



X-MGR DATA SHEET

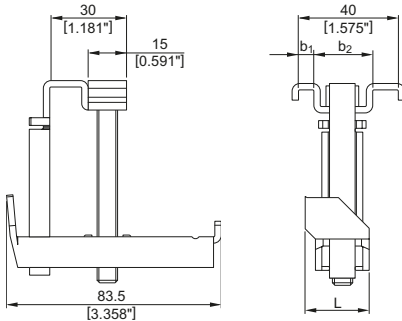
Grating fastening system



X-MGR Grating fastening system

Product data

Dimensions



Material specifications

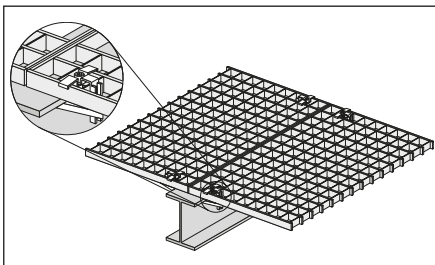
Screw:	
Carbon steel	
Zinc coating:	60 µm HDG
Upper part:	
Carbon steel:	SPCC-S
Zinc coating:	65 µm HDG
Bottom part:	
Carbon steel:	SPCC-S
Zinc coating:	65 µm HDG
Nut:	
Carbon steel	
Zinc coating:	45 µm HDG
Nut-holder:	
Stainless steel:	SS304

Recommended fastening tools

SF 121-A, SF150-A, SF 14, SFC 14-A, SF 18-A, SFC 18-A, SF 22-A

- For more details, please refer to **X-MGR fastener program** and to the chapter **Accessories and consumables compatibility** in the Direct Fastening Technology Manual (DFTM).

Applications



Fixing of grating

For fastenings exposed to weather and mildly corrosive conditions.
 Not for use in marine atmospheres (upstream)!

Performance data

Recommended tensile loads

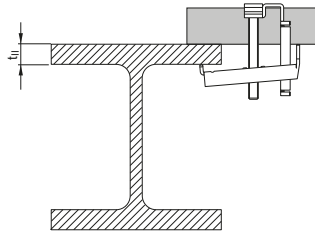
$N_{rec} = 0.6 \text{ kN (135 lb)}$

- Tensile loading is limited by plastic deformation of the saddle clip.
- X-MGR resists shear by friction and is not suitable for explicit shear load designs.

Application recommendation

Thickness of base material

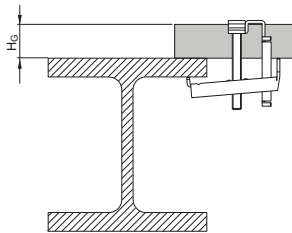
$t_{II} = 3 - 25 \text{ mm (0.118 - 0.984")}$



Thickness of fastened material

Grating height:

$H_G = 25 - 40 \text{ mm (0.98 - 1.57")}$

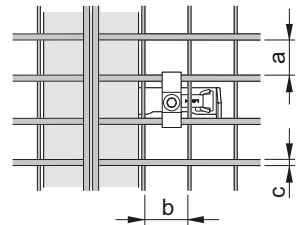


Total fastening height

$H_G + t_{II} \leq 65 \text{ mm (2.56")}$

Grating opening types

Fastener	a mm (inch)	b mm (inch)	c mm (inch)
X-MGR M60	30 (1.18")	$\geq 30 (1.18")$	$\leq 3 (0.118")$
X-MGR W60	25 (0.98")	$\geq 30 (1.18")$	$\leq 4.8 (3/16")$



Spacing and edge distances

No general restriction exists.

Corrosion information

For fastenings exposed to weather and mildly corrosive conditions. **Not for use in marine atmosphere (Upstream)** or in heavily polluted environment.

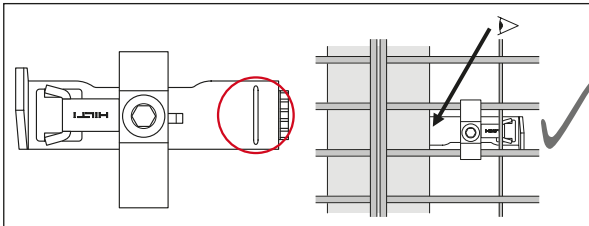
Fastener program and system recommendation

Fastener program

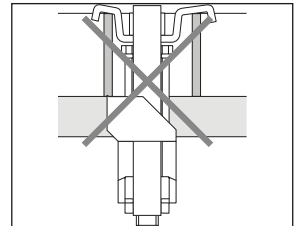
Fastener	Item-no.	Steel flange thickness t_{fl} mm (inch)	Grating height mm (inch)	Fastening tool
X-MRG-M60	384233	3-25 (0.12"-0.98")	25-40 (0.98"-1.57")	SF 121-A, SF 150-A
X-MRG-W60	384234	3-25 (0.12"-0.98")	25-40 (0.98"-1.57")	SF 121-A, SF 150-A

Quality assurance

Fastening inspection



The sign on the clip has to be positioned under the steel flange



The saddle of the fastener should not be bent, see installation instructions below.

Installation recommendation

Tightening torque

Element: X-MGR 5–8 Nm

Tightening tool recommendation for tightening with cordless screwdriver

Cordless screwdriver	Clutch type (stop detection)	Gear	Clutch
SF 2-A12	TRC	1	15
SF 2H-A12	TRC	1	15
SF 4-A22	TRC	1	8
SF 6-A22	ESC (SJ)	1	7
SF 6H-A22	ESC (SJ)	1	7
SFC 14-A	TRC	1	6-10
SF 18-A	TRC	1	5-8
SFC 18-A	TRC	1	5-8
SF 22-A	TRC	1	5-8
SFC 22-A	TRC	1	4-5
SBT 4-A22	TRC	1	5-7



• Tool power level adjustment:

Gear:



Clutch:



- The setting of the torque via the Hilti screwdriver with torque release coupling (TRC) can change as the clutch wears over time. The specified torque setting is only a rough guide value and applies to a new Hilti screwdriver. To ensure recommended torque is applied, Hilti recommends the use of a calibrated torque wrench or the Hilti torque tool.
- The specified torque setting for the Hilti screw drivers with electronic slip clutch (ESC) is only a rough guide value as the ESC has 2 stop detections; Soft Joint (SJ) detection and Hard Joint (HJ) detection. The hard joint detection is activated due to drop in speed (fast stop) and can lead to a torque spike. The installation torque may vary depending on the user and the application. To ensure recommended torque is applied, Hilti recommends the use of a calibrated torque wrench or the Hilti torque tool.

Tightening tool recommendation for tightening with Hilti torque tool

Hilti torque tool

Torque tool S-BT 1/4" – 5 Nm

Torque tool X-BT 1/4" – 8 Nm