

## Section 1. PRODUCT DESCRIPTION

**SELF-TAPPING SCREW FOR FASTENING OF FLAT ROOF THERMAL INSULATION AND WATERPROOFING SYSTEMS TO 0.50 ÷ 0.75MM THICK PROFILED ROOF SHEETS, TIMBER, OSB BOARDS AND PLYWOOD – WDB/WDB-T**

Self-tapping screw WDB/WDB-T in combination with LINO 13, LINO K 13 plastic sleeve is used for fastening thermal insulation and waterproofing systems with use of telescopic connections or KD steel washer with use of fixed connections (no thermal insulation or hard thermal insulation materials, e.g. PIR, PUR). The screw is made of carbon steel, coated with a special SQ ceramic coating, meeting stringent requirements of corrosion resistance (15 Kesternich cycles), thanks to which screws have the highest corrosion protection. Screws WDB-T with TX drive are only made to order.

Types of substrates on which screw WDB/WDB-T can be installed according to EAD 030351-00-0402:

- profiled roof sheets th 0.50-0.75mm
- timber C24, OSB board, plywood
- concrete C12/15, concrete C20/25, thin-wall concrete panel – only provided with expansion anchor KNX

Fasteners hold European Technical Assessment: ETA-15/0578



Screw length



PH-2



TORX-20



Ceramic coating



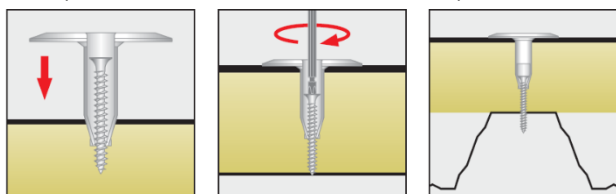
PH-2 TORX-20



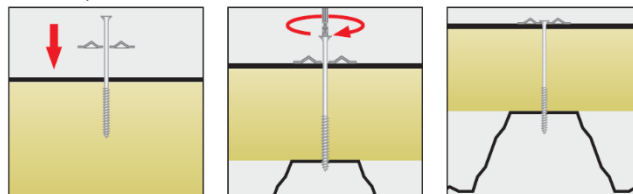
## Section 2. METHOD OF INSTALLATION

1. Before installation identify the substrate (steel sheet, timber, concrete substrate), and its thickness and select suitable fasteners. On concrete substrates KNX expansion anchor can be used additionally
2. Identify thermal insulation thickness and type (mineral wool, polystyrene, PIR foam, PUR foam, EPS roofing membrane).
3. Identify waterproofing material type and width (1.0; 1.5; 2.0; 2.5 rm.)
4. Based on items 1-3 select adequate length of plastic sleeve – by min. 15mm shorter than thermal insulation thickness
5. Due to telescopic connection of the screw, effective width of plastic sleeve is:  $L_k - 15\text{mm}$
6. Select adequate length of a screw according to a substrate, so that its effective depth of anchorage conforms with European Technical Assessment and relevant Product Data Sheet
7. It is recommended to keep the distance of support washer of the sleeve or KD steel washers of min. 10mm from the edge of the waterproofing (on the overlap, for oval washers in parallel with the longer side to the waterproofing edge)
8. If the waterproofing layer is fixed only (without thermal insulation layer) or if thermal insulation system of high density is fixed, it is recommended to use a combination: KD + WDB/WDB-T screw – fixed connection
9. Once plastic sleeve/washer is combined with a suitable screw, the fastener should be screwed in the substrate using dedicated driver bits
10. After installation, roof fastener should maintain effective pressure on the waterproofing and thermal insulation systems, and the support washer of the plastic sleeve/washer should prevent rotation about steel fastener axis
11. Number of fasteners per  $1\text{m}^2$  should be defined in the facility technical design – the design should include division of a flat roof into individual wind zones (corner, outer side, inner side, central)

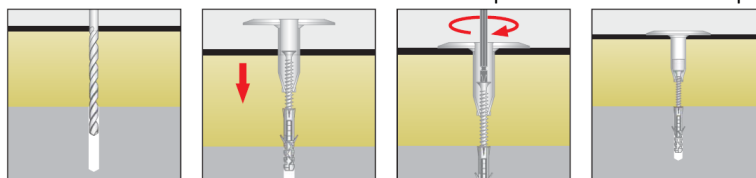
Example installation: steel substrate – telescopic connection



Example installation: steel structure – fixed connection



Example installation: concrete substrate – installation with expansion anchor – telescopic connection



**PRODUCT DATA SHEET – WDB/WDB-T**

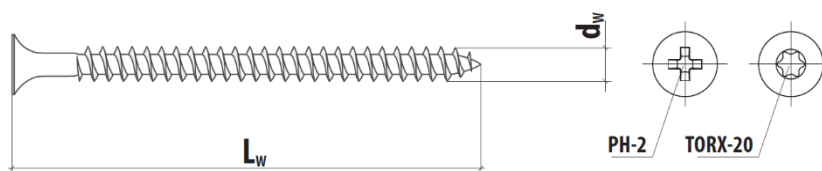
**Section 3. TECHNICAL DATA**

TECHNICAL PARAMETERS		
Parameter	Unit	Value
Screw diameter	$d_w$ [mm]	4.8
Screw head diameter	$D_w$ [mm]	9.0
Screw drive	[-]	PH-2/TORX-20*
Screw material	[-]	carbon steel
Corrosion protection	[-]	ceramic coating SQ
European Technical Assessment	[-]	ETA-15/0578

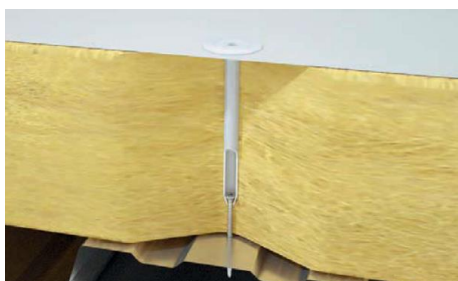
\*WDB/WDB-T

INSTALLATION PARAMETERS			
Substrate	Min. substrate thickness	Min. distance from edge	Min. spacing
	$h_{min}$ [mm]	$c_{min}$ [mm]	$l_{os}$ [mm]
Steel sheet	0.50 – 0.75	30	120
Timber C24	30	30	120
OSB board	18	30	120
Plywood	20	30	120
Concrete C12/15 – 20/25*	60	30	120
Thin wall concrete slab*	20	30	120

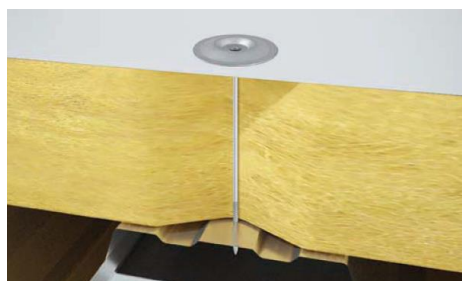
\*in combination with KNX expansion anchor



STRENGTH PARAMETERS				
Substrate	LINO 13/LINO K 13 + WDB/WDB-T	KD + WDB/WDB-T	LINO 13/LINO K 13 + WDB/WDB-T + KNX	KD + WDB/WDB-T + KNX
Characteristic load-bearing capacity [kN]				
Steel sheet th – 0.50 mm	0.78	0.78	-	-
Steel sheet th – 0.63 mm	0.99	0.99	-	-
Steel sheet th – 0.75 mm	1.17	1.17	-	-
Timber C24	2.37	1.67	-	-
OSB board	1.06	1.06	-	-
Plywood	0.98	0.98	-	-
Concrete C12/15	-	-	1.12	1.12
Concrete C20/25	-	-	1.45	1.45
Thin wall concrete slab	-	-	1.20	1.20

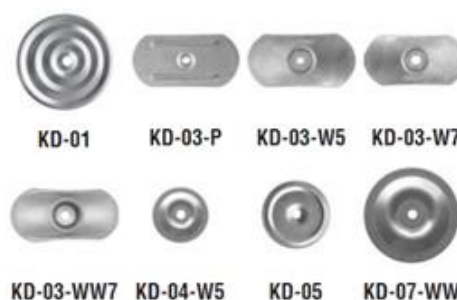


Example combination: LINO + WDB/WDB-T



Example combination: KD + WDB/WDB-T

WASHER TYPES			
Washer marking	Washer type	Drilled hole diameter [mm]	Washer dimensions [mm]
KD-01	round	5.0	70
KD-03-P	oval	5.5	80 x 40
KD-03-W5	oval	5.0	80 x 40
KD-03-W7	oval	7.0	80 x 40
KD-03-WW7	oval	7.0	80 x 40
KD-04-W5	round	5.0	40
KD-05	round	5.0	50
KD-07-WW	round	6.5	70



**PRODUCT DATA SHEET – WDB/WDB-T**

SELECTION TABLE		
Product code	Sleeve dimensions (d <sub>k</sub> x L <sub>k</sub> )	Number of pieces in a box
KNX-08050	8 x 50	400



KNX 8x50

SELECTION TABLE			
Product code		Screw dimensions (d <sub>w</sub> x L <sub>w</sub> )	Number of pieces in a box
WDB	WDB-T		
WDB-48050-D	WDB-T-48050-D	4.8 x 50	100
WDB-48060-D	WDB-T-48060-D	4.8 x 60	100
WDB-48070-D	WDB-T-48070-D	4.8 x 70	100
WDB-48080-D	WDB-T-48080-D	4.8 x 80	100
WDB-48090-D	WDB-T-48090-D	4.8 x 90	100
WDB-48100-D	WDB-T-48100-D	4.8 x 100	100
WDB-48120-D	WDB-T-48120-D	4.8 x 120	100
WDB-48140-D	WDB-T-48140-D	4.8 x 140	100
WDB-48160-D	WDB-T-48160-D	4.8 x 160	100
WDB-48180-D	WDB-T-48180-D	4.8 x 180	100
WDB-48200-D	WDB-T-48200-D	4.8 x 200	100
WDB-48220-D	WDB-T-48220-D	4.8 x 220	100
WDB-48240-D	WDB-T-48240-D	4.8 x 240	100

**Section 4. REMARKS**

1. All previous versions of this Product Data Sheet shall cease to be valid
2. Data given in this Product Data Sheet is in accordance with current knowledge and published in good faith.  
KLIMAS Sp. z o.o. is not responsible for correctness and quality of the fixing if recommendations regarding method of use and installation are not followed.