UNIVERSAL

POW OVAL STEEL WASHERS - DEEP VERSION

Steel washer with special form for roofing applications, for use with all types of roofing screws.

FEATURES AND BENEFITS

Oval washer made of aluminum and zinc sheet, which ensures a very high resistance against corrosion.

Deep shape of the washer in connection with WB double-threaded screw is the solution for installation of roofing membrane system to steel sheet.

SUBSTRATES

- Concrete
- Concrete slab
- Metal sheet & profiles
- Chipboard
- Plywood
- Timber
- Oriented strand board

POW OVAL STEEL WASHERS - DEEP VERSION

APPLICATIONS

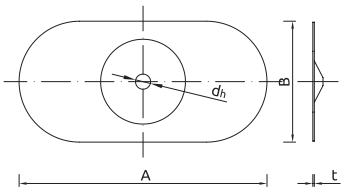
Flat roofs

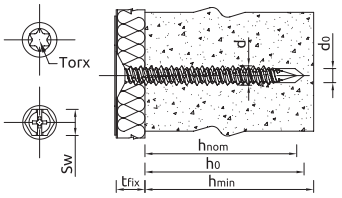
POW OVAL STEEL WASHERS - DEEP VERSION

INSTALLATION GUIDE

1. Position POW washer on insulation and insert: WBT, WCS,WW screw.
2. Using drilling machine, drive the screw into substrate until fixing depth is reached.

INSTALLATION DATA





SKU	Steel Flange			
	Hole Diameter	Length	Width	Thickness
	d	a	b	t
	mm	mm	mm	mm
R-POW-05-ALZN	5	82	40	0,7
R-POW-07-ALZN	7	82	40	0,7

Type of fixing			R-WBT	R-LX	R-WCS	R-WO-T	R-WX-T	R-WX-T	R-WW-T
Thread diameter	d	[mm]	6,1	6,2	6,3	4,8	4,8	6,0	5,0
Min. edge distance	c_{min}	[mm]	40	40	40	30	30	30	30
Min. spacing	s_{min}	[mm]	120	120	120	120	120	120	120
Wrench size	-	[mm]	T25	SW8	SW8	T25	T25	T25	T25
CONCRETE SUBSTRATES									
Min. substrate thickness - Steel sheet	h_{min}	[mm]	100	100	100	-	-	-	-
Hole diameter in substrate	d_0	[mm]	5,0	5,0	5,0	-	-	-	-
Min. hole depth in substrate	h_0	[mm]	25 / 35	25 / 35	25 / 35	-	-	-	-
Installation depth	h_{nom}	[mm]	20 / 30	20 / 30	20 / 30	-	-	-	-
STEEL DECKS									
Min. substrate thickness - Steel sheet	$h_{min} = t$	[mm]	-	-	-	0,5	0,63	0,63	-
Max. drilling capacity	$t_I + t_{II}$	[mm]	-	-	-	1,0	1,5	1,5	-
TIMBER AND WOODEN BASED STRUCTURES									
Min. substrate thickness - Timber structures	h_{min}	[mm]	24	-	-	24	-	-	24
Min. substrate thickness - Wooden based structures	h_{min}	[mm]	18	-	-	18	-	-	18

DESIGN PERFORMANCE DATA

Characteristic values of axial load resistance

Concrete substrates

Type of fixing			R-WBT	R-WBT	R-LX	R-LX	R-WCS	R-WCS
Embedment depth	h_{ef}	[mm]	20	30	20	30	20	30
TENSION LOAD								
R-POW-05 + SCREW								
CONCRETE class ≥ C12/15 acc. to EN 206								
Characteristic resistance	N_{Rk}	[kN]	1,73	3,06	1,73	3,06	-	-
Partial safety factor	γ_M	[-]	1,33	1,33	1,33	1,33	-	-
CONCRETE class ≥ C20/25 acc. to EN 206								
Characteristic resistance	N_{Rk}	[kN]	2,48	4,37	2,48	4,37	-	-
Partial safety factor	γ_M	[-]	1,33	1,33	1,33	1,33	-	-
CONCRETE HOLLOW CORE SLABS / CONCRETE CHANNELS SLABS class ≥ C16/20 acc. to EN 206								
Characteristic resistance	N_{Rk}	[kN]	1,59	2,48	1,59	2,48	-	-

POW OVAL STEEL WASHERS - DEEP VERSION

Type of fixing			R-WBT	R-WBT	R-LX	R-LX	R-WCS	R-WCS
Partial safety factor	γ_M	[-]	1,33	1,33	1,33	1,33	-	-
R-POW-07 + SCREW								
CONCRETE class ≥ C12/15 acc. to EN 206								
Characteristic resistance	N_{Rk}	[kN]	1,73	2,93	1,73	2,93	1,73	2,93
Partial safety factor	γ_M	[-]	1,33	1,33	1,33	1,33	1,33	1,33
CONCRETE class ≥ C20/25 acc. to EN 206								
Characteristic resistance	N_{Rk}	[kN]	2,48	2,93	2,48	2,93	2,48	2,93
Partial safety factor	γ_M	[-]	1,33	1,33	1,33	1,33	1,33	1,33
CONCRETE HOLLOW CORE SLABS / CONCRETE CHANNELS SLABS class ≥ C16/20 acc. to EN 206								
Characteristic resistance	N_{Rk}	[kN]	1,59	2,48	1,59	2,48	1,59	2,48
Partial safety factor	γ_M	[-]	1,33	1,33	1,33	1,33	1,33	1,33

Characteristic values of axial load resistance

Steel substrates

Type of fixing			R-WO-T	R-WX-T 4.8	R-WX-T 6.0
TENSION LOAD					
R-POW-05 + SCREW					
CHARACTERISTIC RESISTANCE - STEEL DECK S280GD					
Thickness of steel substructure t_{II} = 0,50mm	N_{Rk}	[kN]	0,61	-	-
Thickness of steel substructure t_{II} = 0,63mm	N_{Rk}	[kN]	0,83	0,74	-
Thickness of steel substructure t_{II} = 0,75mm	N_{Rk}	[kN]	1,19	1,00	-
Thickness of steel substructure t_{II} = 0,88mm	N_{Rk}	[kN]	1,22	1,08	-
Thickness of steel substructure t_{II} = 1,00mm	N_{Rk}	[kN]	1,59	1,50	-
Thickness of steel substructure t_{II} = 1,25mm	N_{Rk}	[kN]	-	1,86	-
Thickness of steel substructure t_{II} = 1,50mm	N_{Rk}	[kN]	-	1,88	-
Partial safety factor	γ_M	[-]	1,33	1,33	-
CHARACTERISTIC RESISTANCE - STEEL DECK S320GD					
Thickness of steel substructure t_{II} = 0,50mm	N_{Rk}	[kN]	0,66	-	-
Thickness of steel substructure t_{II} = 0,63mm	N_{Rk}	[kN]	0,90	0,80	-
Thickness of steel substructure t_{II} = 0,75mm	N_{Rk}	[kN]	1,29	1,08	-
Thickness of steel substructure t_{II} = 0,88mm	N_{Rk}	[kN]	1,32	1,17	-
Thickness of steel substructure t_{II} = 1,00mm	N_{Rk}	[kN]	1,73	1,62	-
Thickness of steel substructure t_{II} = 1,25mm	N_{Rk}	[kN]	-	1,88	-
Thickness of steel substructure t_{II} = 1,50mm	N_{Rk}	[kN]	-	1,88	-
Partial safety factor	γ_M	[-]	1,33	1,33	-
CHARACTERISTIC RESISTANCE - STEEL DECK S350GD					
Thickness of steel substructure t_{II} = 0,50mm	N_{Rk}	[kN]	0,71	-	-
Thickness of steel substructure t_{II} = 0,63mm	N_{Rk}	[kN]	0,97	0,87	-
Thickness of steel substructure t_{II} = 0,75mm	N_{Rk}	[kN]	1,38	1,16	-
Thickness of steel substructure t_{II} = 0,88mm	N_{Rk}	[kN]	1,41	1,26	-
Thickness of steel substructure t_{II} = 1,00mm	N_{Rk}	[kN]	1,85	1,74	-
Thickness of steel substructure t_{II} = 1,25mm	N_{Rk}	[kN]	-	2,17	-
Thickness of steel substructure t_{II} = 1,50mm	N_{Rk}	[kN]	-	3,04	-
Partial safety factor	γ_M	[-]	1,33	1,33	-
R-POW-07 + SCREW					
CHARACTERISTIC RESISTANCE - STEEL DECK S280GD					
Thickness of steel substructure t_{II} = 0,50mm	N_{Rk}	[kN]	0,61	-	-
Thickness of steel substructure t_{II} = 0,63mm	N_{Rk}	[kN]	0,83	0,74	1,21
Thickness of steel substructure t_{II} = 0,75mm	N_{Rk}	[kN]	1,19	1,00	1,34
Thickness of steel substructure t_{II} = 0,88mm	N_{Rk}	[kN]	1,22	1,08	1,45
Thickness of steel substructure t_{II} = 1,00mm	N_{Rk}	[kN]	1,59	1,50	1,95
Thickness of steel substructure t_{II} = 1,25mm	N_{Rk}	[kN]	-	1,86	2,48
Thickness of steel substructure t_{II} = 1,50mm	N_{Rk}	[kN]	-	2,60	3,10
Partial safety factor	γ_M	[-]	1,33	1,33	1,33
CHARACTERISTIC RESISTANCE - STEEL DECK S320GD					
Thickness of steel substructure t_{II} = 0,50mm	N_{Rk}	[kN]	0,66	-	-
Thickness of steel substructure t_{II} = 0,63mm	N_{Rk}	[kN]	0,90	0,80	1,31
Thickness of steel substructure t_{II} = 0,75mm	N_{Rk}	[kN]	1,29	1,08	1,45
Thickness of steel substructure t_{II} = 0,88mm	N_{Rk}	[kN]	1,32	1,17	1,57
Thickness of steel substructure t_{II} = 1,00mm	N_{Rk}	[kN]	1,73	1,62	2,11
Thickness of steel substructure t_{II} = 1,25mm	N_{Rk}	[kN]	-	2,01	2,69
Thickness of steel substructure t_{II} = 1,50mm	N_{Rk}	[kN]	-	2,82	3,17
Partial safety factor	γ_M	[-]	1,33	1,33	1,33
CHARACTERISTIC RESISTANCE - STEEL DECK S350GD					
Thickness of steel substructure t_{II} = 0,50mm	N_{Rk}	[kN]	0,71	-	-
Thickness of steel substructure t_{II} = 0,63mm	N_{Rk}	[kN]	0,97	0,87	1,41
Thickness of steel substructure t_{II} = 0,75mm	N_{Rk}	[kN]	1,38	1,16	1,56
Thickness of steel substructure t_{II} = 0,88mm	N_{Rk}	[kN]	1,41	1,26	1,69

POW OVAL STEEL WASHERS - DEEP VERSION

Type of fixing			R-WO-T	R-WX-T 4.8	R-WX-T 6.0
Thickness of steel substructure t_{II} = 1,00mm	N_{Rk}	[kN]	1,85	1,74	2,27
Thickness of steel substructure t_{II} = 1,25mm	N_{Rk}	[kN]	-	2,17	2,89
Thickness of steel substructure t_{II} = 1,50mm	N_{Rk}	[kN]	-	3,04	3,17
Partial safety factor	γ_M	[-]	1,33	1,33	1,33

Characteristic values of axial load resistance

Wooden and wooden-based substrates

Type of fixing			R-WO-T	R-WX-T 4.8	R-WX-T 6.0
TENSION LOAD					
R-POW-05 / R-POW-07 + SCREW					
TIMBER STRUCTURES - WOOD class ≥ C24 acc. to EN 14081-1					
Embedment depth	h_{ef}	[mm]	24	24	24
Characteristic resistance	N_{Rk}	[kN]	1,73	1,02	1,57
Partial safety factor	γ_M	[-]	1,33	1,33	1,33
OSB SHEETS acc. to EN 300, density ≥ 650kg/m³					
Embedment depth	h_{ef}	[mm]	18	18	18
Characteristic resistance	N_{Rk}	[kN]	1,31	0,88	1,4
Partial safety factor	γ_M	[-]	1,33	1,33	1,33
WOOD WOOL PANELS MEB GREEN SUPREMA GB 600 acc. to EN 13168, density ≥ 600kg/m³					
Embedment depth	h_{ef}	[mm]	25	25	-
Characteristic resistance	N_{Rk}	[kN]	0,29	0,28	-
Partial safety factor	γ_M	[-]	1,33	1,33	-
WOOD WOOL PANELS MEB GREEN SUPREMA GB 1050 acc. to EN 13168, density ≥ 1050kg/m³					
Embedment depth	h_{ef}	[mm]	18	18	-
Characteristic resistance	N_{Rk}	[kN]	0,75	0,92	-
Partial safety factor	γ_M	[-]	1,33	1,33	-
WOOD-BASED PANELS MIAMI ECO BOARD acc. to EN 13986, density ≥ 1300kg/m³					
Embedment depth	h_{ef}	[mm]	20	20	-
Characteristic resistance	N_{Rk}	[kN]	1,62	1,69	-
Partial safety factor	γ_M	[-]	1,33	1,33	-
PARTICLEBOARDS MFP acc. to EN 312, density ≥ 740kg/m³					
Embedment depth	h_{ef}	[mm]	22	22	-
Characteristic resistance	N_{Rk}	[kN]	1,85	1,85	-
Partial safety factor	γ_M	[-]	2	2	-

LOGISTICAL DATA

SKU	Base-sales unit	Unit pack	Bulk pack	Pallet	Single Package - Gross Weight	Bulk Package - Gross Weight	Palette - Gross Weight	Barcode
R-POW-05-ALZN	pcs.	100.0	1200.0	28800.0	2.3	28.0	672.8	5906675102580
R-POW-07-ALZN	pcs.	100.0	1200.0	28800.0	2.3	28.0	671.0	5906675102603

RELATED PRODUCTS

ANCHORING		Screw for concrete **R-WBT** 	Screws for timber **R-WW-T** 	Screw for steel **R-WO-T** 	Screw for concrete **R-WCS** 	Self-drilling screws for steel **R-WX-T**
DRILLING		Drill bits Roof System with collar **RT-TDC** 	Drill bits Aggressor SDS plus **RT-SDSA** 	Drill bits Roof System **RT-TD** 	Bit holder with 2 magnets **RT-BIT-ADAP** 	Long screwdriver bits **RT-BIT-TORX25**
DRILLING	Automatic	Cordless Hammer 18V SDS plus **R-PRH18** 	Cordless RawlDriver 18V **R-PDD18** 	Cordless drywall RawlDriver 18V, set **R-PDS18-M2A** 		