REPUBLIC OF BULGARIA
Executive agency
Bulgarian accreditation service

Signatory to the EA Multilateral Agreement in this field

ORDER

№ A 188

Sofia, 11.06.2025

Pursuant to Art. 10, para. 1, item 2 and Art. 20, para. 6 of the Law on National Accreditation of Conformity Assessment Bodies and item 4. of the BAS QR 2 Accreditation Procedure, in connection with an open procedure reg. № 523-ЛИ/31.08.2023, assessment reports reg. № 523-ЛИ/7/В/15.07.2024, reg. № 523-ЛИ/Р/17.02.2025, declaration reg. № 523-ЛИ/4/Р/07.04.2025 and statement of the Accreditation Commission order reg. № 523-ЛИ/7/В/30.05.2025, I hereby

ACCREDIT

TECHNICAL UNIVERSITY OF SOFIA

LABORATORY FOR TESTING, MODELING, ANALYSIS AND SYNTHESIS OF MECHATRONIC SYSTEMS FOR RAILWAY TRANSPORT

Management and laboratory address:
1707, 8 Kliment Ohridski Blvd, TU Sofia

To perform testing of:

Type of the scope: *flexible**			
№	**Tested products**	**Type of test/ characteristic**	**Testing methods (standard/ validated method)**
1	2	3	4
1.	Static tests of railway rolling stock and its components (new or in operation)	1.1. Structural stress – σ [N/mm²]; for horizontal, vertical, combined and specific loads	– БДС EN 12663-1, Section 7 (ERRI B12/RP17, ERRI B12/RP60, UIC 510-3, UIC 510-4, UIC 566, UIC 577); – БДС EN 12663-2, Sections 6, 7, 9 (ERRI B12/RP17, ERRI B12/RP60, UIC 510-3, UIC 510-4, UIC 566, UIC 577).
		1.2. Structural deflection – f [mm]	– БДС EN 12663-1, Sections 6, 8 (ERRI B12/RP17, ERRI B12/RP60, UIC 510-3, UIC 510-4, UIC 566); – БДС EN 12663-2, Sections 6, 7, 9 (ERRI B12/RP17, ERRI B12/RP60, UIC 510-3, UIC 510-4, UIC 566).
		1.3. Structural stresses – σ [N/mm²];	– БДС EN 15551+A1, Annexes B, D (ERRI B12/RP17); – БДС EN 12663-2, Sections 6, 7, 9 (ERRI B12/RP17).
		1.4. Residual deformations $\delta_{res.}$ [‰];	– БДС EN 15551+A1, Annexes B, D (ERRI B12/RP17);

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Type of the scope: *flexible**			
№	**Tested products**	**Type of test/ characteristic**	**Testing methods (standard/ validated method)**
1	2	3	4
			– БДС EN 12663-2, Sections 6, 7, 9 (ERRI B12/RP17).
		1.5. Ohmic resistance of the front (attacking) wheelset of the vehicle mounted on the rolling stock and insulated from the rail, [Ω];	– БДС EN 50153 (UIC 533).
		1.6. Ohmic resistance of the protective grounding of the vehicle between the metal frame of the wagon body and the rail, [Ω];	– БДС EN 50153 (UIC 533).
		1.7. Force – P [kN];	– БДС EN 13298
		1.8. Displacement – f [mm];	– БДС EN 13298
		1.9. Stiffness C_i [kN/mm]:	– БДС EN 13298
2.	Dynamic tests of railway rolling stock and its components (new or in operation)	2.1. Vertical accelerations of the body of railway rolling stock - $\ddot{Z}_i^*$ [m/s²];	– БДС EN 14363 (UIC 513, UIC 518); – БДС EN 12299 (UIC 513, UIC 518).
		2.2. Lateral (horizontally - transverse) accelerations of the body of railway rolling stock - $\ddot{Y}_i^*$ [m/s²];	– БДС EN 14363 (UIC 513, UIC 518); – БДС EN 12299 (UIC 513, UIC 518).
		2.3. Lateral (horizontally - transverse) accelerations of bogie frame above the rolling stock axle boxes – $\ddot{Y}_i^+$ [m/s²];	– БДС EN 14363 (UIC 513, UIC 518); – БДС EN 12299 (UIC 513, UIC 518).
		2.4. Acceleration – $\ddot{X}$ [m/s²], in the middle of the rolling stock along the longitudinal axis	– БДС EN 15551+A1, Annexes E, G (ERRI B12/RP17); – БДС EN 12663-2, Sections 8, 9 (ERRI B12/RP17).
		2.5. Structural stresses – σ [N/mm²] under dynamic loads	– БДС EN 12663-1, Section 7 (ERRI B12/RP17, ERRI B12/RP60); – БДС EN 12663-2, Sections 6, 7, 9 (ERRI B12/RP17, ERRI B12/RP60).
		2.6. Smoothness of the run [-]	– БДС EN 14363 (UIC 513, UIC 518); – БДС EN 12299 (UIC 513, UIC 518).
		2.7. Safety against derailment – force Y [kN].	– БДС EN 14363
		2.8. Load on the rails from the rolling stock wheelsets – Qi [kN];	– БДС EN 14363 (ERRI B55/RP8).
		2.9. Difference in the load of individual wheels of one	– БДС EN 14363 (ERRI B55/RP8).

Type of the scope: *flexible**			
№	**Tested products**	**Type of test/ characteristic**	**Testing methods (standard/ validated method)**
1	2	3	4
		wheelset of a rolling stock – Δij [%]	
		2.10. Resistance moment of rotation of the bogie – Mtr, [kN.m]	– БДС EN 14363 (ERRI B12/Rp17).
		2.11. Force [kN];	– БДС EN 14363 (ERRI B12/Rp17).
		2.12. Displacement [mm].	– БДС EN 14363 (ERRI B12/Rp17).
3.	Braking systems of railway rolling stock	3.1. Brake pipe transmittance – f [mm]	– БДС EN 50215 (UIC 540, UIC 543-1, UIC 544-1, UIC 547);
		3.2. Leak tightness (hermeticity)	– БДС EN 50215 (UIC 540, UIC 543-1, UIC 544-1, UIC 547);
		3.3. Indicator diagram of the cycle (holding, loosening)	– БДС EN 50215 (UIC 540, UIC 543-1, UIC 544-1, UIC 547);
		3.4. Pressure – P, [bar]	– БДС EN 50215 (UIC 540, UIC 543-1, UIC 544-1, UIC 547);
		3.5. Time – t, [s]	– БДС EN 50215 (UIC 540, UIC 543-1, UIC 544-1, UIC 547);
		3.6. Brake cylinder piston stroke – f, [mm]	– БДС EN 50215 (UIC 540, UIC 543-1, UIC 544-1, UIC 547);
		3.7. Pressure force on braking pads (linings) on the wheel (disc) – F, [kN]	– БДС EN 50215 (UIC 540, UIC 543-1, UIC 544-1, UIC 547);
		3.8. Velocity – V, [km/h]	– БДС EN 50215 (UIC 540, UIC 543-1, UIC 544-1, UIC 547); – БДС EN 14531 (UIC 540, UIC 543-1, UIC 544-1, UIC 547).
		3.9. Braking distance – S, [m]	– БДС EN 50215 (UIC 540, UIC 543-1, UIC 544-1, UIC 547); – БДС EN 14531 (UIC 540, UIC 543-1, UIC 544-1, UIC 547).
		3.10. Wear – Δ, [mm]	– БДС EN 50215 (UIC 540, UIC 543-1, UIC 544-1, UIC 547); – БДС EN 14531 (UIC 540, UIC 543-1, UIC 544-1, UIC 547).
		3.11. Braking efficiency – λ, [%]	– БДС EN 50215 (UIC 540, UIC 543-1, UIC 544-1, UIC 547); – БДС EN 14531 (UIC 540, UIC 543-1, UIC 544-1, UIC 547).
4.	Draw and buffing gear of railway rolling stock	4.1. Distance between hook and guide – A [mm];	– БДС EN 15566 +A1, Section 4, Annexes D3.1, D3.4, E4.3, E8.6 (UIC 520, UIC 827-1).
		4.2. Deformation Δ, [mm];	– БДС EN 15566 +A1, Section 4, Прил. D3.1, D3.4, E4.3, E8.6„ (UIC 520, UIC 827-1).
		4.3. Preload – Fн [kN];	– БДС EN 15551+A1, Section 5, Annexes B, D (UIC 526-1; UIC 528. UIC 827-1).
		4.4. Force – F [kN];	– БДС EN 15551+A1, Section 5, Annexes B, D (UIC 526-1; UIC 528. UIC 827-1).

Type of the scope: *flexible**			
№	**Tested products**	**Type of test/ characteristic**	**Testing methods (standard/ validated method)**
1	2	3	4
			– БДС EN 15566 +A1, Section 4, Annexes D3.1, D3.4, E4.3, E8.6 (UIC 520, UIC 827-1).
		4.5. Stroke – f [mm];	– БДС EN 15551+A1, Section 5, Annexes B, D (UIC 526-1; UIC 528. UIC 827-1). – БДС EN 15566 +A1, Section 4, Annexes D3.1, D3.4, E4.3, E8.6 (UIC 520, UIC 827-1).
		4.6. Value of the accumulated energy – We [kJ];	– БДС EN 15551+A1, Annexes D, E, G (UIC 520, UIC 526-1; UIC 528. UIC 827-1); – БДС EN 15566 +A1, Annexes F1.4, F1.5 (UIC 520, UIC 526-1; UIC 528. UIC 827-1).
		4.7. Value of the absorbed energy – Wa [kJ]	– БДС EN 15551+A1, Annexes D, E, G (UIC 520, UIC 526-1; UIC 528. UIC 827-1); – БДС EN 15566 +A1, Annexes F1.4, F1.5 (UIC 520, UIC 526-1; UIC 528. UIC 827-1).

***Flexible Scope:** Implementing a new version of standards/documents or standards / documents replacing them is allowed. An updated list of standards/documents and their dated versions is provided by CAB.*

I ORDER

To issue the certificate of accreditation reg. № 320 ЛИ/11.06.2025, valid until 11.06.2029 and this order as an integral part of it.

The certificate of accreditation with the enclosure to be received by the rector of Technical University of Sofia, the head of Laboratory for testing, modeling, analysis and synthesis of mechatronic systems for railway transport, at Technical University of Sofia, or other authorized person in the office of EA BAS.

This order shall be notified to Laboratory for testing, modeling, analysis and synthesis of mechatronic systems for railway transport, at Technical University of Sofia, within 3 (three) days from its issuance.

Eng. Irena Borislavova

Executive Director
of Executive agency Bulgarian accreditation service