**The Appendix is an integral part of**
**Certificate of Accreditation No. 139/2023 of 27. 3. 2023**

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

**Vojenský výzkumný ústav, s.p.**
Test centre
Veslařská 337/230, Pisárky, 637 00 Brno

**Testing Laboratory locations:**

| | | |
|---|---|---|
| 1. | **Climatic and Corrosion Resistance Testing Laboratory** | Veslařská 337/230, Pisárky, 637 00 Brno |
| 2. | **Material Testing Laboratory** | Veslařská 337/230, Pisárky, 637 00 Brno |
| 3. | **Detection and Protection Testing Laboratory** | Rybkova 8, Pisárky, 602 00 Brno |
| 4. | **Testing Laboratory of Camouflage Devices** | Veslařská 337/230, Pisárky, 637 00 Brno |

## 1. Climatic and Corrosion Resistance Testing Laboratory

**Tests:**

| Ordinal number[1] | Test procedure / method name | Test procedure / method identification[2] | Tested object |
|---|---|---|---|
| 1 | Determination of corrosion resistance or anti corrosion protection capacity in salt spray chamber by NSS method | **MPSZ01-01**<br>(ČSN EN ISO 9227 NSS,<br>ISO 9227,<br>DIN EN ISO 9227,<br>NF EN ISO 9227,<br>BS EN ISO 9227,<br>ČSN EN ISO 7253,<br>ČSN 34 5791-2-11,<br>EN 60068-2-11,<br>IEC 68-2-11,<br>DIN IEC 68-2-11,<br>BS 2011-2.1,<br>ČSN EN 60068-2-52,<br>ČSN EN 3027,<br>ČOS 999905 method 309,<br>IEC 60068-2-11 Test Ka,<br>IEC 60068-2-52 Test Kb,<br>EN 60068-2-52,<br>ASTM B117,<br>BS 3900-F4,<br>ČSN EN 13523-8,<br>FED-STD- 141,<br>FED-STD-791 Meth. 4001.3,<br>MIL STD-202 Meth. 101E,<br>MIL STD-810 Meth. 509.4<br>MIL STD-810 Meth. 509.7) | Metallic materials, metallic and non-metallic inorganic coats, paints and paint systems, preserving agents, packaging materials, engineering, electric and electronic products. |

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| Ordinal number[1] | Test procedure / method name | Test procedure / method identification[2] | Tested object |
|---|---|---|---|
| 2 | Determination of corrosion resistance or anti corrosion protection capacity in salt spray chamber by AASS method | **MPSZ01-01** (ČSN EN ISO 9227, ASTM G85) | Metallic materials and metallic coatings |
| 3 | Determination of corrosion resistance or anti corrosion protection capacity in salt spray chamber by CASS method | **MPSZ01-01** (ČSN EN ISO 9227, DIN EN ISO 9227, ASTM B368) | Metallic materials and metallic coatings |
| 4 | Determination of corrosion resistance or anti corrosion protection capacity in chamber with sulphur dioxide and common moisture condensation | **MPSZ01-02** (ČSN EN ISO 3231, ČSN ISO 6988, ČSN IEC 68-2-49, DIN 50018, EN ISO 6988, ISO 6988, EN ISO 3231, ISO 3231, BS EN ISO 3231, DIN EN ISO 3231, NF EN ISO 3231, IEC 60068-2-42, IEC 60068-2-49, DIN IEC 68-2-49, BS 3900-F8, BS 5466-8, ASTM G 87-84) | Metallic materials, metallic and non-metallic inorganic coats, paints and paint systems, preserving agents, packaging materials, engineering, electric and electronic products. |
| 5 | Determination of resistance to climate - effect of dry heat | **MPSZ01-03/1** (ČSN EN 60068-2-2+A1) | Metallic materials, metallic and non-metallic inorganic coats, paints and paint systems, preserving agents, packaging materials, engineering, electric and electronic products. |

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| Ordinal number[1] | Test procedure / method name | Test procedure / method identification[2] | Tested object |
|---|---|---|---|
| 6 | Determination of resistance to climate - effect of moisture condensation | **MPSZ01-03/2** (BS 3900, ČSN EN ISO 6270-2, BS EN ISO 6270-2, DIN EN ISO 6270-2, EN ISO 6270-2, ISO 6270-2, NF EN ISO 6270-2, ČSN 038131, ČSN 038135, DIN 50017, MIL-STD-202 Method 104A, MIL-STD-810EJ) | Metallic materials, metallic and non-metallic inorganic coats, paints and paint systems, preserving agents, packaging materials, engineering, electric and electronic products. |
| 7 | Determination of resistance to climate – effect of cold | **MPSZ01-03/3** (ČSN EN 60068-2-1+A1, IEC 60068-2-1, DIN IEC 60068-2-1, NF EN 60068-2-1/A1, BS EN 60068-2-1) | Metallic materials, metallic and non-metallic inorganic coats, paints and paint systems, preserving agents, packaging electric and electronic products. |
| 8 | Determination of resistance to climate – effect of temperature variation | **MPSZ01-03/4** (ČSN EN 60068-2-14, BS EN 60068-2-14, DIN EN 60068-2-14, EN 60068-2-14, IEC 60068-2-14, NF EN 60068-2-14, ČSN IEC 68-2-33, ČSN 67 3098) | Metallic materials, metallic and non-metallic inorganic coats, paints and paint systems, preserving agents, packaging materials, engineering, electric and electronic products. |
| 9 | Determination of resistance to climate – effect of - tests of military equipment resistance to climatic effects of the environment | **MPSZ01-03/5** (ČOS 999905- method 302, ČOS 999905- method 303, ČOS 999905- method 304, ČOS 999905- method 306) | Metallic materials, metallic and non-metallic inorganic coats, paints and paint systems, preserving agents, packaging materials, engineering, electric and electronic products. |

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| Ordinal number[1] | Test procedure / method name | Test procedure / method identification[2] | Tested object |
|---|---|---|---|
| 10 | Determination of coating thickness | **MPSZ01-04**<br>(ČSN EN ISO 2808,<br>BS EN ISO 2808,<br>DIN EN ISO 2808,<br>EN ISO 2808, ISO 2808,<br>NF EN ISO 2808) | Metallic and non-metallic materials, paints and paint systems |
| 11 | Cross-cut test | **MPSZ01-05**<br>(ČSN EN ISO 2409,<br>BS EN ISO 2409,<br>DIN EN ISO 2409,<br>EN ISO 2409, ISO 2409, NF EN ISO 2409) | Metallic and non-metallic materials, paints and paint systems |
| 12 | Pull-off test for adhesion | **MPSZ01-06**<br>(ČSN EN ISO 4624,<br>BS EN ISO 4624,<br>DIN EN ISO 4624,<br>EN ISO 4624,<br>ISO 4624,<br>NF EN ISO 4624,<br>ČSN EN ISO 16276-1,<br>BS EN ISO 16276-1,<br>DIN EN ISO 16276-1,<br>EN ISO 16276-1,<br>ISO 16276-1,<br>NF EN ISO 16276-1) | Paints and paint systems |
| 13 | Falling-weight test, small-area indenter | **MPSZ01-07**<br>(ČSN EN ISO 6272-2,<br>BS EN ISO 6272-2,<br>DIN EN ISO 6272-2,<br>EN ISO 6272-2,<br>ISO 6272-2,<br>NF EN ISO 6272-2) | Paints and paint systems |
| 14 | Falling-weight test, large-area indenter | **MPSZ01-08**<br>(ČSN EN ISO 6272-1,<br>BS EN ISO 6272-1,<br>DIN EN ISO 6272-1,<br>EN ISO 6272-1,<br>ISO 6272-1,<br>NF EN ISO 6272-1) | Paints and paint systems |

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| Ordinal number[1] | Test procedure / method name | Test procedure / method identification[2] | Tested object |
|---|---|---|---|
| 15 | Bending over a cylindrical mandrel | **MPSZ01-09** (ČSN EN ISO 1519, BS EN ISO 1519, DIN EN ISO 1519, EN ISO 1519, ISO 1519, NF EN ISO 1519) | Paints and paint systems |
| 16 | Exposure to laboratory light sources – xenon lamps | **MPZS01-10** (ČSN EN ISO 16474-2, EN ISO 16474-2, ISO 16474-2, BS EN ISO 16474-2, NF EN ISO 16474-2, DIN EN ISO 16474-2, method A cycle 1 applies to all standards listed) | Paints and paint systems |
| 17 | Chemical resistance | **MPSZ01-11** (NATO AC/225 D14 Chemical resistance, AECTP 300 Method 314, ČOS 999905 Method 314) | Metallic and non-metallic materials, paints and paint systems |

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[2] 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)

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**2. Material Testing Laboratory**

**Tests:**

| Ordinal number[1] | Test procedure/method name | Test procedure/method identification[2] | Tested object |
|---|---|---|---|
| 1 | Determination of mechanical properties by tensile strength test | **MPSZ02-01** (ČSN EN ISO 6892-1) | Metallic materials |
| 2 | Determination of flexural strength | **MPSZ02-02** (ČSN EN 843-1) | Ceramic materials, glass materials |
| 3 | Determination of impact energy by Charpy impact test | **MPSZ02-03** (ČSN ISO 148-1) | Metallic materials |
| 4 | Determination of hardness by Vickers test | **MPSZ02-04** (ČSN EN ISO 6507-1) | Metallic materials |
| 5 | Determination of hardness by Brinell test | **MPSZ02-05** (ČSN EN ISO 6506-1) | Metallic materials |
| 6 | Determination of hardness by Rockwell test | **MPSZ02-06** (ČSN EN ISO 6508-1) | Metallic materials |
| 7 | Determination of material grain size by metallographic analysis | **MPSZ02-07** (ČSN EN ISO 643, ČSN EN ISO 2624, ASTM E 112) | Metallic materials |
| 8 | Metallographic determination of depth of decarburization | **MPSZ02-08** (ČSN EN ISO 3887, cl. 4.2 ASTM E 1077) | Metallic materials |
| 9 | Determination of coating thickness | **MPSZ02-09** (ČSN EN ISO 1463) | Metallic and non-metallic materials |
| 10 | Determination of mechanical properties on the basis of tensile test | **MPSZ02-11** (ČSN EN ISO 13934-1 ČSN EN ISO 13937-2 ČSN EN ISO 1421 ČSN EN ISO 4674-1 ČSN EN 29073-3) | Textile materials |

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| Ordinal number[1] | Test procedure/method name | Test procedure/method identification[2] | Tested object |
|---|---|---|---|
| 11 | Plastics – Tensile test | **MPSZ02-12**<br>(ČSN EN ISO 527−1<br>ČSN EN ISO 527−2<br>ČSN EN 527−3<br>ČSN EN ISO 527−4<br>ČSN EN ISO 527−5) | Plastics |
| 12 | Plastics – Bend test | **MPSZ02-13**<br>(ČSN EN ISO 178<br>ČSN EN ISO 14125) | Plastics |
| 13 | Determination of hardness by Shore method | **MPSZ02-14**<br>(ČSN EN ISO 868<br>ČSN ISO 48−4) | Plastics |

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### 3. Detection and Protection Testing Laboratory

*The Laboratory provides expert opinions and interprets test results.*

**Tests:**

| Ordinal number [1] | Test procedure/method name | Test procedure/method identification [2] | Tested object |
|---|---|---|---|
| 1 | Determination of concentration of highly toxic substances by GC/MS method and determination of functional characteristics of detectors of highly toxic substances from the measured values | **MPSZ03-01** | Detectors of highly toxic substances |
| 2 | Determination of breakthrough time of adsorption fabrics exposed to yperite in static conditions on indicator (MINITEST) | **MPSZ03-51**[3] | Textile materials, breathable protective clothing |
| 3 | Determination of breakthrough time of protective materials exposed to yperite in static conditions on indicator (MIKROTEST) | **MPSZ03-52**[4] | Rubber, film and textile materials |
| 4 | Determination of breakthrough time of protective materials exposed to yperite and soman on indicator (cupral method) | **MPSZ03-53**[4] | Rubber, film and textile materials |
| 5 | Measurement of permeability of yperite through textile materials on the basis of change in electrical conductivity (PENETRATION) | **MPSZ03-54**[5] | Textile materials, breathable protective clothing |

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| Ordinal number [1] | Test procedure/method name | Test procedure/method identification [2] | Tested object |
|---|---|---|---|
| 6 | Determination of the resistance of paint systems against penetration of chemical warfare agents into their structure according to AEP-65 | **MPSZ03-55** (AEP-65) | Paint systems |
| 7 | Determination of resistance of samples of protective materials against penetration of liquid chemical warfare agents according to AEP-38 | **MPSZ03-56** (AEP-38) | Rubber, film and textile materials |

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[3] Obšel, V., Otřísal, P., Florus, S.: Minitest - system for detecting the penetration of toxic vapours and liquids through textile barrier materials. In: Book of Abstracts from the 2nd international scientific conference Hazmat Protect 2016. Kamenná, Czech Republic, 2016, p. 29. ISBN 978-80270-0474-4

[4] Florus, S., Otřísal, P.: Selected methods for studying the chemical resistance of insulating protective films against chemical warfare agents. Chem. Listy, 2014, 108,838-842. ISSN 1213-7103

[5] Individual and collective protection, Determination of the protective effectiveness of fabrics against liquid phase yperite under static conditions – Penetration method II, 13 1401 VTÚO

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## 4. Testing Laboratory of Camouflage Devices

*The laboratory provides expert opinions and interprets test results.*

**Tests:**

| Ordinal number[1] | Test procedure/method name | Test procedure/method identification[2] | Tested object |
|---|---|---|---|
| 1 | Determination of spectral reflectance of materials | **MPSZ04-01** (ČOS 108018 and ČOS 108019) | Camouflage materials and other materials for non-military use |
| 2 | Determination of spectral reflectance of materials | **MPSZ04-02** (ČOS 108003, 2nd Issue, Revision 4:2012) | Camouflage materials and other materials for non-military use |
| 3 | Determination of colour coordinates and colour difference of material | **MPSZ04-03** (ČOS 108018 and ČOS 108019) | Camouflage materials and other materials for non-military use |
| 4 | Determination of colour coordinates and colour difference of material | **MPSZ04-04** (ČOS 108003, 2nd Issue, Revision 4:2012) | Camouflage materials and other materials for non-military use |

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**Explanations:**

AEP – Allied Engineering Publication
NSS – Neutral Salt Spray Test
EN – European Standard
DIN – Deutsche Industrie Norm
IEC – International Electrotechnical Commission
NF – Norme Française
BS – British Standard
FED-STD – Federal Standard
AASS – Acetic Acid Salt Spray Test
CASS – Cooper Accelerated Acetic Salt Spray Test
MPSZ – Testing Laboratory Methodological Procedure
ASTM – US Standard published by the American Society for Testing and Materials
MIL-STD – Military Standard
GS/MS – Gas Chromatography / Mass Spectrometry