



**CERTIFICATE OF APPROVAL OF MANUFACTURERS OF
MATERIALS**
No. FAB181320XG/001

This is to certify that the manufacture of the product identified below is in compliance with the applicable requirements of the RINA Rules for the Approval of Manufacturers of Materials.

<i>Description</i>	Hot Rolled Steel Plates
<i>Type</i>	Rolled steel for structural application (normal strength and higher strength hull steel plates).
<i>Manufacturer</i>	ILSENBURGER GROBBLECH GMBH
<i>Place of manufacture</i>	Veckenstedter Weg 10 38871 Ilsenburg Germany
<i>Reference standards</i>	RINA Rules for the approval of manufacturers of materials

Issued in **HAMBURG** on **July 1, 2020**. This Certificate is valid until **June 30, 2025**



T. Wilmsmann

RINA Services S.p.A.
Tobias Wilmsmann

This certificate consists of this page and 1 enclosure





CERTIFICATE OF APPROVAL OF MANUFACTURERS OF MATERIALS

No. FAB181320XG/001

Enclosure - Page 1 of 1

Rolled steel for structural application (normal strength and higher strength hull steel plates).

APPROVAL CONDITIONS

Steel making process and deoxidation practice : basic oxygen process, fully killed, fine grained steel.

Casting process : CC = continuous casting.

Condition of supply and thickness:



Normal strength steel

Grade (*1)	Product	Steel-making	Max. Thickness [mm]	Heat treatment condition
A-B-D	Plate	CC	40	NR
A-B-D-E	Plate	CC	150	N
A-B-D-E	Plate	CC	25	TM

Higher strength steel

Grade	Product	Steel-making	Max. Thickness [mm]	Heat treatment condition
AH32-AH36, DH32-DH36	Plate	CC	40	NR
EH32S-EH36S (*2)	Plate	CC	40	NR
AH40-DH40- EH40	Plate	CC	20	N
AH32-AH36- DH32-DH36	Plate	CC	150	N
EH32-EH36- FH32-FH36	Plate	CC	150	N
AH32-AH36- DH32-DH36	Plate	CC	120	TM
EH32-EH36	Plate	CC	120	TM
FH32-FH36	Plate	CC	120	TM
AH40-DH40- EH40-FH40	Plate	CC	120	TM

(*1) The approval is valid also for equivalent structural steel grades acc. to EN 10025 and specified through thickness properties (Z25 / Z35)

(*2) S - special designation

Survey conditions:

The plates are to be in compliance in all respects with the relevant RINA rules and are to be tested accordingly.

General conditions for the approval

-The approval is granted on condition that the RINA Rules for the approval, manufacture, testing and certification of materials are complied with in all respects.

-RINA is to be notified of any change of materials, manufacturing process, quality control routines that may affect the validity of this certificate.

Ilsenburger Grobblech GmbH is authorized to carry out inspection on his own responsibility acc. to valid Alternative Testing Scheme (ATS).



**CERTIFICATE OF APPROVAL OF MANUFACTURERS OF
MATERIALS**
No. FAB181320XG/002

This is to certify that the manufacture of the product identified below is in compliance with the applicable requirements of the RINA Rules for the Approval of Manufacturers of Materials.

<i>Description</i>	Hot Rolled Steel Plates
<i>Type</i>	Ferritic steel plates for low temperature service. 13MnNi63 corresponding to RINA steel grade 510LF
<i>Manufacturer</i>	ILSENBURGER GROBBLECH GMBH
<i>Place of manufacture</i>	Veckenstedter Weg 10 38871 Ilsenburg Germany
<i>Reference standards</i>	RINA Rules for the approval of manufacturers of materials

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CERTIFICATE OF APPROVAL OF MANUFACTURERS OF MATERIALS

No. FAB181320XG/002

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Ferritic steel plates for low temperature service. 13MnNi63 corresponding to RINA steel grade 510LF

APPROVAL CONDITIONS

Steel making process : basic oxygen process.

Casting process: CC = continuous casting.

Deoxidation practice: fully killed, fine grained steel.

Chemical composition: in accordance with the RINA Rules (Part D and E).

Mechanical properties and testing: in accordance with the RINA Rules (Part D and E) in relation to the minimum design temperature, the thickness and the products to be carried out.

Condition of supply: normalized.

Maximum thickness: 50 mm.

Survey conditions:

The plates are to be in compliance in all respects with the relevant RINA Rules and are to be tested accordingly.

General conditions for the approval

-The approval is granted on condition that the RINA Rules for the approval, manufacture, testing and certification of materials are complied with in all respects.

-RINA is to be notified of any change of materials, manufacturing process, quality control routines that may affect the validity of this certificate.

Ilseburger Grobblech GmbH is authorized to carry out inspection on his own responsibility acc. to valid Alternative Testing Scheme (ATS).

HAMBURG 01.07.2020



**CERTIFICATE OF APPROVAL OF MANUFACTURERS OF
MATERIALS**
No. FAB181320XG/003

This is to certify that the manufacture of the product identified below is in compliance with the applicable requirements of the RINA Rules for the Approval of Manufacturers of Materials.

<i>Description</i>	Ferritic steel plates for low temperature service
<i>Type</i>	RINA Ni alloy steel type 1,5Ni 3,5Ni 5,0Ni and 9,0Ni
<i>Manufacturer</i>	ILSENBURGER GROBBLECH GMBH
<i>Place of manufacture</i>	Veckenstedter Weg 10 38871 Ilsenburg Germany
<i>Reference standards</i>	RINA Rules for the approval of manufacturers of materials

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No. FAB181320XG/003

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RINA Ni alloy steel type 1,5Ni 3,5Ni 5Ni and 9Ni

APPROVAL CONDITIONS

Steel making process: basic oxygen process.

Casting process: continuous casting.

Deoxidation practice: fully killed, fine grained steel

Mechanical properties, and survey conditions: the plates are to comply in all respects with the RINA Rules (Part D and Part E) in relation to the minimum design temperature and relevant thickness and are to be tested accordingly.

Condition of supply and thickness:

Grade	Grade acc. to EN 10028-4	Product	Steel-making	Max. Thickness [mm]	Heat treatment condition
1,5 Ni	15NiMn6	Plate	BOC, CC	50	Q+T
3,5 Ni	12Ni14	Plate	BOC, CC	40	N
				50	Q+T
5,0 Ni	X12Ni5	Plate	BOC, CC	40	N
				50	Q+T
9,0 Ni	X8Ni9+NT640	Plate	BOC, CC	40	N+N+T
	X8Ni9+QT640	Plate	BOC, CC	50	Q+T
	X8Ni9+NT680	Plate	BOC, CC	50	Q+T

General conditions for the approval

-The approval is granted on condition that the RINA Rules for the approval, manufacture, testing and certification of materials are complied with in all respects.

-RINA is to be notified of any change of materials, manufacturing process, quality control routines that may affect the validity of this certificate.

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HAMBURG 01.07.2020

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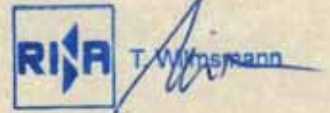
**CERTIFICATE OF APPROVAL OF MANUFACTURERS OF
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No. FAB181320XG/004

This is to certify that the manufacture of the product identified below is in compliance with the applicable requirements of the RINA Rules for the Approval of Manufacturers of Materials.

<i>Description</i>	Steel plates for boilers, pressure vessels and low temperature service
<i>Type</i>	C-Mn steels grades: 360 - 410 - 460 - 510 - types HA-HB-HD Low alloy steel grades: 0,3Mo-1Cr0,5Mo-2,25Cr1Mo
<i>Manufacturer</i>	ILSENBURGER GROBBLECH GMBH
<i>Place of manufacture</i>	Veckenstedter Weg 10 38871 Ilsenburg Germany
<i>Reference standards</i>	RINA Rules for the approval of manufacturers of materials

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No. FAB181320XG/004

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C-Mn steels grades: 360 - 410 - 460 - 510 - types HA-HB-HD

Low alloy steel grades: 0,3Mo-1Cr0,5Mo-2,25Cr1Mo

APPROVAL CONDITIONS

Steel making process: basic oxygen process.

Casting process: continuous casting.

Deoxidation practice, chemical composition, mechanical properties, condition of supply and survey conditions: the plates are to comply in all respects with the relevant RINA Rules (Part D, Ch2, Sect.I, para.4 and 5) and are to be tested accordingly.

Maximum thickness: 60 mm

The approval is valid also for the equivalent pressure vessel steel grades according to EN 10028

General conditions for the approval

-The approval is granted on condition that the RINA Rules for the approval, manufacture, testing and certification of materials are complied with in all respects.

-RINA is to be notified of any change of materials, manufacturing process, quality control routines that may affect the validity of this certificate.

Ilseburger Grobblech GmbH is authorized to carry out inspection on his own responsibility acc. to valid Alternative Testing Scheme (ATS).

HAMBURG July 1, 2020