



Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	Hilti Corporation
Address	Feldkircherstrasse 100, 9494 Schaan, Liechtenstein
Type	Building Construction Elements
Description	New Generation Hilti X-BT-GR, X-BT-MR, X-BT-ER Threaded Fastener, X-FCM-R & X-FCS-R Grating Fastener.
Trade Name	X-BT-GR: M8/7 SN8. X-BT-MR: M10/15 SN8 W10/15 SN8 M8/14 SN8 M6/14 SN8 W6/14 SN8 M8/7 SN8. X-BT-ER: M10/7 SN8 W10/7 SN8 M8/7 SN8 M6/7 SN8 W6/7 SN8. Grating Fastener: X-FCM-R X-FCM-R HL X-FCS-R.
Application	Marine, offshore & Industrial
Specified Standard	New generation Hilti X-BT-GR, X-BT-MR and X-BT-ER Threaded Fastener Specification and Hilti Direct Fastening technology manual for Grating Fasteners.
Other Conditions	<p>This Type Approval certificate is to be read in conjunction with submitted Technical Report on the supplementary design documents.</p> <p>The minimum strength of the base material must be as stated in the Hilti X-BT-GR, X-BT-MR and X-BT-ER Threaded Fastener Specification.</p>

Fran Arguello Casteleiro

Engineering - Machinery - Specialist to Lloyd's Register EMEA
A member of the Lloyd's Register group

71 Fenchurch Street, London, EC3M 4BS, United Kingdom

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Type Approval Certificate

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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Manufacturer	Hilti Corporation			
Address	Feldkircherstrasse 100, Schaan, FL-9494, Liechtenstein			
Place of Production	New Generation Fastener X-BT Hilti Corporation, Feldkircherstrasse 100, Schaan, FL-9494, Liechtenstein			
Type	Building Construction Elements			
	X-BT-GR M8/7 SN 8	X-BT-MR M10/15 SN 8 W10/15 SN 8 M8/14 SN 8 M6/14 SN 8 M6/10 SN 8 W6/14 SN 8 W6/10 SN 8	X-BT-ER M10/7 SN 8 W10/7 SN 8 M8/7 SN 8 M6/7 SN 8 M6/3 SN 8 W6/7 SN 8 W6/3 SN 8	Grating Fastener X-FCM-R X-FCM-R-HL X-FCS-R
Description	New Generation Hilti X-BT-GR, X-BT-MR, X-BT-ER Threaded Fastener, X-FCM-R & X-FCS-R Grating Fasteners			
Trade Name	X-BT-GR, X-BT-MR, X-BT-ER Threaded Fasteners, X-FCM-R & X-FCS-R Grating Fasteners			
Application	Marine, Offshore & Industrial			
Specified Standard	New Generation Hilti X-BT-GR, X-BT-MR and X-BT-ER Threaded Fastener Specification and Hilti Direct Fastening Technology Manual for Grating Fasteners			



John Baghurst

Machinery Specialist to Lloyd's Register EMEA
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Type Approval Certificate

Other Conditions

1, This Type Approval Certificate is to be read in conjunction with the submitted Technical Report on the Supplementary Design Documents

2, The minimum strength of the base material is to be as stated in the Hilti X-BT-GR, X-BT-MR & X-BT-ER Threaded Fastener Specification

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document No. UKITSO/37417997/ENG and 19-00003-02 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

All other details remain as the previous Certificate No. 19/00003 to which this extension should be attached.

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Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

This certificate is issued to:

PRODUCER	Hilti Corporation			
PLACE OF PRODUCTION	FL-9494 Schaan Principality of Liechtenstein			
DESCRIPTION	New Generation Hilti X-BT-GR, X-BT-MR, X-BT-ER Threaded Fastener, X-FCM-R & X-FCS-R Grating Fastener			
APPLICATION	Marine, offshore & Industrial			
SPECIFIED STANDARDS	New generation Hilti X-BT-GR, X-BT-MR and X-BT-ER Threaded Fastener Specification and Hilti Direct Fastening technology manual for Grating Fasteners.			
TYPES	X-BT-GR	X-BT-MR	X-BT-ER	Grating Fastener
SIZES	M8/ 7 SN8	M10/ 15 SN8 W10/ 15 SN8 M8/ 14 SN8 M6/ 14 SN8 W6/ 14 SN8 M8/ 7 SN8	M10/ 7 SN8 W10/ 7 SN8 M8/ 7 SN8 M6/ 7 SN8 W6/ 7 SN8	X-FCM-R X-FCM-R HL X-FCS-R

- CONDITIONS**
1. This Type Approval certificate is to be read in conjunction with submitted Technical Report on the supplementary design documents.
 2. The minimum strength of the base material must be as stated in the Hilti X-BT-GR, X-BT-MR and X-BT-ER Threaded Fastener Specification.

Certificate No 19/ 00003

Issue Date 15 January 2019

Expiry Date 14 January 2024

Sheet 1 of 2



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Marine Technology & Engineering Services, Southampton
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3. The end user must ensure that the base and fastened materials possess adequate corrosion resistance for the environments in which they are to be used.
4. For use on LR Classed ships, the locations and systems for which they are to be used are to be subject to a ship specific agreement.
5. Fatigue classification in accordance with EN 1993-1-9:2005 – Eurocode 3: Design of steel structures, is equivalent to category 90 m=3 ($\Delta\sigma \leq 200$ N/mm²) and category 100 m=5,
6. The Hilti direct mechanical fastening system comprises Hilti fastening and drilling tools, drill bits and power loads.

OTHER CONDITIONS

To ensure the validity of this certificate, production facilities are to be inspected by an LR Surveyor who shall verify that the products conform to the approval documentation referenced in the Design Appraisal Document that forms part of this certificate.

“This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate.”

The Design Appraisal Document UKITSO/33750158/ENG and its supplementary Type Approval Terms and Conditions form part of this Certificate

Certificate No 19/ 00003
Issue Date 15 January 2019
Expiry Date 14 January 2024
Sheet 2 of 2



K.S. Kwon
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