



TÜRK LOYDU

TYPE APPROVAL CERTIFICATE

This Certificate consists of 2 pages.

This is to certify that the

NORMAL AND HIGHER STRENGTH HULL STRUCTURAL STEELS

With type designations

TL-A, TL-B, TL-D [CR (NR)]
 TL-AZ35, TL-BZ35, TL-DZ35 (TM)
 TL-A32Z35, TL-D32Z35, TL-E32Z35 (TM)
 TL-A36Z35, TL-D36Z35, TL-E36Z35 (TM)

Manufactured by

PJSC “ILYICH IRON AND STEEL WORKS OF MARIUPOL”

Is found to comply with

Türk Loydu’s Rules for Classification of Steel Ships ; Chapter 2, Section 3 , B, H

Application : Normal and Higher Strength Hull Structural Steels
Design : PJSC “Ilyich Iron and Steel Works of Mariupol”
Sizes : See appendix I
Address of Manufacturer : Levchenko str. 1 UA – 87504 Mariupol - UKRAINE
Place and date : İSTANBUL – 18.06.2021

Subject to the conditions referred to in the following pages, this certificate is valid until 02.05.2026

Emrah SÖĞÜTEU
 New Building Division Manager



Product description:

Type Designation :

TL-A, TL-B, TL-D [CR (NR)]

TL-AZ35, TL-BZ35, TL-DZ35 (TM)

TL-A32Z35, TL-D32Z35, TL-E32Z35 (TM)

TL-A36Z35, TL-D36Z35, TL-E36Z35 (TM)

Materials used : See appendix I

Application/ Limitation (Approval conditions):

Normal and higher strength hull structural steels to be used in ship according to Türk Loydu rules.

Documentation :

Test reports from ILYICH mechanical test laboratory.

Test carried out (and results) :

Type tests have been carried out according to Türk Loydu's Rules for Classification of Steel Ships; Chapter 2, Section 3 , B, H

Place of test carried out :

ILYICH Mechanical Test Laboratory – Mariupol / UKRAINE
Levchenko str. 1 UA – 87504

Marking of product: The product to be marked same as below mentioned.

- Manufacturer Name and trade mark,
- Type designation
- Size


Hasan HABİBOĞLU
Surveyor

This certificate is subject to terms and conditions described below:

- Any significant change in design or construction may render this Certificate invalid. Type Approval Certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. This certificate is not valid for products without marking above mentioned. The manufacturer should notify TÜRK LOYDU of any modifications or changes to the equipment in order to obtain valid certificate. This certificate shows that tested specimens as representative of the product complies of the TÜRK LOYDU rules, and relevant international instruments that apply to it.



TÜRK LOYDU

APPENDIX I

Normal and Higher Strength Steels

Grade	Delivery Condition	Min. Thick. mm	Max. Thick. mm	Steelmaking (1) Casting Method(2)	Deoxidation	Microalloy (Grain refining elements)	Z Quality
TL-A	CR (NR)	6	50	BOC, CC	killed	Al or Al+Ti	
TL-B	CR (NR)	6	50	BOC, CC	killed	Al or Al+Ti	
TL-D	CR (NR)	6	50	BOC, CC	killed	Al or Al+Ti	
TL-A	TM	6	50	BOC, CC	killed	Al or Al+Ti	Z35
TL-B	TM	6	50	BOC, CC	killed	Al or Al+Ti	Z35
TL-D	TM	6	50	BOC, CC	killed	Al or Al+Ti	Z35
TL-A32	TM	6	50	BOC, CC	killed	Al+Nb+Ti or Al+V+Ti or Al+Nb+V+Ti	Z35
TL-D32	TM	6	50	BOC, CC	killed	Al+Nb+Ti or Al+V+Ti or Al+Nb+V+Ti	Z35
TL-E32	TM	6	50	BOC, CC	killed	Al+Nb+Ti or Al+V+Ti or Al+Nb+V+Ti	Z35
TL-A36	TM	6	50	BOC, CC	killed	Al+Nb+Ti or Al+V+Ti or Al+Nb+V+Ti	Z35
TL-D36	TM	6	50	BOC, CC	killed	Al+Nb+Ti or Al+V+Ti or Al+Nb+V+Ti	Z35
TL-E36	TM	6	50	BOC, CC	killed	Al+Nb+Ti or Al+V+Ti or Al+Nb+V+Ti	Z35

(1) :
 CR : Controlled Rolled
 NR : Normalized Rolled
 TM : Thermomechanically Rolled
 N : Normalized

(2) :
 CC : Continuous Casting
 IC : Ingot Casting
 BOC : Basic Oxygen Converter


 Hasan HABİBOĞLU
 Surveyor