

# TYPE EXAMINATION CERTIFICATE

**This is to certify:  
That the Framing Channel System**

with type designation(s)  
**HL, HM, HZM**

Issued to  
**Halfen GmbH  
Langenfeld, Germany**

is found to comply with  
**EN 1993-1-1:2005 Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings**  
**EN 1090-1:2009 Execution of steel structures and aluminium structures – Part 1: Requirements for conformity assessment of structural components**

## Application :

**Products approved by this certificate are accepted for installation on all vessels, yachts and offshore units.**

**Max. axial force:** -  
**Max. working temp.:** -20°C up to 200°C  
**Sizes:** see page 2  
Issued at **Hamburg** on **2016-12-20**

This Certificate is valid until **2021-12-19**.  
DNV GL local station: **Essen**

Approval Engineer: **Peter Gierhan**

for **DNV GL**

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**Olaf Drews**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Examination Certificate and not to the approval of equipment/systems installed.

## Product description

### Framing Channel

Material: S235JR (1.0038) for HL, HM (hot-rolled, cold-rolled)  
S275JR (1.0044) for HZM (bright-rolled)  
X2CrNiMo17-12-2 (1.4404), X6CrNiMoTi17-12-2 (1.4571) for HL, HM, HZM

Size range: bright-rolled HZM 29/20 up to 53/34  
hot- cold -rolled HM 40/22 up to 72/48  
HL 28/15, 28/28  
HM 28/15, 28/28

### Bolts

HS, HSR, HZS

## Application/Limitation

The Halfen FRAMING CHANNEL SYSTEM in connection with Halfen BOLTS type HS, HSR, HZS is approved as a supporting and fixing system on ships and other structures classed by DNV GL. Type HZM and HM of hot-rolled material are approved for the installation under the influence of an increased vibration strain, type HL and HM of cold-rolled material are approved to the installation under the influence of a general vibration strain.

The selection of the FRAMING CHANNEL SYSTEM for the corresponding application and the right installation are to be in accordance with the requirements.

Load: according to table "Vibrationstests Kennlinie 1,2"

## Type Examination documentation

### Tests carried out

- Brunel P11-0437, TUD M 07 1880.1, TUD M 07 1880.2
- Verfahrensanweisung Montageschienen für den Schiffbau, Product catalog MT-FBC14
- Tabellen Vibrationstests Kennlinie 1,2

## Marking of product

For traceability to this type examination certificate, each framing channel is to be marked with:

- Type designation
- Size

## Certificate Retention Survey

A condition for retention of the Type Approval Certificate in its validity period is that periodical assessments are successfully carried out. The objective of the periodical assessment is to verify that the conditions for the type approval have not been altered. The main scope of the periodical assessment will normally include:

- Verification of the TE applicant's production and quality system w.r.t ensuring continued consistent production of the type approved products at the TE applicant's own premises and at other companies that are given the responsibility for manufacturing of the products.
- Review of the TE documentation and that this is still used as a basis for the production.
- Review of possible changes to the design, the material and the performance of the product.
- Verification of the product marking.

## END OF CERTIFICATE