

Approval of Material Manufacturers
Zulassung von Werkstoffherstellern



This is to certify that the works of
Hiermit wird bescheinigt, dass die Firma

**TORUS ACÉLTERMÉKGYÁRTÓ KFT.
KISKUNFÉLEGYHÁZA
HUNGARY**

has been subjected to an approval test in accordance with the Society's Rules with satisfactory results and is approved for the manufacture of the following products:

einer Zulassungsprüfung nach den Vorschriften des Germanischen Lloyd unterzogen wurde und für die Herstellung folgender Erzeugnisse zugelassen ist:

***Pressed Parts
in accordance with the Rules for Metallic Materials,
Chapter 2, Section 6.A***

This approval is granted provided that all products intended to be used for the construction of ships or installations classed with Germanischer Lloyd comply in every respect with the Society's Rules and Requirements.

Die Zulassung erfolgt unter der Voraussetzung, dass alle Erzeugnisse, die zum Bau von Schiffen und Anlagen mit Klasse des Germanischen Lloyd bestimmt sind, die Vorschriften des Germanischen Lloyd in jeder Hinsicht erfüllen.

Certificate of approval No.
Zulassungsbescheinigung Nr.

WZ 1714 HH 2

This Certificate is valid until:
Diese Bescheinigung ist gültig bis:

2016-06-30

Part of the approval is our letter of approval ref. no. 072004-13 of 2013-07-24.
Bestandteil der Zulassung ist das Zulassungsanschreiben, Tgb.-Nr. 072004-13 vom 2013-07-24.

Hamburg, 2013-07-24

Germanischer Lloyd

A blue ink signature, appearing to be 'M. von Busch', written over a faint circular background.

Marcus von Busch

A blue ink signature, appearing to be 'Dr. Eva Junghans', written over a faint circular background.

Dr. Eva Junghans

Ref. no.: 072004-13



Manufacturer: TORUS Acéltermékgyártó Kft.

List 11: Pressings

Grade	Key	Supply Condition (1)	max. Thickness, mm	Remarks
S235J2 acc. to EN 10025-2	BD-CF	N	8	BD-CF: cold formed heads / Diameter: max. Ø1600 mm
S235J2 acc. to EN 10025-2	BD-HF	HF	30	BD-HF: hot formed heads / Diameter: max. Ø1600 mm
S235J2 acc. to EN 10025-2	BD-HF	N	30	BD-HF: hot formed heads / Diameter: max. Ø1600 mm
P235GH acc. to EN 10028-2	BD-CF	N	8	BD-CF: cold formed heads / Diameter: max. Ø1600 mm
P265GH acc. to EN 10028-2	BD-CF	N	8	BD-CF: cold formed heads / Diameter: max. Ø1600 mm
P235GH acc. to EN 10028-2	BD-HF	HF	30	BD-HF: hot formed heads / Diameter: max. Ø1600 mm
P235GH acc. to EN 10028-2	BD-HF	N	30	BD-HF: hot formed heads / Diameter: max. Ø1600 mm
P265GH acc. to EN 10028-2	BD-HF	HF	30	BD-HF: hot formed heads / Diameter: max. Ø1600 mm
P265GH acc. to EN 10028-2	BD-HF	N	30	BD-HF: hot formed heads / Diameter: max. Ø1600 mm

Key: BD Bottoms

(1):

AC, AF, AR = as cast, as forged, as rolled
 CR = controlled rolled
 F = ferritized
 HF = hot formed
 N = normalized

N+T = normalized + tempered
 Q+T = quenched + tempered
 SH = surface hardened
 S+Q = solution annealed + quenched
 TM = thermomechanically rolled

(2):

CC = continuous casting
 IC = ingot casting

ÉRKEZÉS DÁTUMA

05. AUG 2013

TORUS KFT



Germanischer Lloyd SE • P.O. Box 11 16 06 • 20416 Hamburg/Germany

TORUS Acéltermékgyártó Kft.
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Phone +49 40 36149-0
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Your reference

Your Letter of

Our reference

Extension

Date

072004-13/EJh

+49 40 3 61 49-7449

2013-07-24

Approval of your works for the manufacture of pressed parts (prolongation)

Ladies and Gentlemen,

Thank you for your company's commitment to manufacture products with GL certification.

We refer to our Surveyor's report on the inspection of your works performed on 2013-06-20 and to his confirmation that the results of continuous delivery tests witnessed by him are in full compliance with our Rules for Materials.

Therefore the preconditions for prolongation of approval of your works granted by our letter ref. no. 085525-10 dated 2010-08-13 are complied with.

The material grades, supply conditions and dimensions / weights covered by the approval are indicated in the approval annex.

The manufacturing details covered by the approval are as follows:

1. Products

Pressed parts for pressure vessels, e.g. pressed heads and shell components fabricated from ferritic steel plates by hot and cold forming

2. Manufacturing process

Hot Forming Process

Inspection and preparation of steel plates, round blank cutting of steel plates, round blank reheating by furnace, hot pressing process by hydraulic presses with press forces up to 15 MN, heat treatment, edge trimming, mechanical preparation, non-destructive testing such as ultrasonic testing, final inspection, despatch

Cold Forming Process

Inspection and preparation of steel plates, round blank cutting of steel plates, cold forming process by dishing presses and flanging machine, heat treatment, edge trimming, mechanical preparation, non-destructive testing such as ultrasonic testing, final inspection, despatch

3. Prematerial suppliers

ISD Dunaferri Dunai Vasmű ZRt. (WZ 1296 HH), Dunaferri Lörinci Rolling Mill Ltd. (WZ 1146 HH), ThyssenKrupp Steel Europe AG (WZ 817 HH), ArcelorMittal Poland S.A, Oddział w Krakowie (WZ 2169 HH) or other GL-approved material manufacturer



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Chairman of the Supervisory Board: Dr Wolfgang Peiner • Executive Board: Erik van der Noordaa (Chairman) • Dr. Joachim Segatz • Pekka Paasivaara
Germanischer Lloyd SE, Registered Office Hamburg, HRB 115442

Place of performance and jurisdiction is Hamburg. The latest edition of the General Terms and Conditions of Germanischer Lloyd is applicable. German law applies.

4. Fabrication welding

Not permitted

5. Particulars

- 1) Non-destructive testing such as ultrasonic testing and metallographic tests by external laboratory POWERTEST Kereskedelmi és Szolgáltató Kft., Budapest (Hungary)
- 2) Subject to approval of GL, heat treatment condition for the manufacture of hot formed heads is in accordance with the GL-Rules for Metallic Materials, Chapter 2, Section 6.A, Item 6.1.1 and 6.1.4.

Our approval is granted under provision that all pressed parts intended to be used for the construction of ships classed with our Society will comply with our Rules in all respects and will be tested in the presence of our Surveyor.

The quality of your company's manufactured products, within the valid approved scope, contributes to the safety and reputation of GL classed ships.

Your company has been added to the list of approved manufacturers, which is regularly published on the Internet. In order to view the appropriate data start the GL website <http://www.gl-group.com>, from the menu "GL Tools" select "Approval Finder", and then "Manufacturers of Materials".

Enclosed please find our certificate of approval no. **WZ 1714 HH 2**, valid until 2016-06-30, as well as the corresponding annex.

We thank you for your cooperation and wish your company every success.

Yours faithfully,

Germanischer Lloyd



Marcus von Busch



Dr. Eva Junghans