



SCOPE OF ACCREDITATION

Accredited conformity assessment body

INSTITUT „GOŠA“ DOO Beograd
Zavod za ispitivanje i kontrolu
Beograd, Milana Rakića 35

Standard:

SRPS ISO/IEC 17025:2006
(ISO/IEC 17025:2005)

Short description of the scope

- *mechanical, metallographic testing and non-destructive tests of metals, alloys, metal products and welded joints;*
- *chemical testing of iron and steel;*
- *fire testing of non-metallic materials for passenger vehicle interior.*



Detailed description of the scope

| Place of testing: in the laboratory; Smederevska Palanka, Prvog srpskog ustanka 202 and on the site* | | | | |
|--|------------------------------|--|--|-----------------------------------|
| Mechanical, metallographic, chemical testing and non-destructive testing: metallic materials | | | | |
| No. | Test item material / product | Test type and/or property to be measured (test technique) | Measuring range(where applicable) | Reference document |
| 1. | Metallic materials | Tensile testing - method of test at room temperature | Load up to 250 kN | SRPS EN ISO 6892-1:2017, method B |
| | | Bend test at room temperature | Load up to 100 kN | SRPS EN ISO 7438:2016 |
| | | Impact testing by Charpy at temperatures from - 65 °C up to 20 °C | 0 J up to 300 J | SRPS EN ISO 148-1:2017 |
| | | Brinell hardness test | | SRPS EN ISO 6506-1: 2016 |
| | | Vickers hardness test | | SRPS EN ISO 6507-1:2018 |
| | | Rockwell hardness test | | SRPS EN ISO 6508-1:2017 |
| | | Micrographic method of determining apparent ferritic or austenitic grain size in steels | | SRPS EN ISO 643:2014 |
| | | Determination of depth of decarburization | | SRPS EN ISO 3887:2018 |
| | | Micrographic examination of the non-metallic inclusion content | | SRPS EN 10247:2017 |
| | | Radiographic testing* | | SRPS EN ISO 5579:2014 |
| | | Ultrasonic testing* | | SRPS EN ISO 16810:2016 |
| | | Ultrasonic testing of steel flat product of thickness greater than 6 mm (reflection method)* | | SRPS EN 10160:2010 |
| Magnetic particle inspection* | | SRPS EN ISO 9934-1:2017 | | |
| 2. | Welded joints | Longitudinal tensile test on weld metal in fusion welded joints | Load up to 250 kN Range of measurement up to 100 kN | SRPS EN ISO 5178:2013 |

| Place of testing: in the laboratory; Smederevska Palanka, Prvog srpskog ustanka 202 and on the site* | | | | |
|--|------------------------------|---|--|---------------------------|
| Mechanical, metallographic, chemical testing and non-destructive testing: metallic materials | | | | |
| No. | Test item material / product | Test type and/or property to be measured (test technique) | Measuring range(where applicable) | Reference document |
| 2. | Welded joints (cont'd) | Tensile testing - method of test at room temperature | Load up to 250 kN Range of measurement up to 100 kN | SRPS EN ISO 4136:2013 |
| | | Bend test at room temperature | | SRPS EN ISO 5178:2013 |
| | | Impact testing by Charpy at temperatures from - 65 °C up to 20 °C | 0 J up to 300 J | SRPS EN ISO 9016:2013 |
| | | Hardness testing - Hardness test on arc welded joints | | SRPS EN ISO 9015-1:2013 |
| | | Macroscopic and microscopic examination of welds | | SRPS EN ISO 17639:2014 |
| | | Radiographic testing* | | SRPS EN ISO 17636-1:2014 |
| | | Radiographic testing of resistance spot welds for aluminium and its alloys* | | SRPS ISO 3777:1995 |
| | | Ultrasonic testing* | | SRPS EN ISO 17640:2017 |
| | | Ultrasonic testing of the weld seam of welded steel tubes* | | SRPS EN ISO 10893-11:2012 |
| | | Magnetic particle testing* | | SRPS EN ISO 17638:2017 |
| | | Liquid penetrant testing* | | SRPS EN ISO 3452-1:2017 |



| Place of testing: in the laboratory; Smederevska Palanka, Prvog srpskog ustanka 202 and on the site* | | | | |
|---|------------------------------|---|-----------------------------------|-------------------------------------|
| Mechanical, metallographic, chemical testing and non-destructive testing: metallic materials | | | | |
| No. | Test item material / product | Test type and/or property to be measured (test technique) | Measuring range(where applicable) | Reference document |
| | | Visual examination* | | SRPS EN ISO 17637:2017 |
| 3. | Castings | Radiographic testing of castings* | | SRPS EN 12681-1:2017 |
| | | Aluminium and aluminium alloy castings - Radiographic testing* | | ISO 9915:1992 - <i>withdrawn</i> |
| | | Ultrasonic testing* | | SRPS EN 12680-1:2010 |
| | | Magnetic particle testing* | | ISO 4986:2010 |
| | | | | SRPS EN 1369:2017 |
| | | Liquid penetrant testing* | | ISO 4987:2010 |
| Liquid penetrant testing of sand, gravity die and low pressure die castings* | | SRPS EN 1371-1:2017 | | |
| 4. | Steel forgings | Ultrasonic testing of ferritic or martensitic steel forgings* | | SRPS EN 10228-3:2016 |
| | | Magnetic particle testing* | | SRPS EN 10228-1:2016 |
| 5. | Iron and steel | Determination of carbon and sulfur content - Infrared absorption method | | GS-DT-001 ¹⁾ |
| | | | | SRPS EN ISO 15350:2012 |
| | | Determination of silicon content - Spectrophotometric method | | GS-DT-020 ²⁾ |
| | | | | GS-DT-021 ³⁾ |
| | | Determination of manganese - Volumetric by Volhardt-Wolff method | | GS-DT-030 ⁴⁾ |
| | | Determination of manganese content - Spectrophotometric method | | GS-DT-032 ⁵⁾ |
| Determination of chromium - Volumetric by Philips method | | GS-DT-040 ⁶⁾ | | |
| Determination of nickel content - Spectrophotometric method | | GS-DT-051 ⁷⁾ | | |

| Place of testing: in the laboratory; Smederevska Palanka, Prvog srpskog ustanka 202 and on the site* | | | | |
|---|------------------------------|---|------------------------------------|--------------------------|
| Mechanical, metallographic, chemical testing and non-destructive testing: metallic materials | | | | |
| No. | Test item material / product | Test type and/or property to be measured (test technique) | Measuring range (where applicable) | Reference document |
| 5. | Iron and steel (cont'd) | | | GS-DT-052 ⁸⁾ |
| | | Determination of phosphorus content - Spectrophotometric method | | GS-DT-060 ⁹⁾ |
| | | Determination of molybdenum content - Spectrophotometric method | | GS-DT-070 ¹⁰⁾ |
| | | Determination of vanadium – Volumetric by Philips method | | GS-DT-080 ¹¹⁾ |
| | | Determination of copper content- Spectrophotometric method | | GS-DT-101 ¹²⁾ |
| | | Determination of tungsten content - Gravimetric method | | GS-DT-110 ¹³⁾ |

| Place of testing: in the laboratory; Belosavci bb municipality of Topola | | | | |
|---|--------------------------------|--|------------------------------------|--------------------|
| Chemical testing: metallic materials | | | | |
| No. | Test item / material / product | Test type and/or property to be measured (test technique) | Measuring range (where applicable) | Reference document |
| 1. | Iron and steel | Determination of the content: carbon, silicon, manganese, phosphorus, sulfur, chromium, nickel, copper, aluminum, titanium, molybdenum, vanadium, niobium and tungsten | | SRPS C.A1.011:2004 |

Place of testing: in the laboratory; *Smederevska Palanka, Prvog srpskog ustanka 202*

Fire tests: non-metallic materials for the interiors of passenger vehicles

| No. | Test item / material / product | Test type and/or property to be measured (test technique) | Measuring range (where applicable) | Reference document |
|-----|--|--|------------------------------------|--|
| 1. | Nonmetallic materials for passenger vehicle interior | Test method for determining the fire resistance of rigid non-thermoplastic materials | | UIC Kodex 564-2 VE ¹⁴⁾ , Appendix 4 |
| | | Test method for determining the fire resistance of textiles | | UIC Kodex 564-2 VE ¹⁴⁾ , Appendix 5 |

Key:

| Reference document | Reference / name of the test method |
|--------------------------|--|
| GS-DT-001 ¹⁾ | LECO CS-244, Michigan USA, 1984 |
| GS-DT-020 ²⁾ | Arbeitsvorschriften, Sammlung III, Photometrische Bestimmungen in der Metall- und Huttenindustrie mit Spekol-Veilverzweckgerat, PulfrichPhotometer und Elpho, Zentralinstitut fur Giessertechnik, Leipzig, 1966, Ergänzungen I, 1969, str. 59 |
| GS-DT-021 ³⁾ | Arbeitsvorschriften, Sammlung III, Photometrische Bestimmungen in der Metall- und Huttenindustrie mit Spekol-Veilverzweckgerat, PulfrichPhotometer und Elpho, Zentralinstitut fur Giessertechnik, Leipzig, 1966, Ergänzungen I, 1969, str. 59 |
| GS-DT-031 ⁴⁾ | Ing. P. Sabioncello, Ing. I. Filipović, Laboratorijski priručnik za anorgansku tehničku kemijsku analizu, II deo, Kovine I rudače, Zagreb, 1948, str. 58 |
| GS-DT-032 ⁵⁾ | Douglas A. Skroog, Donald M. West, F. James Holler, Osnove analitičke hemije, Školska knjiga, Zagreb, 1999, Str. 856 |
| GS-DT-040 ⁶⁾ | Ing. P. Sabioncello, Ing. I. Filipović, Laboratorijski priručnik za anorgansku tehničku kemijsku analizu, II deo, Kovine I rudače, Zagreb, 1948, str. 95 |
| GS-DT-051 ⁷⁾ | Arbeitsvorschriften, Sammlung III, Photometrische Bestimmungen in der Metall- und Huttenindustrie mit Spekol-Veilverzweckgerat, PulfrichPhotometer und Elpho, Zentralinstitut fur Giessertechnik, Leipzig, 1966, Ergänzungen I, 1969, str. 49 |
| GS-DT-052 ⁸⁾ | Arbeitsvorschriften, Sammlung III, Photometrische Bestimmungen in der Metall- und Huttenindustrie mit Spekol-Veilverzweckgerat, PulfrichPhotometer und Elpho, Zentralinstitut fur Giessertechnik, Leipzig, 1966, Ergänzungen I, 1969, str. 51 |
| GS-DT-060 ¹⁰⁾ | Arbeitsvorschriften, Sammlung III, Photometrische Bestimmungen in der Metall- und Huttenindustrie mit Spekol-Veilverzweckgerat, PulfrichPhotometer und Elpho, Zentralinstitut fur Giessertechnik, Leipzig, 1966, Ergänzungen I, 1969, str. 55 |
| GS-DT-070 ¹²⁾ | Ing. P. Sabioncello, Ing. I. Filipović, Laboratorijski priručnik za anorgansku tehničku kemijsku analizu, II deo, Kovine I rudače, Zagreb, 1948, str. 123 |
| GS-DT-080 ¹¹⁾ | Ing. P. Sabioncello, Ing. I. Filipović, Laboratorijski priručnik za anorgansku tehničku kemijsku analizu, II deo, Kovine I rudače, Zagreb, 1948, str. 105 |
| GS-DT-101 ¹²⁾ | Arbeitsvorschriften, Sammlung III, Photometrische Bestimmungen in der Metall- und Huttenindustrie mit Spekol-Veilverzweckgerat, PulfrichPhotometer und Elpho, Zentralinstitut fur Giessertechnik, Leipzig, 1966, Ergänzungen I, 1969, str. 150 |
| GS-DT-110 ¹³⁾ | Ing. P. Sabioncello, Ing. I. Filipović, Laboratorijski priručnik za anorgansku tehničku kemijsku analizu, II deo, Kovine I rudače, Zagreb, 1948, str. 113 |





ATS

Accreditation No. **01-044**

Valid from: 15.10.2019.

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| Reference document | Reference / name of the test method |
|---|--|
| UIC Kodex 564-2 VE ¹⁴⁾ / UIC Code 564-2 OR ¹⁴⁾ | Vorschriften über Brandverhütung und Feuerbekämpfung für die internationalen Verkehr eingesetzten Schienenfahrzeuge, in denen Reisende, befördert oder die der Reisendenzugwagenubauart zugeordnet werden, 1991, Internationaler Eisenbanverband, Paris / Regulations relating to fire protection and firefighting measures in Passenger carrying railway vehicles or assimilated vehicles used on international services, 3rd edition of 1.1.91 and 2 Amendments, International Union of Railway, Paris |

This Scope of accreditation is valid only with Accreditation Certificate No **01-044**

Accreditation expiry date: 19.05.2020.



Acting Director

[Handwritten Signature]
Prof. Aco Janićijević PhD