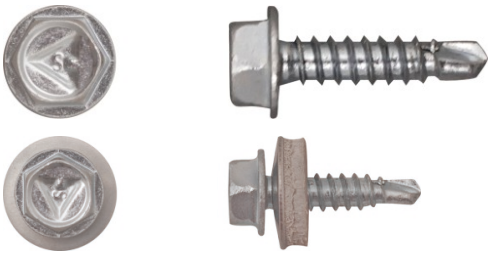
OCWS Stainless steel self-drilling screws

Stainless steel self drilling screw with reduced drilling point guarantees optimum tightness of the fastening



Approvals and Reports

- ETA-10/0183
- UKTA-22/6336

Product information

Features and benefits

- Stainless steel self drilling screw made with BIMETAL
- Hardened surface of the thread (flexible core). Corrosion resistant zinc coating has a thickness of no less than 12um.
- The full length thread design prevents twisting and allows application without a washer. Furthermore the specific shape and type of thread allow metal sheets to be connected together.
- Self vulcanizing EPDM washer. Temperature and UV resistant. The special shape of the washer ensures proper seating of the sealing material on the outer cladding material fixture which guarantees a proper seal.
- The drill point is designed to provide a fast and hassle-free installation in wood. Sharp point of the drill prevents movement of the surface of the fixture.

Applications

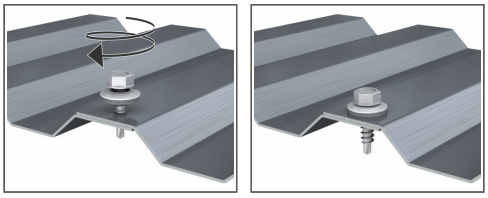
- For fixing of: Overlapping sheet connection

Base materials

Approved for use in:

- Structural Steel
- Metal Sheet & Profiles

Installation guide



1. Screw must be installed at 90 degrees to substrate.
2. Special driver must be used.
3. Lowest torque setting on impact screwdriver to start.
4. Reduce speed when the washer starts to deform.
5. Use a cordless Impact screwdriver. Note: Never use a power drill.
6. For installation please use screwdriver of load capacity 1600 - 2000 rpm with regulated trogue.

Product information

Size	Product Code	Screw			Fixture		Max. drilling thickness	Washer size	RAL Colour
		Diameter	Length	Head size	Max. thickness with washer	Max. thickness without washer			
		d	l	S	t_{fix}				
		[mm]							
Ø4.8	OCWS-48019	4.8	19	8	7	10	2.5	14	-
	OCWS-48019S16	4.8	19	8	7	10	2.5	14	-
Ø5.5	OCWS-55025	5.5	25	8	8	11	3	14, 16, 19	-
	OCWS-55025S16	5.5	25	8	8	11	3	14, 16, 19	-
Ø4.8	OCWS-48019TS14	4.8	19	8	7	10	2.5	14	-
Ø5.5	OCWS-55025S14	5.5	25	8	8	11	3	14, 16, 19	-
	OCWS-55025S19	5.5	25	8	8	11	3	14, 16, 19	-
Ø4.8	OCWS-48019S147035	4.8	19	8	7	10	2.5	14	7035
	OCWS-48019S149006	4.8	19	8	7	10	2.5	14	9006
	OCWS-48019S149010	4.8	19	8	7	10	2.5	14	9010
Ø5.5	OCWS-55025S169006	5.5	25	8	8	11	3	14, 16, 19	9006

Installation data

Size			Ø4.8	Ø5.5
Hole diameter in substrate	d_0	[mm]	-	-
Min. hole depth in substrate	h_0	[mm]	-	-
Min. installation depth	h_{nom}	[mm]	-	-
Min. substrate thickness	h_{min}	[mm]	0.4	1
Min. spacing	s_{min}	[mm]	30	30
Min. edge distance	c_{min}	[mm]	10	10
Wrench size	Sw	[mm]	8	8
Screw diameter	d	[mm]	4.8	5.5

Basic performance data

Performance data for single screw without influence of edge distance and spacing

Size		TENSION LOAD		SHEAR LOAD	
		Ø4.8 (S14)	Ø5.5 (S16)	Ø4.8	Ø5.5
MEAN ULTIMATE LOAD					
Substrate thickness 0,50mm	[kN]	0.60	-	1.02	-
Substrate thickness 0,75mm	[kN]	1.09	-	2.12	-
Substrate thickness 1,00mm	[kN]	1.56	0.97	2.78	2.44
Substrate thickness 1,50mm	[kN]	0.00	2.15	-	0.00
CHARACTERISTIC LOAD					
Substrate thickness 0,50mm	[kN]	0.45	-	0.88	-
Substrate thickness 0,75mm	[kN]	0.81	-	1.61	-
Substrate thickness 1,00mm	[kN]	1.29	0.80	2.40	2.11
Substrate thickness 1,50mm	[kN]	1.49	1.67	-	2.83
DESIGN LOAD					
Substrate thickness 0,50mm	[kN]	0.34	-	0.66	-
Substrate thickness 0,75mm	[kN]	0.61	-	1.21	-
Substrate thickness 1,00mm	[kN]	0.97	0.60	1.80	1.59
Substrate thickness 1,50mm	[kN]	1.12	1.26	-	2.13

Basic performance data

Size		TENSION LOAD		SHEAR LOAD	
		Ø4.8 (S14)	Ø5.5 (S16)	Ø4.8	Ø5.5
RECOMMENDED LOAD					
Substrate thickness 0,50mm	[kN]	0.24	-	0.47	-
Substrate thickness 0,75mm	[kN]	0.44	-	0.86	-
Substrate thickness 1,00mm	[kN]	0.69	0.43	1.29	1.14
Substrate thickness 1,50mm	[kN]	0.80	0.90	-	1.52

Design performance data

DESIGN PERFORMANCE DATA Ø4.8

TENSION LOADS FOR SCREW WITH WASHER 14

Size			Ø4.8									
Sheet metal thickness	t_N	[mm]	0.40	0.50	0.55	0.63	0.75	0.88	1.00	1.13	1.25	1.50
SUBSTRATE THICKNESS 0.40 mm												
Characteristic load	N_{Rk}	[kN]	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
SUBSTRATE THICKNESS 0.50 mm												
Characteristic load	N_{Rk}	[kN]	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
SUBSTRATE THICKNESS 0.55 mm												
Characteristic load	N_{Rk}	[kN]	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	-
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	-
SUBSTRATE THICKNESS 0.63 mm												
Characteristic load	N_{Rk}	[kN]	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	-
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	-
SUBSTRATE THICKNESS 0.75 mm												
Characteristic load	N_{Rk}	[kN]	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	-
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	-
SUBSTRATE THICKNESS 0.88 mm												
Characteristic load	N_{Rk}	[kN]	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	-	-
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	-	-
SUBSTRATE THICKNESS 1.00 mm												
Characteristic load	N_{Rk}	[kN]	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	-	-
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	-	-
SUBSTRATE THICKNESS 1.13 mm												
Characteristic load	N_{Rk}	[kN]	1.49	1.49	1.49	1.49	1.49	1.49	-	-	-	-
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	1.12	1.12	1.12	1.12	1.12	1.12	-	-	-	-
SUBSTRATE THICKNESS 1.25 mm												
Characteristic load	N_{Rk}	[kN]	1.49	1.49	1.49	1.49	1.49	1.49	-	-	-	-
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	1.12	1.12	1.12	1.12	1.12	1.12	-	-	-	-
SUBSTRATE THICKNESS 1.50 mm												
Characteristic load	N_{Rk}	[kN]	1.49	1.49	-	-	-	-	-	-	-	-
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	1.12	1.12	-	-	-	-	-	-	-	-

SHEAR LOAD

Size			Ø4.8									
Sheet metal thickness	t_N	[mm]	0.40	0.50	0.55	0.63	0.75	0.88	1.00	1.13	1.25	1.50
SUBSTRATE THICKNESS 0.40 mm												
Characteristic resistance	V_{Rk}	[kN]	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
SUBSTRATE THICKNESS 0.50 mm												
Characteristic resistance	V_{Rk}	[kN]	0.71	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.53	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66

Design performance data

Size			Ø4.8									
Sheet metal thickness	t_N	[mm]	**0.40**	**0.50**	**0.55**	**0.63**	**0.75**	**0.88**	**1.00**	**1.13**	**1.25**	**1.50**
SUBSTRATE THICKNESS 0.55 mm												
Characteristic resistance	V_{Rk}	[kN]	0.77	0.94	1.11	1.11	1.11	1.11	1.11	1.11	1.11	-
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.58	0.71	0.83	0.83	0.83	0.83	0.83	0.83	0.83	-
SUBSTRATE THICKNESS 0.63 mm												
Characteristic resistance	V_{Rk}	[kN]	0.86	1.07	1.17	1.34	1.34	1.34	1.34	1.34	1.34	-
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.65	0.80	0.88	1.01	1.01	1.01	1.01	1.01	1.01	-
SUBSTRATE THICKNESS 0.75 mm												
Characteristic resistance	V_{Rk}	[kN]	1.05	1.05	1.20	1.34	1.61	1.61	1.61	1.61	1.61	-
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.79	0.79	0.90	1.01	1.21	1.21	1.21	1.21	1.21	-
SUBSTRATE THICKNESS 0.88 mm												
Characteristic resistance	V_{Rk}	[kN]	1.05	1.05	1.20	1.34	1.61	2.01	2.01	-	-	-
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.79	0.79	0.90	1.01	1.21	1.51	1.51	-	-	-
SUBSTRATE THICKNESS 1.00 mm												
Characteristic resistance	V_{Rk}	[kN]	1.05	1.05	1.20	1.34	1.61	2.01	2.40	-	-	-
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.79	0.79	0.90	1.01	1.21	1.51	1.80	-	-	-
SUBSTRATE THICKNESS 1.13 mm												
Characteristic resistance	V_{Rk}	[kN]	1.05	1.05	1.20	1.34	1.61	-	-	-	-	-
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.79	0.79	0.90	1.01	1.21	-	-	-	-	-
SUBSTRATE THICKNESS 1.25 mm												
Characteristic resistance	V_{Rk}	[kN]	1.05	1.05	1.20	1.34	1.61	-	-	-	-	-
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.79	0.79	0.90	1.01	1.21	-	-	-	-	-
SUBSTRATE THICKNESS 1.50 mm												
Characteristic resistance	V_{Rk}	[kN]	1.05	1.05	-	-	-	-	-	-	-	-
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.79	0.79	-	-	-	-	-	-	-	-

DESIGN PERFORMANCE DATA Ø5.5

TENSION LOADS FOR SCREW WITH WASHER 16

Size			Ø5.5									
Sheet metal thickness	t_N	[mm]	**0.55**	**0.63**	**0.75**	**0.88**	**1.00**	**1.13**	**1.25**	**1.50**	**1.75**	**2.00**
SUBSTRATE THICKNESS 1.00 mm												
Characteristic load	N_{Rk}	[kN]	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
SUBSTRATE THICKNESS 1.13 mm												
Characteristic load	N_{Rk}	[kN]	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
SUBSTRATE THICKNESS 1.25 mm												
Characteristic load	N_{Rk}	[kN]	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
SUBSTRATE THICKNESS 1.50 mm												
Characteristic load	N_{Rk}	[kN]	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
SUBSTRATE THICKNESS 1.75 mm												
Characteristic load	N_{Rk}	[kN]	1.67	1.92	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	1.26	1.44	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
SUBSTRATE THICKNESS 2.00 mm												
Characteristic load	N_{Rk}	[kN]	1.67	1.92	2.32	2.81	2.81	2.81	2.81	2.81	2.81	2.81
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	1.26	1.44	1.74	2.11	2.11	2.11	2.11	2.11	2.11	2.11
SUBSTRATE THICKNESS 2.50 mm												
Characteristic load	N_{Rk}	[kN]	1.67	1.92	2.32	2.93	3.61	3.85	3.85	3.85	3.85	3.85
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	1.26	1.44	1.74	2.20	2.71	2.89	2.89	2.89	2.89	2.89
SUBSTRATE THICKNESS 3.00 mm												
Characteristic load	N_{Rk}	[kN]	1.67	1.92	2.32	2.93	3.61	4.25	4.25	4.25	4.25	4.25
Design resistance γ_{Ms} = 1.33	N_{Rd}	[kN]	1.26	1.44	1.74	2.20	2.71	3.20	3.20	3.20	3.20	3.20

Design performance data

SHEAR LOAD

Size			Ø5.5										
Sheet metal thickness	t_N	[mm]	**0.50**	**0.55**	**0.63**	**0.75**	**0.88**	**1.00**	**1.13**	**1.25**	**1.50**	**1.75**	**2.00**
SUBSTRATE THICKNESS 1.00 mm													
Characteristic resistance	V_{Rk}	[kN]	1.30	1.36	1.45	1.69	1.90	2.11	2.11	2.11	2.11	2.11	2.11
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.98	1.02	1.09	1.27	1.43	1.59	1.59	1.59	1.59	1.59	1.59
SUBSTRATE THICKNESS 1.13 mm													
Characteristic resistance	V_{Rk}	[kN]	1.30	1.36	1.68	1.88	2.08	2.24	2.24	2.24	2.24	2.24	2.24
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.98	1.02	1.26	1.41	1.56	1.68	1.68	1.68	1.68	1.68	1.68
SUBSTRATE THICKNESS 1.25 mm													
Characteristic resistance	V_{Rk}	[kN]	1.30	1.36	1.91	2.08	2.26	2.42	2.42	2.42	2.42	2.42	2.42
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.98	1.02	1.44	1.56	1.70	1.82	1.82	1.82	1.82	1.82	1.82
SUBSTRATE THICKNESS 1.50 mm													
Characteristic resistance	V_{Rk}	[kN]	1.30	1.36	1.91	2.13	2.36	2.59	2.71	2.83	2.83	2.83	2.83
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.98	1.02	1.44	1.60	1.77	1.95	2.04	2.13	2.13	2.13	2.13
SUBSTRATE THICKNESS 1.75 mm													
Characteristic resistance	V_{Rk}	[kN]	1.30	1.36	1.91	2.18	2.47	2.74	2.99	3.23	3.23	3.23	3.23
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.98	1.02	1.44	1.64	1.86	2.06	2.25	2.43	2.43	2.43	2.43
SUBSTRATE THICKNESS 2.00 mm													
Characteristic resistance	V_{Rk}	[kN]	1.30	1.36	1.91	2.18	2.63	3.08	3.40	3.72	3.72	3.72	3.72
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.98	1.02	1.44	1.64	1.98	2.32	2.56	2.80	2.80	2.80	2.80
SUBSTRATE THICKNESS 2.50 mm													
Characteristic resistance	V_{Rk}	[kN]	1.30	1.36	1.91	2.18	2.87	3.57	4.13	4.70	4.70	4.70	4.70
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.98	1.02	1.44	1.64	2.16	2.68	3.11	3.53	3.53	3.53	3.53
SUBSTRATE THICKNESS 3.00 mm													
Characteristic resistance	V_{Rk}	[kN]	1.30	1.36	1.91	2.18	3.13	4.08	4.88	5.68	5.68	5.68	5.68
Design resistance γ_{Mc} = 1.33	V_{Rd}	[kN]	0.98	1.02	1.44	1.64	2.35	3.07	3.67	4.27	4.27	4.27	4.27

Product commercial data

Product Code	Washer size [mm]	RAL Colour	Quantity [pcs]			Weight [kg]			Bar Codes
			Box	Outer	Pallet	Box	Outer	Pallet	
OCWS-48019 [1)]	14		250	4000	96000	1.00	16.0	414.0	5906675320120
OCWS-48019S16 [1)]	14		250	4000	96000	1.10	17.6	452.4	5906675320144
OCWS-55025 [1)]	14, 16, 19		200	3200	76800	1.77	28.3	709.7	5906675320526
OCWS-55025S16 [1)]	14, 16, 19		200	3200	76800	1.77	28.3	709.7	5906675320540
OCWS-48019TS14 [1)]	14								
OCWS-55025S14 [1)]	14, 16, 19		200	3200	76800	1.77	28.3	709.7	5906675320533
OCWS-55025S19 [1)]	14, 16, 19		200	3200	76800	1.77	28.3	709.7	5906675320557
OCWS-48019S147035 [1)]	14	7035	250	4000	96000	1.00	16.0	414.0	5906675460772
OCWS-48019S149006 [1)]	14	9006	250	4000	96000	1.00	16.0	414.0	5906675417134
OCWS-48019S149010 [1)]	14	9010	250	4000	96000	1.00	16.0	414.0	5906675431246
OCWS-55025S169006 [1)]	14, 16, 19	9006	200	3600	76800	1.77	31.9	709.7	5906675417141

1) ETA-10/0183