WSR-4,8×L or WSR-T-4,8×L

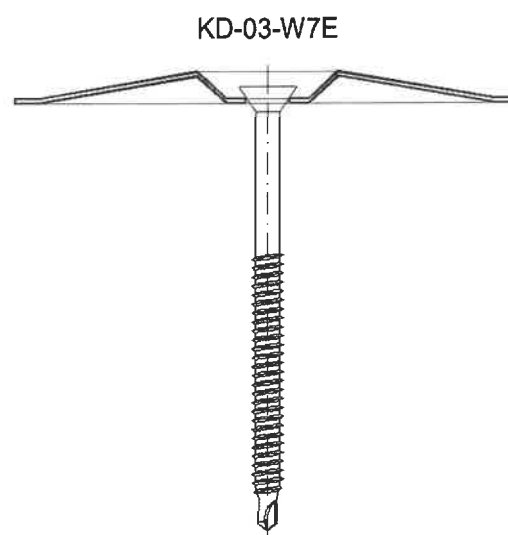
**Wkręt-Met Flat Roof Fasteners**

KD-07-W5 and WSR-4,8×L or WSR-T-4,8×L  
KD-07-W6 and WSR-4,8×L or WSR-T-4,8×L  
KD-07-H6 and WSR-4,8×L or WSR-T-4,8×L  
KD-03-N65 and WSR-4,8×L or WSR-T-4,8×L

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WSR-4,8×L or WSR-T-4,8×L

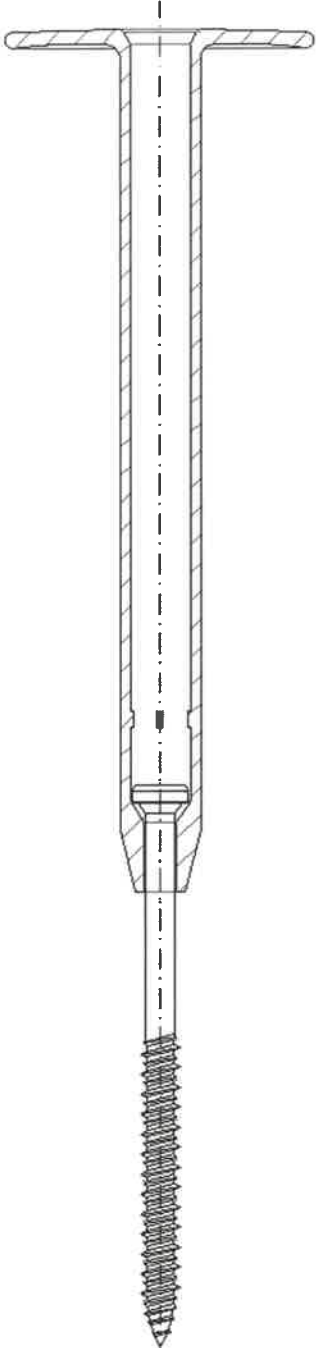
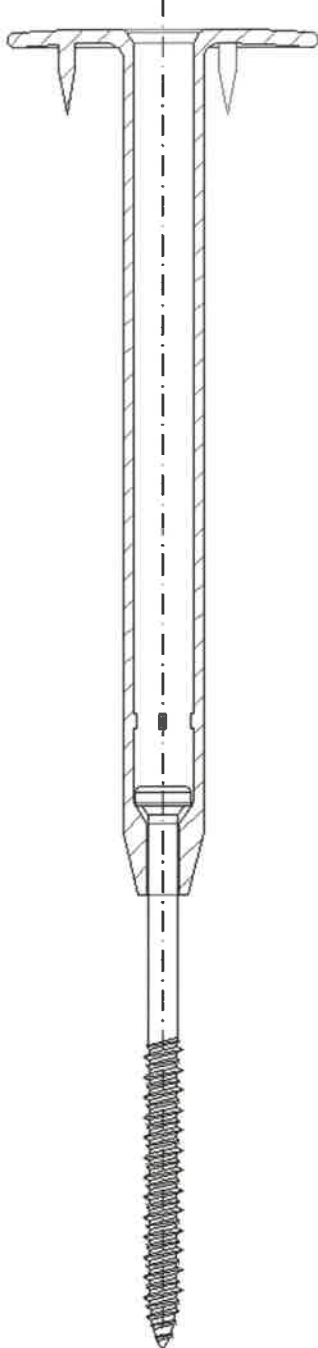
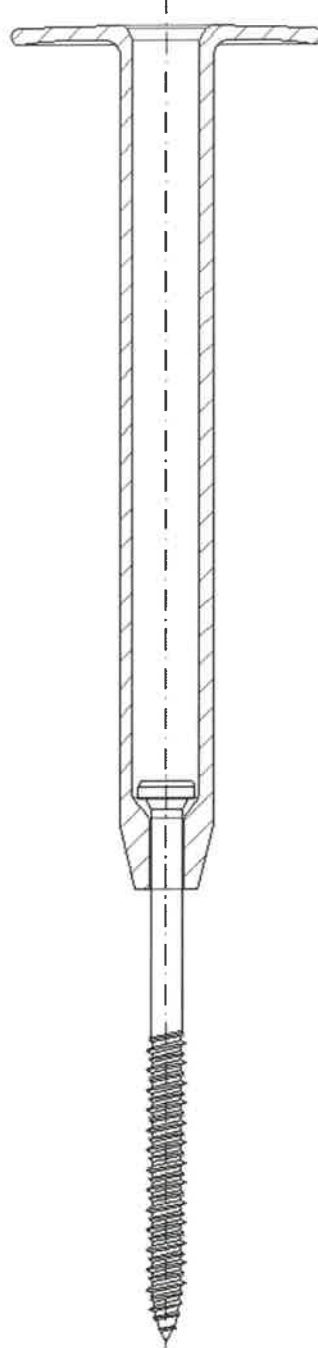


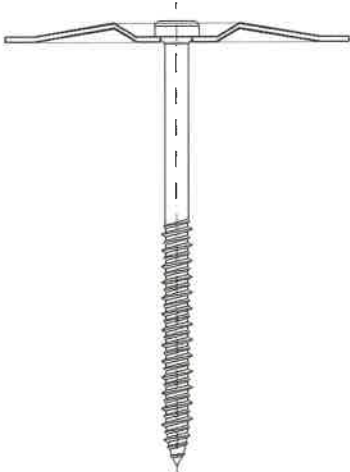
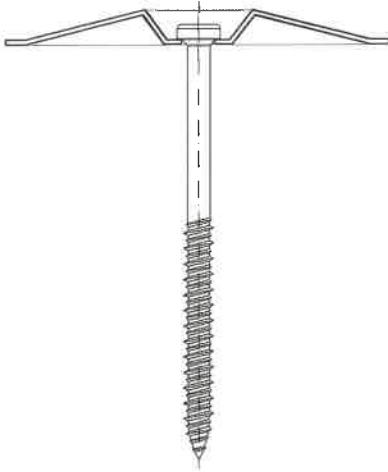
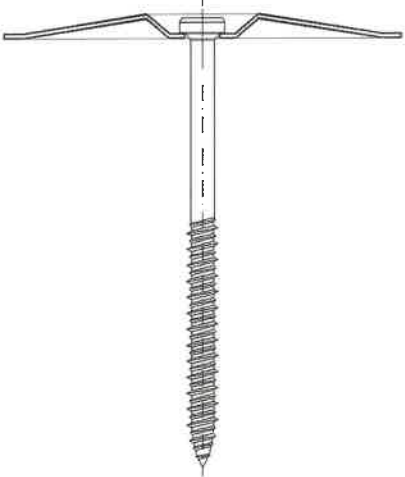
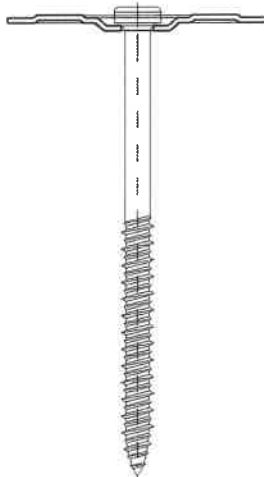
WSR-4,8×L or WSR-T-4,8×L

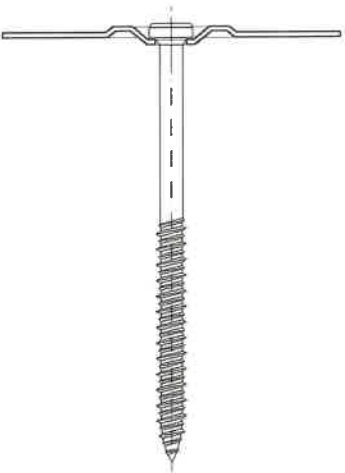
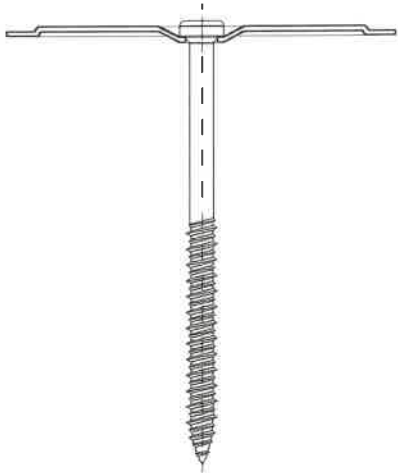
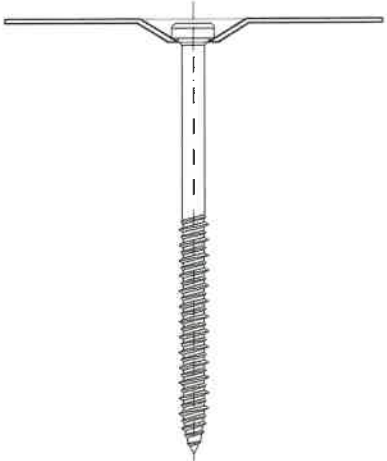
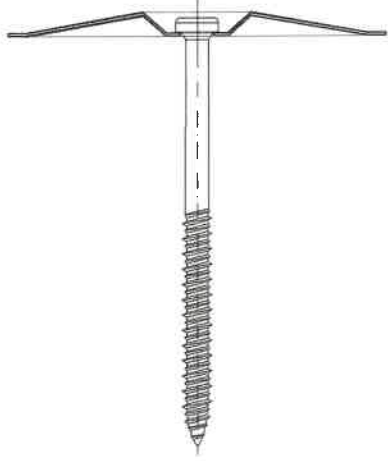
### Wkręt-Met Flat Roof Fasteners

KD-03-G65 and WSR-4,8×L or WSR-T-4,8×L  
KD-03-W7E and WSR-4,8×L or WSR-T-4,8×L

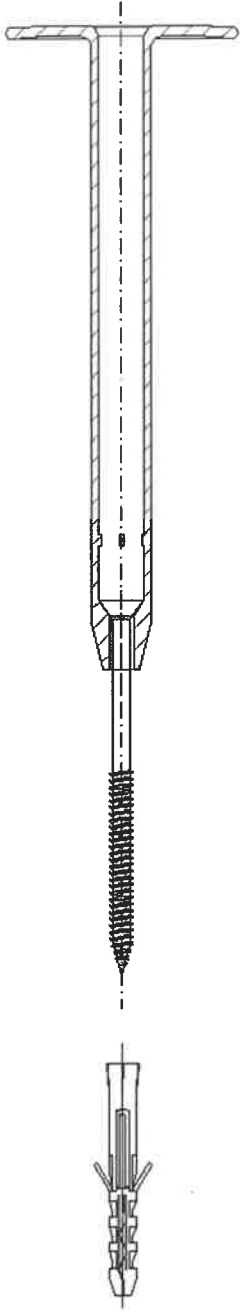
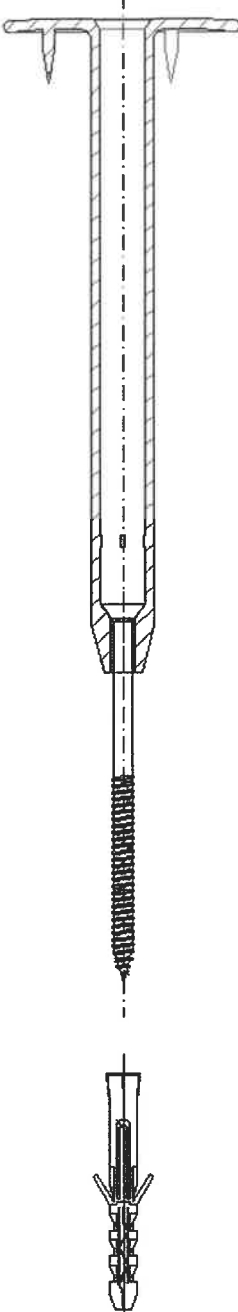
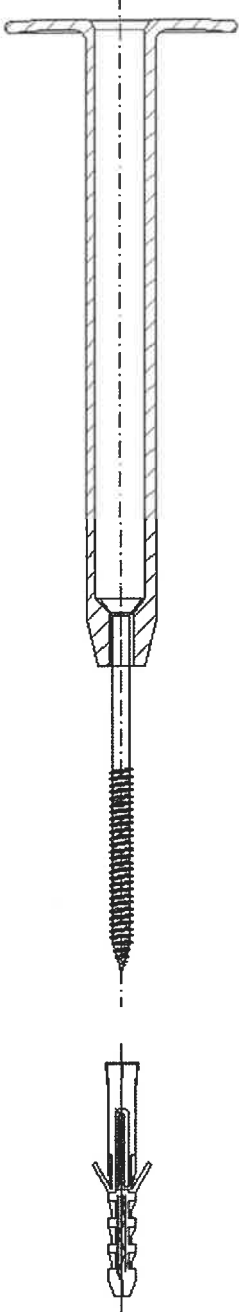
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<div><div><div>LINO 13 x L</div><div>WBSW – 6,3 x L</div></div><div><div>LINO 13K x L</div><div>WBSW – 6,3 x L</div></div><div><div>LINO 15 x L</div><div>WBSW – 6,3 x L</div></div></div>	
<div>Wkręt-Met Flat Roof Fasteners</div>	
<div>LINO 13 and WBSW-6,3xL LINO 13 K and WBSW-6,3xL LINO 15 and WBSW-6,3xL</div>	<div>Annex A26 of European Technical Assessment ETA-15/0578</div>

<div data-bbox="421 286 564 320" data-label="Caption">KD-07-WW</div>  <div data-bbox="389 831 596 869" data-label="Text">WBSW – 6,3 x L</div>	<div data-bbox="1018 286 1177 320" data-label="Caption">KD-03-WW7</div>  <div data-bbox="994 831 1201 869" data-label="Text">WBSW – 6,3 x L</div>
<div data-bbox="427 976 558 1010" data-label="Caption">KD-03-W7</div>  <div data-bbox="389 1525 596 1563" data-label="Text">WBSW – 6,3 x L</div>	<div data-bbox="1027 976 1165 1010" data-label="Caption">KD-05-W6</div>  <div data-bbox="994 1525 1201 1563" data-label="Text">WBSW – 6,3 x L</div>
<div data-bbox="430 1675 826 1713" data-label="Section-Header"><b>Wkręt-Met Flat Roof Fasteners</b></div>	<div data-bbox="1102 1724 1388 1870" data-label="Text"> <b>Annex A27</b>  of European  Technical Assessment  ETA-15/0578 </div>
<div data-bbox="438 1765 821 1906" data-label="Text"> KD-07-WW and WBSW-6,3×L  KD-03-WW7 and WBSW-6,3×L  KD-03-W7 and WBSW-6,3×L  KD-05-W6 and WBSW-6,3×L </div>	

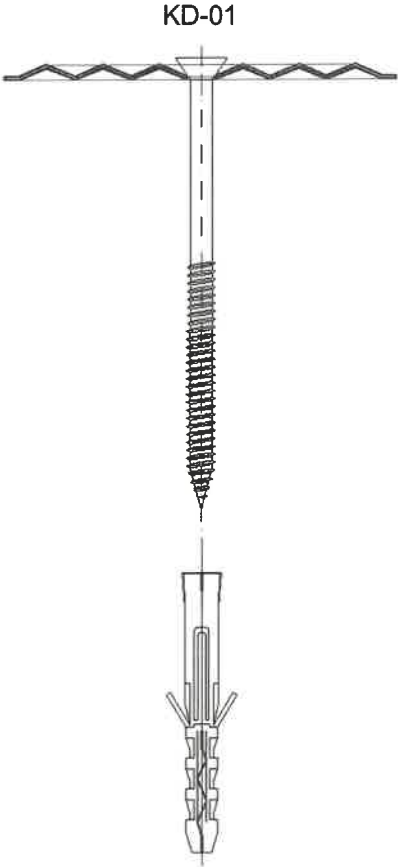
<div><div><div>KD-07-N65</div><div>WBSW – 6,3 x L</div></div><div><div>KD-03-N65</div><div>WBSW – 6,3 x L</div></div><div><div>KD-03-G65</div><div>WBSW – 6,3 x L</div></div><div><div>KD-03-W7E</div><div>WBSW – 6,3 x L</div></div></div>	
<b>Wkręt-Met Flat Roof Fasteners</b>	<b>Annex A28</b> of European Technical Assessment ETA-15/0578
KD-07-N65 and WBSW-6,3×L KD-03-N65 and WBSW-6,3×L KD-03-G65 and WBSW-6,3×L KD-03-W7E and WBSW-6,3×L	



<p style="text-align: center;">LINO 13 x L</p>  <p style="text-align: center;">WDB-4,8xL or WDB-T-4,8xL KNX – 8x50</p>	<p style="text-align: center;">LINO 13K x L</p>  <p style="text-align: center;">WDB-4,8xL or WDB-T-4,8xL KNX – 8x50</p>	<p style="text-align: center;">LINO 15 x L</p>  <p style="text-align: center;">WDB-4,8xL or WDB-T-4,8xL KNX – 8x50</p>
<p style="text-align: center;"><b>Wkręt-Met Flat Roof Fasteners</b></p> <p style="text-align: center;">LINO 13 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50 LINO 13 K and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50 LINO 15 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50</p>		<p style="text-align: center;"><b>Annex A29</b> of European Technical Assessment ETA-15/0578</p>



WDB-4,8×L or WDB-T-4,8×L  
KNX – 8X50

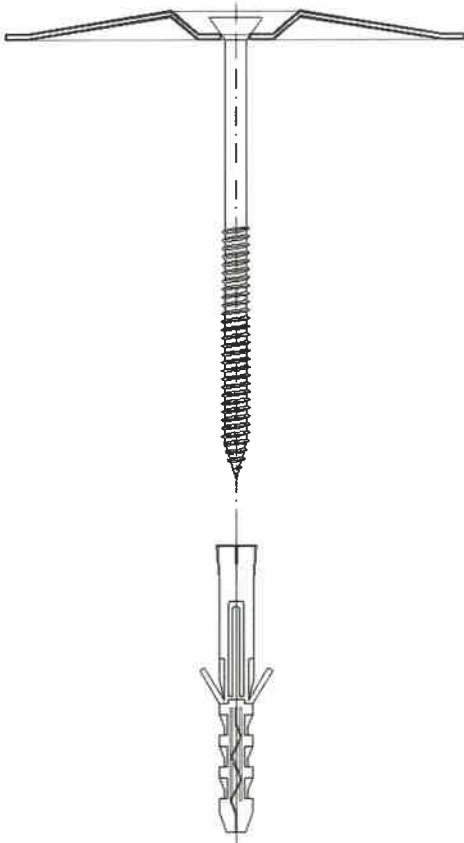
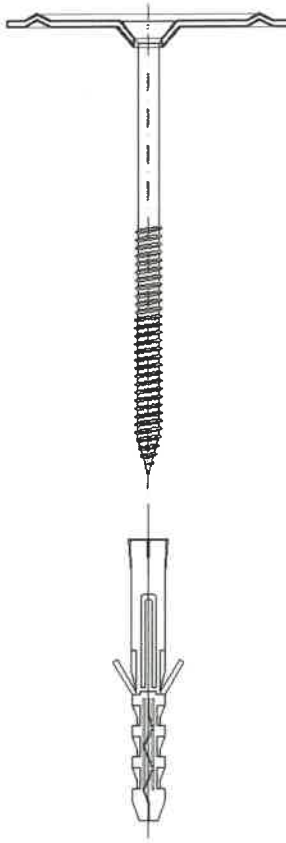


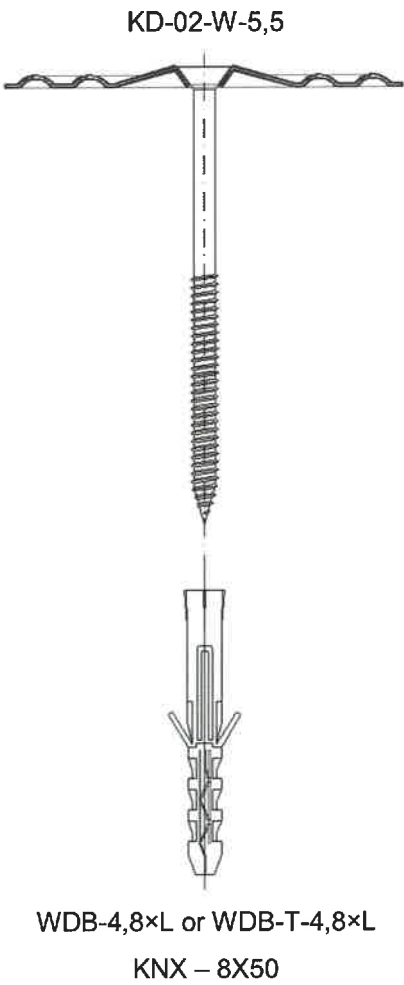
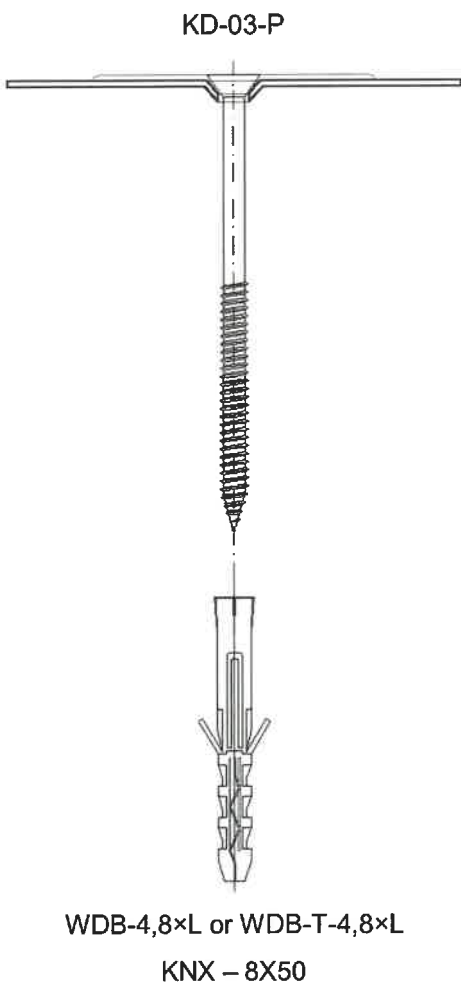
WDB-4,8×L or WDB-T-4,8×L  
KNX – 8X50

**Wkręt-Met Flat Roof Fasteners**

KD-04-W5 and WDB-4,8×L or WDB-T-4,8×L and KNX-8×50  
KD-01 and WDB-4,8×L or WDB-T-4,8×L and KNX-8×50

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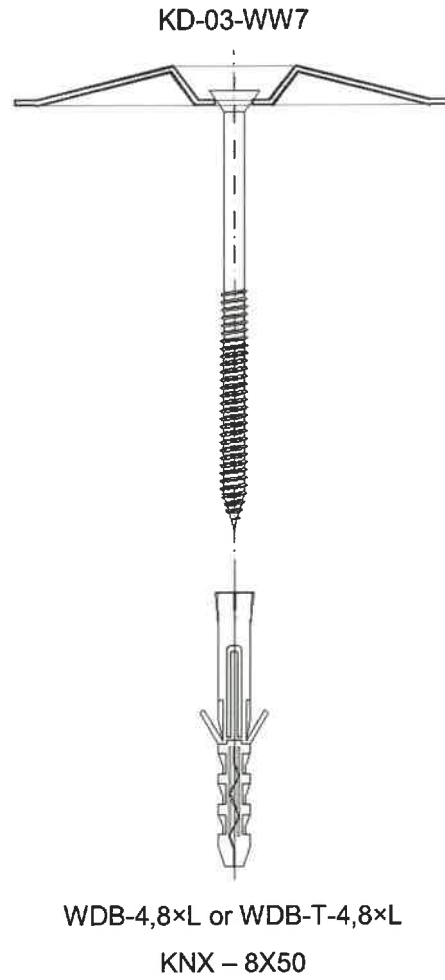
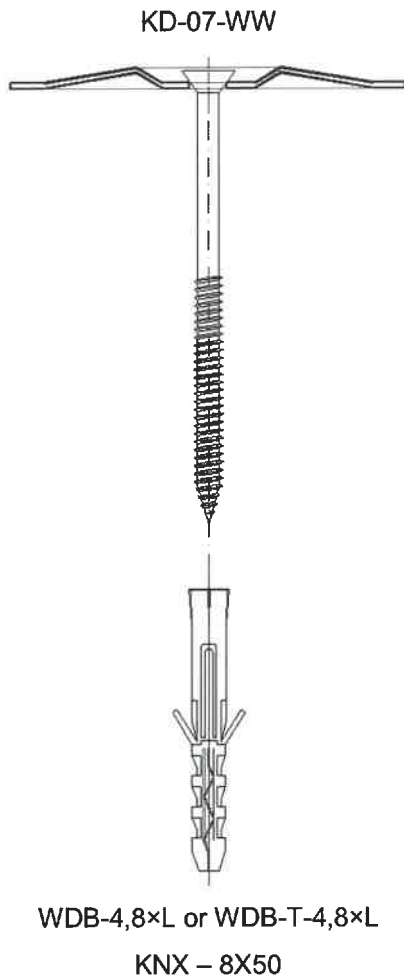
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>KD-03-W5</p>  <p>WDB-4,8×L or WDB-T-4,8×L KNX – 8X50</p> </div> <div style="text-align: center;"> <p>KD-05</p>  <p>WDB-4,8×L or WDB-T-4,8×L KNX – 8X50</p> </div> </div>	
<b>Wkręt-Met Flat Roof Fasteners</b>	<b>Annex A31</b> of European Technical Assessment ETA-15/0578
KD-03-W5 and WDB-4,8×L or WDB-T-4,8×L and KNX-8×50 KD-05 and WDB-4,8×L or WDB-T-4,8×L and KNX-8×50	



**Wkręt-Met Flat Roof Fasteners**

KD-03-P and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50  
KD-02-W-5,5 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50

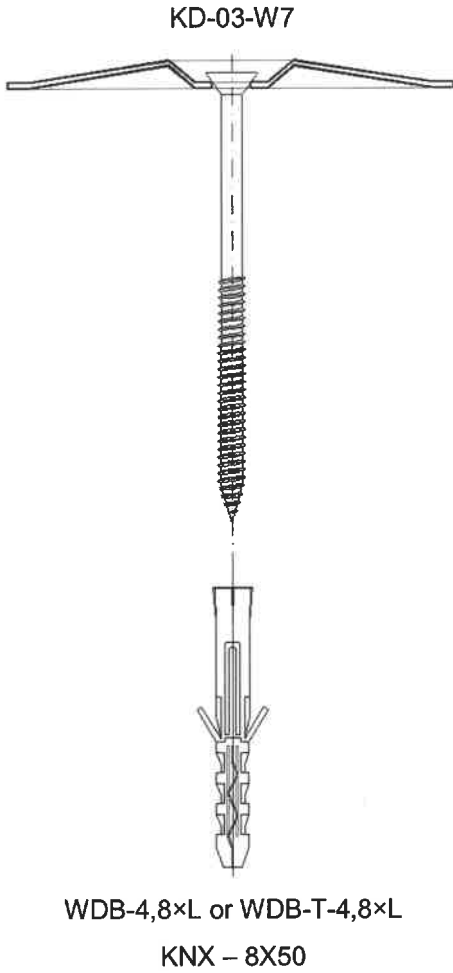
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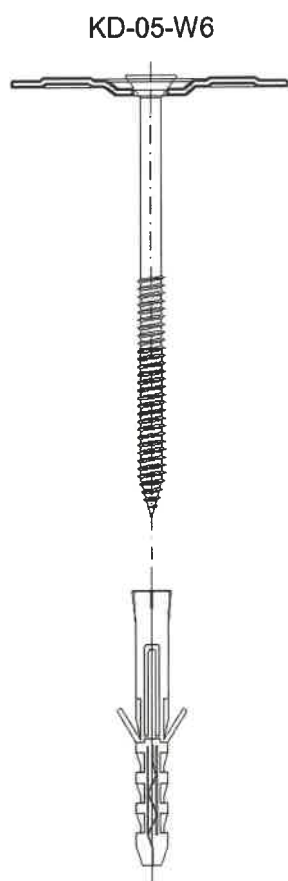
### Wkręt-Met Flat Roof Fasteners

KD-07-WW and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50  
KD-03-WW7 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50

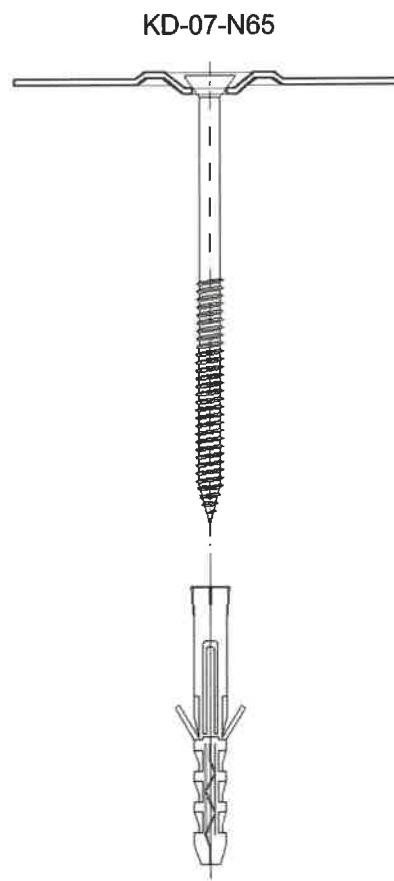
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<b>Wkręt-Met Flat Roof Fasteners</b>	<b>Annex A34</b> of European Technical Assessment ETA-15/0578
KD-03-W7 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50	



WDB-4,8xL or WDB-T-4,8xL  
KNX – 8X50

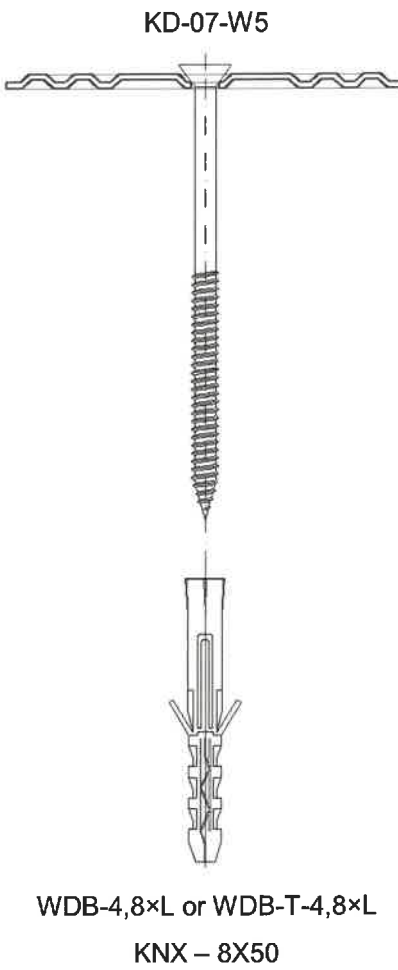
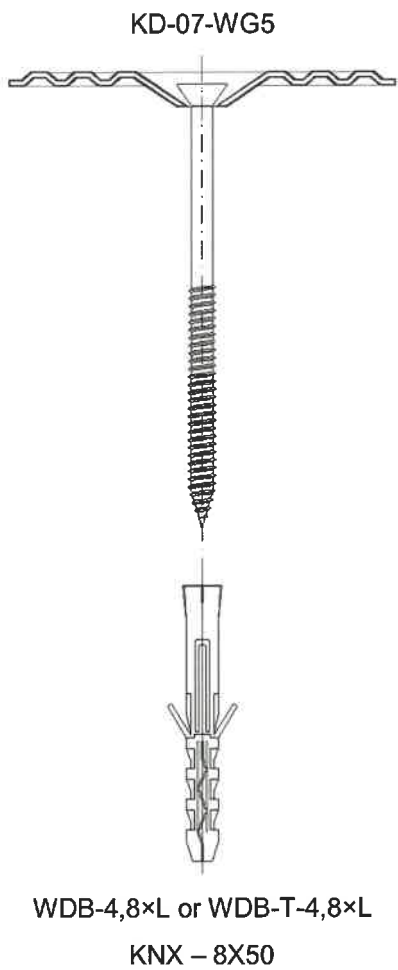


WDB-4,8xL or WDB-T-4,8xL  
KNX – 8X50

### Wkręt-Met Flat Roof Fasteners

KD-05-W6 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50  
KD-07-N65 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50

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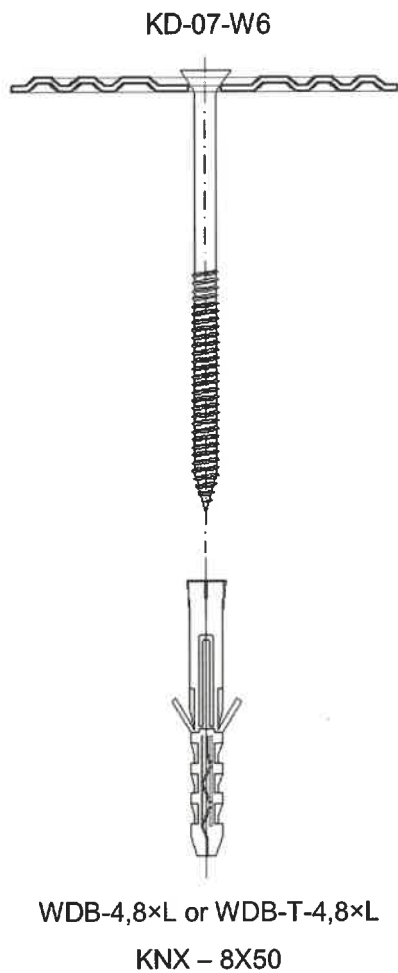


**Wkręt-Met Flat Roof Fasteners**

KD-07-WG5 and WDB-4,8×L or WDB-T-4,8×L and KNX-8×50  
KD-07-W5 and WDB-4,8×L or WDB-T-4,8×L and KNX-8×50

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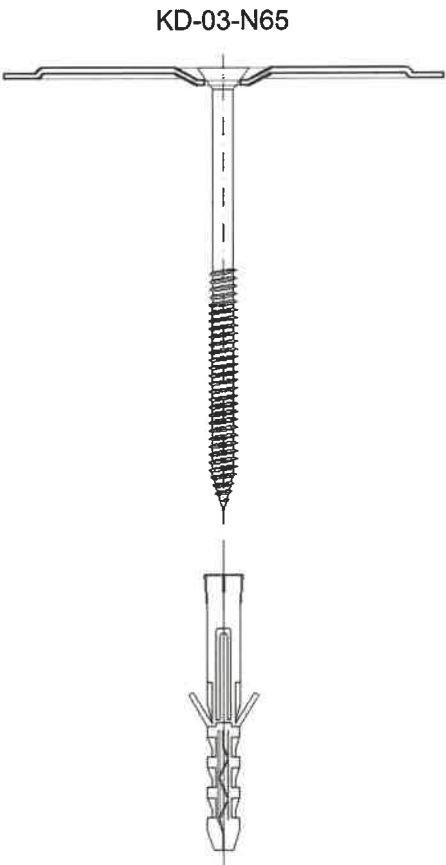




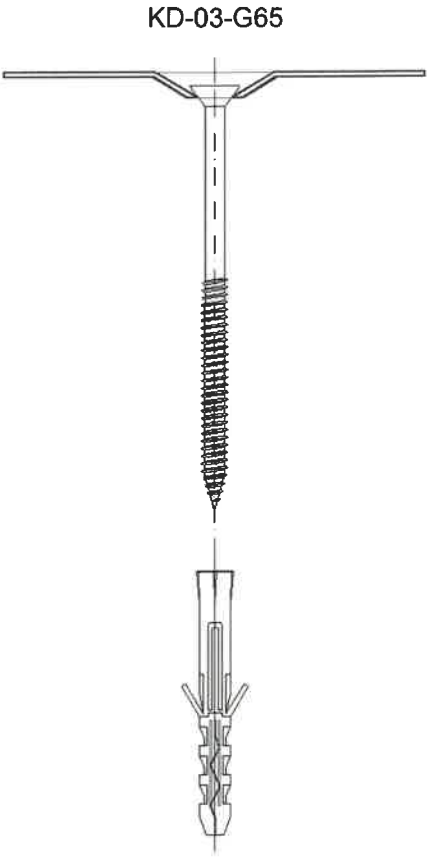
### Wkręt-Met Flat Roof Fasteners

KD-07-W6 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50  
KD-07-H6 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50

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WDB-4,8xL or WDB-T-4,8xL  
KNX – 8X50

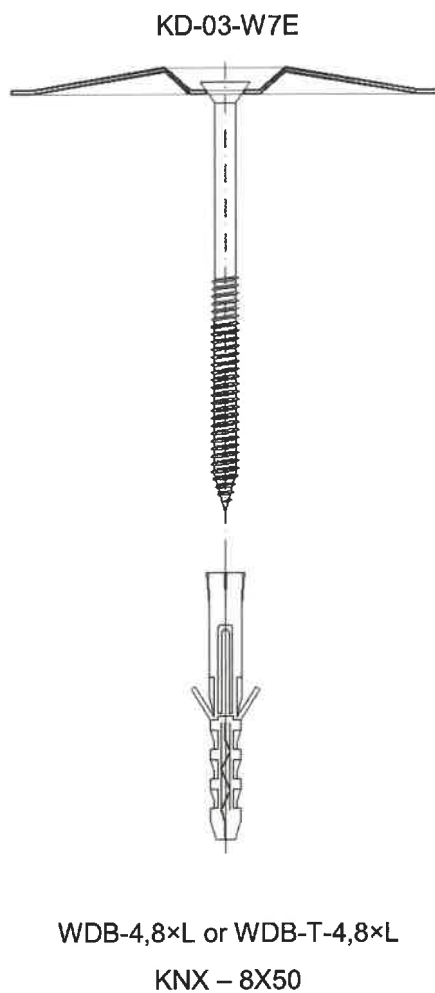


WDB-4,8xL or WDB-T-4,8xL  
KNX – 8X50

**Wkręt-Met Flat Roof Fasteners**

KD-03 -N65 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50  
KD-03-G65 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50

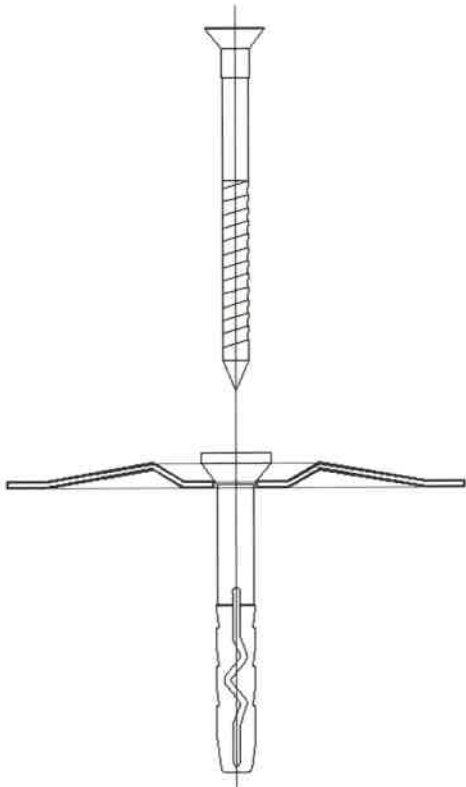
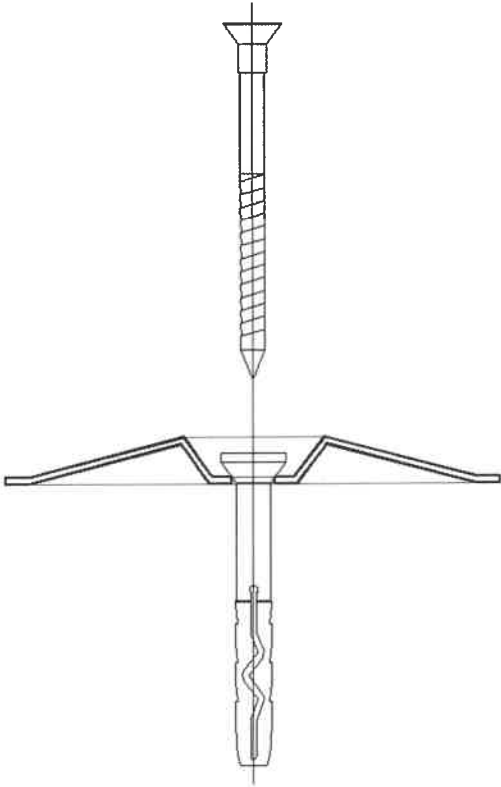
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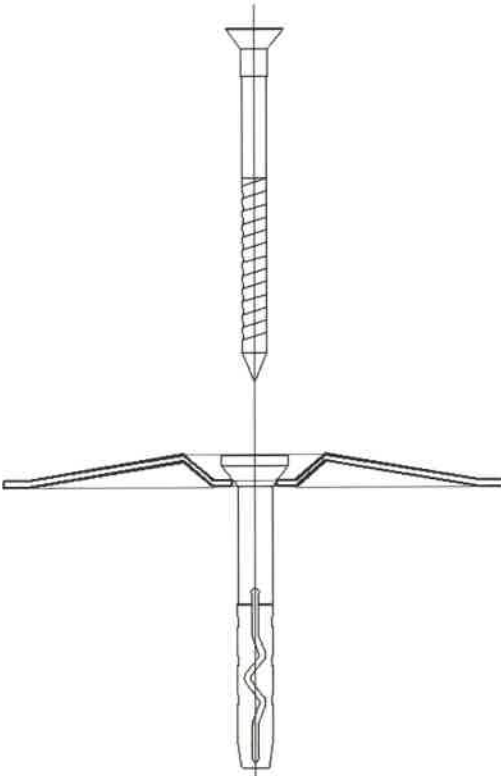
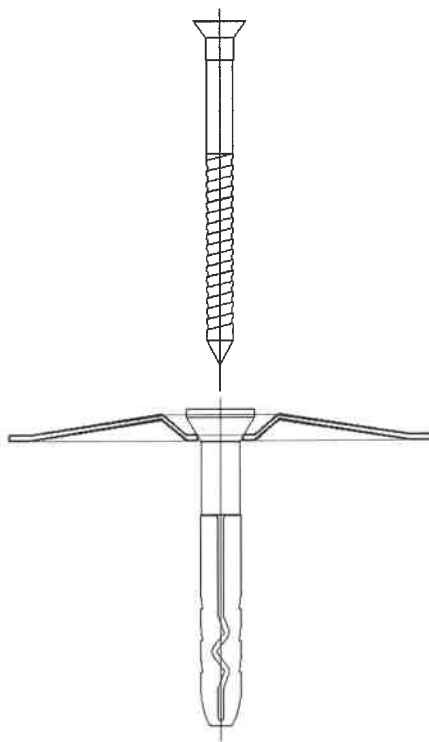


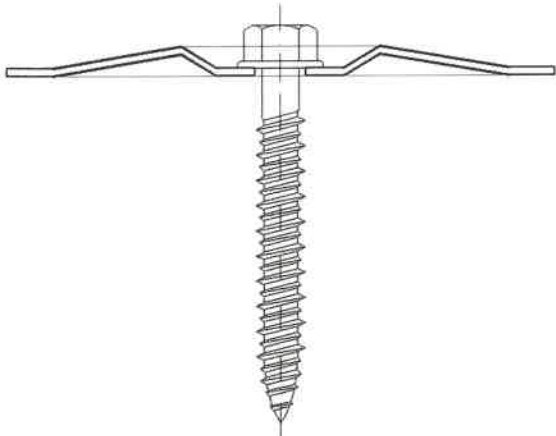
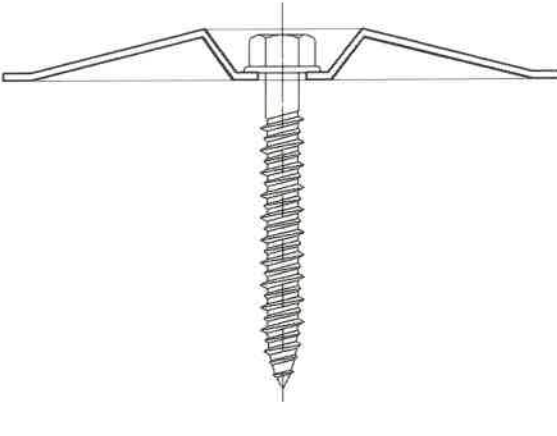
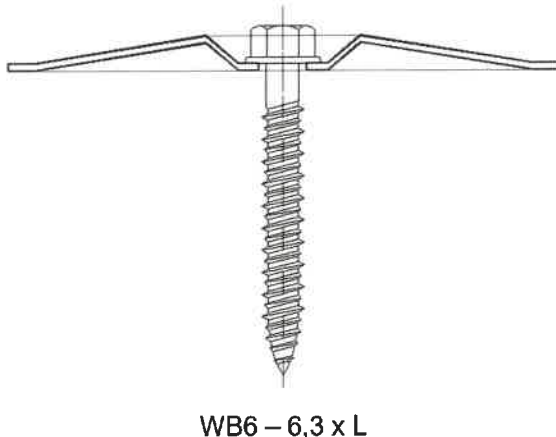
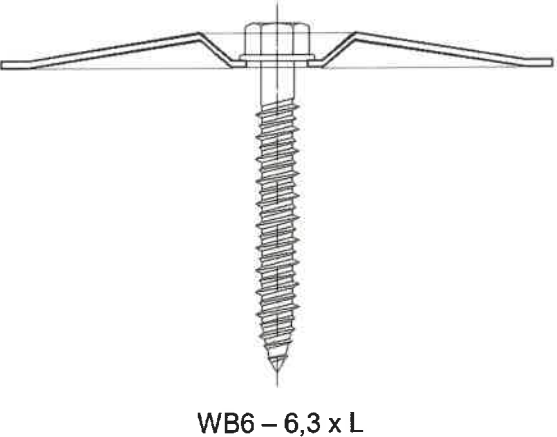
### Wkręt-Met Flat Roof Fasteners

KD-03-W7E and WDB-4,8×L or WDB-T-4,8×L and KNX-8×50

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<div><div><div>screw to expansion sleeve SMN-6x50</div><div>expansion sleeve SMN-6x50</div></div><div>KD-07-WW</div><div><div>screw to expansion sleeve SMN-6x50</div><div>expansion sleeve SMN-6x50</div></div><div>KD-03-WW7</div></div>	
<b>Wkręt-Met Flat Roof Fasteners</b>	<b>Annex A40</b> of European Technical Assessment ETA-15/0578
KD-07-WW and SMN-6x50 KD-03-WW7 and SMN-6x50	

<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>screw to expansion sleeve SMN-6x50</p>  <p>expansion sleeve SMN-6x50</p> </div> <div style="text-align: center;"> <p>screw to expansion sleeve SMN-8x60</p>  <p>expansion sleeve SMN-8x60</p> </div> </div>	
<b>Wkret-Met Flat Roof Fasteners</b>	<b>Annex A41</b> of European Technical Assessment ETA-15/0578
KD-03-W7 and SMN-6x50 KD-03-W9 and SMN-8x50	

<div><div><p>KD-07-WW</p><p>WB6 – 6,3 x L</p></div><div><p>KD-03-WW7</p><p>WB6 – 6,3 x L</p></div><div><p>KD-03-W7</p><p>WB6 – 6,3 x L</p></div><div><p>KD-03-W9</p><p>WB6 – 6,3 x L</p></div></div>	
<b>Wkręt-Met Flat Roof Fasteners</b>	<b>Annex A42</b> of European Technical Assessment ETA-15/0578
KD-07-WW and WB6-6,3xL KD-03-WW7 and WB6-6,3xL KD-03-W7 and WB6-6,3xL KD-03-W9 and WB6-6,3xL	

**Specifications of intended use****Anchorage subject to:**

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

**Base materials:**

- Steel sheets
- Timber structures
- OSB sheets
- Plywood
- Reinforced or unreinforced normal weight concrete, including precast concrete slabs

**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.

**Wkręt-Met Flat Roof Fasteners**

**Intended use**  
Specification

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Characteristic values of axial load resistance [kN]								
Ann. No.	Wkręt-Met Flat Roof Fasteners		Substrate					
			Steel sheet S280GD acc. to EN 10346			Wood class ≥ C24 acc. to EN 14081	OSB acc. to EN 300	Plywood acc. to EN 313
	Screw	Washer with sleeve / washer	t ≥ 0,50 mm	t ≥ 0,63 mm	t ≥ 0,75 mm	h <sub>ef</sub> = 30 mm	h <sub>ef</sub> = 18 mm	h <sub>ef</sub> = 20 mm
A14	WDB-4,8 or WDB-T-4,8	LINO 13 PA	0,78	0,99	1,17	2,37	1,06	0,98
A14		LINO 13K PA	0,78	0,99	1,17	2,37	1,06	0,98
A14		LINO 13 PP	0,78	0,99	1,17	2,12	1,06	0,98
A14		LINO 13K PP	0,78	0,99	1,17	2,12	1,06	0,98
A14		LINO 15 PE	0,78	0,99	1,17	1,70	1,06	0,98
A14		LINO 15 PP	0,78	0,99	1,17	1,95	1,06	0,98
A15		KD-04-W5	0,78	0,99	1,17	3,23	1,06	0,98
A15		KD-01	0,78	0,99	1,17	1,67	1,06	0,98
A15		KD-03-W5	0,78	0,99	1,17	2,84	1,06	0,98
A15		KD-05	0,78	0,99	1,17	3,12	1,06	0,98
A16		KD-03-P	0,78	0,99	1,17	2,50	1,06	0,98
A16		KD-02-W-5,5	0,78	0,99	1,17	2,06	1,06	0,98
A16		KD-07-WW	0,78	0,99	1,17	2,90	1,06	0,98
A16		KD-03-WW7	0,78	0,99	1,17	2,27	1,06	0,98
A17		KD-03-W7	0,78	0,99	1,17	2,46	1,06	0,98
A17		KD-05-W6	0,78	0,99	1,17	3,67	1,06	0,98
A17		KD-07-N65	0,78	0,99	1,17	3,67	1,06	0,98
A17		KD-07-WG5	0,78	0,99	1,17	2,42	1,06	0,98
A18		KD-07-W5	0,78	0,99	1,17	2,22	1,06	0,98
A18		KD-07-W6	0,78	0,99	1,17	2,63	1,06	0,98
A18		KD-07-H6	0,78	0,99	1,17	2,85	1,06	0,98
A18		KD-03-N65	0,78	0,99	1,17	3,67	1,06	0,98
A19		KD-03-G65	0,78	0,99	1,17	3,67	1,06	0,98
A19		KD-03-W7E	0,78	0,99	1,17	2,74	1,06	0,98

Wkręt-Met Flat Roof Fasteners

Characteristic values of axial load resistance

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Characteristic values of axial load resistance [kN]							
Ann. No.	Wkręt-Met Flat Roof Fasteners		Substrate				
			Steel sheet S280GD acc. to EN 10346				
	Screw	Washer with sleeve / washer	t ≥ 0,50 mm	t ≥ 0,63 mm	t ≥ 0,75 mm	t ≥ 0,88 mm	t ≥ 1,00 mm
A20	WSR-4,8 or WSR-T-4,8	LINO 13 PA	0,84	1,03	1,20	1,53	1,61
A20		LINO 13K PA	0,84	1,03	1,20	1,53	1,61
A20		LINO 13 PP	0,84	1,03	1,20	1,53	1,61
A20		LINO 13K PP	0,84	1,03	1,20	1,53	1,61
A20		LINO 15 PE	0,84	1,03	1,20	1,53	1,61
A20		LINO 15 PP	0,84	1,03	1,20	1,53	1,61
A21		KD-04-W5	0,84	1,03	1,20	1,53	1,61
A21		KD-01	0,84	1,03	1,20	1,53	1,61
A21		KD-03-W5	0,84	1,03	1,20	1,53	1,61
A21		KD-05	0,84	1,03	1,20	1,53	1,61
A22		KD-03-P	0,84	1,03	1,20	1,53	1,61
A22		KD-02-W-5,5	0,84	1,03	1,20	1,53	1,61
A22		KD-07-WW	0,84	1,03	1,20	1,53	1,61
A22		KD-03-WW7	0,84	1,03	1,20	1,53	1,61
A23		KD-03-W7	0,84	1,03	1,20	1,53	1,61
A23		KD-05-W6	0,84	1,03	1,20	1,53	1,61
A23		KD-07-N65	0,84	1,03	1,20	1,53	1,61
A23		KD-07-WG5	0,84	1,03	1,20	1,53	1,61
A24		KD-07-W5	0,84	1,03	1,20	1,53	1,61
A24		KD-07-W6	0,84	1,03	1,20	1,53	1,61
A24		KD-07-H6	0,84	1,03	1,20	1,53	1,61
A24		KD-03-N65	0,84	1,03	1,20	1,53	1,61
A25		KD-03-G65	0,84	1,03	1,20	1,53	1,61
A25		KD-03-W7E	0,84	1,03	1,20	1,53	1,61

Wkręt-Met Flat Roof Fasteners	Annex C2 of European Technical Assessment ETA-15/0578
Characteristic values of axial load resistance	

Characteristic values of axial load resistance [kN]								
Ann. No.	Wkręć-Met Flat Roof Fasteners		Substrate					
			Wood class $\geq$ C24 acc. to EN 14081	OSB acc. to EN 300	Plywood acc. to EN 313	Concrete $\geq$ C12/15 acc. to EN 206	Concrete $\geq$ C20/25 acc. to EN 206	Precast concrete slab $\geq$ C20/25 acc. to EN 206
	Screw	Washer with sleeve / washer	$h_{ef} = 30$ mm	$h_{ef} = 18$ mm	$h_{ef} = 20$ mm	$h_{ef} = 30$ mm	$h_{ef} = 30$ mm	$h_{ef} = 20$ mm
A26	WBSW	LINO 13 PA	2,32	1,68	2,32	1,64	2,12	1,92
A26		LINO 13K PA	2,32	1,68	2,32	1,64	2,12	1,92
A26		LINO 13 PP	2,12	1,68	2,12	1,64	2,12	1,92
A26		LINO 13K PP	2,12	1,68	2,12	1,64	2,12	1,92
A26		LINO 15 PE	2,03	1,68	2,03	1,57	2,03	1,92
A26		LINO 15 PP	2,16	1,68	2,16	1,64	2,12	1,92
A27		KD-07-WW	3,04	1,68	3,30	1,64	2,12	1,92
A27		KD-03-WW7	3,04	1,68	3,62	1,64	2,12	1,92
A27		KD-03-W7	3,04	1,68	3,54	1,64	2,12	1,92
A27		KD-05-W6	3,04	1,68	3,54	1,64	2,12	1,92
A28		KD-07-N65	3,04	1,68	3,54	1,64	2,12	1,92
A28		KD-03-N65	3,04	1,68	3,54	1,64	2,12	1,92
A28		KD-03-G65	3,04	1,68	3,54	1,64	2,12	1,92
A28		KD-03-W7E	3,04	1,68	3,04	1,64	2,12	1,92

**Wkręć-Met Flat Roof Fasteners**

Characteristic values of axial load resistance

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Characteristic values of axial load resistance [kN]				
Ann. No.	Wkręt-Met Flat Roof Fasteners		Substrate	
			Concrete ≥ C12/15 acc. to EN 206	Concrete ≥ C20/25 acc. to EN 206
	Fastener	Washer	$h_{ef} = 30 \text{ mm}$	$h_{ef} = 30 \text{ mm}$
A40	SMN 6×50	KD-07-WW	0,79	1,02
A40		KD-03-WW7	0,79	1,02
A41		KD-03-W7	0,79	1,02
A41	SMN 8×60	KD-03-W9	1,18	1,52

Characteristic values of axial load resistance [kN]					
Ann. No.	Wkręt-Met Flat Roof Fasteners		Substrate		
			Concrete ≥ C12/15 acc. to EN 206	Concrete ≥ C20/25 acc. to EN 206	Precast concrete slab ≥ C20/25 acc. to EN 206
	Screw	Washer	$h_{ef} = 30 \text{ mm}$	$h_{ef} = 30 \text{ mm}$	$h_{ef} = 20 \text{ mm}$
A42	WB6	KD-07-WW	2,31	2,98	2,10
A42		KD-03-WW7	2,31	2,98	2,10
A42		KD-03-W7	2,31	2,98	2,10
A42		KD-03-W9	2,31	2,98	2,10

**Wkręt-Met Flat Roof Fasteners**

Characteristic values of axial load resistance

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