# Schedule of Accreditation

**issued by**

# United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

| | | |
|---|---|---|
| UKAS TESTING<br>**31737**<br>**Accredited to ISO/IEC 17025:2017** | **Element Materials Technology Warwick Ltd**<br>**Issue No:** 001 **Issue date:** 15 September 2025 | |
| | **Rothwell Road**<br>**Warwick**<br>**CV34 5JX** | **Contact: Antonio Ramirez**<br>**Tel: +44 (0)1926 478478**<br>**E-Mail: info.warwick@element.com**<br>**Website: www.element.com** |
| **Testing performed at the above address only** | | |

**Flexible Scope**

The laboratory is accredited for the use of a Flexible Scope for testing activities in the areas of Environmental Testing and Mechanical Tests detailed within Element In-House procedure “COP-144 Testing Flexible Scope Management Procedure for Element Warwick”.

The flexible scope allows for:
Modification of existing test methods
Inclusion of technically equivalent standard methods
Inclusion of revised standard methods

This may include tests on the same or similar product types against standards, or customer-specified methods that are not specifically listed in this Schedule for Environmental Testing and Mechanical Tests providing that:
(1) The method or standard does not introduce new principles of measurement.
(2) The method or standard does not require measurements to be made outside the parametric boundaries defined in this Schedule.

Information about flexible scopes of accreditation is available in UKAS document GEN 4.

NOTE: Where EN Standards have exact equivalents in IEC, or BS EN Standards, these are also included in the accreditation.

DETAIL OF ACCREDITATION

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including:<br><br>AEROSPACE STRUCTURES, MATERIALS AND EQUIPMENT<br>AGRICULTURAL EQUIPMENT<br>COMPUTERS AND PERIPHERALS<br>CONSTRUCTION PLANT, EQUIPMENT, PRODUCTS AND MATERIALS<br>CRYOGENIC EQUIPMENT<br>DOMESTIC APPLIANCES<br>ELECTRICAL/ELECTRONIC COMPONENTS, CONNECTORS AND PRODUCTS<br>ELECTRO-MECHANICAL DEVICES<br>FIREARMS<br>FIRE FIGHTING AND DETECTION EQUIPMENT<br>HYDRAULIC EQUIPMENT AND FITTINGS<br>MARINE EQUIPMENT<br>MECHANICAL PRODUCTS AND PLANT<br>MINING EQUIPMENT AND COMPONENTS<br>MISSILE AND COMPONENTS<br>MOTOR VEHICLE ACCESSORIES AND COMPONENTS<br>OFFICE EQUIPMENT<br>PACKAGES AND PACKAGING MATERIAL<br>PLASTICS AND PRODUCTS | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)**<br><br>CLIMATIC<br><br>High temp – low humidity - constant and cyclic<br><br>Max temp: +170°C<br><br>Max chamber size: 1.2 m x 1.2 m x 1.2 m<br><br>Max temp: +70°C<br><br>Max chamber size: 4.0 m x 2.5 m x 2.5 m | DEF STAN 00-35 Pt 3, Iss3:1999 Tests CL1 and CL2<br>DEF STAN 00-35 Pt 3, Iss4:2006 Tests CL1 and CL2<br>DEF STAN 00-035 Pt 3, Iss5:2017 Test CL2<br>ETSI EN 300 019-2-1:2000<br>ETSI EN 300 019-2-1 v2.3.1 2017-11<br>ETSI EN 300 019-2-2:1999<br>ETSI EN 300 019-2-2:2013<br>ETSI EN 300 019-2-3:2003<br>ETSI EN 300 019-2-3:2015<br>RTCA DO 160B:1984<br>RTCA DO 160C:1989<br>RTCA DO 160D:1997<br>RTCA DO 160E: 2004<br>RTCA DO 160F: 2007<br>RTCA DO 160G: 2010<br>RTCA DO 160G: CN1: 2014<br>TR 2130C:2005<br>TR 2130D:2011<br>TR 2130E:2014<br>BS EN 50155:10.2.4:2007<br>BS EN 50155:13.4.5:2017<br>BS EN 50133-1:1997<br>BS EN 60839-11-1:2013<br>BS EN 60068-2-2:2007<br>BS EN 60945:2002<br>IEC 68-2-2:1974(1994)<br>BS 3G100: Part 2:Subsect 3.2: 1970(1983) |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd) | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd) | |
| PRESSURE VESSELS<br>RADAR EQUIPMENT<br>RADIO AND TV EQUIPMENT<br>SAFETY APPLIANCES AND EQUIPMENT<br>SATELLITES AND SUB-ASSEMBLIES<br>SECURITY DEVICES AND ALARMS<br>STRUCTURES AND COMPONENTS<br>TELECOMMUNICATION EQUIPMENT<br>THERMAL IMAGING<br>WEAPONS AND SUB-ASSEMBLIES | CLIMATIC<br><br>High temp – low humidity (cont'd) - constant and cyclic<br><br>Max temp: +170°C<br><br>Max chamber size: 1.2 m x 1.2 m x 1.2 m<br><br>Max temp: +70°C<br><br>Max chamber size: 4.0 m x 2.5 m x 2.5 m | DEF STAN 07-55:1983 Tests B1, B2<br>MIL-STD 810B:1967 Method 501<br>MIL-STD 810C:1975 Method 501.1<br>MIL-STD 810D:1983 Method 501.2<br>MIL-STD 810E:1983 Method 501.3<br>MIL-STD 810F:1989 Method 501.4<br>MIL-STD 810G:2008 Method 501.5<br>MIL-STD 810G:CN1:2014 Method 501.6<br>MIL-STD 810H:2019 Method 501.7 |
| | High temp – low humidity<br><br>**- constant humidity**<br><br>Max temp: +500 °C<br><br>Max chamber size: 0.54 m x 0.47 m x 0.54 m | JCPS 05-07:1987, Clause 7.1.4.2<br>NES 1004:1995 Data Sheet 7<br>DEF STAN 08-123:2000 Data Sheet 7<br>DEF STAN 08-123: Iss 2: 2012 Data Sheet 7<br>Lloyds Register Specification No 1:1996: Dry Heat Test<br>Lloyds Register Specification No 1:2013: Section 18 |
| | Low temperature<br><br>**- constant and cyclic**<br><br>Min temp: -70 °C<br><br>Max chamber size: 1.2 m x 1.2 m x 1.2 m<br><br>Min temp: -50 °C<br><br>Max chamber size: 4.0 m x 2.5 m x 2.5 m | DEF STAN 00-35 Pt 3, Iss3:1999 Tests CL4 and CL5<br>DEF STAN 00-35 Pt 3, Iss4:2006 Tests CL4 and CL5<br>DEF STAN 00-035 Pt 3, Iss5:2017 Tests CL5<br>BS EN 60068-2-1:2007 Tests Aa, Ab, Ad<br>ETSI EN 300 19-2-2:1999<br>ETSI EN 300 019-2-2:2013<br>ETSI EN 300 19-2-3:2003<br>ETSI EN 300 019-2-3:2015<br>IEC 68-2-1:1990 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>CLIMATIC (cont'd)<br><br>Low temperature (cont'd)<br><br>**- constant and cyclic**<br><br>Min temp: -70 °C<br><br>Max chamber size:<br>1.2 m x 1.2 m x 1.2 m<br><br>Min temp: -50 °C<br><br>Max chamber size:<br>4.0 m x 2.5 m x 2.5 m | TR 2130C:2002<br>TR 2130D:2011<br>TR 2130E:2014<br>BS 3G100: Part 2: Subsect 3.2: 1970(1983)<br>RTCA DO 160B:1984<br>RTCA DO 160C:1989<br>RTCA DO 160D:1997<br>RTCA DO 160E: 2004<br>RTCA DO 160F: 2007<br>RTCA DO 160G: 2010<br>RTCA DO 160G: CN1: 2014<br>DEF STAN 07-55:1983 Tests B4, B5<br>BS EN 50155:12.2.3 and 12.2.14:2007<br>BS EN 50155:13.4.4 and 13.4.6.:2017<br>MIL-STD 810B:1967 Method 502<br>MIL-STD 810C:1975 Method 502.1<br>MIL-STD 810D:1983 Method 502.2<br>MIL-STD 810E:1989 Method 502.3<br>MIL-STD 810F:2003 Method 502.4<br>MIL-STD 810G:2008 Method 502.5<br>MIL-STD 810G:CN1 2014 Method 502.6<br>MIL-STD 810H:2019 Method 502.7<br>BS EN 50133-1:1997<br>BS EN 60839-11-1:2013<br>NES 1004:1995 Data Sheet 8<br>DEF STAN 08-123:2000 Data Sheet 8<br>DEF STAN 08-123 Issue 2:2012 Data Sheet 8<br>Lloyds Register Specification No 1:1996: Low temperature test |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>CLIMATIC (cont'd)<br><br>Thermal Shock<br><br>a) Automatic transference<br><br>Max temp: +170 °C<br>Min temp: -70 °C<br><br>Max chamber size:<br>0.6 m x 0.6 m x 0.4 m<br><br>b) Manual transference<br><br>Max temp: +170 °C<br>Min temp: -70 °C<br><br>Max chamber size:<br>1.2 m x 1.2 m x 0.9 m | <br><br><br><br>BS EN 60068-2-14:2000 Tests Na, Nb<br>BS EN 60068-2-14:2009 Tests Na, Nb<br>BS 3G100: Part 2: Subsect 3.15:1978(1983)<br>DEF STAN 00-35 Pt 3, Iss3:1999 CL14<br>DEF STAN 00-35 Pt 3, Iss4:2006 CL14<br>DEF STAN 00-035 Pt 3, Iss5:2017 CL14<br>DEF STAN 07-55:1983 Test B14<br>MIL-STD 810B:1967 Method 503<br>MIL-STD 810C:1975 Method 503.1<br>MIL-STD 810D:1983 Method 503.2<br>MIL-STD 810E:1989 Method 503.3<br>MIL-STD 810F:2003 Method 503.4<br>MIL-STD 810G:2008 Method 503.5<br>MIL-STD 810G:CN1 2019 Method 503.6<br>MIL-STD 810H:2008 Method 503.7 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>CLIMATIC (cont'd)<br><br>Temperature Change/Variation<br><br>Max temp: +200 °C<br>Min temp: -70 °C<br><br>Max chamber size:<br>1.2 m x 1.2 m x 0.9 m<br><br>High temp - high humidity<br>**- constant and cyclic**<br><br>Max temp: +70 °C<br>Humidity range: 10 to 98% rh<br><br>Max chamber size:<br>4.0 m x 2.5 m x 2.5 m<br><br>Max temp: +80 °C<br>Humidity range: 30 to 98% rh<br><br>Max chamber size:<br>0.91 m x 0.91 m x 0.91 m | RTCA DO 160B:1984<br>RTCA DO 160C:1989<br>RTCA DO 160D:1997<br>RTCA DO 160E:2004<br>RTCA DO 160F:5.3:2007<br>RTCA DO 160G:2010<br>RTCA DO 160G CHG1:2014<br>ETSI EN 300 19-2-1:2000<br>ETSI EN 300 019-2-1 v2.3.1 (2017-11)<br>ETSI EN 300 19-2-2:1999<br>ETSI EN 300 019-2-2 2013<br>ETSI EN 300 19-2-3:2003<br>ETSI EN 300 019-2-3:2015<br><br>DEF STAN 00-35 Pt 3, Iss3:1999 Test CL7<br>DEF STAN 00-35 Pt3, Iss4:2006 Test CL7<br>DEF STAN 00-035 Pt 3,Iss5:2017 Test CL6<br>NES 1004:1995 Data Sheet 7<br>DEF STAN 08123:2000 Data Sheet 7<br>DEF STAN 08-123 Issue 2:2012 Data Sheet 7<br>RTCA DO 160B:1984<br>RTCA DO 160C:1989<br>RTCA DO 160D:1997<br>RTCA DO 160E:2004<br>RTCA DO 160F:2007<br>RTCA DO 160G:2010<br>RTCA DO 160G:CN1:2014 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>CLIMATIC (cont'd)<br><br>High temp - high humidity **- constant and cyclic** (cont'd)<br><br>Max temp: +70 °C<br>Humidity range: 10 to 98% rh<br><br>Max chamber size:<br>4.0 m x 2.5 m x 2.5 m<br><br>Max temp: +80 °C<br>Humidity range: 30 to 98% rh<br><br>Max chamber size:<br>0.91 m x 0.91 m x 0.91 m | MIL-STD 810B:1967 Method 507<br>MIL-STD 810C:1975 Method 507.1<br>MIL STD 810D:1983 Method 507.3<br>MIL STD 810D:1983 Method 507.3<br>MIL-STD 810E:1989 Method 507.3<br>MIL-STD 810F:2003 Method 507.4MIL-STD 810G:2008 Method 507.5<br>MIL-STD 810G;CN1:2014 Method 507.6<br>MIL-STD 810H:2019 Method 507.6<br>TR 2130C:2002<br>TR 2130D:2011<br>TR 2130E:2014<br>BS EN 50155:10.2.5:2007<br>BS EN 5015513.4.7:2017<br>BS 2011: Ca:1977<br>BS 2011: Cab:1990<br>BS 2011: Cb:1990<br>BS EN 60068-2-30:2005<br>BS EN 60068-2-78:2002<br>BS EN 60068-2-78:2013<br>BS EN 60945:2002<br>IEC 68-2-3:1969<br>IEC 60068-2-30:1980<br>IEC 68-2-56:1988<br>BS 3G100: Part 2:Subsect 3.7: 1972(1983)<br>DEF STAN 07-55:1983<br>Tests B6, B7<br>ETSI EN 300 19-2-1:2000<br>ETSI EN 300 19-2-1v2.3.1(2017-11)<br>ETSI EN 300 19-2-2:1999<br>ETSI EN 300 19-2-2:2013 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>CLIMATIC (cont'd)<br><br>High temp - high humidity **- constant and cyclic** (cont'd)<br><br>Max temp: +70 °C<br>Humidity range: 10 to 98% rh<br><br>Max chamber size:<br>4.0 m x 2.5 m x 2.5 m<br><br>Max temp: +80 °C<br>Humidity range: 30 to 98% rh<br><br>Max chamber size:<br>0.91 m x 0.91 m x 0.91 m<br><br>High/low temp - low/high pressure (atmospheric) - high humidity (combined and sequential)<br><br>Temperature range:<br>-70 °C to +150 °C<br><br>Humidity range: 30 to 98 %rh<br><br>Pressure range: 35 mbar to 1090 mbar<br><br>Chamber size:<br>1.01 m x 1.01 m x 1.02 m | <br><br><br><br>ETSI EN 300 19-2-3:2003<br>ETSI EN 300 19-2-3:2015<br>NES 1004:1995<br>Data Sheet 9<br>DEF STAN 08-123:2000<br>Data Sheet 9<br>DEF STAN 08-123 Issue 2:2012<br>Data Sheet 9<br>Lloyds Register Specification No 1:1996: Humidity tests 1 and 2<br>Lloyds Register Specification No 1:2013 Sections 14 and 15<br><br><br><br>BS EN 60068-2-13:1999<br>BS EN 60068-2-40:2000<br>BS EN 60068-2-41:2000<br>BS EN 60068-2-61:1994<br>DEF STAN 00-35 Pt 3, Iss 3:1999 Tests CL11, CL12 and CL21<br>DEF STAN 00-35 Pt 3, Iss 4:2006 Tests CL11, CL12, and CL21<br>DEF STAN 00-035 Pt 3, Iss 5:2017 test CL11<br>DEF STAN 07-55:1983<br>Test B11 and B12<br>MIL-STD 202F:105C:1980<br>MIL-STD 810B:1967 Method 500<br>MIL-STD 810C:1975 Method 500.1<br>MIL-STD 810D:1983 Method 500.2 Method 520<br>MIL-STD 810E:1989 Method 500.3 Method 520.1 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>CLIMATIC (cont'd)<br><br>High/low temp - low/high pressure (atmospheric) - high humidity (combined and sequential) (cont'd)<br><br>Temperature range:<br>-70 °C to +150 °C<br><br>Humidity range: 30 to 98 %rh<br><br>Pressure range: 35 mbar to 1090 mbar<br><br>Chamber size:<br>1.01 m x 1.01 m x 1.02 m<br><br>Dust and Sand – Driving<br><br>Temperature Range:<br>+20 to +71 °C<br><br>Chamber size:<br>1.5 m x 1.5 m x 2.5 m<br><br>Maximum Test Area:<br>200 mm diameter<br><br>Maximum Velocity:<br>25 m/s with 200 mm dia Duct<br>40 m/s with 140 mm dia Duct<br><br>Dust Concentration:<br>0.1 g/m3 to 20 g/m3 | MIL-STD 810F:2003 Method 500.4 Method 520.2<br>MIL-STD 810G:2008 Method 500.5 Method 520.3<br>MIL-STD 810G w/Change 1:2014 Method 500.6 Method 520.4<br>MIL-STD 810H:2019 Method 500.6 Method 520.5<br>RTCA DO 160B:1984<br>RTCA DO 160C:1989<br>RTCA DO 160D:1997<br>RTCA DO 160E:2004<br>RCTA DO 160F:2007<br>RTCA DO 160G:2010<br>RTCA DO 160G CHG1:2014<br><br>DEF STAN 07-55:1983 Test D1<br>RTCA DO 160B:1984<br>RTCA DO 160C:1989<br>RTCA DO 160D:1997<br>RTCA DO 160E:2004<br>RTCA DO 160F:12.0:2007<br>RTCA DO 160G:2010<br>RTCA DO 160G CHG1:2014<br>MIL-STD 810B:1967 Method 510<br>MIL-STD 810C:1975 Method 510.1<br>MIL STD 810D:1983 Method 510.2<br>MIL-STD 810E:1989 Method 510.3<br>MIL-STD 810F:2003 Method 510.4<br>MIL-STD 810G:2008 Method 510.5<br>MIL-STD 810G:CN1:2014 Method 510.6<br>MIL-STD 810H:2019 Method 510.7<br>Procedures I and II |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>CLIMATIC (cont'd)<br><br>Dust and Sand – Driving (cont'd)<br><br>Temperature Range:<br>+20 to +71 °C<br><br>Chamber size:<br>1.5 m x 1.5 m x 2.5 m<br><br>Maximum Test Area:<br>200 mm diameter<br><br>Maximum Velocity:<br>25 m/s with 200 mm dia Duct<br>40 m/s with 140 mm dia Duct<br><br>Dust Concentration:<br>0.1 g/m3 to 20 g/m3<br><br>Dust and Sand – Turbulent<br><br>Temperature Range:<br>+20 to +70 °C<br><br>Chamber size:<br>1.5 m x 1.5 m x 2.5 m<br><br>Dust Concentration:<br>0.1 g/$m^3$ to 20 g/$m^3$<br><br>Drip Proof<br><br>Drip Tray area:<br>0.77 m x 0.77 m | <br><br><br><br>DEF STAN 00-35 Pt 3, Iss 3:1999 Test CL25<br>DEF STAN 00-35 Pt 3, Iss 4:2006 Test CL25<br>DEF STAN 00-035 Pt 3, Iss 5:2017 Test CL25<br><br><br><br><br><br><br>DEF STAN 07-55:1983 Test D1<br>DEF 133:1971 para 10<br><br><br><br><br><br>ETSI EN 300 19-2-1:2000<br>ETSI EN 300 019-2-1 v2.3.1(2017-11)<br>BS 3G100: Part 2: Subsect 3.11: 1973(1983) Grade B |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>CLIMATIC (cont'd)<br><br>Drip Proof (cont'd)<br><br>Drip Tray area:<br>0.77 m x 0.77 m | RTCA DO 160B:1984<br>RTCA DO 160C:1989<br>RTCA DO 160D:1997<br>RTCA DO 160E:2004<br>RTCA DO 160F:10.3.1:2007<br>RTCA DO 160G:2010<br>RTCA DO 160G CHG1:2014<br>DEF STAN 00-35 Pt 3, Iss 3:1999 Test CL28<br>DEF STAN 00-35 Pt 3, Iss 4:2006 Test CL28<br>DEF STAN 00-035 Pt 3, Iss 5:2017 Test CL28<br>BS EN 60068-2-18:2001<br>BS EN 60068-2-18:2017<br>IEC 60068-2-18:2000<br>IEC 60068-2-18:2017<br>DEF STAN 07-55:1983 Test D4<br>BS EN 50133-1:1997<br>MIL-STD 810B:1967 Method 506<br>MIL-STD 810C:1975 Method 506.1<br>MIL STD 810D:1983 Method 506.2<br>MIL-STD 810E:1989 Method 506.3<br>MIL-STD 810F:2003 Method 506.4<br>MIL-STD 810G:2008 Method 506.5 Procedure III<br>MIL-STD 810G CN 1:2014 Method 506.6 Procedure III<br>MIL-STD 810H:2019 Method 506.6 Procedure III |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>CLIMATIC (cont'd)<br><br>Spray Proof<br><br>Max Item size:<br>3.0 m x 3.0 m x 3.0 m<br><br>Driving Rain<br><br>Max item size:<br>3.0 m x 3.0 m x 3.0 m<br>(single pass)<br><br>Icing/Freezing Rain<br><br>Min temp: -50 °C<br><br>Max chamber size:<br>4.0 m x 2.5 m x 2.5 m | <br><br><br><br>RTCA DO 160B:1984<br>RTCA DO 160C:1989<br>RTCA DO 160D:1997<br>RTCA DO 160E:2004<br>RTCA DO 160F:2007<br>RTCA DO 160G:2010<br>RTCA DO 160G CN1:2014<br><br><br>BS EN 60068-2-17:1995<br>IEC 68-2-17:1994<br>BS 3G100: Part 2:<br>Subsect 3.11:1973(1983) Grade B<br>DEF STAN 00-35 Pt 3, Iss 3:1999<br>Test CL27<br>DEF STAN 00-35 Pt 3, Iss4: 2006<br>Test CL27<br>DEF STAN 00-035 Pt 3, Iss5:2017<br>Test CL27<br>DEF STAN 07-55:1983 Test D3<br>NES 1004:1995 Data Sheet 18<br>DEF STAN 08-123:2000 Data Sheet 18<br>DEF STAN 08-123 Issue 2:2012 Data Sheet 18<br><br><br>MIL STD 810D: 1983 Method 521.0<br>MIL-STD 810E:1989 Method 521.1<br>MIL-STD 810F:2003 Method 521.2<br>MIL-STD 810G:2008<br>Method 521.3<br>MIL-STD 810G CN1:2014<br>Method 521.4<br>MIL-STD 810H:2019 Method 521.4 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>CLIMATIC (cont'd)<br><br>Icing/Freezing Rain (cont'd)<br><br>Min temp: -50 °C<br><br>Max chamber size:<br>4.0 m x 2.5 m x 2.5 m | RTCA DO 160B:1984<br>RTCA DO 160C:1989<br>RTCA DO 160D:1997<br>RTCA DO 160E:2004<br>RTCA DO 160F:24.0:2007<br>RTCA DO 160G:2010<br>RTCA DO 160G CHG1:2014<br>DEF STAN 00-35 Pt 3, Iss 3:1999<br>Test CL10<br>DEF STAN 00-35 Pt 3, Iss4:2006<br>Test CL10<br>DEF STAN 00-035 Pt 3, Iss5:2017<br>Test CL10<br>NES 1004:1995<br>Data Sheet 15<br>DEF STAN 08-123:2000<br>Data Sheet 15<br>DEF STAN 08-123 Issue 2:2012<br>Data Sheet 15 |
| | Corrosion Salt<br><br>Max chamber size:<br>1.9 m x 1.2 m x 0.9 m | BS EN 60068-2-11:1999:Ka<br>BS EN 60068-2-52:1996:Kb<br>BS EN 60068-2-52:2018:Kb<br>IEC 68-2-11:1981<br>IEC 68-2-52:1996<br>TR 2130C:2002<br>TR 2130D:2011<br>TR 2130E:2014<br>BS 3G100: Part 2:<br>Subsection 3.8:1977(1983)<br>BS EN 50155:12.2.10:2007<br>BS EN 50155:13.4.10:2017<br>BS EN ISO 9227:2006: NSS<br>BS EN ISO 9227:2017: NSS<br>DEF STAN 07-55:1983<br>Tests C2, C5 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>CLIMATIC (cont'd)<br><br>Corrosion Salt (cont'd)<br><br>Max chamber size:<br>1.9 m x 1.2 m x 0.9 m | RTCA DO 160B:1984<br>RTCA DO 160C:1989<br>RTCA DO 160D:1997<br>RTCA DO 160E:2004<br>RTCA DO 160F:14.0:2007<br>RTCA DO 160G:2010<br>RTCA DO 160G:CN1:2014<br>MIL-STD 810B:1967 Method 509<br>MIL-STD 810C:1975 Method 509.1<br>MIL STD 810D:1983 Method 509.2<br>MIL-STD 810E:1989 Method 509.3<br>MIL-STD 810F:2003 Method 509.4<br>MIL-STD 810G:2008 Method 509.5<br>MIL-STD 810G CN1:2014<br>Method 509.6<br>MIL-STD 810H:2019 Method 509.7<br>DEF STAN 00-35 Pt 3, Iss 3:1999<br>Tests CN2 and CN5<br>DEF STAN 00-35 Pt 3, Iss 4:2006<br>Tests CN2 and CN5<br>DEF STAN 00-035 Pt 3, Iss 5:2017<br>Tests CN2 and CN5<br>NES 1004:1995, Data Sheet 21<br>DEF STAN 08-123:2000<br>Data Sheet 21<br>DEF STAN 08-123 Issue 2:2012<br>Data Sheet 21<br>Lloyds Register Specification<br>No 1:1996: Salt mist<br>Lloyds Register Specification No<br>1:2013 Section 16<br>BS EN 60068-2-52:2018:Kb<br>IEC 68-2-11:1981<br>IEC 68-2-52:1996<br>TR 2130C:2002<br>TR 2130D:2011<br>TR 2130E:2014<br>BS 3G100: Part 2: Subsection<br>3.8:1977(1983) |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>CLIMATIC (cont'd)<br><br>Corrosion Salt (cont'd)<br><br>Max chamber size:<br>1.9 m x 1.2 m x 0.9 m<br><br>DYNAMIC<br><br>(a) Ambient Temperature<br><br>**(electromagnetic)**<br><br>Freq range: 3 to 3000 Hz<br>Max peak thrust: 160 kN<br>Max payload (vertical): 2000 kg<br>Max payload (horizontal): 7000 kg<br>Max displacement: 40mm pk-pk<br><br>(b) High/Low Temperature<br><br>(Prefabricated Enclosure)<br><br>Max temp: +150 °C<br>Min temp: -70 °C | <br><br><br><br>BS EN 50155:12.2.10:2007<br>BS EN 50155:13.4.10:2017<br>BS EN ISO 9227:2006: NSS<br>BS EN ISO 9227:2017: NSS<br><br><br>NES 1004:1995 Data Sheet 25 (externally generated)<br>DEF STAN 08-123:2000 Data Sheet 25 (externally generated)<br>DEF STAN 08-123 Issue 2:2012 Data Sheet 25 (externally generated)<br>DEF STAN 07-55:1983 Test A1 & Test A2<br>MIL-STD 810B:1967 Method 514 Method 519<br>MIL-STD 810C:1975 Method 514.2 Method 519.2<br>MIL STD 810D:1983 Method 514.3 Method 519.3<br>MIL-STD 810E:1989 Method 514.4 Method 519.4<br>MIL-STD 810F:2003 Method 514.5 Method 519.5<br>MIL-STD 810G:2008 Method 514.6 Method 519.6<br>MIL-STD 810G CN1:2014 Method 514.7 Method 519.7<br>MIL-STD 810H:2019 Method 514.8 Method 519.8 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>DYNAMIC (cont'd)<br><br>Vibration<br><br>Sine, random, broadband random, swept sine, fixed sine dwell, notching, force notching, sine-on-random, random-on-random, sine-on-random-on-random, and gunfire<br><br>- with slip table facility | DEF STAN 00-35 Pt 3, Iss 3:1999 Test M1<br>DEF STAN 00-35 Pt 3, Iss 4:2006 Test M1<br>DEF STAN 00-035 Pt 3, Iss 5:2017 Test M1<br>BS 2011: Fd:1973(1984)<br>BS 2011: Fda:1973(1984)<br>BS 2011: Fdb:1973(1984)<br>BS 2011: Fdc:1973(1984)<br>BS EN 60068-2-6:2008:Fc<br>BS EN 60945:2002<br>IEC 60068-2-64:2008<br>IEC 68-2-6:1993<br>TR 2130C:2002<br>TR 2130D:2011<br>TR 2130E:2014<br>BS 3G100: Part 2: Subsection 3.1:1969(1983)<br>RTCA DO 160B:1984<br>RTCA DO 160C:1989<br>RTCA DO 160D:1997<br>RTCA DO 160E:2004<br>RTCA DO 160F:2007<br>RTCA DO 160G:2010<br>RTCA DO 160G CN1:2014<br>IEC 61373:1999<br>IEC 61373:2010<br>BS EN 50155-1:2007<br>BS EN 50155:13.4.11:2017<br>BS EN 60255-21-1:1996<br>ETSI EN 300 19-2-1:2000<br>ETSI EN 300 019-2-1 v 2.3.1 (2017)<br>ETSI EN 300 19-2-2:1999<br>ETSI EN 300 019-2-2 2013<br>ETSI EN 300 19-2-3:2003<br>ETSI EN 300 019-2-3:2015<br>MIL-STD167-1A 2005 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>DYNAMIC (cont'd)<br><br>Shock<br><br>Classical shock with half sine, initial and terminal peak sawtooth, trapezoidal, and rectangular pulse shape<br>Shock response spectrum synthesis (SRS)<br><br>**- Vertical**<br>half sine, sawtooth<br>Max item mass: 2000 kg<br><br>**- Ambient temperature**<br>Severity: 1 g to 210 g<br>Duration:<br>1 ms to 70 ms<br>(severity dependent)<br><br>**- with temperature (prefabricated enclosure)**<br><br>Severity: 3 g to 1500 g<br>Duration:<br>0.2 ms to 70 ms<br>(severity dependent)<br><br>Max temp: +150 °C<br>Min temp: -70 °C | DEF STAN 00-35 Pt 3, Iss 3:1999 Tests M3, M6 and M7<br>DEF STAN 00-35 Pt 3, Iss 4:2006 Tests M3, M6 and M7<br>DEF STAN 00-035 Pt 3, Iss 5:2017 Tests M3 and M6<br>RTCA DO 160B:1984<br>RTCA DO 160C:1989<br>RTCA DO 160D:1997<br>RTCA DO 160E:2004<br>RTCA DO 160F:2007<br>RTCA DO 160G:2010<br>RTCA DO 160G CN1:2014<br>TR 2130C:2002<br>TR 2130D:2011<br>TR 2130E:2014<br>BS EN 60068-2-27:1993:Ea<br>BS EN 60068-2-27:2009<br>EN 60068-2-81:2003<br>IEC 68-2-27:1987<br>DEF STAN 07-55:1983<br>Test A3<br>MIL-STD 810B:1967 Method 516<br>MIL-STD 810C:1975 Method 516.2<br>MIL STD 810D:1983 Method 516.3<br>MIL-STD 810E:1989 Method 516.4<br>MIL-STD 810F:2003 Method 516.5MIL-STD 810G:2008 Method 516.6<br>MIL-STD 810G:CN1:2014 Method 516.7<br>MIL-STD 810H:2019 Method 516.8BRB/RIA 20:1995<br>IEC 61373:1999<br>IEC 61373:2010 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>DYNAMIC (cont'd)<br><br>Shock (cont'd)<br><br>Classical shock with half sine, initial and terminal peak sawtooth, trapezoidal, and rectangular pulse shape<br>Shock response spectrum synthesis (SRS)<br><br>**- Vertical**<br>half sine, sawtooth<br>Max item mass: 2000 kg<br><br>**- Ambient temperature**<br>Severity: 1 g to 210 g<br>Duration:<br>1 ms to 70 ms<br>(severity dependent)<br><br>**- with temperature (prefabricated enclosure)**<br><br>Severity: 3 g to 1500 g<br>Duration:<br>0.2 ms to 70 ms<br>(severity dependent)<br><br>Max temp: +150 °C<br>Min temp: -70 °C | <br><br><br><br><br><br>BS EN 50155:12.2.11:2007<br>BS EN 50155:13.4.11:2017<br>BS EN 60255-21-2:1996<br>BS EN 60255-21-1:1996<br>ETSI EN 300 19-2-1:2000<br>ETSI EN 300 019-2-1 v 2.3.1 (2017-11)<br>ETSI EN 300 19-2-2:1999<br>ETSI EN 300 019-2-2 2013<br>ETSI EN 300 19-2-3:2003<br>ETSI EN 300 019-2-3:2015<br>NES 1004:1995, Data Sheet 28<br>DEF STAN 08-123:2000<br>Data Sheet 28<br>DEF STAN 08-123 Issue 2:2012<br>Data Sheet 28 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>DYNAMIC (cont'd)<br><br>Shock (cont'd)<br><br>**- Horizontal**<br>half sine, sawtooth<br>Max item mass: 7000 kg | DEF STAN 00-35 Pt 3, Iss 3:1999<br>Tests M3, M6 and M7<br>DEF STAN 00-35 Pt 4, Iss 4:2006<br>Tests M3, M6 and M7<br>DEF STAN 00-035 Pt 3, Iss 5:2017<br>Tests M3 and M6<br>RTCA DO 160B:1984<br>RTCA DO 160C:1989<br>RTCA DO 160D:1997<br>RTCA DO 160E:2004<br>RTCA DO 160F:2007<br>RTCA DO 160G:2010<br>RTCA DO 160G CHG1:2014<br>TR 2130C:2002<br>TR 2130D:2011<br>TR 2130E:2014 |
| | **- ambient temperature**<br>Severity: 1 g to 210 g<br>Duration:<br>1 ms to 70 ms<br>(severity dependent) | BS EN 60068-2-27:1993:Ea<br>BS EN 60068-2-27:2009<br>IEC 68-2-27:1987<br>DEF STAN 07-55:1983<br>Test A3<br>MIL-STD 810B:1967 Method 516<br>MIL-STD 810C:1975 Method 516.2<br>MIL STD 810D:1983 Method 516.3<br>MIL-STD 810E:1989 Method 516.4<br>MIL-STD 810F:2003Method 516.5<br>MIL-STD 810G:2008<br>Method 516.6<br>MIL-STD 810G CN 1:2014<br>Method 516.7<br>MIL-STD 810H:2019 Method 516.8 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>DYNAMIC (cont'd)<br><br>Shock (cont'd)<br><br>**- with temperature (prefabricated enclosure)**<br>Severity: 1 g to 210 g<br>Duration:<br>1 ms to 70 ms<br>(severity dependent)<br><br>Max temp: +150 °C<br>Min temp: -70 °C<br><br>**- SRS**<br>Limited by:<br>210g acceleration<br>50mm displacement | BRB/RIA 20:1995<br>IEC 61373:1999<br>IEC 61373:2010<br>BS EN 50155:12.2.11:2007<br>BS EN 50155:13.4.11:2017<br>ETSI EN 300 19-2-1:2000<br>ETSI EN 300 019-2-1 v 2.3.1 (2017-11)<br>ETSI EN 300 19-2-2:1999<br>ETSI EN 300 019-2-2 2013<br>ETSI EN 300 19-2-3:2003<br>ETSI EN 300 019-2-3:2015<br>NES 1004:1995<br>Data Sheet 28<br>DEF STAN 08-123:2000<br>Data Sheet 28<br>DEF STAN 08-123 Issue 2:2012<br>Data Sheet 28<br><br>MIL STD 810D:1983 Method 516.3<br>MIL-STD 810E:1989 Method 516.4<br>MIL-STD 810F:2003 Method 516.5<br>MIL STD 810G:2008<br>Method 516.6<br>MIL-STD 810G CN1:2014<br>Method 516.7<br>MIL-STD 810H:2019 Method 516.8 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>DYNAMIC (cont'd)<br><br>Bump<br><br>**- ambient temperature**<br>Max item mass: 2000 kg<br><br>**- with temperature (prefabricated enclosure)**<br>Max item mass: 2000 kg<br>Max temp: +150 °C<br>Min temp: -70 °C<br><br>Drop and Topple<br><br>**- with temperature (prefabricated enclosure)**<br>Max item mass: 2000 kg<br>Max temp: +150 °C<br>Min temp: -70 °C | DEF STAN 00-35 Pt 3, Iss 3:1999 Test M12<br>DEF STAN 00-35 Pt 3, Iss 4:2006 Test M12<br>DEF STAN 00-035 Pt 3, Iss 5:2017 Test M12<br>TR 2130C:2005<br>TR 2130D:2011<br>TR 2130E:2014<br>BS EN 60068-2-29:1993:Eb<br>IEC 68-2-29:1987<br>DEF STAN 07-55:1983<br>Test A5<br>ETSI EN 300 19-2-2:1999<br>ETSI EN 300 019-2-2 2013<br>ETSI EN 300 19-2-3:2003<br>ETSI EN 300 019-2-3:2015<br><br>DEF STAN 00-35 Pt 3, Iss 3:1999 Test M4<br>DEF STAN 00-35 Pt 3, Iss 4:2006 Test M4<br>DEF STAN 00-035 Pt 3, Iss 5:2017 Test M4<br>TR 2130C:2002<br>TR 2130D:2011<br>TR 2130E:2014<br>BS EN 60068-2-31:2008:Ec<br>IEC 68-2-31:1969<br>ETSI EN 300 19-2-2:1999<br>ETSI EN 300 019-2-2 2013<br>DEF STAN 07-55:1983<br>Test A4<br>BR 967:1973:Mechanical Environmental Clause 5.1 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>DYNAMIC (cont'd)<br><br>Free Fall Impact Test<br><br>**- with temperature (prefabricated enclosure)**<br>Max drop ht: 4.5 m<br>Max item mass: 8000 kg<br>Max temp: + 150 °C<br>Min temp: -70 °C | DEF STAN 00-35 Pt 3, Iss 3:1999 Test M5<br>DEF STAN 00-35 Pt 3, Iss 4:2006: Test M5<br>DEF STAN 00-035 Pt 3, Iss 5:2017 Test M5<br>TR 2130C:2002<br>TR 2130D:2011<br>TR 2130E:2014<br>BS EN 60068-2-31:2008<br>IEC 68-2-32:1975<br>ETSI EN 300 19-2-2:1999<br>ETSI EN 300 019-2-2 2013<br>DEF STAN 07-55:1983 Test A9 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| GENERAL NON-EXPLOSIVE STORES AND EQUIPMENT including: (cont'd)<br><br>As listed on Pages 1 and 2 | **ENVIRONMENTAL TESTS (NON-EXPLOSIVE ITEMS)** (cont'd)<br><br>DYNAMIC (cont'd)<br><br>Acceleration<br>**- steady state**<br><br>Max acceleration: 70 g<br>Max radius: 1.22 m<br>Max item mass:<br>22 kg (at max gn)<br>Max item size: length 0.5 m<br>width 0.3 m<br>height 0.3 m | BS EN 60068-2-7:1993: Ga<br>IEC 68-2-7:1983<br>BS 3G100: Part 2:<br>Subsection3.6:1972(1983)<br>DEF STAN 07-55:1983 Test A6<br>DEF STAN 00-35 Pt 3, Iss 3:1999<br>Test M13<br>DEF STAN 00-35 Pt 3, Iss 4:2006<br>Test M13<br>DEF STAN 00-035 Pt 3, Iss 5:2017<br>Test M13<br>MIL-STD 810B:1967 Method 513<br>MIL-STD 810C:1975 Method 513.2<br>MIL STD 810D:1983 Method 513.3<br>MIL-STD 810E:1989 Method 513.4<br>MIL-STD 810F:2003 Method 513.5<br>MIL-STD 810G:2008<br>Method 513.6<br>MIL-STD 810G CN1:2014<br>Method 513.7<br>MIL-STD 810H:2019 Method 513.8<br>RTCA DO 160B:1984<br>RTCA DO 160C:1989<br>RTCA DO 160D:1997<br>RTCA DO 160E:2004<br>RTCA DO 160F:2007<br>RTCA DO 160G:2010<br>RTCA DO 160G CHG1:2014 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| ENCLOSURES FOR ELECTRICAL EQUIPMENT | **2 INGRESS PROTECTION TESTS**<br><br>IP1X Protected against solid objects greater than 50 mm diameter<br><br>IP2X Protected against solid objects greater than 12.5 mm diameter<br><br>IP3X Protected against solid objects greater than 2.5 mm diameter<br><br>IP4X Protected against solid objects greater than 1.0 mm diameter<br><br>IP5X Dust protected<br><br>IP6X Dust tight<br><br>IPX1 Protected against dripping water<br><br>IPX2 Protected against dripping water when tilted up to 15°<br><br>IPX3 Protected against spraying water<br><br>IPX4 Protection against splashing water<br><br>IPX5 Protected against water jets<br><br>IPX6 Protected against powerful water jets<br><br>IPX7 Protected against the effects of immersion<br><br>IPX8 Protected against submersion | BS EN 60529:1992 +A2:2013<br>EN 60529:1991<br>IEC 60529:1989<br>BS EN 60598-1:2008, Clause 9.2<br>Lloyds Register Specification No 1:1996: Enclosure test<br>Lloyds Register Specification No 1:2013 Section 20<br>TR 2130C:2002<br>TR 2130D:2011<br>TR 2130E:2014 |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| AMUNITION<br>EXPLOSIVES and PROPELLANTS<br>FUZES: WEAPONS<br>FIREARMS<br>WEAPONS and<br>SUB-ASSEMBLIES | **ENVIRONMENTAL TESTS (EXPLOSIVE ITEMS)**<br>(UN Class 1 Hazard Divisions 1.3 and 1.4) | |
| | All tests above (pages 1 to 23) may be carried out | See above (pages 1 to 23) |
| | Certain tests listed above can/may increase the potential hazard of the explosive item | Where necessary, prefabricated Standard Safety Cells are constructed for containment |
| | The hazard classifications mentioned above (1.3 and 1.4) must not be violated before, during, or after testing | |
| | Assurances that the item will remain potentially safe under the test conditions must be furnished by the customer | |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| AEROSPACE STRUCTURES, MATERIALS AND EQUIPMENT<br>AGRICULTURAL EQUIPMENT<br>CONSTRUCTION PLANT, EQUIPMENT, PRODUCTS AND MATERIALS<br>CRYOGENIC EQUIPMENT<br>ELECTRICAL/ELECTRONIC COMPONENTS, CONNECTORS AND COMPONENTS<br>ELECTRO-MECHANICAL DEVICES<br>ENCLOSURES<br>MARINE EQUIPMENT<br>MECHANICAL PRODUCTS AND PLANT<br>MINING EQUIPMENT AND COMPONENTS<br>MOTOR VEHICLE ACCESSORIES AND COMPONENTS<br>PACKAGES AND PACKAGING MATERIAL<br>STRUCTURES AND COMPONENTS<br>WELDMENTS | **MECHANICAL TESTS**<br><br>Structural tests<br><br>(a) Static (universal testing machines)<br><br>Max force: 53 kN<br>Max crosshead ht: 0.45 m<br><br>(b) Static/low frequency (reaction frames)<br>- ambient, high/low temp (prefabricated enclosures)<br><br>Purpose built reaction frames<br><br>Maximum specimen size:<br>4 m x 4 m x 3 m (high)<br>Max single force: 500 kN (hydraulic actuators)<br><br>Max temp: +70°C<br>Min temp: -70°C<br><br>Properties measured: -<br>displacement<br>mechanical strain<br><br>**Fatigue Tests – Mechanical**<br>sinusoidal, random, synthesised<br><br>Purpose built reaction frame<br>Maximum specimen size:<br>4 m x 4 m x 3 m (high)<br><br>Max force: 53 kN<br>Max freq: 10 Hz<br>(force/stiffness dependent) | Documented In-House Procedures COP-015 & COP-016<br>DEF STAN 00-970:1989 Part 2: Chapter 200<br>NES 1004:1995 Data Sheet 36<br>DEF STAN 08-123:2000 Data sheet 3<br>DEF STAN 08-123 Issue 2:2012 Data Sheet 36<br>DEF STAN 00-35 Pt 3, Iss3:1999 Tests M15, M16 and CL22<br>DEF STAN 00-35 Pt 3, Iss 4:2006 Tests M15, M16 and CL22<br>DEF STAN 00-035 Pt 3, Iss 5:2017 Tests M15, M16 and CL22<br>NES 1004:1995 Data Sheet 35<br>DEF STAN 08-123:2000 Data Sheet 35<br>DEF STAN 08-123 Issue 2:2012 Data Sheet 35<br>Lloyds Register Specification No 1:2013 Section 10 & 11<br><br>Documented In-House Procedure COP-015<br>DEF STAN 00-970:1989 Part 2: Chapter 201<br>COP-005 Hydraulic mechanical fatigue test procedure |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| As listed on page 26 | **MECHANICAL TESTS** (cont'd) | |
| | **Endurance Tests – Mechanical**<br><br>Purpose-built rigs utilising pneumatic/hydraulic/electric Actuators<br><br>Measurement of:<br>force - static and dynamic<br>displacement<br>strain<br>frequency-cycles completed<br>: at failure | Documented In-House Procedure COP-015 and COP-005 Hydraulic mechanical fatigue test method |
| JET ENGINE COMPONENTS INCLUDING GUIDE VANES; LOW, INTERMEDIATE AND HIGH-PRESSURE COMPRESSOR STAGES FOR COMMERCIAL AND MILITARY AIRCRAFT | High Cycle Fatigue Testing (HCF)<br><br>Electromagnetic shaker, or air-jet excitation<br><br>Frequency range:<br>50Hz to 3kHz | Documented In-house Procedure: COP-086 |
| HOSES, PIPES AND TUBES<br>HYDRAULIC EQUIPMENT AND FITTINGS<br>PRESSURE VESSELS | Pressure Tests<br><br>(a) Hydraulic fatigue<br>Max pressure :<br>22 MPa (3200 lb/in$^2$)<br>Cycle rate 2 to 600 cpm<br><br>(b) Hydrostatic proof<br>Max pressure:<br>60 MPa (8700 lb/in$^2$)<br><br>c) Air pressure/vacuum<br>Positive gauge pressure limit:<br>13.79 MPa (2000 lb/in$^2$)<br>Negative gauge pressure limit:<br>-96 kPa (-14 ib/in$^2$) | DEF STAN 00-35 Pt 3, Iss 3:1999 Test CL15<br>DEF STAN 00-35 Pt 3, Iss 4:2006 Test CL15<br>DEF STAN 00-035 Pt 3, Iss 5:2017 Test CL11<br>NES 1004:1995 Data Sheet 13<br>DEF STAN 08-123:2000 Data Sheet 13<br>DEF STAN 08-123 Issue 2:2012 Data Sheet 13<br>BS EN 60068-2-13:1999<br>COP-138 Hydraulic pressure fatigue testing<br>COP-140 Pneumatic testing |

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used |
|---|---|---|
| ELECTRICAL/ELECTRONIC COMPONENTS and PRODUCTS | **ELECTRICAL OPERATION AND MEASUREMENT**<br><br>Voltage:<br>DC: 100 mV to 1000 V<br>AC: 10 mV to 1000 V at 10 Hz<br>AC: 100 mV to 10 V at 50 kHz<br><br>Frequency: 1 Hz to 100 kHz<br><br>Current:<br>AC: 1 mA to 1000 A<br>DC: 10 μA to 1000 A<br><br>Resistance: 1 mΩ to 10 MΩ<br><br>Insulation Resistance:<br>100 MΩ to 1 TΩ at 500 V<br>100 MΩ to 1 GΩ at 1 kV max<br><br>Break detection (Contacts):<br>1 μS to 100 mS<br>(max current: 100 mA) | Documented In-House Methods (as agreed with the client)<br><br>TEP-10 |
| ELECTRO-MECHANICAL and MECHANICAL PRODUCTS | **MECHANICAL OPERATION AND MEASUREMENTS**<br><br>Torque: 1 lb-in to 500 lb-ft<br><br>Air Pressure: 0 to 16,000 psi<br><br>Vacuum:100 mb to 1050 mb<br><br>Internal Dimensions:<br>0.1 to 150 mm<br><br>External Dimensions:<br>0.1 to 150 mm<br><br>Weight: 1.00g to 12 kg | Documented In-House Methods (as agreed with the client)<br><br>TEP-10 |
| END | | |