

Approval of Material Manufacturers
Zulassung von Werkstoffherstellern



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

**PJSC Electrometallurgical Works Dneprospetsstal
named after A.N. Kuzmin
Zaporozhye
Ukraine**

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:*

**Steelmaking and Rolled Products
in accordance with the GL-Rules for Metallic Materials,
Chapter 2, Section 1**

**Steel Forgings
in accordance with the GL-Rules for Metallic Materials,
Chapter 2, Section 3**

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 969 HH 6

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

2015-12-31

Part of the approval is our letter of approval ref. no. 005004-13 of 2013-01-16.
Bestandteil der Zulassung ist das Zulassungsanschreiben, Tgb.-Nr. 005004-13 vom 2013-01-16.

Hamburg, 2013-01-16

Germanischer Lloyd

i.A.
Stefan Röhr

i.A.
Oliver Krömer



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

PJSC Electrometallurgical Works Dnepropetsstal
named after A.N. Kuzmin
Attn. Mr. I. A. Alfiorov
Yuzhnoe Shosse, 81
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Ukraine

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Your reference	Your Letter of	Our reference	Extension	Date
	2013-01-15	005004-13/OKoe	+49 40 3 61 49-4561	2013-01-16

Approval of your works for the manufacture of semi-finished products and steel bars (prolongation)

Dear Mr. Alfiorov,

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 2013-01-13 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. 064775-11 dated 2011-06-10 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

Semi-finished products such as raw ingots, rolled and forged bars made of unalloyed, low alloy and austenitic stainless steels for further processing to final products which are intended for the construction, repair and equipping of ships, offshore installations and other structures which are classified by GL or whose classification has been applied for; hot rolled steel bars made of unalloyed steels with minimum nominal yield strengths up to and including 355 N/mm² which are to be used for welded structures, e.g. in machinery manufacture or in shipbuilding; hot rolled steel bars which are given their final shape by machining made of unalloyed and low alloy steels intended for the manufacture of components and structural parts in machine construction and shipbuilding; open die forged and hot rolled steel bars which are given their final shape by machining made of austenitic stainless steels intended for the fabrication of cargo tanks of chemical tankers, pressure vessels and other vessels, for which chemical stability in relation to the cargo or operating fluid is required, and also for sleeves of rudderstocks, rudder pintles, propeller shafts etc. which are required to be seawater resistant; open die forged and hot rolled steel bars which are given their final shape by machining made of austenitic stainless steels intended for boilers, pressure vessels, process equipment and pipelines as well as open die forged and hot rolled steel bars which are given their final shape by machining made of austenitic stainless steels with specified low temperature properties intended to be used for cargo and processing equipment on gas tankers at design temperatures below 0°C

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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.



2. Dimensions

Forged Bars

Diameter: Ø180 - Ø325 mm

Length: max. 6,500 mm

Weight: max. 4,500 kg

Rolled Bars

Diameter: Ø8 - Ø280 mm

Length: max. 18,000 mm

Raw Ingots

Weight: max. 7,400 kg

3. Manufacturing process

Steel Making Shop No.2

Electric arc furnace (EAF), secondary metallurgy by ladle furnace (LF), vacuum treatment by tank degasser (VD), ingot casting with bottom pouring for ingot weights up to 7,400 kg, cutting, grinding, marking, stamping, final inspection, despatch

Steel Making Shop No.3

Electric arc furnace (EAF), converter refining process by Argon Oxygen Decarburization (AOD), secondary metallurgy by ladle furnace (LF), ingot casting with bottom pouring for ingot weights up to 7,400 kg, cutting, grinding, marking, stamping, final inspection, despatch

Blooming Mill (Diameter: Ø130 - Ø280 mm)

Inspection and preparation of raw material, reheating of steel ingots by recuperative soaking pit furnace, descaling by high water pressure, hot rolling process by 2-high reversible 1050 / 950 Blooming Mill Unit, cutting by hot saw machine, cooling by cooling bed, 1st inspection, heat treatment, 2nd inspection, straightening by hydraulic press leveller, shot blasting, machining by straightening, peeling and / or grinding, non-destructive testing (NDT) such as ultrasonic testing (UT), magnetic particle inspection (MT) and / or visual inspection (VT), weight testing, marking, stamping, packaging, final inspection, despatch

Section Mill (Diameter: Ø8 - Ø130 mm)

Inspection and preparation of raw material, reheating of semi-finished billets by reheating furnace, descaling by high water pressure, hot rolling process by 3-high reversible 550 Section Mill Unit, 325 Section Mill Unit and / or 280 Section Mill Unit, cutting by hot saw machine, cooling by cooling bed, 1st inspection, heat treatment, 2nd inspection, straightening by hydraulic press leveller, shot blasting, machining by straightening, peeling and / or grinding, non-destructive testing (NDT) such as ultrasonic testing (UT), magnetic particle inspection (MT) and / or visual inspection (VT), weight testing, marking, stamping, packaging, final inspection, despatch

Forging Press Shop (Diameter: Ø180 - Ø325 mm)

Inspection and preparation of raw material, reheating of steel ingots by chamber-type furnace, open die forging process / upsetting process by hydraulic forging presses with forces of 32 MN and 60 MN equipped with manipulators of carrying capacity of 5,000 kg and / or 10,000 kg, 1st inspection, cutting, heat treatment, 2nd inspection, machining by straightening, peeling and grinding, non-destructive testing (NDT) such as ultrasonic testing (UT), magnetic particle inspection (MT) and / or visual inspection (VT), weight testing, marking, stamping, packaging, final inspection, despatch

3. Prematerial suppliers

Only material manufacturers which are approved by GL for the relevant products

4. Fabrication welding

Not permitted

6. Particulars

Steel grades of unalloyed, low alloy and austenitic stainless steels cover the supply of raw ingots, rolled and forged bars for processing into final products which are intended for the construction, repair and equipping of ships, offshore installations and other structures which are classified by GL or whose classification has been applied for in accordance with the GL-Rules for Metallic Materials incl. austenitic stainless steel pipes with specified low temperature properties intended for the cargo and processing equipment of gas tankers with design temperatures below 0°C in accordance with the GL-Rules for Metallic Materials, Chapter 2, Section 2.D and / or austenitic stainless steel pipes to be used for the cargo and processing equipment on chemical tankers and for other lines, vessels and equipment where chemical stability is required in accordance with the GL-Rules for Metallic Materials, Chapter 2, Section 2.E. The final processing mill is responsible for ordering steel which complies with their GL-approved chemical composition and enables them to achieve the required mechanical properties.

Our approval is granted under provision that all bars intended to be used for the outfit 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 969 HH 6**, valid until 2015-12-31, as well as the corresponding annex.

Please kindly be informed that the Directive of the Council of the European Community of 21 December 1988 (89/106/EEC) on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products, in short Construction Products Directive, changed by Council Directive 93/68/EEC of 22 July 1993, regulates the placing on the market and the free trade of construction products. The purpose of this directive is to abolish trade barriers for construction products on the European market and to create a uniform market for these products. In order to guarantee this, the Construction Products Directive is based on the following four elements:

- A system of harmonized technical specifications,
- A harmonized system of conformity certification for the various products,
- Requirement specifications and tasks of notified certification bodies,
- CE marking of construction products.

The basis for carrying out a CE conformity proof is, as described above, a harmonized European product specification. In the field of hot rolled structural steels for steelwork applications this requirement is fulfilled by EN 10025 (2004), i.e. EN 10025-2: Hot rolled products of structural steels - Part 2: Technical delivery conditions for unalloyed structural steels in our particular case.

That means in effect that these unalloyed steels with minimum nominal yield strengths up to and including 355 N/mm² which are to be used for welded structures, e.g. in machinery manufacture or in shipbuilding in accordance with the GL-Rules for Metallic Materials, Chapter 2, Section 1.C for which your company are approved by GL with existing certificate of approval, an evaluation of conformity and a CE marking can be carried according to the European Construction Products Directive.

On the part of the manufacturer of such steel products the following measures have to be taken within the context of the declaration of conformity:

- Establishment of a factory production control by the manufacturer in order to monitor parameters necessary for all the specified properties,
- Initial type testing of the construction product's properties,
- Testing of samples taken by the manufacturer,
- Initial inspection of factory and factory product control under the responsibility of a notified certification body,
- Continuous surveillance, assessment and approval of factory product control under the responsibility of a notified certification body

For steel products according to EN 10025 (2004), CE marking is possible after EN 10025 has been published in the Official Journal of the European Union. Until 31 August 2006 existing national regulations contradictory to the standard will have to be withdrawn and CE marking for these products has to be implemented in every European country. Using construction products which were produced and placed on the market prior to 31 August 2006 according to former regulations, may still be possible for an extended period, depending on the national regulations.

Please kindly be informed that Germanischer Lloyd receives permission to act as Notified Body under the European Construction Products Directive (CPD). In course of the further implementation of the CPD GL became a Notified Body for the initial certification and continuous surveillance, assessment and approval of the Factory Production Control (FPC). Please consider this opportunity to receive the relevant certification from GL. If you would like any further information, attached please find our CE Update cover letter regarding the GL Services for the Manufacturers of Construction Products.

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

Yours faithfully,

Germanischer Lloyd


Stefan Röhr


Oliver Krömer

Ref. no.: 005004-13



**Manufacturer: PJSC Electrometallurgical Works
Dneprospetsstal
named after A.N. Kuzmin**

List 1: Plates, Strips, Sections and Bars, Prematerial

Grade Remarks	Key	Supply Condition (1)	min. Thick- ness, mm	max. Thick- ness, mm	Casting Method (2)	Deoxidation	Microalloy
S235J0 acc. to EN 10025-2	ST	acc. to standard	8	280	IC	killed	acc. to standard
S235J2 acc. to EN 10025-2	ST	acc. to standard	8	280	IC	killed	acc. to standard
S235JR acc. to EN 10025-2	ST	acc. to standard	8	280	IC	killed	acc. to standard
S275J0 acc. to EN 10025-2	ST	acc. to standard	8	280	IC	killed	acc. to standard
S275J2 acc. to EN 10025-2	ST	acc. to standard	8	280	IC	killed	acc. to standard
S275JR acc. to EN 10025-2	ST	acc. to standard	8	280	IC	killed	acc. to standard
S355J0 acc. to EN 10025-2	ST	acc. to standard	8	280	IC	killed	acc. to standard
S355J2 acc. to EN 10025-2	ST	acc. to standard	8	280	IC	killed	acc. to standard
S355JR acc. to EN 10025-2	ST	acc. to standard	8	280	IC	killed	acc. to standard
S355K2 acc. to EN 10025-2	ST	acc. to standard	8	280	IC	killed	acc. to standard
C22E acc. to EN 10083-2	ST	N, Q+T	8	280	IC	killed	acc. to standard
C22R acc. to EN 10083-2	ST	N, Q+T	8	280	IC	killed	acc. to standard
C35 acc. to EN 10083-2	ST	N, Q+T	8	280	IC	killed	acc. to standard
C35E acc. to EN 10083-2	ST	N, Q+T	8	280	IC	killed	acc. to standard
C35R acc. to EN 10083-2	ST	N, Q+T	8	280	IC	killed	acc. to standard
C40E acc. to EN 10083-2	ST	N, Q+T	8	280	IC	killed	acc. to standard
C40R acc. to EN 10083-2	ST	N, Q+T	8	280	IC	killed	acc. to standard
C45 acc. to EN 10083-2	ST	N, Q+T	8	280	IC	killed	acc. to standard
C45E acc. to EN 10083-2	ST	N, Q+T	8	280	IC	killed	acc. to standard

(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

Ref. no.: 005004-13



**Manufacturer: PJSC Electrometallurgical Works
Dnepropetsstal
named after A.N. Kuzmin**

Grade Remarks	Key	Supply Condition (1)	min. Thick- ness, mm	max. Thick- ness, mm	Casting Method (2)	Deoxidation	Microalloy
C45R acc. to EN 10083-2	ST	N, Q+T	8	280	IC	killed	acc. to standard
25CrMo4 acc. to EN 10083-3	ST	Q+T	8	280	IC	killed	acc. to standard
25CrMoS4 acc. to EN 10083-3	ST	Q+T	8	280	IC	killed	acc. to standard
34CrMo4 acc. to EN 10083-3	ST	Q+T	8	280	IC	killed	acc. to standard
34CrMoS4 acc. to EN 10083-3	ST	Q+T	8	280	IC	killed	acc. to standard
42CrMo4 acc. to EN 10083-3	ST	Q+T	8	280	IC	killed	acc. to standard
42CrMoS4 acc. to EN 10083-3	ST	Q+T	8	280	IC	killed	acc. to standard
16MnCr5 acc. to EN 10084	ST	Q+T	8	280	IC	killed	acc. to standard
16MnCrS5 acc. to EN 10084	ST	Q+T	8	280	IC	killed	acc. to standard
20MnCr5 acc. to EN 10084	ST	Q+T	8	280	IC	killed	acc. to standard
20MnCrS5 acc. to EN 10084	ST	Q+T	8	280	IC	killed	acc. to standard
20NiCrMo2-2 acc. to EN 10084	ST	Q+T	8	280	IC	killed	acc. to standard
20NiCrMoS2-2 acc. to EN 10084	ST	Q+T	8	280	IC	killed	acc. to standard
1.4301 acc. to EN 10088-3	ST	S+Q	8	220	IC	killed	acc. to standard
1.4301 acc. to EN 10272	ST	S+Q	8	220	IC	killed	acc. to standard
1.4306 acc. to EN 10088-3	ST	S+Q	8	220	IC	killed	acc. to standard
1.4306 acc. to EN 10272	ST	S+Q	8	220	IC	killed	acc. to standard
1.4307 acc. to EN 10088-3	ST	S+Q	8	220	IC	killed	acc. to standard
1.4307 acc. to EN 10272	ST	S+Q	8	220	IC	killed	acc. to standard

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**Manufacturer: PJSC Electrometallurgical Works
Dneprospetsstal
named after A.N. Kuzmin**

Grade Remarks	Key	Supply Condition (1)	min. Thick- ness, mm	max. Thick- ness, mm	Casting Method (2)	Deoxidation	Microalloy
1.4401 acc. to EN 10088-3	ST	S+Q	8	220	IC	killed	acc. to standard
1.4401 acc. to EN 10272	ST	S+Q	8	220	IC	killed	acc. to standard
1.4404 acc. to EN 10088-3	ST	S+Q	8	220	IC	killed	acc. to standard
1.4404 acc. to EN 10272	ST	S+Q	8	220	IC	killed	acc. to standard
1.4435 acc. to EN 10088-3	ST	S+Q	8	220	IC	killed	acc. to standard
1.4435 acc. to EN 10272	ST	S+Q	8	220	IC	killed	acc. to standard
1.4436 acc. to EN 10088-3	ST	S+Q	8	220	IC	killed	acc. to standard
1.4436 acc. to EN 10272	ST	S+Q	8	220	IC	killed	acc. to standard
1.4541 acc. to EN 10088-3	ST	S+Q	8	220	IC	killed	acc. to standard
1.4541 acc. to EN 10272	ST	S+Q	8	220	IC	killed	acc. to standard
1.4550 acc. to EN 10088-3	ST	S+Q	8	220	IC	killed	acc. to standard
1.4550 acc. to EN 10272	ST	S+Q	8	220	IC	killed	acc. to standard
1.4571 acc. to EN 10088-3	ST	S+Q	8	220	IC	killed	acc. to standard
1.4571 acc. to EN 10272	ST	S+Q	8	220	IC	killed	acc. to standard
304 acc. to ASTM A276	ST	S+Q	8	220	IC	killed	acc. to standard
304 acc. to ASTM A479	ST	S+Q	8	220	IC	killed	acc. to standard
304L acc. to ASTM A276	ST	S+Q	8	220	IC	killed	acc. to standard
304L acc. to ASTM A479	ST	S+Q	8	220	IC	killed	acc. to standard
316 acc. to ASTM A276	ST	S+Q	8	220	IC	killed	acc. to standard

(1):

AC, AF, AR = as cast, as forged, as rolled
CR = controlled rolled
F = ferritized
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**Manufacturer: PJSC Electrometallurgical Works
Dnepropetsstal
named after A.N. Kuzmin**

Grade Remarks	Key	Supply Condition (1)	min. Thick- ness, mm	max. Thick- ness, mm	Casting Method (2)	Deoxidation	Microalloy
316 acc. to ASTM A479	ST	S+Q	8	220	IC	killed	acc. to standard
316L acc. to ASTM A276	ST	S+Q	8	220	IC	killed	acc. to standard
316L acc. to ASTM A479	ST	S+Q	8	220	IC	killed	acc. to standard
316Ti acc. to ASTM A276	ST	S+Q	8	220	IC	killed	acc. to standard
316Ti acc. to ASTM A479	ST	S+Q	8	220	IC	killed	acc. to standard
321 acc. to ASTM A276	ST	S+Q	8	220	IC	killed	acc. to standard
321 acc. to ASTM A479	ST	S+Q	8	220	IC	killed	acc. to standard
347 acc. to ASTM A276	ST	S+Q	8	220	IC	killed	acc. to standard
347 acc. to ASTM A479	ST	S+Q	8	220	IC	killed	acc. to standard
C- & C-Mn Steels	HZ	AR	8	280	IC	killed	acc. to standard
Alloy Steels	HZ	AR	8	280	IC	killed	acc. to standard
Austenitic Stainless Steels	HZ	AR	8	220	IC	killed	acc. to standard

Key: BD Strip BF Wide Flats BL Plate FO Sections HZ Prematerial (Ingots, Slabs, Billets) ST Bars WFS Bulbflatbars

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Q+T = quenched + tempered
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S+Q = solution annealed + quenched
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Ref. no.: 005004-13

**Manufacturer: PJSC Electrometallurgical Works
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named after A.N. Kuzmin

List 3: Forgings

Grade	Key	Supply Condition (1)	max. Thickness, mm	max. Weight	Remarks
1.4301 acc. to EN 10222-5	ST	S+Q	325	4500 kg	
1.4301 acc. to EN 10250-4	ST	S+Q	325	4500 kg	
1.4306 acc. to EN 10222-5	ST	S+Q	325	4500 kg	
1.4306 acc. to EN 10250-4	ST	S+Q	325	4500 kg	
1.4307 acc. to EN 10222-5	ST	S+Q	325	4500 kg	
1.4307 acc. to EN 10250-4	ST	S+Q	325	4500 kg	
1.4404 acc. to EN 10222-5	ST	S+Q	325	4500 kg	
1.4404 acc. to EN 10250-4	ST	S+Q	325	4500 kg	
1.4435 acc. to EN 10222-5	ST	S+Q	325	4500 kg	
1.4435 acc. to EN 10250-4	ST	S+Q	325	4500 kg	
1.4436 acc. to EN 10222-5	ST	S+Q	325	4500 kg	
1.4436 acc. to EN 10250-4	ST	S+Q	325	4500 kg	
1.4541 acc. to EN 10222-5	ST	S+Q	325	4500 kg	
1.4541 acc. to EN 10250-4	ST	S+Q	325	4500 kg	
1.4550 acc. to EN 10222-5	ST	S+Q	325	4500 kg	
1.4550 acc. to EN 10250-4	ST	S+Q	325	4500 kg	
1.4571 acc. to EN 10222-5	ST	S+Q	325	4500 kg	
1.4571 acc. to EN 10250-4	ST	S+Q	325	4500 kg	
304 acc. to ASTM A276	ST	S+Q	325	4500 kg	
304 acc. to ASTM A479	ST	S+Q	325	4500 kg	
304L acc. to ASTM A276	ST	S+Q	325	4500 kg	
304L acc. to ASTM A479	ST	S+Q	325	4500 kg	
316 acc. to ASTM A276	ST	S+Q	325	4500 kg	
316 acc. to ASTM A479	ST	S+Q	325	4500 kg	
316L acc. to ASTM A276	ST	S+Q	325	4500 kg	
316L acc. to ASTM A479	ST	S+Q	325	4500 kg	
316TI acc. to ASTM A276	ST	S+Q	325	4500 kg	
316TI acc. to ASTM A479	ST	S+Q	325	4500 kg	
321 acc. to ASTM A276	ST	S+Q	325	4500 kg	
321 acc. to ASTM A479	ST	S+Q	325	4500 kg	
347 acc. to ASTM A276	ST	S+Q	325	4500 kg	
347 acc. to ASTM A479	ST	S+Q	325	4500 kg	

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S+Q = solution annealed + quenched
TM = thermomechanically rolled

(2):

CC = continuous casting
IC = ingot casting

Ref. no.: 005004-13



**Manufacturer: PJSC Electrometallurgical Works
Dnepropetsstal**
named after A.N. Kuzmin

Grade	Key	Supply Condition (1)	max. Thickness, mm	max. Weight	Remarks
C- & C-Mn Steels	HZ	AC		7400 kg	
Alloy Steels	HZ	AC		7400 kg	
Austenitic Stainless Steels	HZ	AC		7400 kg	
Austenitic Stainless Steels	HZ	AF	325	4500 kg	

Key: FA Fibre Flow Forging FF Hammer Forging GE Die Forging HZ Prematerial ST Forged Bars

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