

**The Appendix is an integral part of  
Certificate of Accreditation No. 219/2023 of 03/05/2023**

**Accredited entity according to ČSN EN ISO/IEC 17025:2018:**

**ÚJV Řež, a. s.,**  
CAB number 1093.3, Testing Laboratory of the Radiation Chemistry and Environmental Qualification  
Department  
Hlavní 130, Řež, 250 68 Husinec

*The laboratory provides opinions and interpretations of test results.*

**Tests:**

| Ordinal number <sup>1</sup> | Test procedure / method name                               | Test procedure / method identification <sup>2</sup>  | Subject of the test   | Degrees of freedom <sup>3</sup> |
|-----------------------------|--|--|---|---------------------------------|
| 1                           | Accelerated thermal ageing test                            | QA-2305/PP01<br>(ČSN EN 60216-1;<br>IEC 60216-1;<br>ČSN EN 60216-2;<br>IEC 60216-2;<br>ČSN EN 60216-3;<br>IEC 60216-3;<br>ČSN EN 60216-4-1;<br>IEC 60216-4-1;<br>ČSN EN 60216-5;<br>IEC 60216-5;<br>ČSN EN 60505;<br>IEC 60505;<br>ČSN EN 60811-401;<br>IEC 60811-401) | Items and materials subject to thermal degradation, e.g. polymer cable insulation, plastic sealing etc.   | -                               |
| 2*                          | Accelerated radiation ageing test in gamma radiation field | QA-2305/PP02<br>(ČSN EN 60544-1;<br>IEC 60544-1;<br>ČSN EN 60544-2;<br>IEC 60544-2;<br>ČSN EN 60544-4;<br>IEC 60544-4;<br>ČSN EN 60544-5;<br>IEC 60544-5)  | Items and materials used in environment with ionising radiation, e.g. cables, sealing, etc.   | -                               |
| 3*                          | Test by pressure steam load                                | QA-2305/PP03<br>(IEC/IEEE 60780-323,<br>p. 7.4.1.7, 7.4.1.10 and 8.4;<br>IEEE 383, p. 6.5.4)   | Products designed for the containment of nuclear power facilities, which shall remain functioning even in case of design accidents, e.g. cables | -                               |
| 4*                          | Determination of insulation resistance                     | QA-2305/PP06<br>(ČSN IEC 60502-1,<br>cl. 17.1;<br>ČSN EN 62631-3-3;<br>ČSN EN 62631-1)   | Electrical products, e.g. electric cables   | -                               |

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| <b>Ordinal number<sup>1</sup></b> | <b>Test procedure / method name</b>  | <b>Test procedure / method identification<sup>2</sup></b>                                   | <b>Subject of the test</b>   | <b>Degrees of freedom<sup>3</sup></b> |
|-----------------------------------|--|---|--|---------------------------------------|
| 5                                 | Determination of mechanical properties (elongation at break, strength, Young modulus, secant modulus, stress and deformation at yield stress) of materials with strength up to 10 kN at static uniaxial tensile test | QA-2305/PP07<br>(ČSN EN 60811-100;<br>IEC 60811-100;<br>ČSN EN 60811-501;<br>IEC 60811-501) | Polymer insulation and sheathing of electrical and optical cables                            | -                                     |
| 6                                 | Determination of mechanical properties (elongation at break, strength, Young modulus, stress and deformation at yield stress) of materials with strength up to 10 kN at static uniaxial tensile test                 | QA-2305/PP07<br>(ČSN EN ISO 527-1;<br>ČSN EN ISO 527-2)                                     | Rigid plastics (test specimens in the form of dumb-bell prepared from plates or sheets)      | -                                     |
| 7                                 | Determination of mechanical properties (elongation at break, strength, Young modulus, secant modulus) of materials with strength up to 10 kN at static uniaxial tensile test   | QA-2305/PP07<br>(ČSN ISO 37)  | Rubberlike materials, e.g. for insulation (dumb-bell shaped or O-ring shaped test specimens) | -                                     |
| 8                                 | Determination of mechanical properties (elongation at break, strength, Young modulus, secant modulus, stress and deformation at yield stress) of materials with strength up to 10 kN at static uniaxial tensile test | ČSN EN 6892-1   | Iron or aluminium alloys   | -                                     |
| 9                                 | Determination of mechanical properties (elongation at break, strength, Young modulus, secant modulus, stress and deformation at yield stress) of materials with strength up to 10 kN at static uniaxial tensile test | ČSN EN 683-2  | Flat rolled products of aluminium or aluminium alloys  | -                                     |

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| <b>10</b>                   | <b>Determination of material properties by means of differential scanning calorimeter (DSC)</b> |  |   |                                 |
| 10.1                        | Determination of basic thermal characteristic of material                                       | QA-2305/PP08,<br>Annex 4, chap. 1<br>(DIN 53765:1994,<br>excl. cl. 2.2.4;<br>ČSN EN 61074:1996;<br>IEC 61074:1991;<br>ČSN EN ISO 11357-1)  | Matters in gaseous, liquid or solid phase, both metallic and nonmetallic, plastics                                | -                               |
| 10.2                        | Determination of thermooxidation stability  | QA-2305/PP08,<br>Annex 4, chap. 2<br>(DIN 53765:1994,<br>cl. 7.3, 7.4, 8.4 and 8.5;<br>ASTM D 3895;<br>ISO 11357-6)                        | Matters in solid or liquid phase at room temperature, e.g. cable insulation, sealing, oils and lubricants, metals | -                               |
| 10.3                        | Determination of thermal characteristics in inert atmosphere                                    | QA-2305/PP08,<br>Annex 4, chap. 3<br>(DIN 53765:1994,<br>excl. cl. 2.2.4;<br>ČSN EN ISO 11357-1)   | Matters in solid or liquid phase at room temperature, e.g. polymeric materials, oils and lubricants               | -                               |
| 10.4                        | Determination of melting point  | QA-2305/PP08,<br>Annex 4, chap. 4<br>(DIN 53765:1994,<br>cl. 7.2 and 8.2;<br>ČSN EN 61074:1996;<br>IEC 61074:1991;<br>ISO 11357-3)         | Substances that change from solid to liquid   | -                               |
| 10.5                        | Determination of melting heat and crystallization   | QA-2305/PP08,<br>Annex 4, chap. 5<br>(DIN 53765:1994,<br>cl. 7.2, 8.2 and 8.3;<br>ČSN EN 61074:1996;<br>IEC 61074:1991);<br>ISO 11357-3)   | Substances that change from solid to liquid   | -                               |
| 10.6                        | Determination of glass transition temperature   | QA-2305/PP08,<br>Annex 4, chap. 6<br>(DIN 53765:1994,<br>cl. 7.1 and 8.1;<br>ČSN EN 61006, chap. 5;<br>IEC 61006, chap. 5;<br>ISO 11357-2) | Polymeric materials showing glass transition above the temperature of -40 °C                                      | -                               |

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|-----------------------------------|---|---|---|---------------------------------------|
| 10.7                              | Determination of activation energy of thermodegradation                                 | QA-2305/PP08, Annex 4, chap. 7 (ASTM E698)  | Solid polymeric materials, e.g. cable insulation materials, sealing, coating compounds, adhesives, resins, bonding agents etc.  | -                                     |
| 10.8                              | Determination of specific heat capacity   | QA-2305/PP08, Annex 4, chap. 8 (DIN 53765:1994, cl. 7.5 and 8.6; ČSN EN ISO 11357-4)          | Liquid and solid, metallic and nonmetallic materials  | -                                     |
| 11                                | Determination of absorbed dose caused by gamma radiation or accelerated electrons       | QA-2305/PP09 (ISO/ASTM 51607)   | Irradiated alanine dosimeters   | -                                     |
| 12*                               | Leak testing with pressure difference detection and determination of pressure of fluids | QA-2305/PP12 (ČSN EN 1593; ČSN EN 13184)  | Sealing materials or sealing assemblies for technical equipment used to seal liquids or gases, e.g. for cable glands and connectors, doors, sight glasses, junction boxes, etc. | -                                     |
| 13                                | Determination of solid matter density by double weighing method                         | QA-2305/PP13 (ČSN EN ISO 1183-1, cl. 5.1)   | Nonporous solids, plastics  | -                                     |
| 14*                               | Measurement of electric voltage and current   | QA-2305/PP14 (Drechsler et al.: "Electrical Measurement II. Basic methods", SNTL Praha, 1973) | Electric equipment and conductors   | -                                     |
| 15*                               | Determination of resistance and impedance   | QA-2305/PP15 (ČSN 34 5660:1953; ČSN EN 60228; IEC 60228)                                      | Electric equipment and conductors   | -                                     |
| 16*                               | Determination of electric capacity and loss factor tg δ                                 | QA-2305/PP16 (ČSN 34 7010-41:1986; ČSN 34 7010-42:1975; IEC 61196-1-103)                      | Electric equipment and conductors   | -                                     |
| 17*                               | Determination of compression set  | QA-2305/PP25 (ČSN ISO 815-1; ASTM D395)   | Sealing and other materials, e.g. rubber  | -                                     |

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|-----------------------------|---|---|--|---------------------------------|
| 18*                         | Voltage withstand test and determination of electric strength | QA-2305/PP30<br>(ČSN EN 61180;<br>ČSN EN 60243-1;<br>ČSN EN 60243-2;<br>ČSN 34 7010-82, cl. 8.2.2;<br>ČSN EN 60684-2;<br>ČSN 60626-2)   | Electrical engineering products and electrical insulating materials, e.g. insulating tubes | -                               |
| 19*                         | Determination of optical attenuation                          | QA-2305/PP32<br>(ČSN EN 60793-1-1;<br>ČSN EN IEC 60793-1-40;<br>ČSN EN 60793-1-46;<br>ČSN EN IEC 60793-2;<br>ČSN EN 60794-1-1;<br>ČSN EN 61280-1-4;<br>ČSN EN IEC 61280-4-1;<br>ČSN EN 61280-4-2;<br>ČSN EN 61300-3-35) | Fibre optic cables, connectors and passive fibre optic components                          | -                               |

<sup>1</sup> asterisk at the ordinal number identifies the tests, which the laboratory is qualified to carry out outside the permanent laboratory premises

<sup>2</sup> if the document identifying the test procedure is dated, only these specific procedures are used. If the document identifying the test procedure is not dated, the latest edition of the specified procedure is used (including any changes)

<sup>3</sup> the laboratory does not apply a flexible approach to the scope of accreditation

Explanatory notes:

QA2305/PPXX – Internal Test Procedure prepared by the Testing Laboratory of the Department of Radiation Chemistry and Environmental Qualification