

DNV GL SE • P.O. Box 11 16 06 • 20416 Hamburg • Germany

VULKAN Technologies Pvt. Ltd.  
Attn. Mr. C. M. Kulkarni  
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Taluka Mulshi, District Pune  
Maharashtra 411 042  
India

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Your reference	Your Letter of	Our reference	Extension	Date
		024968-15/CWdg	+49 40 3 61 49-5924	2015-04-23

## Approval of your works for the manufacture of steel castings as well as castings made from nodular cast iron (prolongation)

Dear Mr. C. M. Kulkarni,

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 2015-02-20 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. 083903-14 dated 2014-10-01 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

Steel castings which are intended for the manufacture of components and structural parts in machine construction and shipbuilding as well as nodular cast iron for the manufacture of machinery and pipeline components, e.g. fittings, flanges, housings, hubs

### 2. Manufacturing process

Pattern making, receipt and melting of raw material in medium frequency induction furnaces, refining or mg-treatment (nodular cast iron), pouring (sand cast), cleaning, heat treatment in LPG fired heat treatment furnaces (steel castings), final machining, inspection including non-destructive testing (NDT) such as ultrasonic testing (UT), dye penetrant inspection (PT) and visual inspection (VT)

### 3. Fabrication welding

Not permitted

### 4. Particulars

Metallographic tests: subcontracted to Metallurgical Services, Ghatkopar.

Our approval is granted under provision that all castings 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 DNV GL website <http://www.dnvgl.com> , choose

"Maritime", "Exchange & Tools", menu "GL Tools", select "Approval Finder", and then "Manufacturers of Materials".

Enclosed please find our certificate of approval no. **WZ 2517 HH 2**, valid until 2018-08-31, as well as the corresponding annex.

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

Yours faithfully,

for DNV GL SE

  
Stefan Röhr

  
Christian Wildhagen

# Approval of Material Manufacturers

## Zulassung von Werkstoffherstellern

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

**VULKAN TECHNOLOGIES PVT. LTD.**  
**DISTRICT PUNE, MAHARASHTRA**  
**INDIA**

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

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

**Steel Castings for Machine Construction and Shipbuilding**  
**in accordance with the GL-Rules for Metallic Materials,**  
**Chapter 2, Section 4, B.**

**Nodular Cast Iron**  
**in accordance with the GL-Rules for Metallic Materials,**  
**Chapter 2, Section 5, B.**

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

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

Certificate of approval No.  
Zulassungsbescheinigung Nr.

WZ 2517 HH 2

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

2018-08-31

Part of the approval is our letter of approval ref. no. 024968-15 of 2015-04-23.  
Bestandteil der Zulassung ist das Zulassungsansprechen, Tgb.-Nr. 024968-15 vom 2015-04-23.

Hamburg, 2015-04-23

**DNV GL SE**

  
Stefan Röhr

  
Christian Wildhagen

Ref. no.: 024968-15

Manufacturer: VULKAN Technologies Pvt. Ltd.

**List 4: Cast Steel**

Grade	Key	Supply Condition (1)	max. Wall Thickness, mm	max. Weight	Casting Method (2)	Remarks
G26CrMo4 acc. to EN 10293	SA	N+T / Q+T	50	250 kg	sand mould	
GS-25CrMo4 acc. to DIN 17205	SA	N+T / Q+T	50	250 kg	sand mould	

Key: -A Austenitic cast steel KZ Cast steel for low temp NR Stainless cast alloy SA Cast steel for common use  
 SO Special cast alloy WF Cast steel for elevated temp.

**List 5: Cast Iron**

Grade	Key	Supply Condition (1)	max. Thickness, mm	max. Weight	Casting Method (2)	Remarks
EN-GJS-400-15 acc. to EN 1563	GGG	AC	130	350 kg		
EN-GJS-450-10 acc. to EN 1563	GGG	AC	130	350 kg		

Key: GG Grey cast iron GGG Nodular cast iron

(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