

HILTI

GRATING FASTENING
MADE SIMPLER, FASTER
AND MORE RELIABLE



PERFORMANCE MEETS SIMPLICITY

Fastening grating has never been simpler. Hilti's innovative and high performing grating fastening systems are suitable for a wide range of project requirements, helping you to save time and cut costs. Get the job done faster, easier and safer than ever before.

GRATING APPLICATION ENVIRONMENT

Highly corrosive environment | C5



- Coastal areas
0-10 km
- Outdoor areas with heavy industrial pollution
- Close proximity to roads

Mildly corrosive environment | C3



- Indoor with temporary condensation
- Outdoor with low pollution
- Outdoor with moderate concentration of pollutants
1-10 km

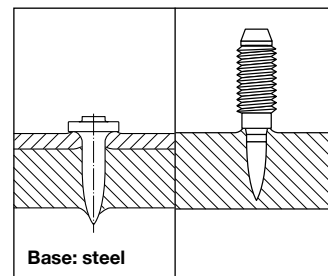
Non corrosive environment | C1



- Dry indoor

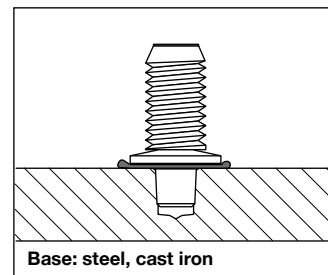
HILTI FASTENING ON STEEL TECHNOLOGIES

Nail



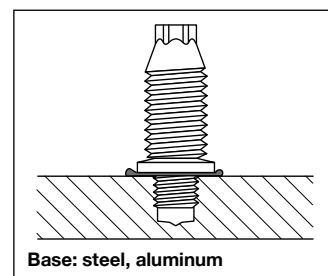
Sharp tip, power-actuated one-step solutions for speed

Weld-like



X-BT - battery actuated solutions for thick steel and corrosion resistance

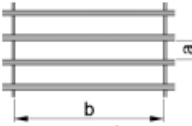





Screw



Versatile solutions for all applications and environments



GRATING FASTENING SYSTEMS

	X-FCM-R HL	X-FCS-R	X-FCM-R	X-FCM-R	X-FCM-R NG	X-FCM-M
						
Fasteners	X-BT-GR M8/7 SN 8	X-BT-GR M8/7 SN 8	X-BT-GR M8/7 SN 8 S-BT-GR M8/7 SN 6 S-BT-GR M8/7 SN 6 AL	X-BT-GR M8/7 SN 8 S-BT-GR M8/7 SN 6 S-BT-GR M8/7 SN 6 AL	S-BT-GR NG M8/7 SN 6	S-BT-GF M8/7 AN 6 X-ST-GR
Material	Stainless steel A4 (316)	Stainless steel A4 (316)	Stainless steel A4 (316)	Stainless steel A4 (316)	Stainless steel A4 (316)	HDG, Duplex
1 Environment	Highly corrosive environment C5					
2 Technology	Blunt tip (weld or screw)					
3 Grating type	Standard opening				Narrow opening	Standard opening
4 Application limit	≥ 8 mm ≥ 5/16 in	≥ 8 mm ≥ 5/16 in	≥ 8 mm ≥ 5/16 in	≥ 6 mm ≥ 1/4 in	≥ 6 mm ≥ 1/4 in	≥ 6 mm ≥ 1/4 in
Base material (BM)	Carbon steel Stainless steel Cast iron	Carbon steel Stainless steel Cast iron	Carbon steel Stainless steel Cast iron	Carbon steel Stainless steel Aluminium	Carbon steel Stainless steel Aluminium	Carbon steel
Grating heights	23 - 53 mm 7/8" - 2 1/16"	31 - 41 mm 1 1/4" - 1 5/8"	23 - 50 mm 7/8" - 2"	23 - 50 mm 7/8" - 2"	23 - 53 mm 7/8" - 2 1/16"	23 - 50 mm 7/8" - 2" 25
Grating openings	a) 18 - 44 mm 3/4" - 1 3/4" b) ≥ 18 mm ≥ 3/4"	25 mm 1"	a) 18 - 30 mm 3/4" - 1 3/16" b) ≥ 18 mm ≥ 3/4"	a) 18 - 30 mm 3/4" - 1 3/16" b) ≥ 18 mm ≥ 3/4"	a) 13 - 22 mm 1/2" - 7/8" b) ≥ 18 mm ≥ 3/4"	a) 18 - 30 mm 3/4" - 1 3/16" b) ≥ 18 mm ≥ 3/4"
Tensile (N_{rec})	3.6 kN 800 lb	2.6 kN 580 lb	1.0 kN 220 lb	0.8 kN 180 lb	S-BT 1.9 kN 430 lb X-ST 1.2 kN 270 lb	0.8 kN 180 lb
Shear (V_{rec})	0.4 kN 90 lb	4.3 kN 970 lb	-	-	-	-
Maximum tightening torque	20 Nm 14.8 lb ft	16 Nm 12 lb ft	8 Nm 5.9 lb ft	8 Nm 5.9 lb ft	8 Nm 5.9 lb ft	8 Nm 5.9 lb ft
Required tools	SF BT 22-A & DX 351-BT BX 3-BT	SF BT 22-A & DX 351-BT BX 3-BT	SF BT 22-A & DX 351-BT BX 3-BT	SBT 4-A22	SBT 4-A22	S-BT: SBT 4-A22 X-ST: DX 76 PTR DX 5-GR
Approvals	DNV, ABS, LR, BV, RINA, ETA	DNV, ABS, LR, BV, RINA, ETA	DNV, ABS, LR, BV, RINA, ETA	DNV, ABS, LR, BV, RINA, ETA	DNV, ABS, LR, BV, RINA, ETA	DNV, ABS, LR (Both) BV, RINA, ETA (S-BT)



X-FCM-M NG	X-FCM-M L	X-FCI	X-FCP-F	X-GR	X-MGR	X-FCM
S-BT-GF M8/7 NG AN 6 X-ST-GR	S-BT-GF M8/7 AN 6 X-ST-GR	S-BT-GF M8/7 AN 6 X-ST-GR	X-ST-GR	X-GR 20		X-EM8H
HDG, Duplex	HDG, Duplex	HDG, Duplex	HDG, Duplex	Stainless A2, Duplex	HDG, Duplex	Zinc carbon
Mildly corrosive environment C3						Indoor environment C1
Blunt tip or sharp tip		Sharp tip			Clamp	Sharp tip
Narrow opening	Large opening	Standard opening				
≥ 6 mm ≥ 1/4 in	≥ 6 mm ≥ 1/4 in	≥ 6 mm ≥ 1/4 in	6 - 12 mm 1/4" - 1/2"	4 - 12 mm 1/6" - 1/2"	3 - 35 mm 1/8" - 1 3/8"	6 - 12 mm 1/4" - 1/2"
Carbon steel	Carbon steel	Carbon steel	Carbon steel	Carbon steel	Carbon steel	Carbon steel
23 - 53 mm 7/8" - 2 1/16"	23 - 53 mm 7/8" - 2 1/16"	28 - 52 mm 1 1/10" - 2 1/16"	5 - 13 mm 7/32" - 1/2"	25 - 40 mm 1" - 1 9/16"	25 - 40 mm 1" - 1 9/16"	23 - 53mm 7/8" - 2 1/16"
a) 13 - 22 mm 1/2" - 7/8" b) ≥ 18 mm ≥ 3/4"	a) 30 - 57 mm 1 3/16" - 2 1/4" b) ≥ 30 mm ≥ 1 3/16"	a) 23 - 65 mm 15/16" - 2 9/16" b) ≥ 20 mm ≥ 13/16"	-	a) 23 - 38 mm 15/16" - 1 1/2" b) ≥ 30 mm ≥ 1 3/16"	a) 25 - 30 mm 1" - 1 3/16" b) ≥ 30 mm ≥ 1 3/16"	a) 18 - 30 mm 3/4" - 1 3/16" b) 18 - 100 mm 3/4" - 4"
1.9 kN 430 lb 1.2 kN 270 lb	0.8 kN 180 lb	0.8 kN 180 lb	0.8 kN 180 lb	0.8 kN 180 lb	0.6 kN 180 lb	0.8 kN 180 lb
-	-	-	-	-	-	-
5 Nm 3.7 lb ft	8 Nm 5.9 lb ft	8 Nm 5.9 lb ft	8 Nm 5.9 lb ft	8 Nm 5.9 lb ft	-	8 Nm 5.9 lb ft
S-BT: SBT 4-A22 X-ST: DX 76 PTR DX 5-GR	S-BT: SBT 4-A22 X-ST: DX 76 PTR DX 5-GR	S-BT: SBT 4-A22 X-ST: DX 5-F8	DX 5-F8	DX 5-GR	Battery drill	DX 5-GR
DNV-GL, ABS LR (Both) BV, RINA, ETA (S-BT)	DNV-GL, ABS LR (Both) BV, RINA, ETA (S-BT)	DNV-GL, ABS LR (Both) BV, RINA, ETA (S-BT)	ABS	ITB	ITB (M60 only)	ABS, LR

EXISTING INSTALLATION METHODS



Clamping

- Restricted positioning
- Poor accessibility
- Sensitivity to vibration
- Higher maintenance cost



Bolting

- Time-consuming drilling
- Risk of corrosion due to through-penetration



Welding

- Time-consuming surface preparation
- Welding grating to steel – no removability
- Cleaning and repainting



Hilti Fastening on Steel

- Easy to install
- High vibration resistance
- Easy to remove
- Large offering to cover all needs
- Approvals

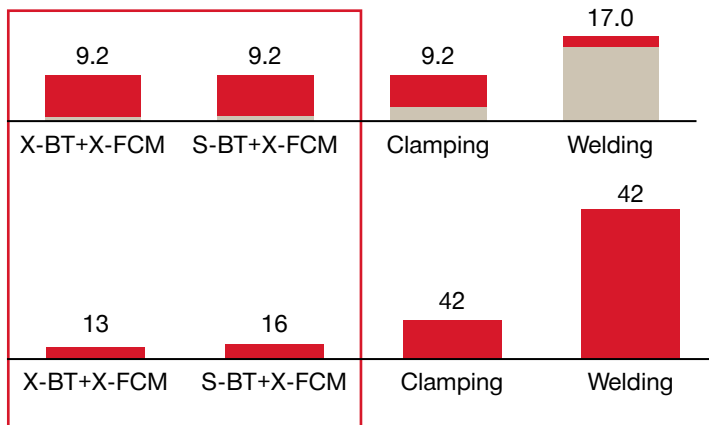
ENJOY SIGNIFICANT SAVINGS ON MATERIALS, LABOR AND TIME



- Material
- Labor



- Hours



Comparison basis

Installation in offshore (C5)
1000 fastening points (in \$thousands)

Installation time in hours for
1000 fastening points

GRATING APPLICATION APPROVALS



CE

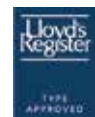


ICC-ES



DNV-GL

Lloyd's Register (LR)



Bureau Veritas (BV)



RINA



American Bureau of Shipping (ABS)



Russian Maritime Register of Shipping



GRATING PORTFOLIO

Item number	Grating disc	Grating height	Environment	Grating opening	
2351685	Grating disc X-FCM-R NG 23/28	23 - 28 mm	Highly Corrosive (C5)	13 - 21 mm	
2279757	Grating disc X-FCM-R NG 28/33	28 - 33 mm			
2279758	Grating disc X-FCM-R NG 32/37	32 - 37 mm			
2279759	Grating disc X-FCM-R NG 38/43	38 - 43 mm			
2279752	Grating disc X-FCM-R NG 48/53	48 - 53 mm			
2351686	Grating disc X-FCM-F NG 23/28	23 - 28 mm			
2279753	Grating disc X-FCM-F NG 28/33	28 - 33 mm	Mildly Corrosive (C3)	18 - 31 mm	
2279754	Grating disc X-FCM-F NG 32/37	32 - 37 mm			
2279755	Grating disc X-FCM-F NG 38/43	38 - 43 mm			
2279756	Grating disc X-FCM-F NG 48/53	48 - 53 mm			
2349132 ; 2349157	Grating disc X-FCM-R 23/28	23 - 28 mm			
2349133 ; 2349158	Grating disc X-FCM-R 28/33	28 - 33 mm			
2349134 ; 2349159	Grating disc X-FCM-R 32/37	32 - 37 mm	Highly Corrosive (C5)	18 - 44 mm	
2349135 ; 2349160	Grating disc X-FCM-R 38/43	38 - 43 mm			
2349136 ; 2349161	Grating disc X-FCM-R 48/53	48 - 53 mm			
2349122 ; 2349152	Grating disc X-FCM-F 23/28	23 - 28 mm			
2349123 ; 2349153	Grating disc X-FCM-F 28/33	28 - 33 mm			
2349124 ; 2349154	Grating disc X-FCM-F 32/37	32 - 37 mm			
2349125 ; 2349155	Grating disc X-FCM-F 38/43	38 - 43 mm	Mildly Corrosive (C3)	18 - 31 mm	
2349126 ; 2349156	Grating disc X-FCM-F 48/53	48 - 53 mm			
2349077 ; 2349147	Grating disc X-FCM 23/28	23 - 28 mm			
2349078 ; 2349148	Grating disc X-FCM 28/33	28 - 33 mm			
2349079 ; 2349149	Grating disc X-FCM 32/37	32 - 37 mm			
2349120 ; 2349150	Grating disc X-FCM 38/43	38 - 43 mm			
2349121 ; 2349151	Grating disc X-FCM 48/53	48 - 53 mm	Non Corrosive (C1)	18 - 44 mm	
2349142	Grating disc X-FCM-R 23/28 HL	23 - 28 mm			
2349143	Grating disc X-FCM-R 28/33 HL	28 - 33 mm			
2349144	Grating disc X-FCM-R 32/37 HL	32 - 37 mm			
2349145	Grating disc X-FCM-R 38/43 HL	38 - 43 mm			
2349146	Grating disc X-FCM-R 48/53 HL	48 - 53 mm			
2343288	Grating disc X-FCM-F 23/28 HL	23 - 28 mm	Highly Corrosive (C5)	18 - 44 mm	
2343289	Grating disc X-FCM-F 28/33 HL	28 - 33 mm			
2343690	Grating disc X-FCM-F 32/37 HL	32 - 37 mm			
2343691	Grating disc X-FCM-F 38/43 HL	38 - 43 mm			
2343692	Grating disc X-FCM-F 48/53 HL	48 - 53 mm			
2343690	Grating disc X-FCM-F 32/37 HL	32 - 37 mm			
2343691	Grating disc X-FCM-F 38/43 HL	38 - 43 mm			
2343692	Grating disc X-FCM-F 48/53 HL	48 - 53 mm			
2198296 ; 2198298	Saddle clip X-FCS-R-3;4-25 31/35	31 - 35 mm			
2198297 ; 2198299	Saddle clip X-FCS-R-3;4-25 37/41	37 - 41 mm			
Special	Grating disc X-FCM-M/R L	27 - 52 mm	Mildly & Highly Corrosive (C3-C5)	30 - 57 mm	
Special	Stud extension X-SEA		Mildly & Highly Corrosive (C3-C5)		
Item number	Checker plate	Grating height			
308860	Grating disc X-FCP-R 5/10	5 - 13 mm	Highly Corrosive (C5)		
308859	Grating disc X-FCP-F 5/10	5 - 13 mm	Mildly Corrosive (C3)		
308856	Sealing ring X-FCP	5 - 13 mm	Mildly & Highly Corrosive (C3-C5)		
Item number	Other grating fasteners	Grating height			
2106415 ; 2154243	Grating disc X-GR 25/30	25 - 30 mm	Mildly Corrosive (C3)	25 - 40 mm	
2106417 ; 2154241	Grating disc X-GR 35/40	35 - 40 mm		25 - 40 mm	
2106416 ; 2154243	Grating disc X-GR 1 1/4"	30 - 35 mm		25 - 40 mm	
Special	Grating disc X-GR	33 - 52 mm		23 - 38 mm	
Special	Grating disc X-GR L	33 - 52 mm		35 - 65 mm	
Special	Grating disc X-GR C	33 - 52 mm		≥ 30 mm	
384233	Grating clamp X-MGR-M60	25 - 40 mm		25 - 40 mm	
384234	Grating clamp X-MGR-W60	25 - 40 mm		25 - 40 mm	
Special	Grating disc X-FCI-M	28 - 52 mm		23 - 38 mm	
Special	Grating disc X-FCI-M L	28 - 52 mm		35 - 65 mm	
Special	Grating disc X-FCI-M C	28 - 52 mm	≥ 30 mm		
					
Item number	Fastener	Grating height			
2194344	Threaded stud X-BT-GR M8/7 SN 8	28 - 52 mm	Highly Corrosive (C5)		
2140529 ; 2302142	Threaded stud S-BT-GR (NG) M8/7 SN 6	28 - 52 mm	Highly Corrosive (C5)		
2140527 ; 2302143	Threaded stud S-BT GF (NG) M8/7 AN 6	28 - 52 mm	Mildly Corrosive (C3)		
2122460 ; 2122209	Threaded stud X-ST GR	28 - 52 mm	Mildly Corrosive (C3)		
271981 ; 271983	Threaded stud X-EM8H	28 - 52 mm	Non Corrosive (C1)		

More references available on demand - contact your Hilti representative