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## European Technical Assessment

**ETA-15/0578  
of 30/09/2015**

### General part

<b>Technical Assessment Body issuing the European Technical Assessment</b>	Instytut Techniki Budowlanej
<b>Trade name of the construction product</b>	Wkręt-Met Flat Roof Fasteners
<b>Product family to which the construction product belongs</b>	Fasteners for flexible roof waterproofing systems
<b>Manufacturer</b>	Klimas Sp. z o.o. ul. Wincentego Witosa 135/137 Kuźnica Kiedrzyńska 42-233 Mykanów Poland
<b>Manufacturing plant</b>	Klimas Sp. z o.o. ul. Wincentego Witosa 135/137 Kuźnica Kiedrzyńska 42-233 Mykanów Poland
<b>This European Technical Assessment contains</b>	32 pages including 28 Annexes which form an integral part of this Assessment
<b>This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of</b>	Guideline for European Technical Approval ETAG 006, edition March 2000, amended November 2012, "Systems of mechanically fastened flexible roof waterproofing membranes", used as European Assessment Document (EAD)

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## Specific part

### 1. Technical description of the product

The construction products are mechanical fasteners Wkręt-Met Flat Roof Fasteners. The fasteners comprise a screw made of carbon steel protected by ceramic coating and a washer or washer with integral sleeve. Washer is made of stainless steel. Washer with integrated sleeve is made of plastic material: polypropylene (PP), polyethylene (PE) or polyamide (PA).

The fasteners shall correspond to the drawings and information given in Annexes 1 to 28.

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

The fasteners Wkręt-Met Flat Roof Fasteners are intended to be used for the fastening of flexible roof waterproofing membranes according to ETAG 006. The possible substructures are steel sheets, concrete, precast concrete slab, plywood and timber boards including OSB.

The provisions made in this European Technical Assessment are based on an assumed working life of the fasteners of 10 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer or Technical Assessment Body, 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.

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

#### 3.1. Performance of the product

##### 3.1.1. Safety in case of fire (BWR 2)

Reaction to fire: No performance assessed.

##### 3.1.2. Hygiene, health and the environment (BWR 3)

Regarding the dangerous substances clauses contained in this European Technical Assessment, there may be requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Regulation, these requirements need also to be complied with, when and where they apply.

##### 3.1.3. Safety in use (BWR 4)

The characteristic values and mean values of the axial load resistance of the fasteners are given in Annex 26 to 28. The values were determined by axial loading tests according to ETAG 006.

The fasteners are deemed to satisfy the requirements of ETAG 006 concerning unwinding. This was evaluated on the basis of existing field experience of the manufacturer.

##### 3.1.4. Sustainable use of natural resources (BWR 7)

No performance assessed.

### **3.1.5. General aspects relating to fitness for use**

The durability requirements of ETAG 006 (resistance to corrosion of metallic parts, impact resistance and brittleness of plastic parts before and after heat ageing, requirements for results of Charpy tests for plastic parts before and after heat ageing) are satisfied for the coated carbon steel and the polypropylene, polyethylene or polyamide parts of the fasteners.

All parts made of carbon steel protected by ceramic coating resisted to 15 cycles of the test procedure described in ETAG 006 (Kaesternich test) and did not show more than 15% surface corrosion.

The test results of the impact resistance and brittleness of plastic parts showed a drop height more than 1,0 m before and after heat ageing of these parts. Furthermore the results of the corresponding Charpy tests after heat ageing did not show any significant decline compared to the results before heat ageing.

### **3.2. Methods used for the assessment**

The assessment of fitness of the fasteners for the declared intended use has been made in accordance with ETAG 006.

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

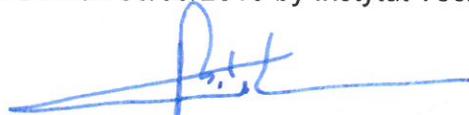
According to Decision 98/143/EC of the European Commission the system 2+ of assessment and verification of constancy of performance applies (see Annex V to Regulation (EU) No 305/2011).

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

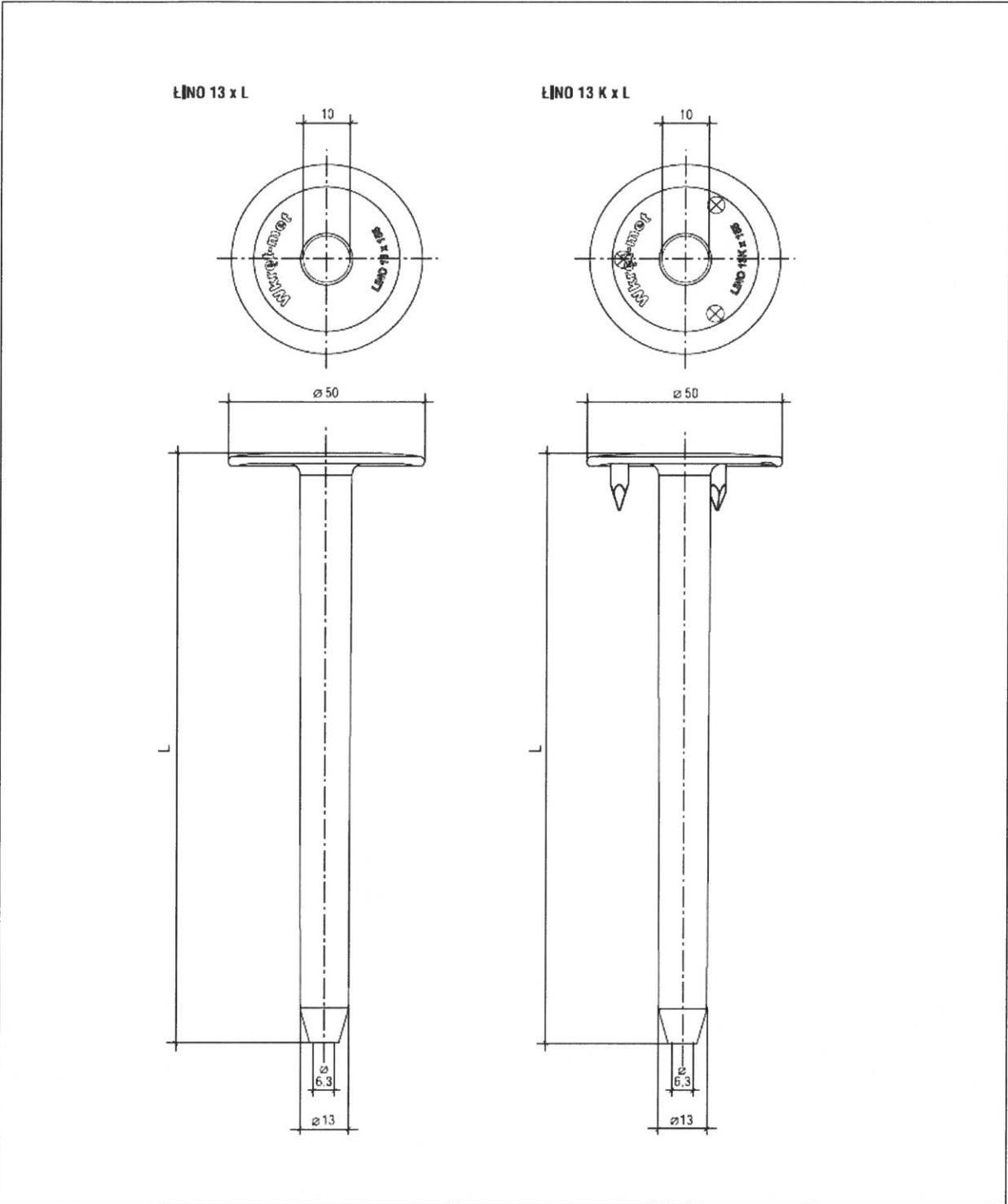
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at the Instytut Techniki Budowlanej.

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 30/09/2015 by Instytut Techniki Budowlanej



Marcin M. Kruk, PhD  
Director of ITB

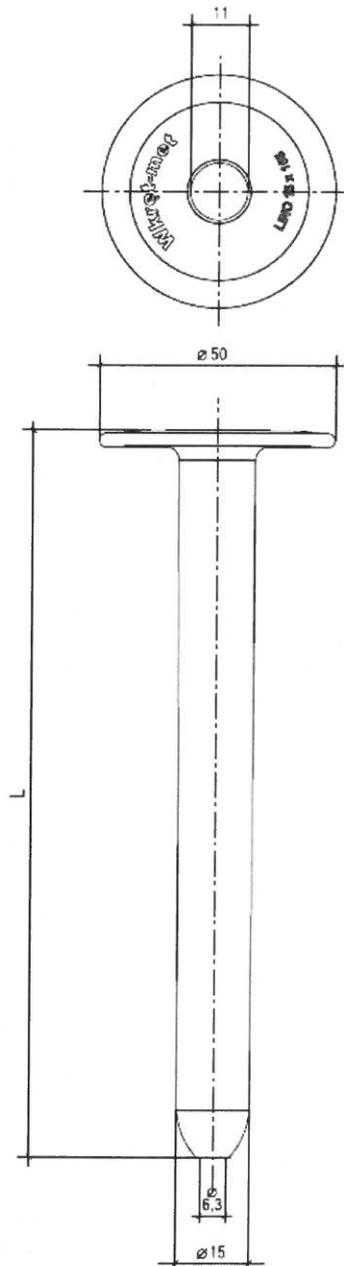


**Wkręt-Met Flat Roof Fasteners**

Plastic sleeves: LINO 13 and LINO 13 K

**Annex 1**  
of European  
Technical Assessment  
ETA-15/0578

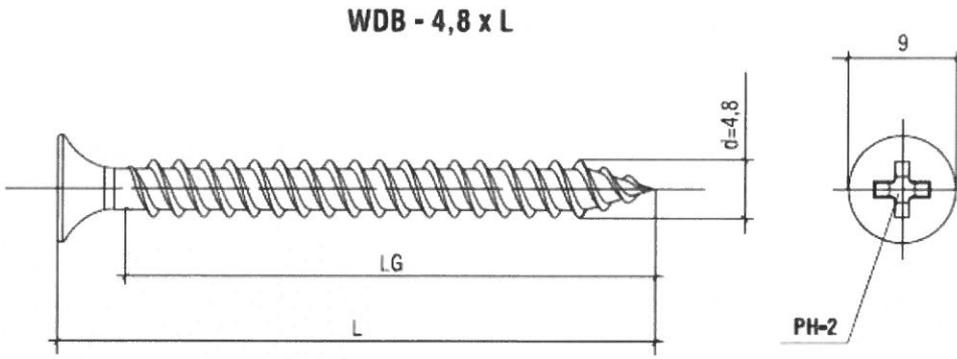
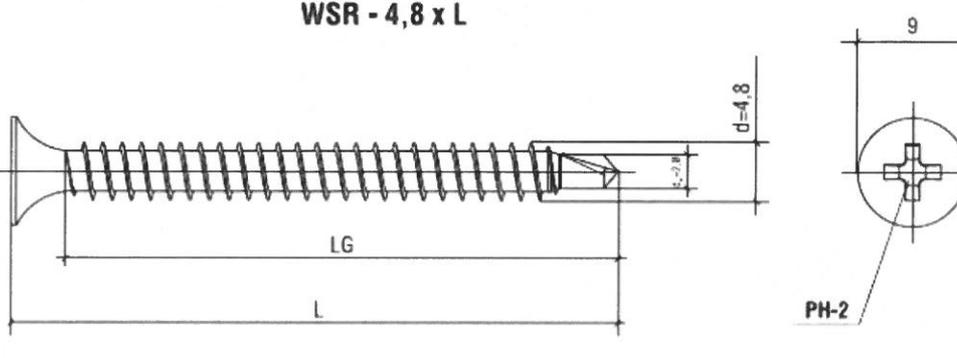
LINO 15 x L

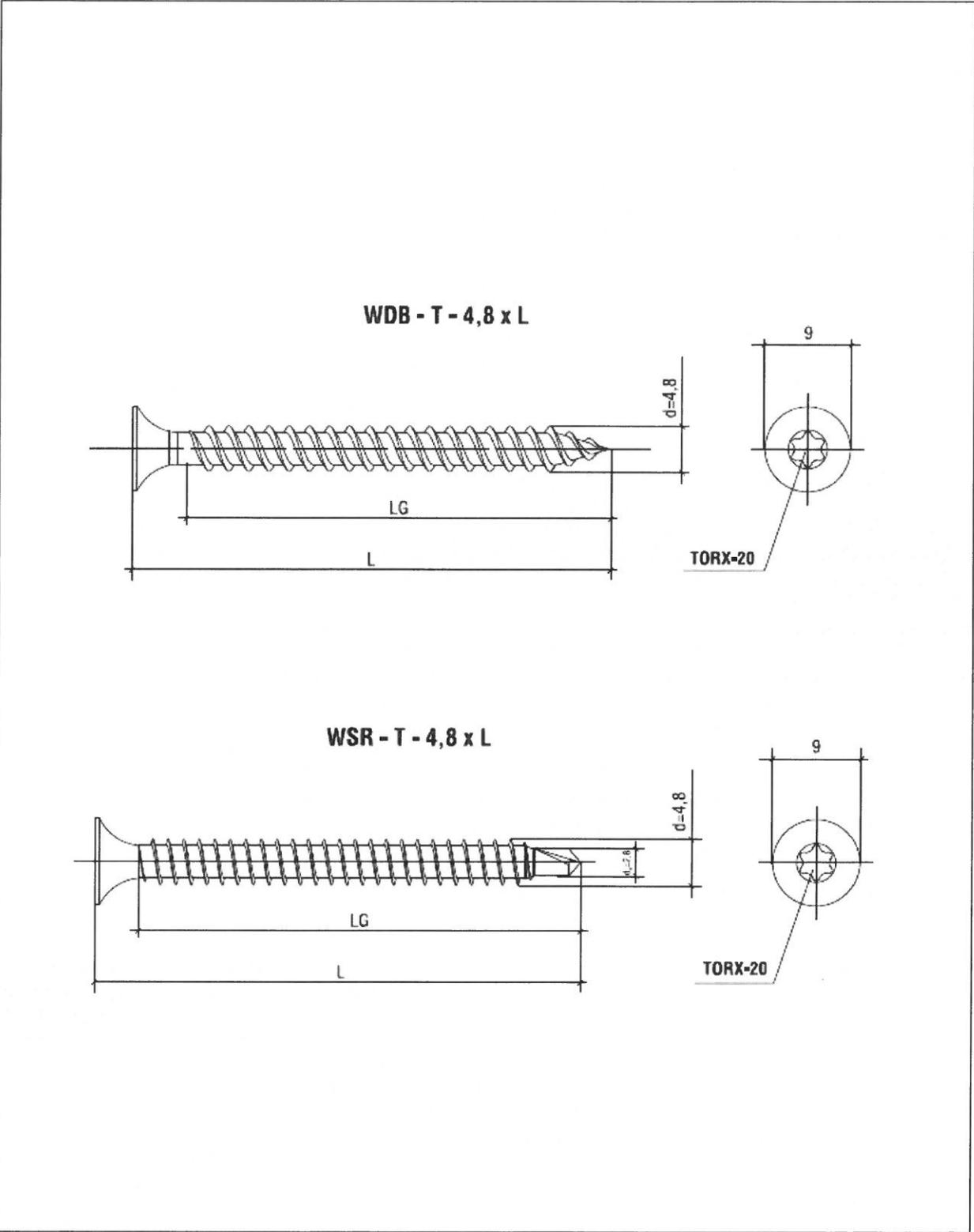


**Wkręt-Met Flat Roof Fasteners**

Plastic sleeves: LINO 15

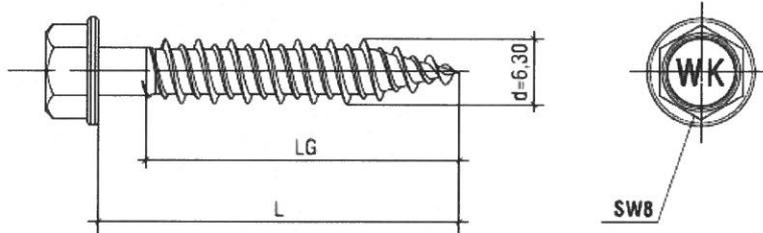
**Annex 2**  
of European  
Technical Assessment  
ETA-15/0578

<p><b>WDB - 4,8 x L</b></p> 	
<p><b>WSR - 4,8 x L</b></p> 	
<p><b>Wkręt-Met Flat Roof Fasteners</b></p>	<p><b>Annex 3</b> of European Technical Assessment ETA-15/0578</p>
<p>Self-tapping screw WDB-4,8xL Self-drilling screw WSR-4,8xL</p>	

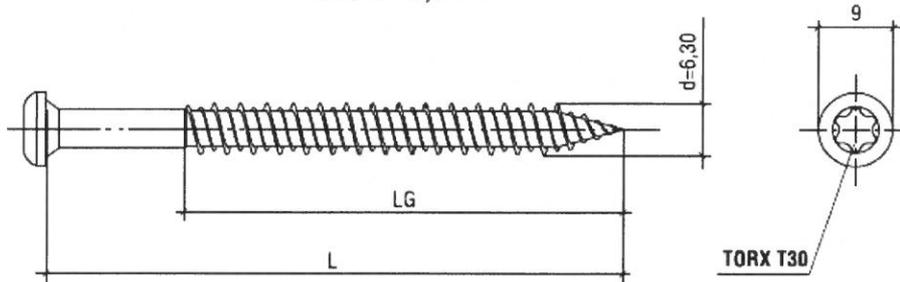


<b>Wkręt-Met Flat Roof Fasteners</b>	<b>Annex 4</b> of European Technical Assessment ETA-15/0578
Self-tapping screw WDB-T-4,8xL Self-drilling screw WSR-T-4,8xL	

**WB6 - C - 6,3 x L**



**WBSW - 6,3 x L**

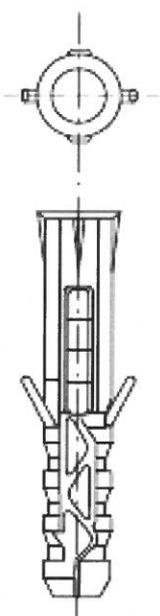


**Wkręt-Met Flat Roof Fasteners**

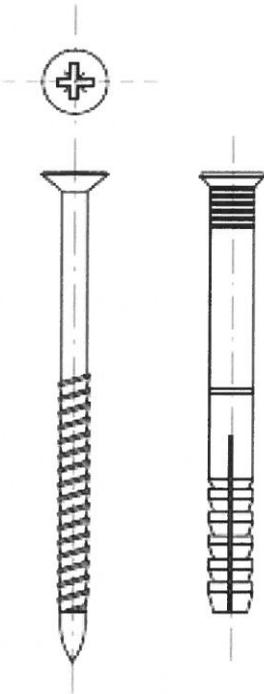
Self-tapping screw WB6-C-6,3xL  
 Self-tapping screw WBSW-6,3xL

**Annex 5**

of European  
 Technical Assessment  
 ETA-15/0578



**KNX 8 x 50**

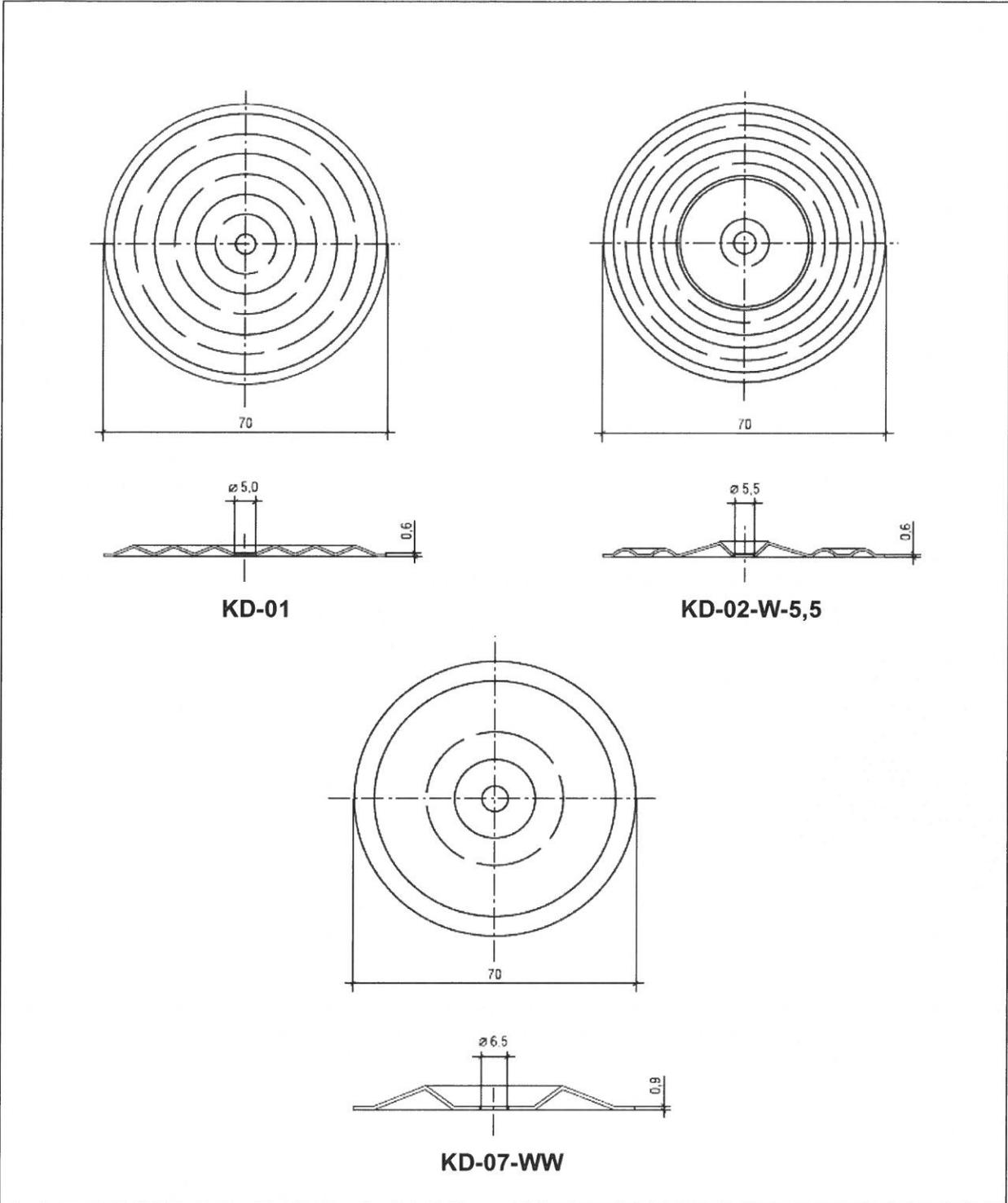


**SMN 6 x 50  
SMN 8 x 60**

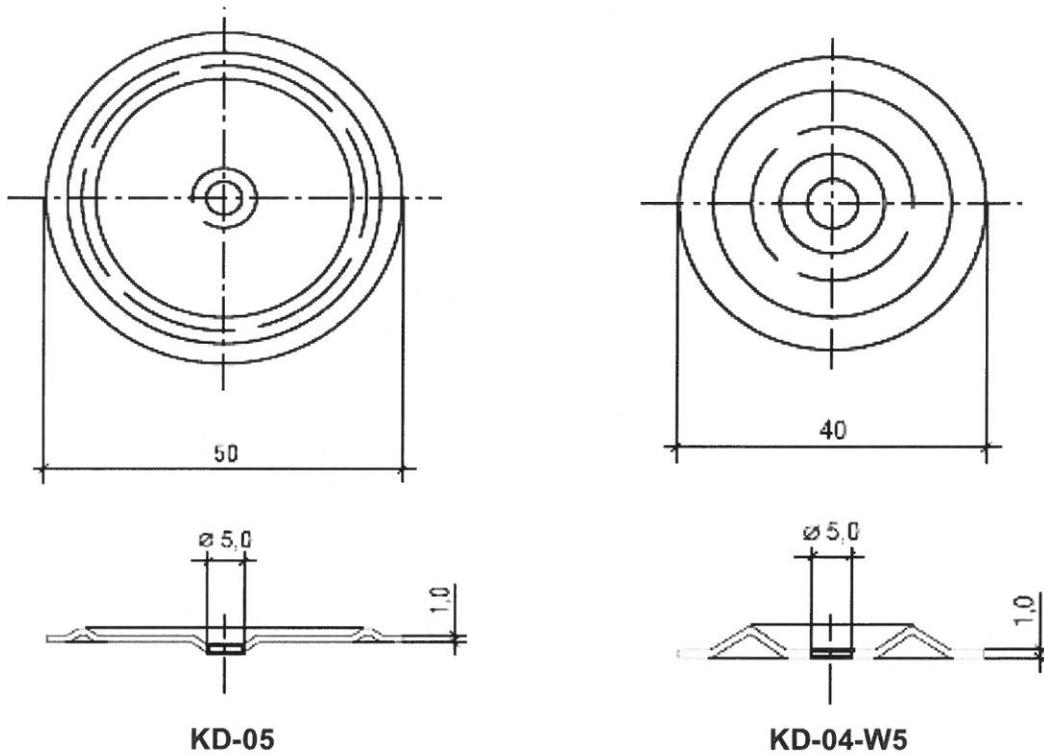
**Wkręt-Met Flat Roof Fasteners**

KNX 8 x 50  
SMN 6 x 50 and SMN 8 x 60

**Annex 6**  
of European  
Technical Assessment  
ETA-15/0578



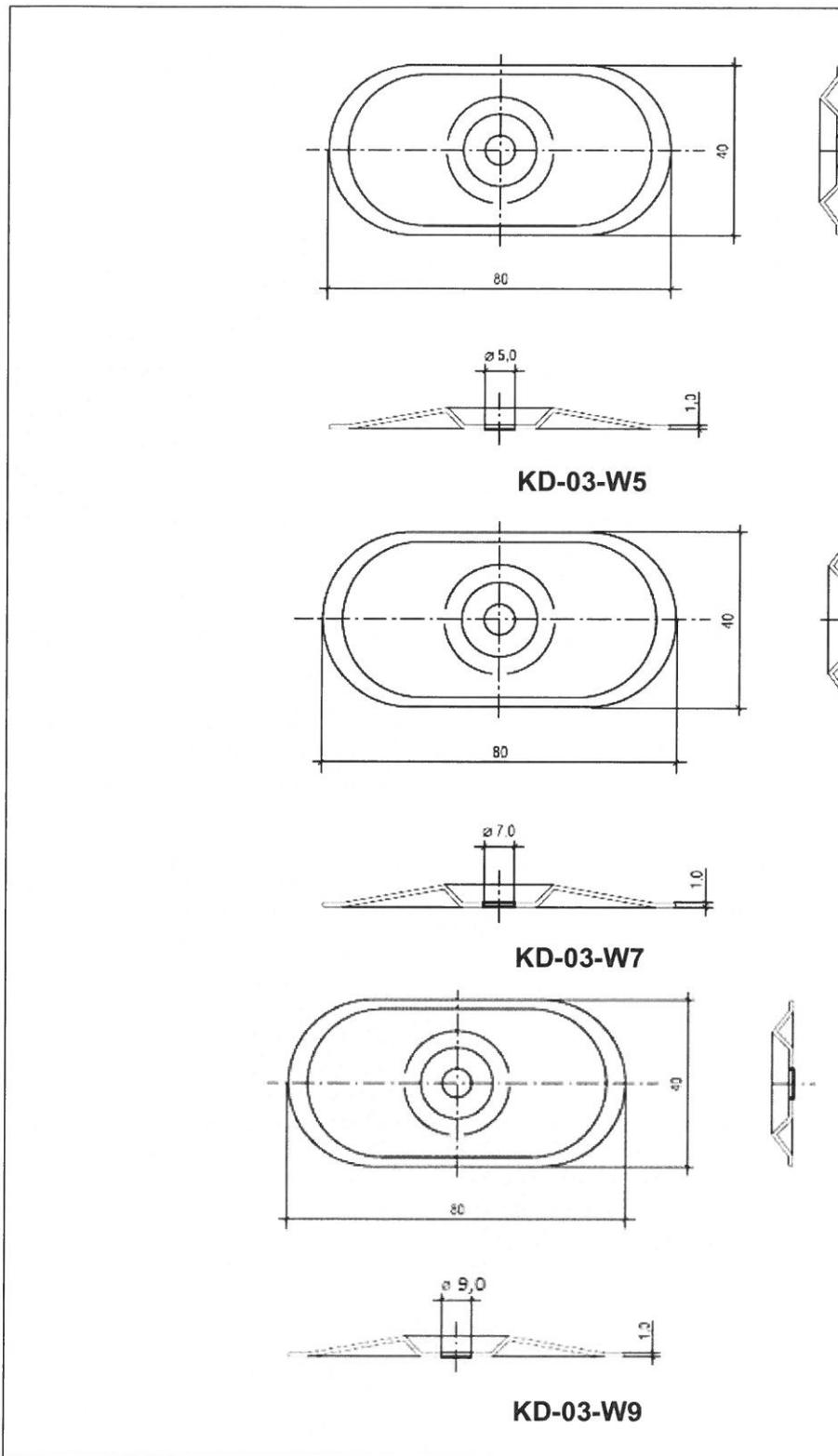
<b>Wkręt-Met Flat Roof Fasteners</b>	<b>Annex 7</b> of European Technical Assessment ETA-15/0578
Stainless steel washer pads: KD-01, KD-02-W-5,5 and KD-07-WW	

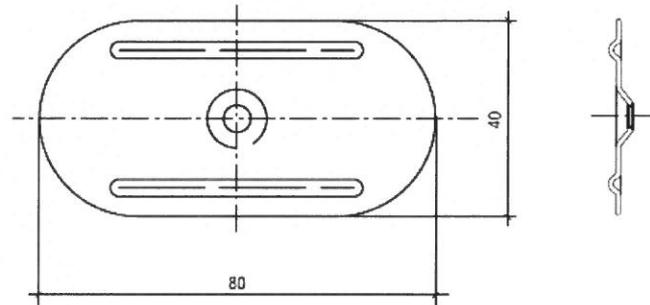


**Wkręt-Met Flat Roof Fasteners**

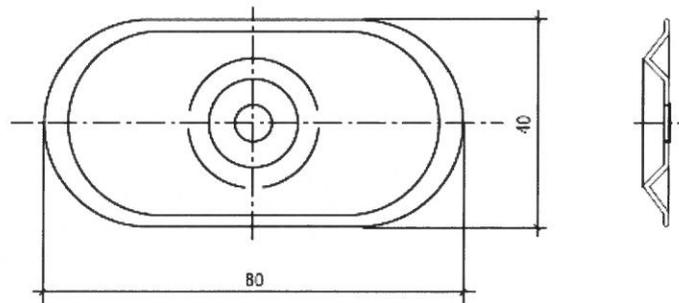
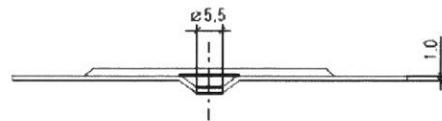
Stainless steel washer pads: KD-05 and KD-04-W5

**Annex 8**  
of European  
Technical Assessment  
ETA-15/0578

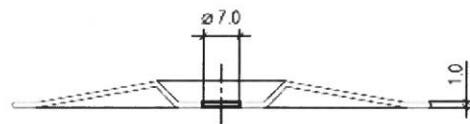
 <p><b>KD-03-W5</b></p> <p><b>KD-03-W7</b></p> <p><b>KD-03-W9</b></p>	
<p><b>Wkręt-Met Flat Roof Fasteners</b></p>	<p><b>Annex 9</b></p>
<p>Stainless steel washer pads: KD-03-W5, KD-03-W7 and KD-03-W9</p>	<p>of European Technical Assessment ETA-15/0578</p>



**KD-03-P**



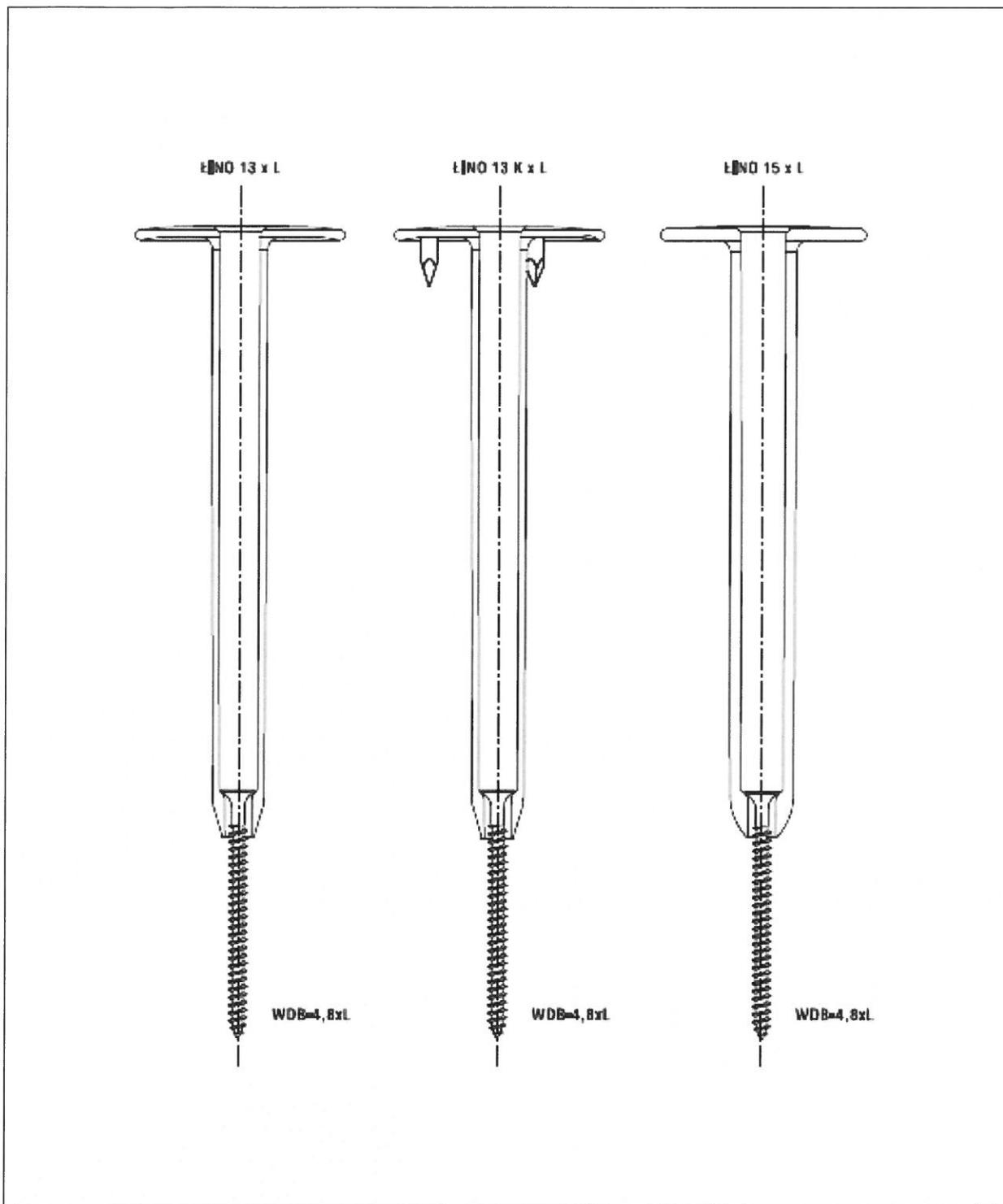
**KD-03-WW7**



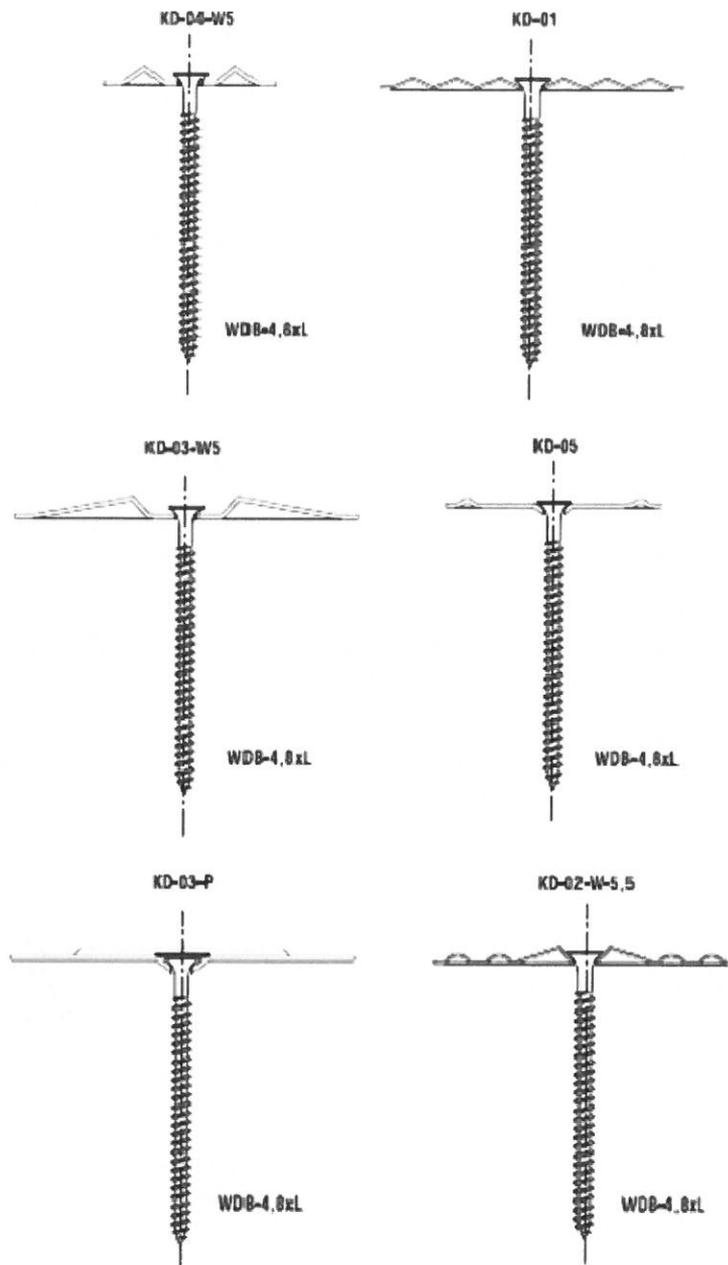
**Wkręt-Met Flat Roof Fasteners**

Stainless steel washer pads: KD-03-P and KD-03-WW7

**Annex10**  
of European  
Technical Assessment  
ETA-15/0578



<b>Wkręt-Met Flat Roof Fasteners</b>		<b>Annex 11</b> of European Technical Assessment ETA-15/0578
Combination 1 ÷ 3 LINO 13 and WDB-4,8×L or WDB-T-4,8×L LINO 13 K and WDB-4,8×L or WDB-T-4,8×L LINO 15 and WDB-4,8×L or WDB-T-4,8×L		



**Wkręt-Met Flat Roof Fasteners**

Combination 4 + 9

KD-04-W5 and WDB-4,8xL or WDB-T-4,8xL

KD-01 and WDB-4,8xL or WDB-T-4,8xL

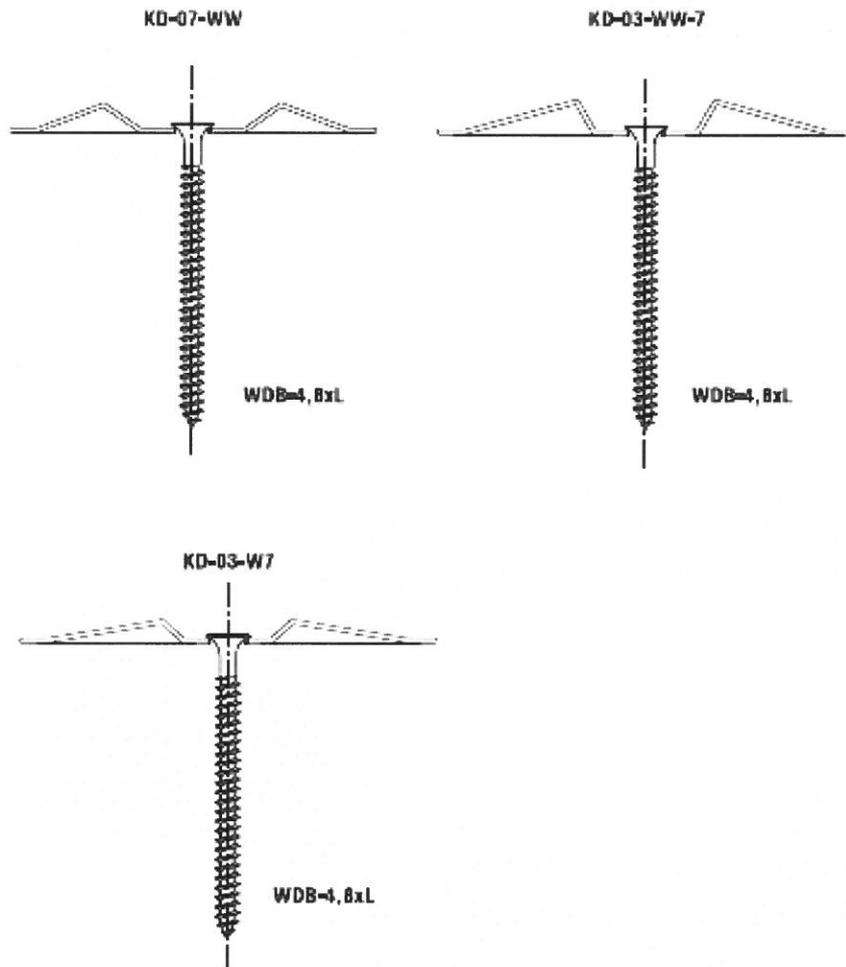
KD-03-W5 and WDB-4,8xL or WDB-T-4,8xL

KD-05 and WDB-4,8xL or WDB-T-4,8xL

KD-03-P and WDB-4,8xL or WDB-T-4,8xL

KD-02-W5,5 and WDB-4,8xL or WDB-T-4,8xL

**Annex 12**  
of European  
Technical Assessment  
ETA-15/0578

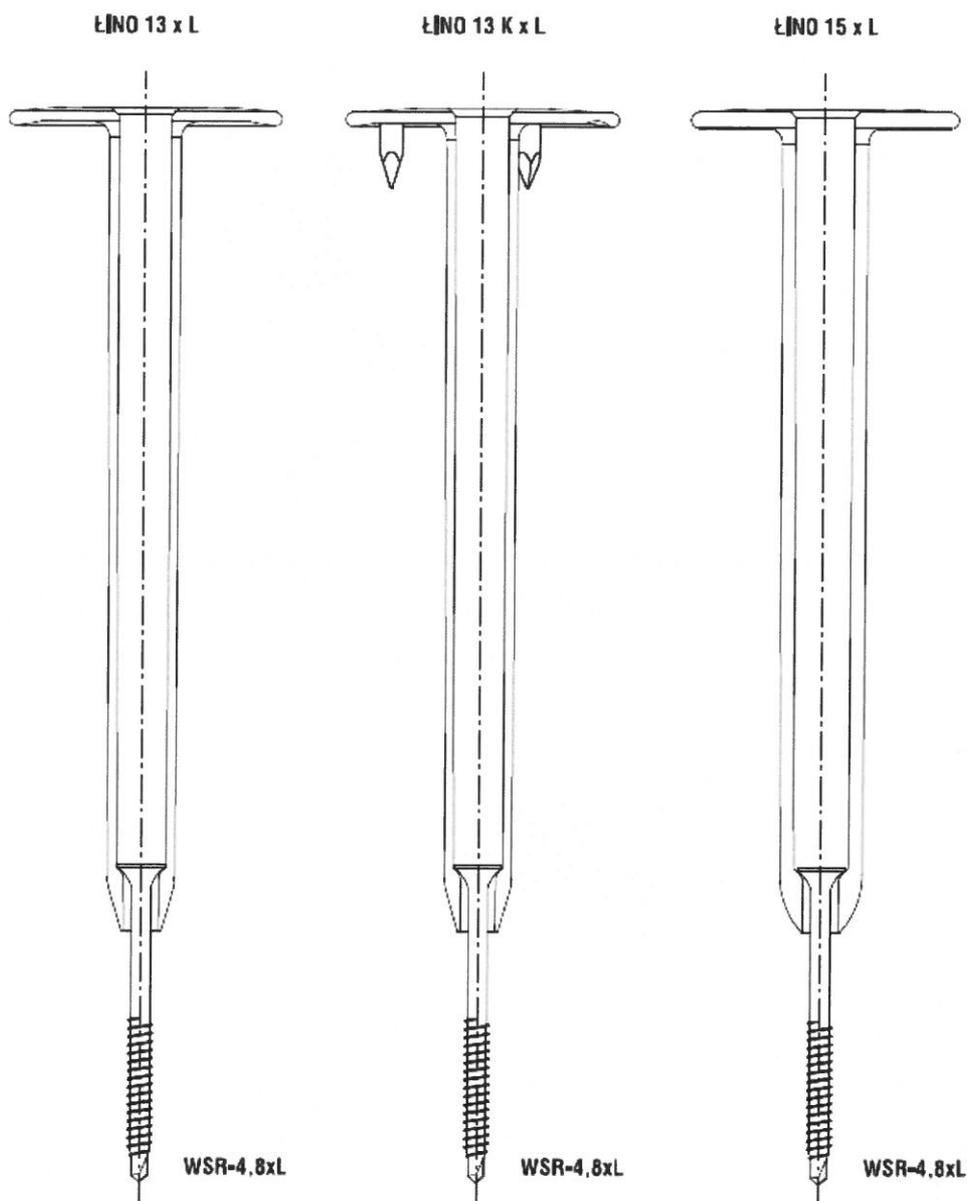


**Wkręt-Met Flat Roof Fasteners**

Combination 10 + 12

KD-07-WW and WDB-4,8xL or WDB-T-4,8xL  
 KD-03-WW-7 and WDB-4,8xL or WDB-T-4,8xL  
 KD-03-W7 and WDB-4,8xL or WDB-T-4,8xL

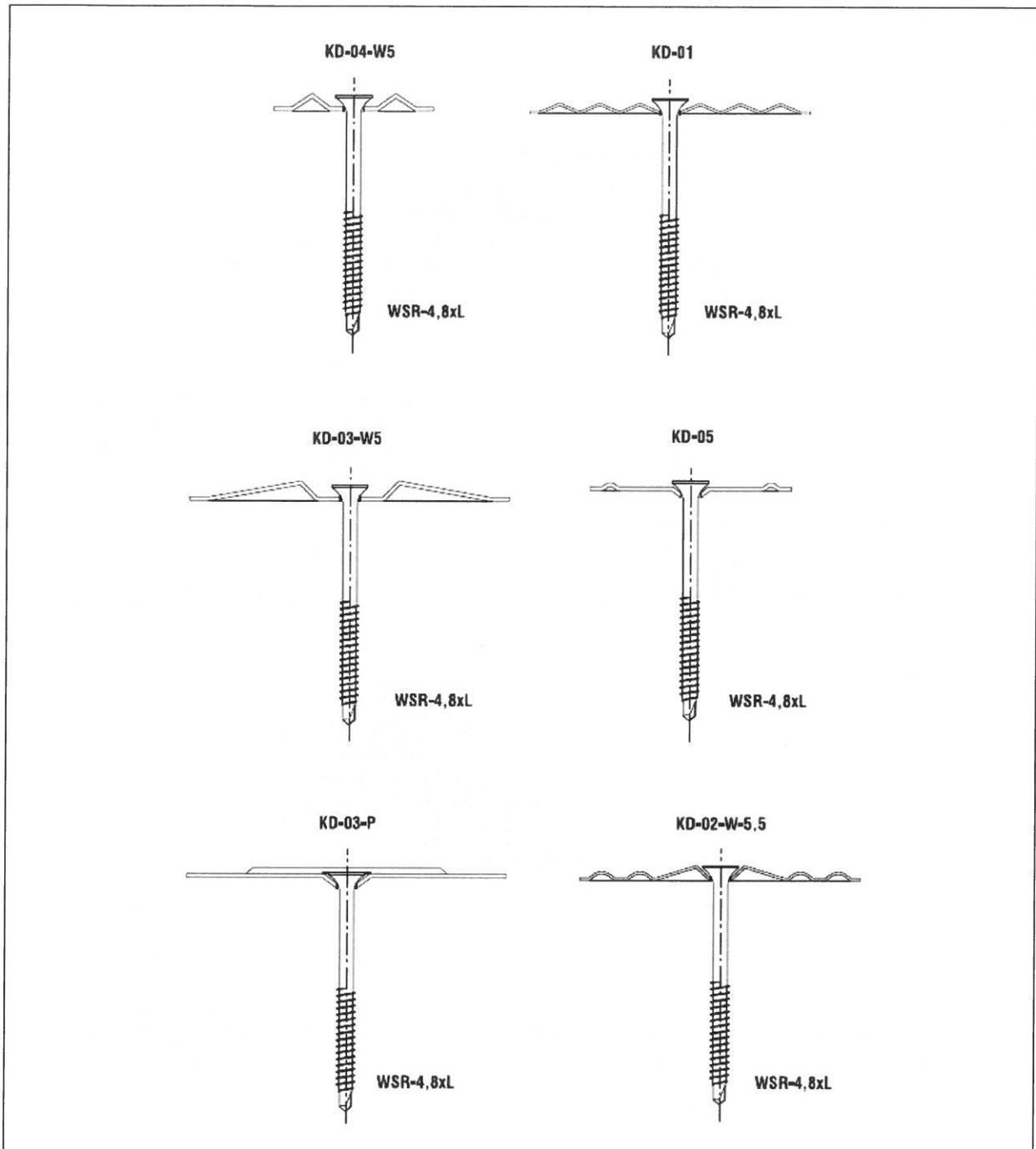
**Annex 13**  
 of European  
 Technical Assessment  
 ETA-15/0578



**Wkręt-Met Flat Roof Fasteners**

Combination 13 ÷ 15  
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

**Annex 14**  
of European  
Technical Assessment  
ETA-15/0578

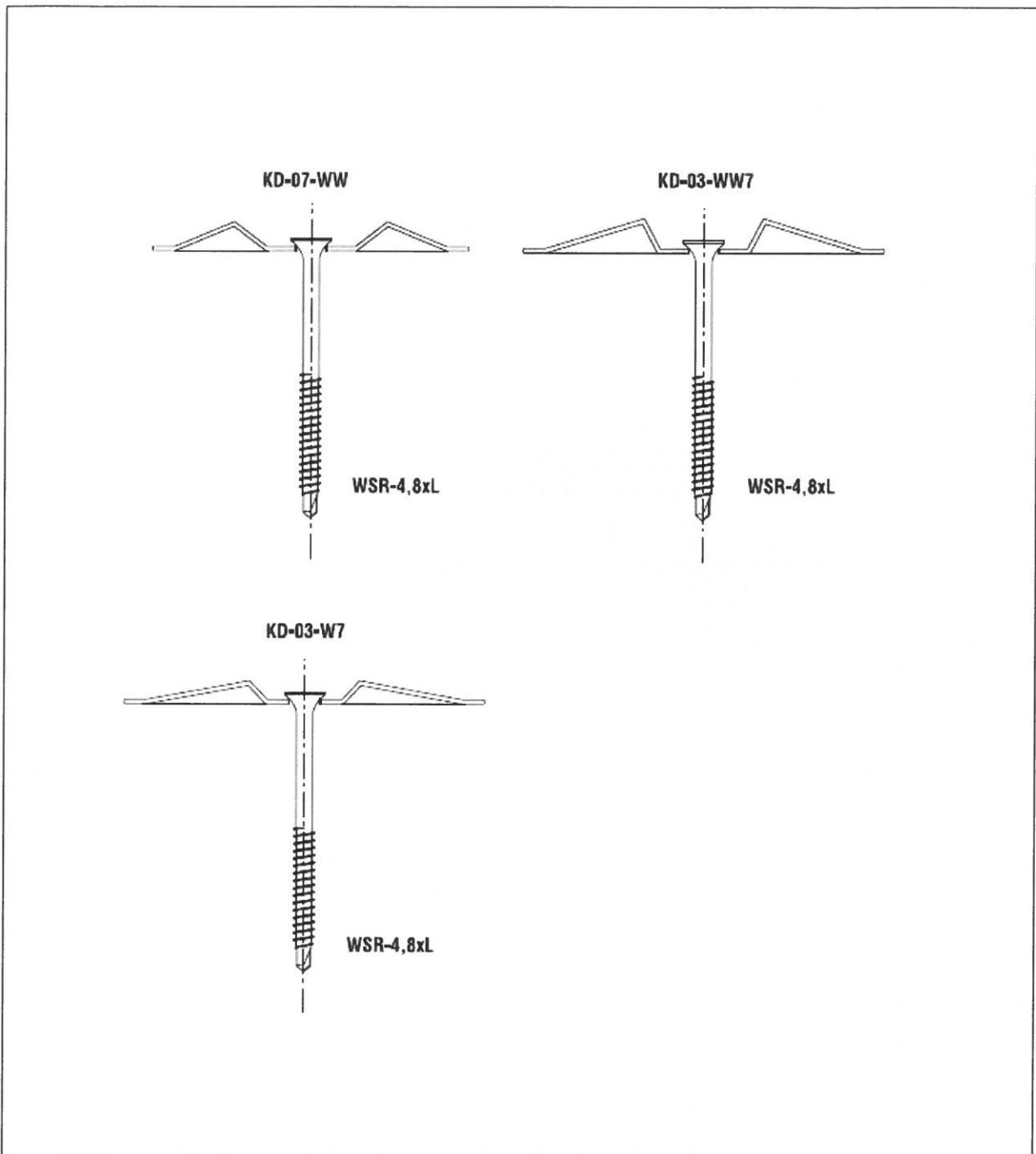


**Wkręt-Met Flat Roof Fasteners**

Combination 16 ÷ 21

- KD-04-W5 and WSR-4,8xL or WSR-T-4,8xL
- KD-01 and WSR-4,8xL or WSR-T-4,8xL
- KD-03-W5 and WSR-4,8xL or WSR-T-4,8xL
- KD-05 and WSR-4,8xL or WSR-T-4,8xL
- KD-03-P and WSR-4,8xL or WSR-T-4,8xL
- KD-02-W-5,5 and WSR-4,8xL or WSR-T-4,8xL

**Annex 15**  
of European  
Technical Assessment  
ETA-15/0578

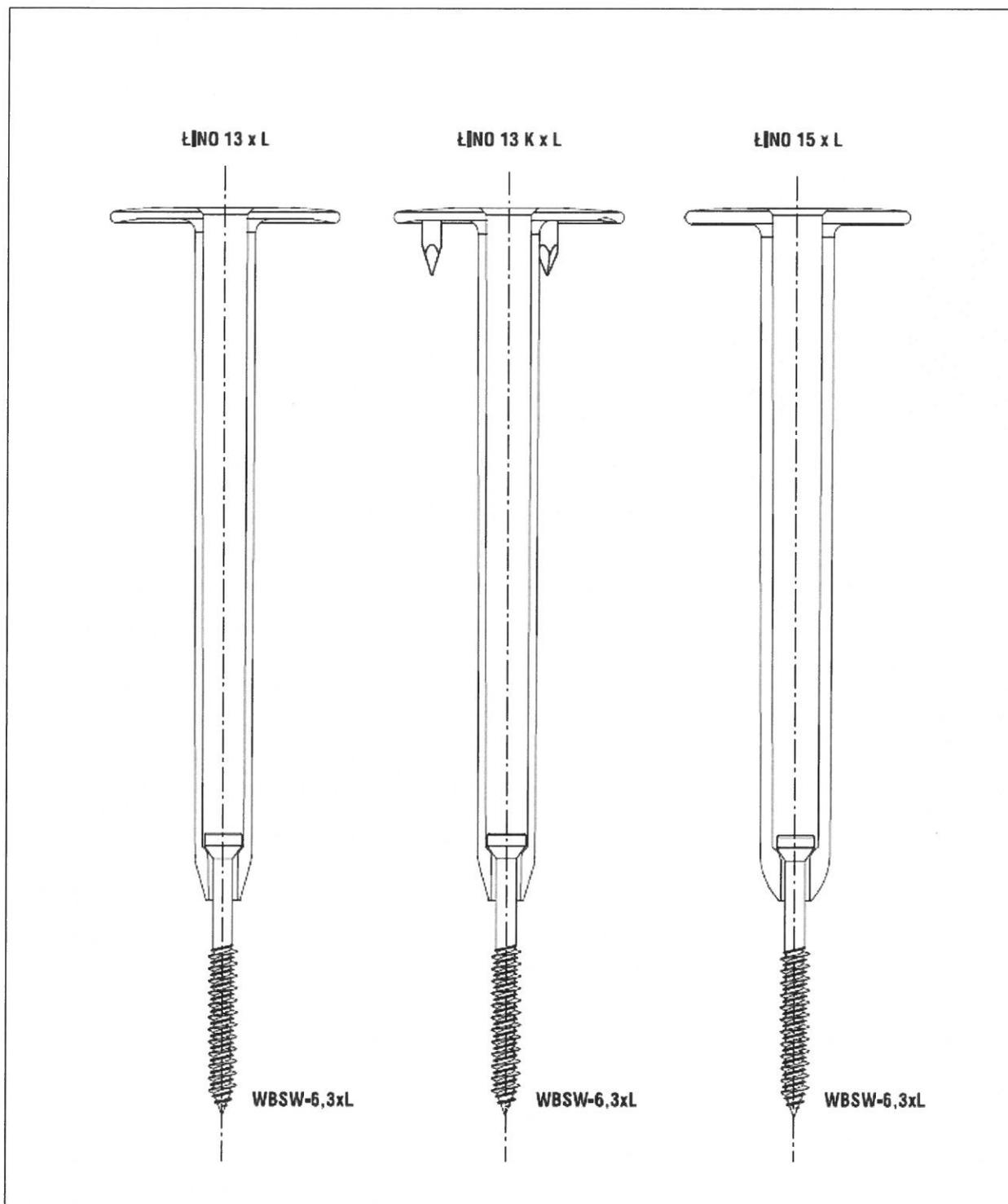


**Wkręt-Met Flat Roof Fasteners**

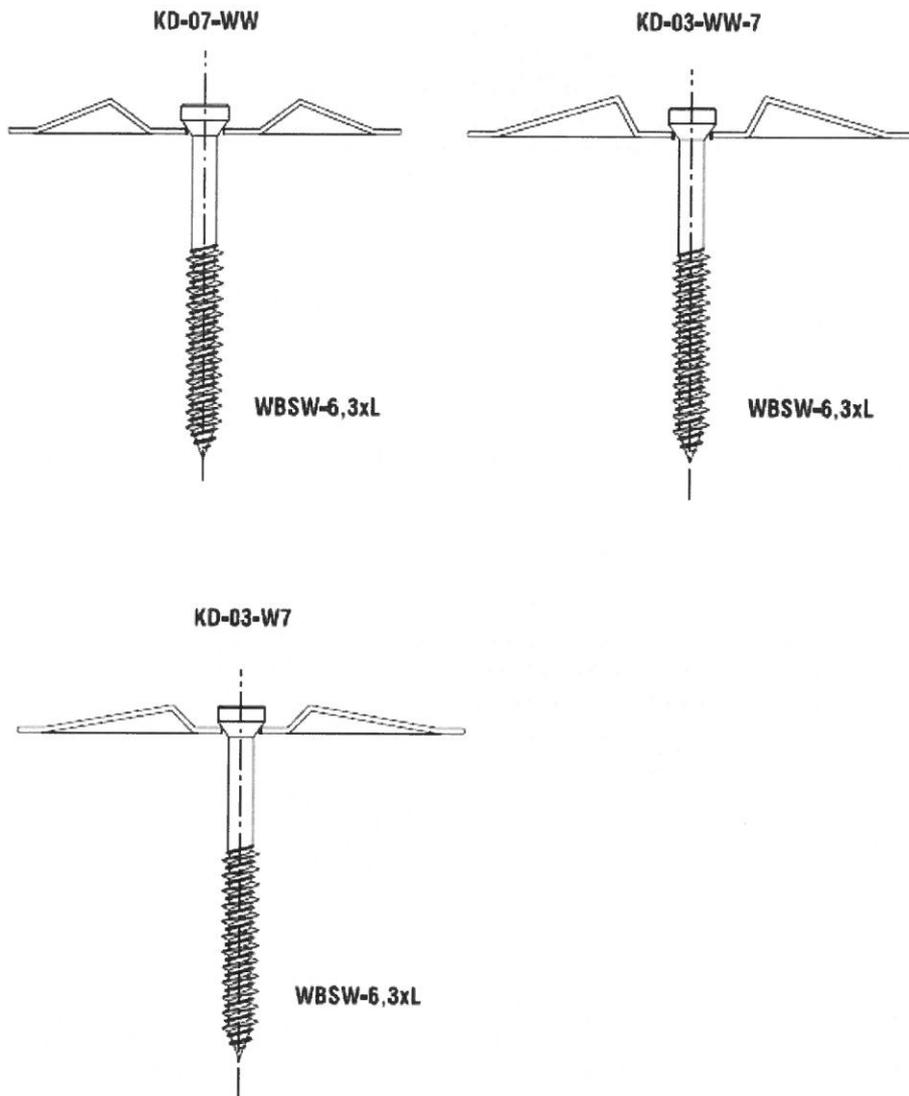
Combination 22 ÷ 24

KD-07-WW and WSR-4,8xL or WSR-T-4,8xL  
KD-03-WW7 and WSR-4,8xL or WSR-T-4,8xL  
KD-03-W7 and WSR-4,8xL or WSR-T-4,8xL

**Annex 16**  
of European  
Technical Assessment  
ETA-15/0578



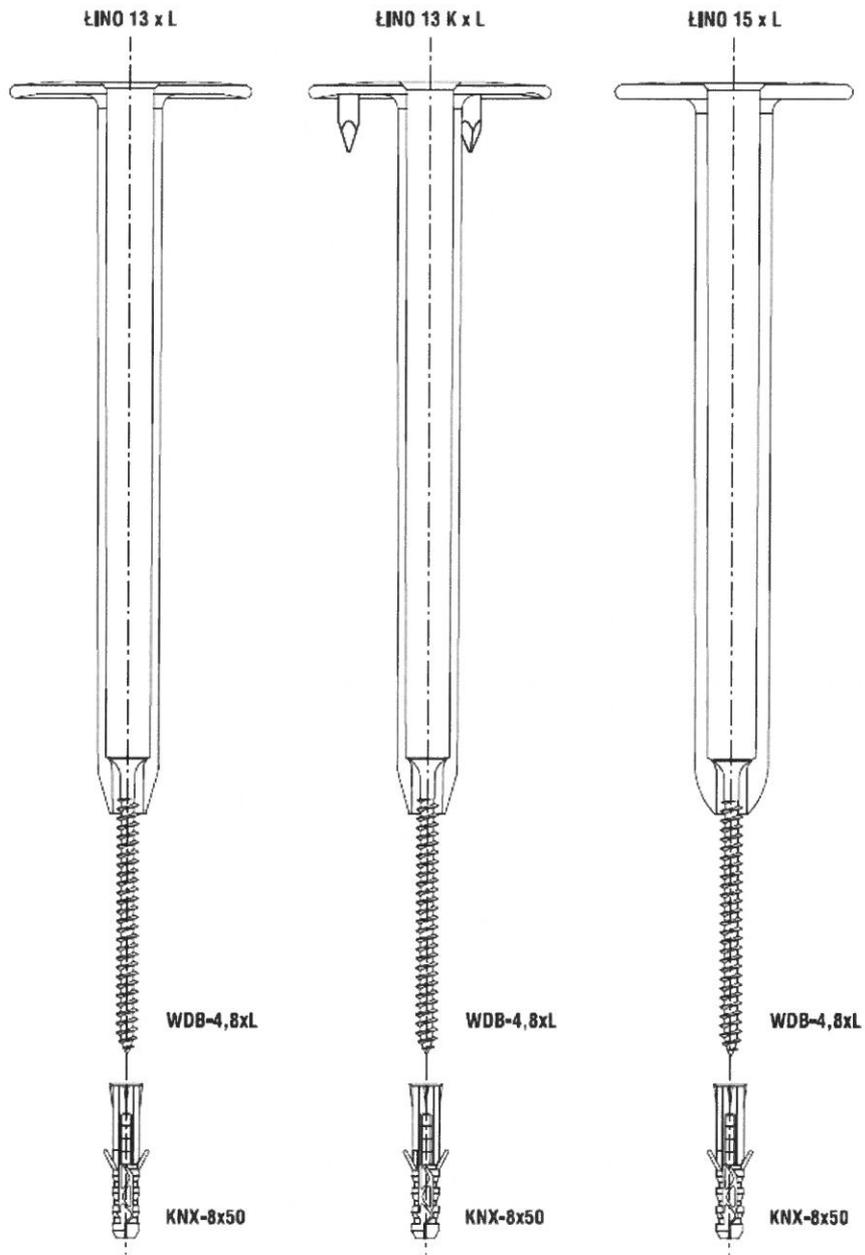
<b>Wkręt-Met Flat Roof Fasteners</b>	
Combination 25 ÷ 27 LINO 13 and WBSW-6,3xL LINO 13 K and WBSW-6,3xL LINO 15 and WBSW-6,3xL	<b>Annex 17</b> of European Technical Assessment ETA-15/0578



**Wkręt-Met Flat Roof Fasteners**

Combination 28 ÷ 30  
KD-07-WW and WBSW-6,3xL  
KD-03-WW7 and WBSW-6,3xL  
KD-03-W7 and WBSW-6,3xL

**Annex 18**  
of European  
Technical Assessment  
ETA-15/0578

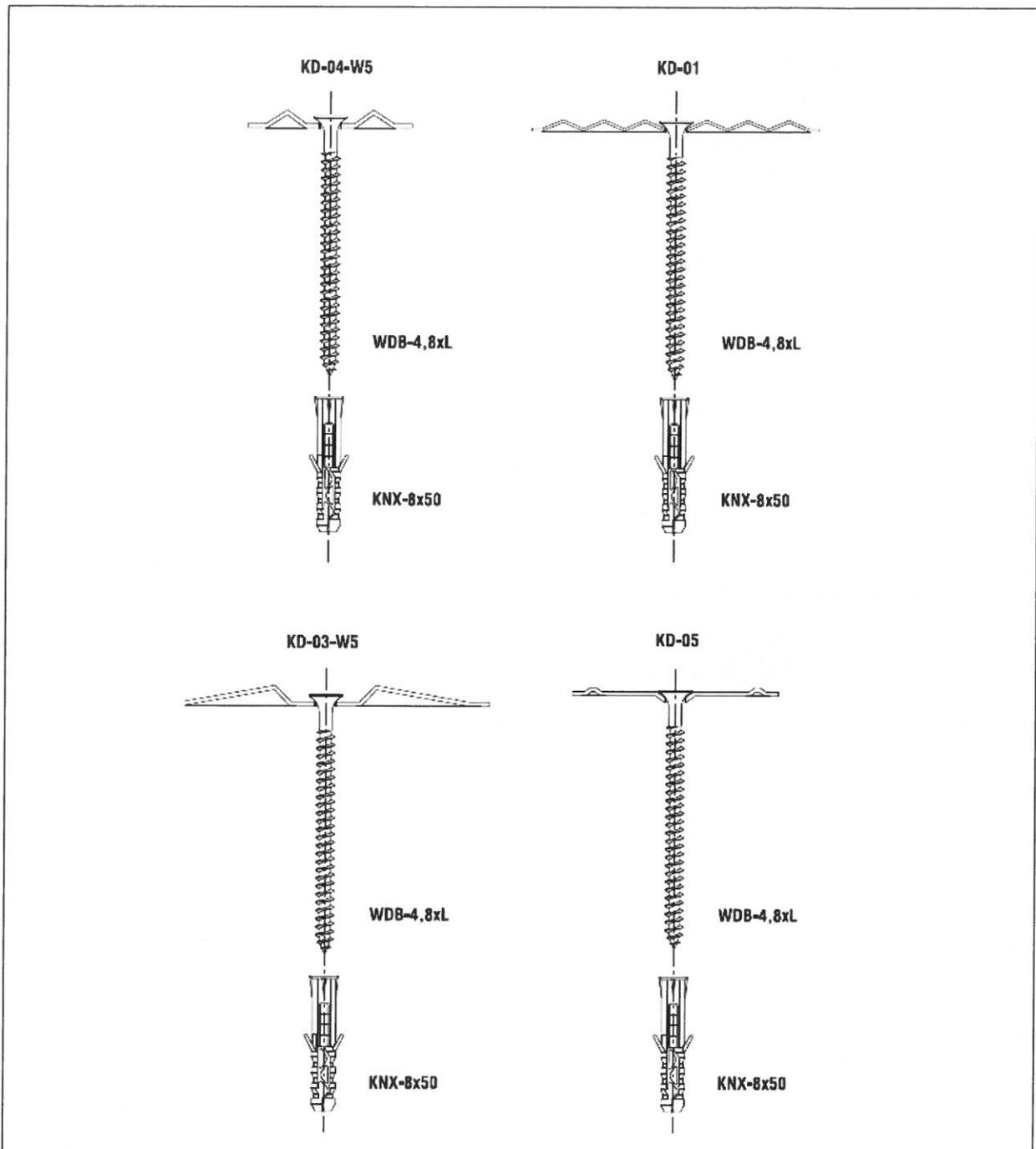


**Wkręt-Met Flat Roof Fasteners**

Combination 31 ÷ 33

- 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

**Annex 19**  
of European  
Technical Assessment  
ETA-15/0578



**Wkręt-Met Flat Roof Fasteners**

Combination 34 ÷ 37

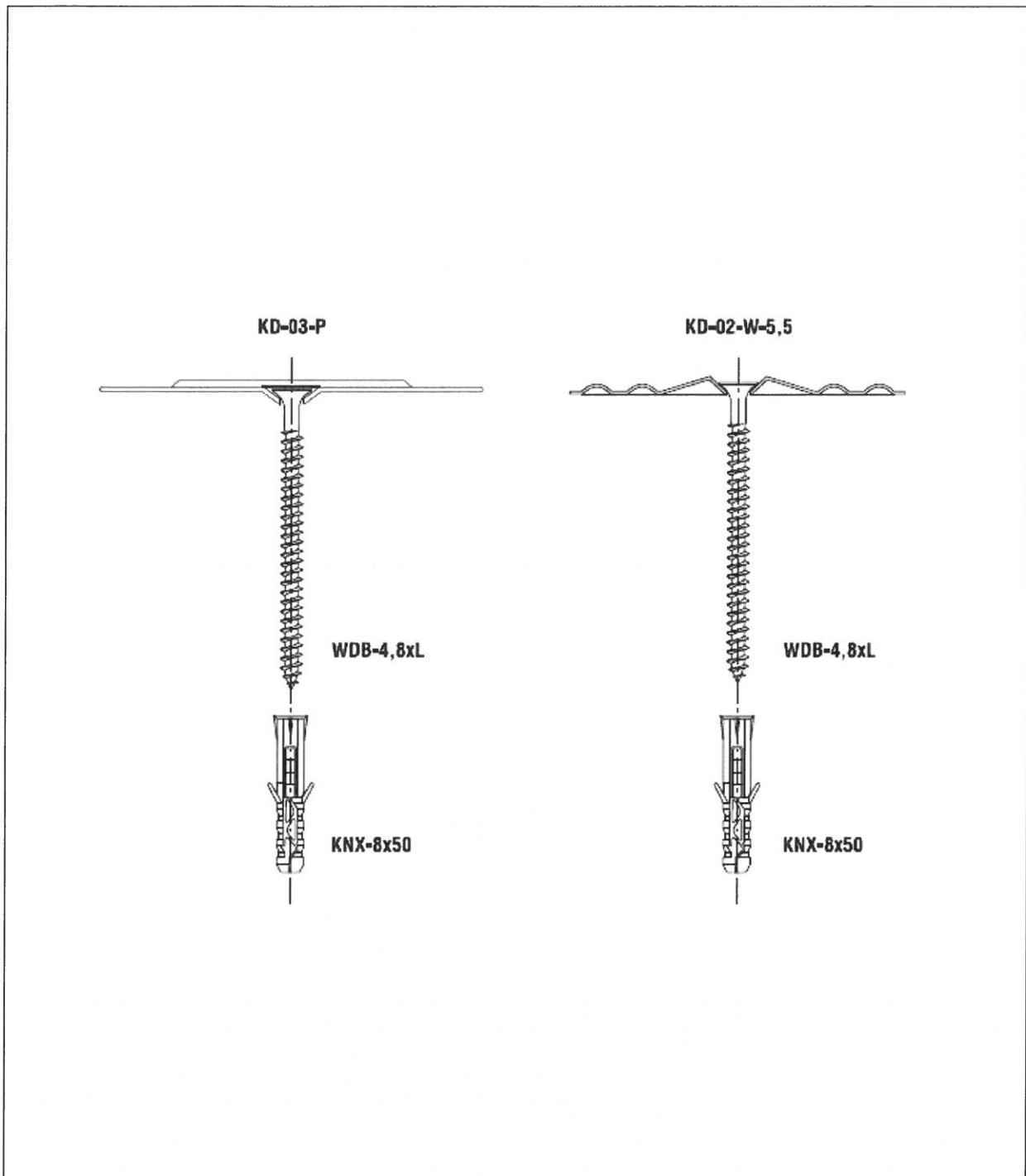
KD-04-W5 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50

KD-01 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50

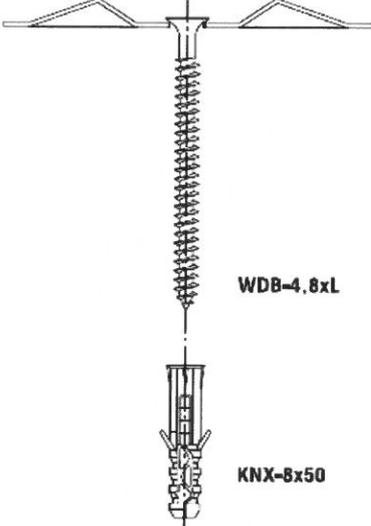
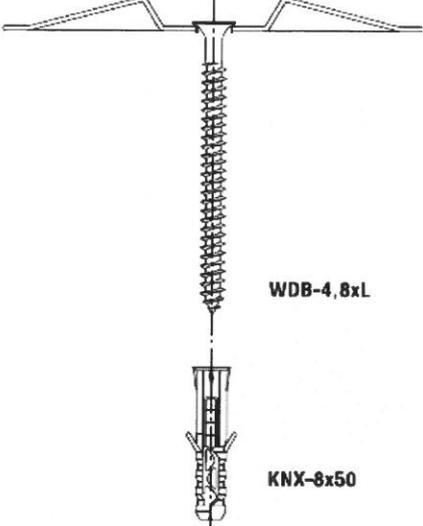
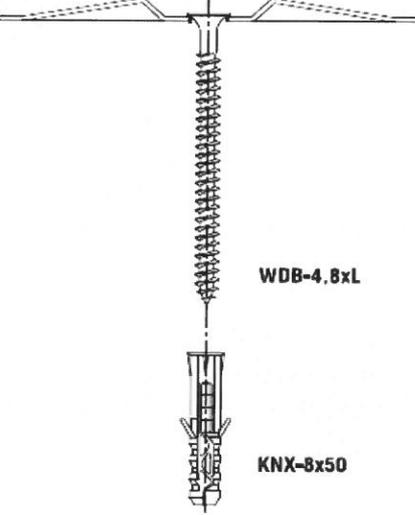
KD-03-W5 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50

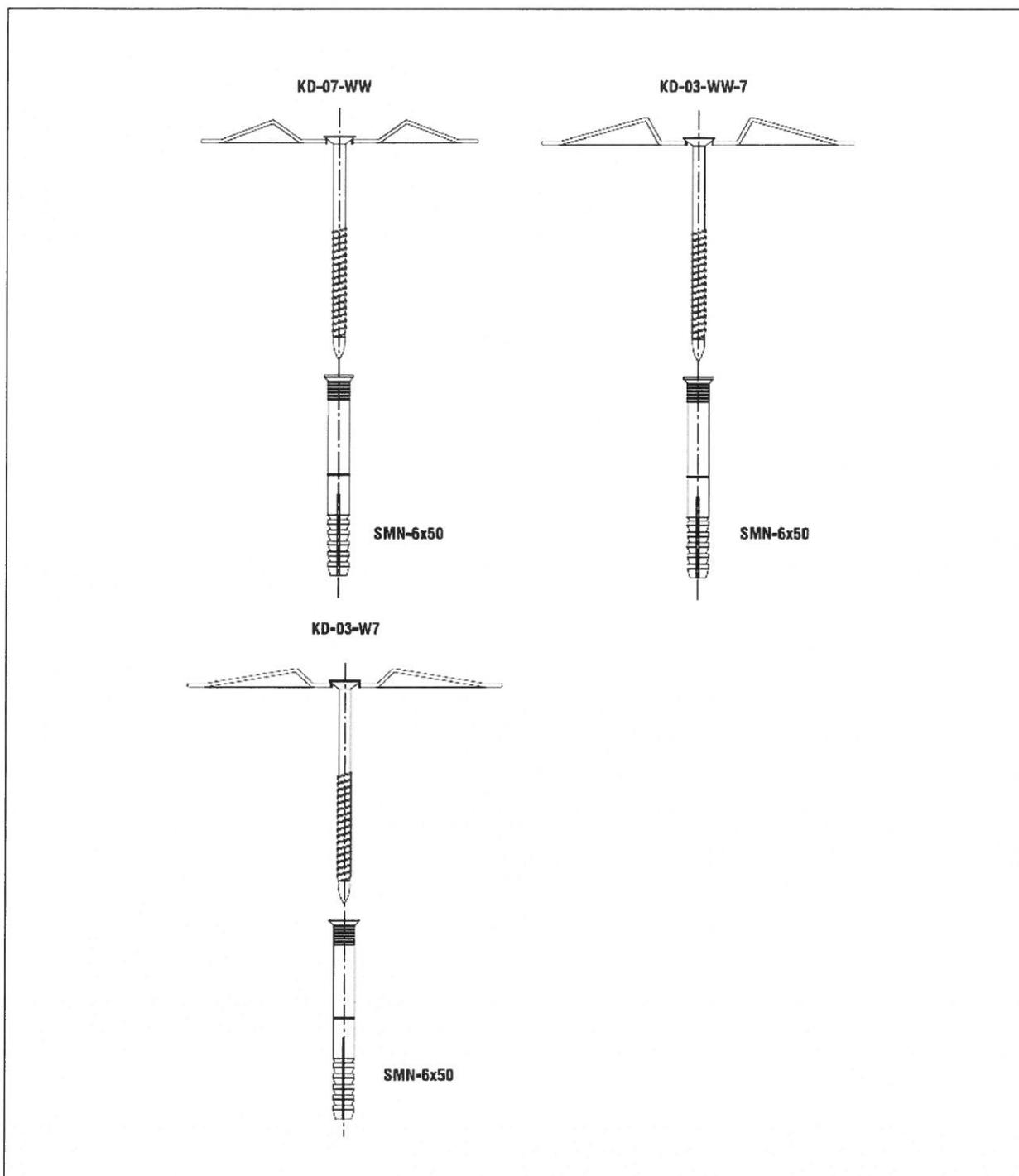
KD-05 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50

**Annex 20**  
of European  
Technical Assessment  
ETA-15/0578

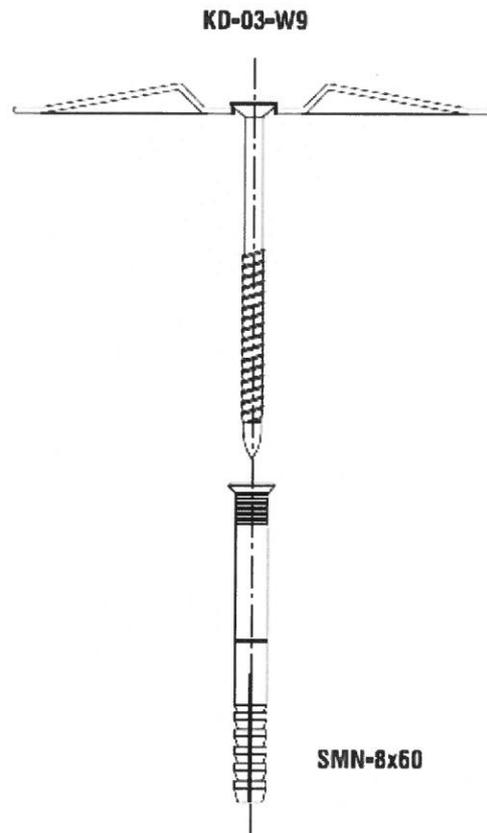


<b>Wkręt-Met Flat Roof Fasteners</b>	
Combination 38 ÷ 39 KD-03-P and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50 KD-02-W-5,5 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50	<b>Annex 21</b> of European Technical Assessment ETA-15/0578

<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p><b>KD-07-WW</b></p>  <p><b>WDB-4,8xL</b></p> <p><b>KNX-8x50</b></p> </div> <div style="text-align: center;"> <p><b>KD-03-WW-7</b></p>  <p><b>WDB-4,8xL</b></p> <p><b>KNX-8x50</b></p> </div> </div> <div style="text-align: center; margin-top: 20px;"> <p><b>KD-03-W7</b></p>  <p><b>WDB-4,8xL</b></p> <p><b>KNX-8x50</b></p> </div>	
<p><b>Wkręt-Met Flat Roof Fasteners</b></p>	
<p style="text-align: center;">Combination 40 ÷ 42</p> <p style="text-align: center;">KD-07-WW and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50          KD-03-WW-7 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50          KD-03-W7 and WDB-4,8xL or WDB-T-4,8xL and KNX-8x50</p>	<p><b>Annex 22</b>          of European          Technical Assessment          ETA-15/0578</p>



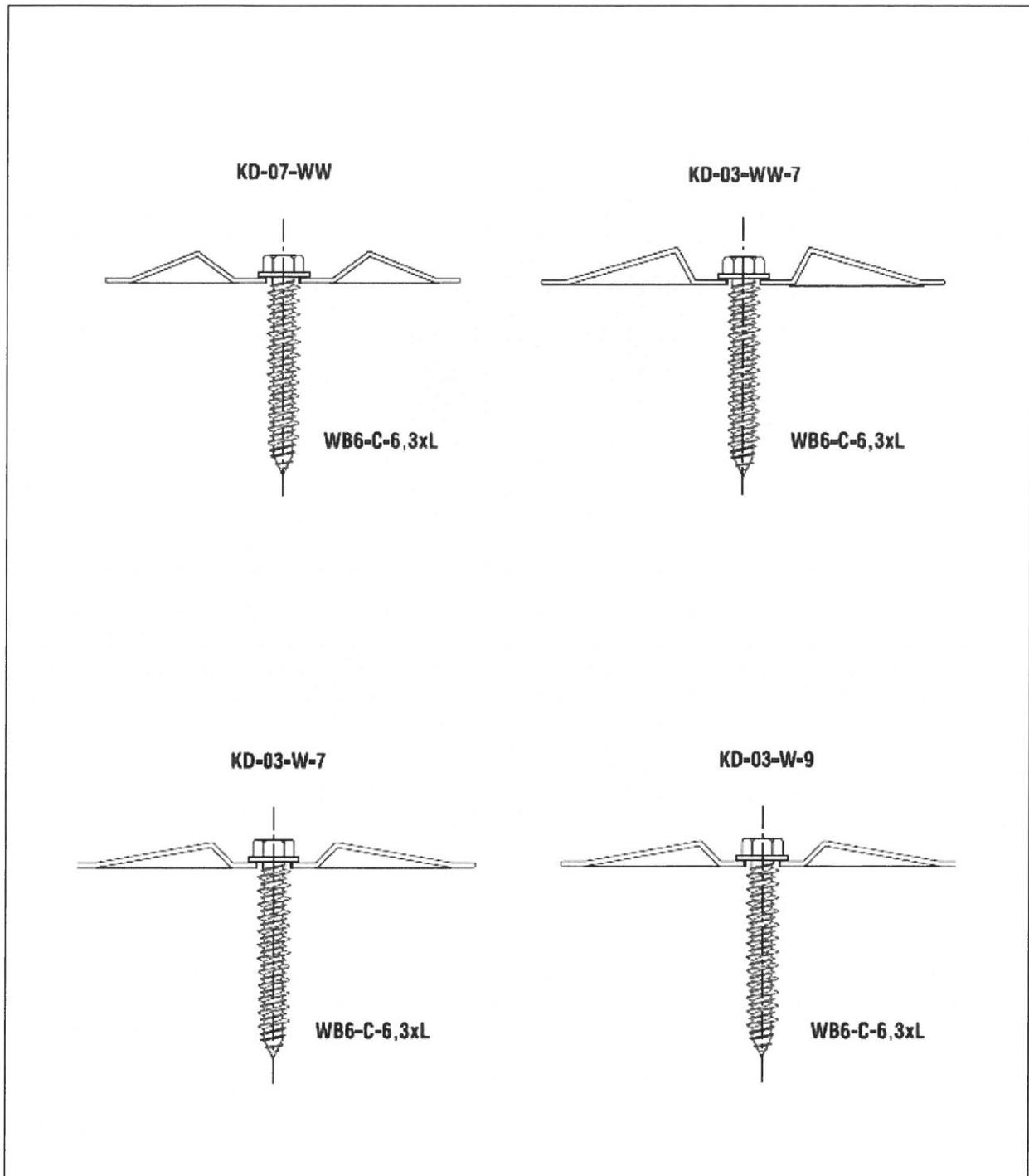
<b>Wkręt-Met Flat Roof Fasteners</b>	<b>Annex 23</b> of European Technical Assessment ETA-15/0578
Combination 43 ÷ 45 KD-07-WW and SMN-6×50 KD-03-WW7 and SMN-6×50 KD-03-W7 and SMN-6×50	



**Wkręt-Met Flat Roof Fasteners**

Combination 46  
KD-03-W9 and SMN-8x60

**Annex 24**  
of European  
Technical Assessment  
ETA-15/0578



<b>Wkręt-Met Flat Roof Fasteners</b>	
Combination 47 ÷ 50 KD-07-WW and WB6-C-6,3xL KD-03-WW7 and WB6-C-6,3xL KD-03-W7 and WB6-C-6,3xL KD-03-W9 and WB6-C-6,3xL	<b>Annex 25</b> of European Technical Assessment ETA-15/0578

Characteristic values of axial load resistance [kN]								
Ann. No.	Wkręć-Met Flat Roof Fasteners		Substrate					
			Steel sheet S280GD acc. to EN 10346			Wood class $\geq$ C24 acc. to EN 14081	OSB acc. to EN 300	Plywood acc. to EN 313
	Screw	Washer with slave Washer	$t \geq 0,50$ mm	$t \geq 0,63$ mm	$t \geq 0,75$ mm	$h_{ef} = 30$ mm	$h_{ef} = 18$ mm	$h_{ef} = 20$ mm
11	WDB-4,8 or WDB-T-4,8	LINO 13 PA	0,78	0,99	1,17	2,37	1,06	0,98
11		LINO 13K PA	0,78	0,99	1,17	2,37	1,06	0,98
11		LINO 15 PE	0,78	0,99	1,17	1,70	1,06	0,98
11		LINO 15 PP	0,78	0,99	1,17	1,95	1,06	0,98
12		KD-01	0,78	0,99	1,17	1,67	1,06	0,98
12		KD-02-W-5,5	0,78	0,99	1,17	2,06	1,06	0,98
12		KD-03-P	0,78	0,99	1,17	2,50	1,06	0,98
12		KD-03-W5	0,78	0,99	1,17	2,84	1,06	0,98
12		KD-04-W5	0,78	0,99	1,17	3,23	1,06	0,98
12		KD-05	0,78	0,99	1,17	3,12	1,06	0,98
13		KD-03-W7	0,78	0,99	1,17	2,46	1,06	0,98
13		KD-03-WW7	0,78	0,99	1,17	3,45	1,06	0,98
13		KD-07-WW	0,78	0,99	1,17	2,90	1,06	0,98

Characteristic values of axial load resistance [kN]							
Ann. No.	Wkręć-Met Flat Roof Fasteners		Substrate				
			Steel sheet S280GD acc. to EN 10346				
	Screw	Washer with slave Washer	$t \geq 0,50$ mm	$t \geq 0,63$ mm	$t \geq 0,75$ mm	$t \geq 0,88$ mm	$t \geq 1,00$ mm
14	WSR-4,8 or WSR-T-4,8	LINO 13 PA	0,84	1,03	1,20	1,53	1,61
14		LINO 13K PA	0,84	1,03	1,20	1,53	1,61
14		LINO 15 PE	0,84	1,03	1,20	1,53	1,61
14		LINO 15 PP	0,84	1,03	1,20	1,53	1,61
15		KD-01	0,84	1,03	1,20	1,53	1,61
15		KD-02-W-5,5	0,84	1,03	1,20	1,53	1,61
15		KD-03-P	0,84	1,03	1,20	1,53	1,61
15		KD-03-W5	0,84	1,03	1,20	1,53	1,61
15		KD-04-W5	0,84	1,03	1,20	1,53	1,61
15		KD-05	0,84	1,03	1,20	1,53	1,61
16		KD-03-W7	0,84	1,03	1,20	1,53	1,61
16		KD-03-WW7	0,84	1,03	1,20	1,53	1,61
16		KD-07-WW	0,84	1,03	1,20	1,53	1,61

<b>Wkręć-Met Flat Roof Fasteners</b>	<b>Annex 26</b> of European Technical Assessment ETA-15/0578
Characteristic values of axial load resistance	

Characteristic values of axial load resistance [kN]								
Ann. No.	Wkręt-Met Flat Roof Fasteners		Substrate					Precast concrete slab $\geq$ C20/25 acc. to EN 206
			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	
	Screw	Washer with slave /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
17	WBSW	LINO 13 PA	2,32	1,68	2,32	1,64	2,12	1,92
17		LINO 13K PA	2,32	1,68	2,32	1,64	2,12	1,92
17		LINO 15 PE	2,03	1,68	2,03	1,57	2,03	1,92
17		LINO 15 PP	2,16	1,68	2,16	1,64	2,12	1,92
18		KD-03-W7	3,04	1,68	3,56	1,64	2,12	1,92
18		KD-03-WW7	3,04	1,68	3,62	1,64	2,12	1,92
18		KD-07-WW	3,04	1,68	3,30	1,64	2,12	1,92
Characteristic values of axial load resistance [kN]								
Ann. No.	Wkręt-Met Flat Roof Fasteners		Substrate					
			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 slave /Washer	$h_{ef} = 30$ mm	$h_{ef} = 30$ mm	$h_{ef} = 20$ mm			
19	WDB-4,8 +KNX 8x50 or WDB-T-4,8 +KNX 8x50	LINO 13 PA	1,12	1,45	1,20			
19		LINO 13K PA	1,12	1,45	1,20			
19		LINO 15 PE	1,12	1,45	1,20			
19		LINO 15 PP	1,12	1,45	1,20			
20		KD-01	1,12	1,45	1,20			
20		KD-03-W5	1,12	1,45	1,20			
20		KD-04-W5	1,12	1,45	1,20			
20		KD-05	1,12	1,45	1,20			
21		KD-02-W-5,5	1,12	1,45	1,20			
21		KD-03-P	1,12	1,45	1,20			
22		KD-03-W7	1,12	1,45	1,20			
22		KD-03-WW7	1,12	1,45	1,20			
22		KD-07-WW	1,12	1,45	1,20			
25		WB6	KD-03-W7	2,31	2,98	2,10		
25	KD-03-WW7		2,31	2,98	2,10			
25	KD-07-WW		2,31	2,98	2,10			
25	KD-03-W9		2,31	2,98	2,10			
<b>Wkręt-Met Flat Roof Fasteners</b>					<b>Annex 27</b> of European Technical Assessment ETA-15/0578			
Characteristic values of axial load resistance								

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
	Screw	Washer	$h_{ef} = 30 \text{ mm}$	$h_{ef} = 30 \text{ mm}$
23	SMN 6×50	KD-03-W7	0,79	1,02
23		KD-03-WW7	0,79	1,02
23		KD-07-WW	0,79	1,02
24	SMN 8×60	KD-03-W9	1,18	1,52

<b>Wkręt-Met Flat Roof Fasteners</b>	<b>Annex 28</b> of European Technical Assessment ETA-15/0578
Characteristic values of axial load resistance	