

## Section 1. PRODUCT DESCRIPTION

### STEEL WASHERS FOR FIXING OF FLAT ROOF THERMAL INSULATION

AND WATERPROOFING SYSTEMS TO BE USED WITH WDB, WDB-T WSR, WSR-T, WBSW, WB6 SCREWS AND SMN EXPANSION ANCHORS – KD



Steel washers KD in combination with self-drilling WSR, WSR-T-4,8xL or self-tapping WDB, WDB-T-4,8xL/WBSW-6,3xL/WB6-6,3xL screws or expansion anchors SMN are used for fixing of flat roof thermal insulation and waterproofing systems with use of fixed connections (no thermal insulation or hard thermal insulation materials, e.g. PIR, PUR). Washers are made of carbon steel.

Recommended for thermal insulation materials:



styropian

wełna mineralna

pianka PIR

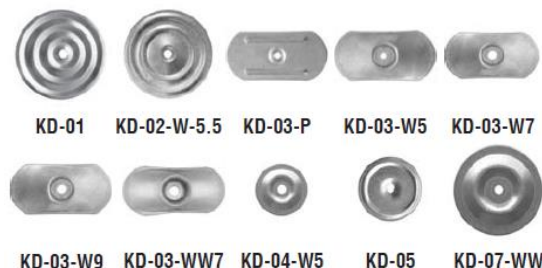
pianka PUR

Types of substrates on which KD washers can be installed according to ETAG 006:

- profiled roof sheets th 0.50-1.25mm
- concrete C12/15, concrete C20/25, thin-wall concrete panel
- timber C24, OSB board, plywood



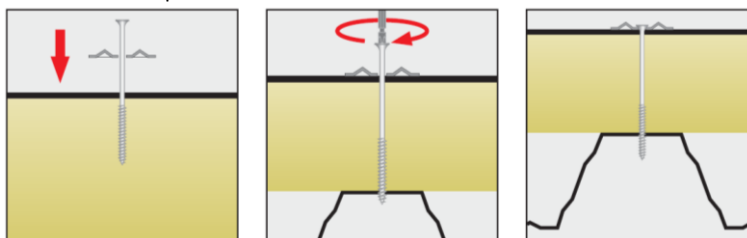
Fasteners hold European Technical Assessment: ETA-15/0578



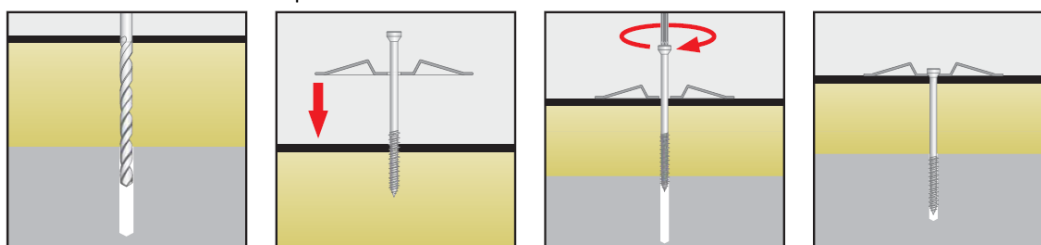
## Section 2. METHOD OF INSTALLATION

1. Before installation identify the substrate (steel sheet, concrete, timber substrate), and its thickness and select suitable fasteners.
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 screw and its length, so that effective depth of anchorage of the screw conforms with European Technical Assessment and relevant Product Data Sheet
5. Then select suitable washer dedicated for the previously selected screw type
6. It is recommended to keep the distance of support washer 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)
7. Once washer is combined with a suitable screw, the fastener should be screwed in the substrate using dedicated driver bits
8. For concrete substrates pre-drill a 5.0mm dia hole
9. After installation, roof fastener should maintain effective pressure on the waterproofing and thermal insulation systems, and the support washer should prevent rotation about steel fastener axis
10. Number of fasteners per 1m<sup>2</sup> 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 – fixed connection



Example installation: concrete substrate – fixed connection



**PRODUCT DATA SHEET – KD**

**Section 3. TECHNICAL DATA**

TECHNICAL PARAMETERS					
Code	Type	Outer diameter	Washer dimensions	Hole in the washer	Thickness
[-]	[-]	$D_p$ [mm]	$D_p \times S_p$ [mm]	$d_p$ [mm]	$h_p$ [mm]
KD-01	round	70	-	5.0	0.6
KD-02-W-5.5	round	70	-	5.5	0.6
KD-03-P	oval	-	80 x 40	5.5	1.0
KD-03-W5	oval	-	80 x 40	5.0	1.0
KD-03-W7	oval	-	80 x 40	7.0	1.0
KD-03-W9	oval	-	80 x 40	9.0	1.0
KD-03-WW7	oval	-	80 x 40	7.0	1.0
KD-04-W5	round	40	-	5.0	1.0
KD-05	round	50	-	5.0	1.0
KD-07-WW	round	70	-	6.5	0.9

DRAWINGS – REFER TO THE ABOVE TABLE				
KD-01	KD-02-W-5.5	KD-03-P	KD-03-W5	KD-03-W7
KD-03-W9	KD-03-WW7	KD-04-W5	KD-05	KD-07-WW

SELECTION TABLE		
Washer	Screw types	Number of pieces in a box
KD-01	WDB, WSR	200
KD-02-W-5.5	WDB, WSR	200
KD-03-P	WDB, WSR	200
KD-03-W5	WDB, WSR	200
KD-03-W7	WBSW, WB6, SMN-6	200
KD-03-W9	WBSW, WB6, SMN-8	200
KD-03-WW7	WDB, WSR, WBSW, WB6, SMN-6	200
KD-04-W5	WDB, WSR	200
KD-05	WDB, WSR	200
KD-07-WW	WDB, WSR, WBSW, WB6	200

**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.