

ROMANIAN ACCREDITATION ASSOCIATION - RENAR

Bucharest, Calea Vitan no. 242, sector 3, zip code 031301

CIF RO 4311980



RENAR is EA-MLA signatory for Testing.

ACCREDITATION CERTIFICATE No. LI 1183

Romanian Accreditation Association – RENAR, being recognized as National Accreditation Body by GO 23/2009, herewith attests that the organization:

Romanian Railway Authority – AFER

Bucharest, No. 393 Griviței Road, sector 1

through

Romanian Railway Notified Body - LABORATORIES (ONFR-L)

fulfills the requirements of **SR EN ISO/CEI 17025:2018** and is competent to carry on **TESTING** activities, as it is detailed in the Annexes of the present accreditation certificate.

This accreditation is maintained provided that the accreditation criteria established by the Romanian Accreditation Association – RENAR are met continuously.

The present certificate includes Annexes no. 1/02.07.2022 (3 pages) și no. 2/02.07.2022 (2 pages), which are an integrated part of this certificate.

The accreditation certificate is an essential accreditation document, which might be periodically revised and issued by RENAR. The most recent version of the accreditation certificate is available on the website of RENAR, www.renar.ro.

Date of initial accreditation: 02.07.2018

Date of renewal accreditation: 02.07.2022

The accreditation is valid until: 01.07.2026

GENERAL DIRECTOR

Alina Elena TAINA



**PRESIDENT OF
THE ACCREDITATION COUNCIL**

PhD. Eng. Dumitru DINU

The translation of this certificate was issued today, 19.08.2022.

The Accreditation Certificate does not relieve/exempt CAB the obligation to obtain all permits and authorizations required for its operation under the law.

Partial reproduction of this certificate is forbidden.

Annex no. 1 to Accreditation Certificate no. LI 1183
Annex no. 1 Issue Date: 02.07.2022

Romanian Railway Authority – AFER

through **Romanian Railway Notified Body - LABORATORIES (ONFR-L)**
Railway Vehicles Testing Unit (SITVF)

Bucharest, 393 Griviței Road, sector 1

A. Tests performed in permanent sites

No.	Activity area / Working technique / Name of the test	Material / product / test object	Reference document
(1)	(2)	(3)	(4)
MECHANICAL FIELD			
1	Longitudinal static loads test	Body of locomotives, passenger cars, multiple units, subway trains, trams units, freight wagons	SR EN 12663-1+A1:2015, chapter 6.2 SR EN 12663-2:2010, chapter 5.2.2 PL 3011-01
2	Vertical static loads test		SR EN 12663-1+A1:2015, chapter 6.3 SR EN 12663-2:2010, chapter 5.2.3 PL 3011-02
3	Buffing impact test	Chassis and freight wagons body	SR EN 12663-2:2010, chapter 8 PL 3011-23
4	Determination of static yield of braking installation by measuring of contact forces between brake pads/blocks and wheels	Rolling stock	SR 12300:98, chapter 3 Leaflet UIC 544-1 edition VI October 2014 Leaflet UIC 540 edition VII July 2016 PL 3011-04
5	Determination of total torsional stiffness	Rolling stock	SR EN 14363+A1:2019, chapter 6 PL3011-06
6	Measurement of wheel loads and determination of the static loads distribution	Rolling stock	SR EN 14363+A1:2019, chapter 5 PL 3011-07
7	Determination of indentation hardness. Shore A Method	Vulcanized or thermoplastic rubber	ISO 48-4:2018 PL 3011-17
8	Determination of tensile stress-strain properties	Vulcanized or thermoplastic rubber	SR ISO 37:2020 PL 3011-18
9	Determination of Brinell hardness	Metallic materials	SR EN ISO 6506-1:2015 PL 3011-19
10	Determination of Vickers hardness	Metallic materials	SR EN ISO 6507-1:2018 PL 3011-20
11	Measurement of extreme-pressure properties (four-ball method)	Mineral oils	STAS 8618 -1979, chapter 6.6 PL 3011-09
PHYSICAL FIELD			
12	Determination of kinematic viscosity and calculation of viscosity index	Liquid, transparent petroleum products	SR EN ISO 3104:2020, chapter 11 and 14.1 SR ISO 2909:2012 PL 3011-08
13	Determination of flash point. Cleveland open cup method	Liquid petroleum products	SR EN ISO 2592:2018 PL 3011-27
CHEMICAL FIELD			
14	Determination of the water content of petroleum products and bituminous materials by the distillation method	Petroleum products, bituminous materials	SR 13484:2012 ASTM D95-13 PL 3011-10
15	Determination of sulphated ash in lubricating oils and additives	Petroleum products	SR ISO 3987+C1:2013 PL 3011-11

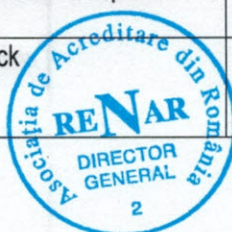


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No.	Activity area / Working technique / Name of the test	Material / product / test object	Reference document
METALLOGRAPHIC FIELD			
16	Macrographic examination by sulfur print (Baumann method)	Samples of unalloyed or alloyed steels with less than 0,1% of sulfur content	SR ISO 4968:1993 PL 3011-12
17	Pointing out of the steel macrostructure by hot etching in 50% HCl solution	Samples (cross sections) of rolled/ forged steel	STAS 11961/1-83, chapter 5, entry 1 in the table PL 3011-13
18	Examination of the microstructure of steels. Constituents	Samples of low or medium carbon steel	STAS 7626-79 PL 3011-14
19	Micrographic determination of the apparent grain size in steels	Samples of unalloyed or alloyed steels	SR EN ISO 643:2020, chapter 6.2 PL 3011-15
20	Macrographic examination of flash butt welded rails	Samples from steel welded rails	SR EN 14587-2:2011, chapter 5.3.6 PL 3011-16
21	Micrographic examination of flash butt welded rails	Samples from steel welded rails	SR EN 14587-2:2011, chapter 5.3.7 PL 3011-16
22	Macrographic examination of aluminothermic welded rails	Samples from steel welded rails	SR EN 14730-1:2017, chapter 7.1.3, 7.3, 7.4.2, Annex C and Annex F PL 3011-16
23	Micrographic examination of aluminothermic welded rails	Samples from steel welded rails	SR EN 14730-1:2017, chapter 7.4.3 and Annex H PL 3011-16

C. Tests performed in situ

No.	Activity area / Working technique / Name of the test	Material / product / test object	Reference document
(1)	(2)	(3)	(4)
MECHANICAL FIELD			
24	Longitudinal static loads test	Body of locomotives, passenger cars, multiple units, subway trains, trams units, freight wagons	SR EN 12663-1+A1:2015, chapter 6.2 SR EN 12663-2:2010, chapter 5.2.2 PL 3011-01
25	Vertical static loads test		SR EN 12663-1+A1:2015, chapter 6.3 SR EN 12663-2:2010, chapter 5.2.3 PL 3011-02
26	Buffing impact test	Freight wagons body	SR EN 12663-2:2010, chapter 8 PL 3011-23
27	Determination of the static yield of braking installation by measuring of contact forces between brake pads/blocks and wheels	Rolling stock	SR 12300:98, chapter 3 Leaflet UIC 544-1 edition VI October 2014 Leaflet UIC 540 edition VII July 2016 PL 3011-04
28	Determination of total torsional stiffness	Rolling stock	SR EN 14363+A1:2019, chapter 6 PL3011-06
29	Measurement of wheel loads and determination of static wheel forces distribution	Rolling stock	SR EN 14363+A1:2019, chapter 5 PL 3011-07
30	Determination of indentation hardness Shore A Method	Vulcanized or thermoplastic rubber	ISO 48-4:2018 PL 3011-17
31	Determination of the braking weight percentage and braking weight	Rolling stock	SR 12300-98 Leaflet UIC 544-1 edition VI October 2014



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No.	Activity area / Working technique / Name of the test	Material / product / test object	Reference document
			Leaflet UIC 540 edition VII July 2016PL 3011-03
	Acoustic field		
32	Measurement of noise emitted by railbound vehicles	Rolling stock	SR EN ISO 3095:2014 SR EN ISO 3095:2014/C91:2017 SR EN 15610:2019 Regulation (EU) no. 1304/2014 PL 3011-05
33	Noise measurement inside railbound vehicles	Rolling stock	SR EN 15153-2:2020 SR EN ISO 3381:2021 Regulation (EU) no. 1304/2014 PL 3011-05.1

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GENERAL DIRECTOR
Alina Elena TAINĂ



Romanian Railway Authority – AFER

through **Romanian Railway Notified Body - LABORATORIES (ONFR-L)**
Structural Subsystems, Infrastructure (I), Control Command Signaling (CCS) Track
and Energy Testing Unit (SITSSICCSCE)

Bucharest, 393 Griviței Road, sector 1

A. Tests performed in permanent premises

No.	Activity area / Working technique / Name of the test	Material / product / test object	Reference document
(1)	(2)	(3)	(4)
MECHANICAL FIELD			
1	Static and dynamic bending test	Concrete railway sleepers	SR EN 13230-2:2016 PL3012-01
2	Bend and Fatigue test (Past-the-post Method)	Railway rail	SR EN 14587- 2:2009 PL 3012-02
3	Determination of longitudinal rail restraint	Fastening systems - sleepers	SR EN 13146-1:2019 PL 3012-03
4	Determination of torsional resistance	Fastening systems - sleepers	SR EN 13146-2:2012 PL 3012-03
5	Determination of the resistance to wear (micro-Deval)	Aggregates	SR EN 1097-1:2011 PL 3012-12
6	Determination of resistance to fragmentation (Los Angeles coefficient)	Aggregates	SR EN 1097-2:2020 PL 3012-13
7	Slow bend testing of aluminothermic-welded rails	Railway rail	SR EN 14730-1:2017 PL 3012-20
PHYSICAL FIELD			
8	Determination of loose bulk density of dry aggregate	Aggregates	SR EN 1097-3:2002 PL 3012-09
9	Determination of the particle density and water absorption of aggregates a) wire basket method b) pycnometer method	Aggregates	SR EN 1097-6:2022 a)cap. 7 - Anexa B b)cap. 8 PL 3012-10
10	Determination of the mass loss percentage by magnesium sulfate test	Aggregates	SR EN 1367-2:2010 PL 3012-14
11	Determination of broken surfaces percentage in coarse aggregate particles	Aggregates	SR EN 933-5:2001 SR EN 933-5:2001/A1:2005 PL 3012-11
12	Determination of particle size distribution by sieving method	Aggregates	SR EN 933-1:2012 PL 3012-08
13	Determination of particle shape - Shape index	Aggregates	SR EN 933-4:2008 PL 3012-06
14	Determination of particle shape - Flakiness index	Aggregates	SR EN 933-3:2012 PL 3012-19
PETROGRAPHIC FIELD			
15	Simplified petrographic description	Aggregates	SR EN 932-3:1998 SR EN 932-3:1998/C1:1999 SR EN 932-3:1998/A1:2004 PL 3012-07



No.	Activity area / Working technique / Name of the test	Material / product / test object	Reference document
ELECTRICAL FIELD			
16	Measurement of insulation resistance	Products used in the railway field, metro, urban transport on rail	SR EN CEI 61557-2: 2009 PL 3012-04
17	Test of electric strength at power frequencies	Products used in the railway field, metro, urban transport on rail	SR EN CEI 60243-1:2013 (except clauses 7.2 ; 7.3) PL 3012-15

C. Testing performed in situ

No.	Activity area / Working technique / Name of the test	Material / product / test object	Reference document.
(1)	(2)	(3)	(4)
ELECTRICAL FIELD			
18	Measurement of insulation resistance	Products used in the railway field, metro, urban transport on rail	SR EN CEI 61557-2: 2009 PL 3012-04
19	Test of electric strength at power frequencies	Products used in the railway field, metro, urban transport on rail	SR EN CEI 60243-1:2013 (except clause pct. 7.2; clause 7.3) PL 3012-15

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GENERAL DIRECTOR
Alina Elena TAINĂ

