

MO-PSU



CERTIFICATES



BASE MATERIAL



CHARACTERISTICS

- Assessed for structural applications in non-cracked concrete M8-M16.
- LEED and A+ certificates, Styrene free.
- Use for medium-high loads, static or quasi-static.
- Valid for dry, wet and flooded holes.
- Valid for zinc plated steel, hot-dip galvanized, stainless steel A2, A4 and HCR.
- Temperature range: from -40°C to +80°C (long term maximum temperature +50°C).

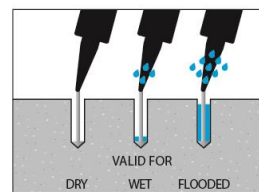
VALID FOR



APPLICATIONS

- Use in indoor and outdoor environments.
- Structural applications.
- Fixing of building substructures.
- Rehabilitation of facades.
- For fixing air conditioning supports, boilers, awnings, garage door frames, signs, balconies, shelving units, railings, handrails, etc.

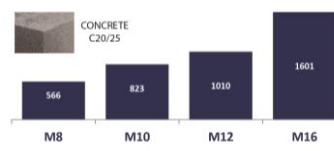
DRILL HOLE CONDITION



APPLICATION EXAMPLES




MAXIMUM LOAD RECOMMENDED [kg]



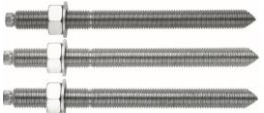








TECHNICAL DATASHEET

1. RANGE



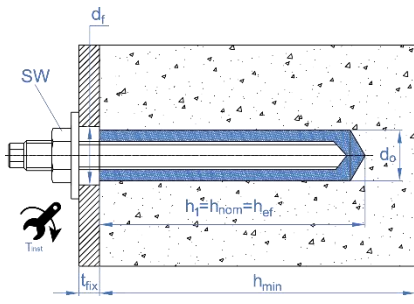
ITEM	CODE	SIZE	PHOTO	COMPONENT	MATERIAL	
1	MOPSU300 MOPSU410	300 ml. 410 ml.		STYRENE FREE POLYESTER UNIVERSAL MORTAR	Styrene free polyester universal. Format: 300 and 410 ml cartridges	12

2. ACCESSORIES

ITEM	CODE	PHOTO	COMPONENT	MATERIAL
1	MOPISSI		APPLICATION GUNS	Gun for 300 ml standard cartridges
	MOPISTO			Gun for 410 ml coaxial cartridges
2	EQ-AC EQ-8.8 EQ-A2 EQ-A4		STUD BOLTS	Threaded steel stud, class 5.8 ISO 898-1 Threaded steel stud, class 8.8 ISO 898-1 Threaded stainless steel stud A2-70 Threaded stainless steel stud A4-70
3	MORCEPKIT		CLEANING BRUSHES	3 Cleaning brushes kit of $\varnothing 14$, $\varnothing 20$ and $\varnothing 29$ mm.
4	MOBOMBA		CLEANING PUMP	Pump for cleaning dust and drill hole fragments
5	MORCANU		MIXING NOZZLE	Plastic. Helix static mixer.
6	MO-TN		NYLON SLEEVE	Plastic. Available in white and grey
7	MO-TR		METAL THREADED SLEEVE	Metal threaded sleeve M8, M10, M12, zinc plated.
8	MO-TM		METAL SLEEVE	Metal sleeve of $\varnothing 12$, $\varnothing 16$ and $\varnothing 22$,

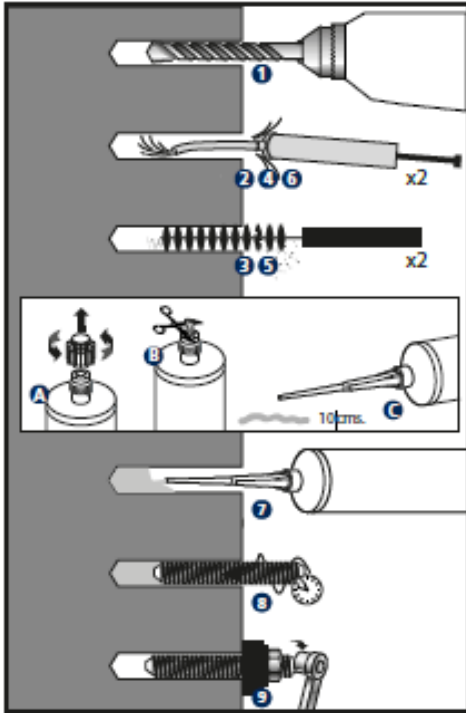
3. INSTALLATION DATA

3.1. CONCRETE FIXING (SET UP PARAMETERS)

SIZE		M8	M10	M12	M16
d_0 : nominal diameter	[mm]	10	12	14	18
d_f : fixture hole diameter \leq	[mm]	9	12	14	18
T_{ins} : torque \leq	[Nm]	10	20	40	80
Circular cleaning brush diameter		$\varnothing 14$		$\varnothing 20$	
$h_{ef,min}$					
h_1 : drill hole depth	[mm]	64	80	96	128
$s_{cr,N}$: critical spacing	[mm]	192	240	288	384
$c_{cr,N}$: critical edge distance	[mm]	96	120	144	192
c_{min} : minimum distance to edge	[mm]	35	40	50	65
s_{min} : minimum spacing	[mm]	35	40	50	65
h_{min} : minimum concrete thickness	[mm]	100	110	126	158
Standard stud					
h_1 : drill hole depth	[mm]	80	90	110	128
$s_{cr,N}$: critical spacing	[mm]	240	270	330	384
$c_{cr,N}$: critical edge distance	[mm]	120	135	165	192
c_{min} : minimum distance to edge	[mm]	43	45	56	65
s_{min} : minimum spacing	[mm]	43	45	56	65
h_{min} : minimum concrete thickness	[mm]	110	120	140	158
$h_{ef,max}$					
h_1 : drill hole depth	[mm]	96	120	144	192
$s_{cr,N}$: critical spacing	[mm]	288	360	432	576
$c_{cr,N}$: critical edge distance	[mm]	144	180	216	288
c_{min} : minimum distance to edge	[mm]	50	60	70	95
s_{min} : minimum spacing	[mm]	50	60	70	95
h_{min} : minimum concrete thickness	[mm]	126	150	174	222
5.8 / 8.8 Zinc plated stud code 		EQAC08110 EQ8808110	EQAC10130 EQ8810130	EQAC12160 EQ8812160	EQAC16190 EQ8816190
A2 / A4 Stainless steel stud code 		EQA208110 EQA408110	EQA210130 EQA410130	EQA212160 EQA412160	EQA216190 EQA416190
		<ul style="list-style-type: none"> h_{ef} depth value may be selected by the user ranging between $h_{ef,min} = 8d$ and $h_{ef,max} = 12d$. Any intermediate values may be interpolated. Critical distances are those where anchors in a group of anchors are not influenced by one another with regard to tension load effects. For smaller distances, down to minimum distances, corresponding reduction coefficients must be applied. Standard studs are available for each measurement, as shown in the table. 			

4. PRODUCT SET UP

4.1. CONCRETE SET UP



1. DRILL

Check the concrete base is compact and porosity is insignificant.
Suitable for wet, dry or flooded drill holes.
Cartridge installation temperature: $\geq 5\text{ }^{\circ}\text{C}$.
Base material installation temperature: MO-PSU $\geq -5\text{ }^{\circ}\text{C}$
Use drill in hammer mode.
Drill to the specified diameter and depth values

2 - 6. BLOW AND CLEAN

Clear the drill holes completely of dust and fragments by following the procedure shown in the picture. If the drill hole is flooded, the water must be removed before mortar is injected.

A – B* – C. OPEN CARTRIDGE

Screw the nozzle into the cartridge and place the assembly in the application gun. Squeeze on the trigger repeatedly until the mortar comes out of the nozzle in a uniform blue color. Any iridescence indicates improper mixing. Always discard the first two doses of each cartridge: these are never to be used for fixing. *For 300 ml cartridges, cut end of bag, behind seal clip.

7. INJECT MORTAR

Insert the nozzle to the bottom of the drill hole and apply mortar: gradually remove the nozzle, ensuring there are no air bubbles. Fill the hole to $\frac{1}{2}$ and $\frac{3}{4}$ of its depth.
In the event of not fully using the cartridge, leave nozzle attached. Only change if using again and handling time has expired, remembering to discard the first two doses of mortar.

8. INSTALLATION

Introduce the stud to be installed by screwing it lightly down to the installation depth value manually; ensuring the mortar covers the stud thread. The introduction of the anchor must take place within the handling time. The mortar must seep from the top of the drill hole to ensure it is completely full and there are no gaps between the stud and the drill hole. While the MO-PUS is blue, the rod can be adjusted and moved so that it is correctly fitted

TEMPERATURE AND CURING TIME

TYPE	Cartridge temperature [°C]	Handling time [min]	Base material temperature [°C]	Curing time [min]
MO-PSU	Min +5	18	Min +5	160
	+5 to +10	10	+5 to +10	160
	+10 to +20	6	+10 to +20	90
	+20 to +25	5	+20 to +25	60
	+25 to +30	4	+25 to +30	50
	+30	4	+30	40

9. APPLY TORQUE

Once the curing time has elapsed (when the color is completely grey), apply torque, never exceeding the values indicated in the table.

5. STORAGE CONDITIONS

Keep the product stored in a cool, dry place, away from direct sunlight and heat sources, at an average temperature between +5 °C and +25 °C.



Shelf life of unopened cartridge: 18 months from the date of manufacture. The expiration date is indicated on the cartridge.

6. RESISTANCES

6.1 CONCRETE FIXATION

Characteristic resistances for C20/25 concrete for an isolated anchor (without considering anchor-to-anchor or anchor-to-edge distance effects) and class 5.8 studs or A4-70 stainless steel are shown in tables below.

CHARACTERISTIC RESISTANCES

CONCRETE CLASS	SIZE				M8	M10	M12	M16	
NON-CRACKED CONCRETE	ZINC PLATED	Tension	$h_{ef,min} = 8d$	N_{Rk}	[kN]	9,33	13,57	16,65	26,38
			Standard stud	N_{Rk}	[kN]	11,66	15,27	19,08	26,38
			$h_{ef,max} = 12d$	N_{Rk}	[kN]	13,99	20,36	24,97	39,57
		Shear	All depths 5.8	V_{Rk}	[kN]	<u>9,0</u>	<u>15,0</u>	<u>21,0</u>	<u>39,0</u>
			All depths 8.8	V_{Rk}	[kN]	<u>15,0</u>	<u>23,0</u>	<u>34,0</u>	<u>63,0</u>
		STAINLESS STEEL	Tension	$h_{ef,min} = 8d$	N_{Rk}	[kN]	9,33	13,57	16,65
	Standard stud			N_{Rk}	[kN]	11,66	15,27	19,08	26,38
	$h_{ef,max} = 12d$			N_{Rk}	[kN]	13,99	20,36	24,97	39,57
	Shear		All depths	V_{Rk}	[kN]	<u>13,0</u>	<u>20,0</u>	<u>30,0</u>	<u>55,0</u>

TECHNICAL DATASHEET

DESIGN RESISTANCES

CONCRETE CLASS	SIZE				M8	M10	M12	M16	
	NON-CRACKED CONCRETE	ZINC PLATED	Tension	$h_{ef,min} = 8d$	N_{Rd}	[kN]	5,18	7,54	9,25
Standard stud				N_{Rd}	[kN]	6,48	8,48	10,60	14,66
$h_{ef,max} = 12d$				N_{Rd}	[kN]	7,77	11,31	13,87	21,98
Shear			All depths 5.8	V_{Rd}	[kN]	<u>7,2</u>	<u>12,0</u>	<u>16,8</u>	<u>31,2</u>
			All depths 8.8	V_{Rd}	[kN]	<u>12,0</u>	<u>18,4</u>	<u>27,2</u>	<u>50,4</u>
STAINLESS STEEL		Tension	$h_{ef,min} = 8d$	N_{Rd}	[kN]	5,18	7,54	9,25	14,66
			Standard stud	N_{Rd}	[kN]	6,48	8,48	10,60	14,66
			$h_{ef,max} = 12d$	N_{Rd}	[kN]	7,77	11,31	13,87	21,98
		Shear	All depths	V_{Rd}	[kN]	<u>8,3</u>	<u>12,8</u>	<u>19,2</u>	<u>35,2</u>

MAXIMUM LOADS RECOMMENDED (when $\gamma_f = 1.4$)

CONCRETE CLASS	SIZE				M8	M10	M12	M16	
	NON-CRACKED CONCRETE	ZINC PLATED	Tension	$h_{ef,min} = 8d$	N_{rec}	[kN]	3,70	5,39	6,61
Standard stud				N_{rec}	[kN]	4,63	6,06	7,57	10,47
$h_{ef,max} = 12d$				N_{rec}	[kN]	5,55	8,08	9,91	15,70
Shear			All depths 5.8	V_{rec}	[kN]	<u>5,1</u>	<u>8,5</u>	<u>12,0</u>	<u>22,2</u>
			All depths 8.8	V_{rec}	[kN]	<u>8,5</u>	<u>13,1</u>	<u>19,4</u>	<u>36,0</u>
STAINLESS STEEL		Tension	$h_{ef,min} = 8d$	N_{rec}	[kN]	3,70	5,39	6,61	10,47
			Standard stud	N_{rec}	[kN]	4,63	6,06	7,57	10,47
			$h_{ef,max} = 12d$	N_{rec}	[kN]	5,55	8,08	9,91	15,70
		Shear	All depths	V_{rec}	[kN]	<u>5,9</u>	<u>9,1</u>	<u>13,7</u>	<u>25,1</u>

COEFFICIENTS FOR TENSION LOADS IN PULL-OUT FAILURE IN HIGH-RESISTANCE CONCRETE TYPES

CONCRETE COEFFICIENT	C30/37	C40/50	C50/60
Ψ_c (Non-cracked)	1,04	1,07	1,09

7. OFFICIAL DOCUMENTATION

The following documents are available through our Sales department or on our official website: www.indexfix.com:

- MOPSU Safety Data Sheet.
- European Technical Assessment ETA 24/0872 for use on non-cracked concrete according to EAD 330232-01-0601 Guide, option 7, for M8 to M16.
- Classified A+ according to French Regulation DEVL11044875A relative to the emission of volatile pollutants for indoor use.
- LEED MOPSU Sustainability certificate
- Declaration of Performance DoP MOPSU
- INDEXcal anchor calculation software.
- INDEXmor cartridge calculation needs software.