



Confirmation of Product Type Approval

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product.

This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 26-SEP-2023. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Product Name: Fastening System

**Model Name(s): Grating fasteners Hilti X-FCM-R, X-FCM-R HL, X-FCM-M,
X-FCM Checker plate fasteners Hilti X-FCP-R and X-FCP-F**

Presented to:

HILTI AKTIENGESELLSCHAFT
FELDKIRCHERSTR. 100
Liechtenstein

Intended Service:

For fastening of grating or checker plate in combination with Hilti powder-actuated or screw-in threaded studs in the Marine and Offshore Industry.

Description:

Grating fasteners are made from stainless material (X-FCM-R, X-FCM-R HL), duplex coated carbon steel (X-FCM-M) or zinc plated carbon steel (X-FCM). The grating fasteners are recommended to be used in combination with Hilti powder-actuated or screw-in threaded studs: 1. X-FCM-R and X-FCM-M in combination with Hilti X-BT, Hilti X-BT-GR, Hilti X-CR or Hilti S-BT fasteners according to PDA 16-HS1545448-PDA, PDA-18-HS1755518-PDA, PDA 16-HS1545447-PDA or PDA 16-HS1550085-1-PDA. 2. X-FCM-R HL in combination with Hilti X-BT-GR M8 fastener according to PDA PDA-18-HS1755518-PDA. 3. X-FCM in combination with Hilti X-E fasteners according to PDA 16-HS1545445-PDA. 4. Checker plate fasteners are made from stainless material (X-FCP-R) or duplex coated carbon steel (X-FCP-F). The checker plate fasteners are recommended to be used in combination with Hilti X-CR powder-actuated threaded studs according to PDA 16-HS1545447-PDA.

Tier:

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Ratings:

For Rating Matrix and Product Test Reports refer to ABS Type Approval Certificate and Hilti Direct Fastening Technology Manual for each product.

Service Restrictions:

Unit Certification is not required for this product. If the manufacturer or purchaser

request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined. 1. User of these fasteners is to observe the Hilti Direct Fastening Technology Manual for application limitations, conditions and recommended load values. 2. The grating fasteners are used in combination with the Hilti threaded studs covered by: a) PDA-16-HS1545448-PDA (X-BT threaded fasteners) b) PDA-16-HS1545447-PDA (X-CRM and X-ST threaded studs) c) PDA-16-HS1545445-PDA (X-EM threaded studs) d) PDA-16-HS1550085-1-PDA (S-BT threaded fasteners) e) PDA-18-HS1755518-PDA (X-BT-GR threaded fasteners) The checker plate fasteners are used in combination with the Hilti X-CRM and X-ST threaded studs covered by PDA-16-HS1545447-PDA. Therefore, the service restrictions applicable for the threaded studs as stated in the respective PDAs have to be observed. 3. Recommended Applications and Locations: a) The securing of grating panels (X-FCM-R, X-FCM-R HL, X-FCM-M, X-FCM) b) The securing of checker plate (X-FCP-R, X-FCP-F)

Comments:

- The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. - ABS approvals are general based on the product test reports furnished by recognized institutions and laboratories which may reflect specific local conditions. If any application is in a jurisdiction where the fasteners are subject to the approval process or specific guidelines are to be followed, the approved technical data or design guidelines take precedence over technical data presented herein. - Duplicate PDA resides with WP-Worgartner Produktions GmbH - AUSTRIA.

Notes / Documentation:

Drawing No. X-FCM-R_HL part list drawings, X-FCM-R-HL part list drawings, 2018-05-23, Revision: A2, Pages: 6 Report No. XE-18-12, Evaluation report on new generation Hilti X-BT-GR, X-BT-MR and X-BT-ER threaded fasteners, Revision: -, Pages: 130 Drawing No. Hilti-DFTM-Data-sheet, X-FCM-R-HL 2018-05-22, Revision: -, Pages: 5 Report No. ACDS Test Report ID 04112018, Tension and Shear tests with the grating fastener X-FCS-R-3-25 37/41 & X-FCS-R-4-25 378/41 combined with X-BT-GR M8/7 SN 8 and base material Q235B and Q345B, Hilti (Shanghai) Ltd, May 10, 2018, Revision: -, Pages: 32 Hilti X-BT Threaded Fastener Specification, July 2015. See Attached Data Sheets.

Term of Validity:

This Product Design Assessment (PDA) Certificate 18-HS1785836-PDA, dated 27/Sep/2018 remains valid until 26/Sep/2023 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.


ABS Rules:

2018 Rules for Conditions of Classification, Part 1 – Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4 2018 Rules for Conditions of Classification, Part 1 – Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following: 2018 Mobile Offshore Drilling Units 3-2-2/11, 4-3-3/5.9

- National Standards:**
- International Standards:**
- Government Authority:**
- EUMED:**
- Others:**

Manufacturer's Standards

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	18-HS1785836-PDA	01-OCT-2018	26-SEP-2023



ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the

date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.