

STS Directory

Accreditation number: STS 0506

International Standard: ISO/IEC 17025:2017
 Swiss Standard: SN EN ISO/IEC 17025:2018

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 Initial accreditation: 05.12.2008
 Current accreditation: 05.12.2023 to 04.12.2028
 Scope of accreditation see: www.sas.admin.ch
 (Accredited bodies)

Scope of accreditation as of 05.12.2023

Testing laboratory for environmental simulation and material investigations

Group of products or materials, field of activity	Principle of measurements ²⁾ (characteristics, measuring ranges, type of test)	Test methods, remarks (national, international Standards, in-house test methods)
Environmental simulation	Thermal Tests Heat tests: until +300°C Cold tests: until -70°C	IEC/EN 60068-2-2 IEC/EN 60721-3-0 bis -7 ^{K1)} MIL-STD-810, Meth. 501 RTCA DO-160, Sect. 4 ISO 16750-4 JESD47 ^{K3)} MIL-STD-883, Meth. 1005, 1006, 1007, 1008 IEC/EN 60068-2-1 IEC/EN 60721-3-0 bis -7 ^{K1)} MIL-STD-810, Meth. 502 RTCA DO-160, Sect. 4



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	<p>Temperature change/-shock-tests: Air – air and air - fluid -70 until +200°C</p> <p>Climatic tests Climatic tests: +10% until 98% rF at +10° until +95°C -60° until 230°C without humidity</p> <p>Condensation tests</p> <p>Corrosion tests</p>	<p>ISO 16750-4 JESD47 ^{K3)} MIL-STD-883, Meth. 1007 IEC 60068-2-14Na und Nb IEC/EN 60721-3-0 bis -7 ^{K1)} MIL-STD-810, Meth. 503 RTCA DO-160, Sect. 5 ISO 16750-4 IPC-TM-650 ^{K2)} ASTM D 4169 ^{K4)} IEC/EN 62281 ^{K5)} JESD47 ^{K3)} IPC/JEDEC J-STD-020C MIL-STD-883, Meth. 1010</p> <p>IEC/EN 60068-2-30, -38, -78 IEC/EN 60721-3-0 bis -7 ^{K1)} MIL-STD-810, Meth. 507 RTCA DO-160, Sect. 6 ISO 16750-4 IPC-TM-650 ^{K2)} JESD47 ^{K3)} MIL-STD-883, Meth. 1004 MIL-STD-750, Meth. 1021</p> <p>EN ISO 6270-2 DIN 50 017</p> <p>IEC/EN 60068-2-52 ISO 7253 IEC 60068-2-11Ka SN EN ISO 9227 DIN 50 021</p>

1) Scope of accreditation Type A (fix)

2) Scope of accreditation Type B (flexible)

3) Scope of accreditation Type C (flexible)

Definition of flexibility see as SAS-Dokument 741



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	<p>Overpressure tests: Chamber: until 4 bar Temperature: until +130°C</p> <p>Low pressure tests: Chamber: until 20 mbar Temperature: until +150°C</p> <p>Dust-, Sand-, / Waterproofness- / -absorption /-tests: Degrees of protection (IP code)</p> <p>Dropping, spurt, immerse</p> <p>Liquid-resistance tests: Spray, wiping, immerse</p> <p>Flammability tests: Hot bar, special installation Burning behaviour of materials</p>	<p>RTCA DO-160, Sect. 4 IEC 60068-3-2 IEC 60068-2-13, -41 IEC 60721-3-0, -4 IEC 60068-3-2 IEC 60068-2-13, -41 MIL-STD-810, Meth. 500 MIL-STD-883, Meth. 1001 RTCA DO-160, Sect. 4 ASTM D 4169 ^{K4)} IEC/EN 62281 ^{K5)}</p> <p>IEC/EN 60529 ^{Z1)} ISO 20653 ^{Z1)} IEC 60068-2-68 ISO 12103-1 NEMA 250 ^{Z1)}</p> <p>EN IEC 60068-2-18 MIL-STD-810, Meth. 506 RTCA DO-160, Sect. 10 IPC-TM-650 ^{K2)}</p> <p>IEC/EN 60068-2-45 DIN EN 2591-315 ISO 16750-5 DIN EN ISO 105-E02, -E03, -E04 RTCA DO-160, Sect. 11 MIL-STD-883, Meth. 1002, 2015 NF F 31-112</p> <p>EN 13819-1 ^{K6)} ISO 3795 DIN 75200</p>

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	<p>Mechanical tests:</p> <p>Vibration: Random and sinus Frequency range: until 2000Hz Temperature: -40° bis +95°C</p> <p>Shock: Half sinus, sawtooth and trapezium Acceleration until 30g depending on object and clamping method</p> <p>Free fall: Height of fall: until 2m Base: Wood, concrete, steel</p> <p>Vibration measurement hand-arm-system</p>	<p>GMW 3232 TS00000 302 IEC/EN 60068-2-6, -53, -64, -80 IEC/EN 60721-3-0 bis -7 ^{K1)} MIL-STD-810, Meth. 514 RTCA DO-160, Sect. 8 ISO 16750-3 IPC-TM-650 ^{K2)} EN 61373 ASTM D 4169 ^{K4)} IEC/EN 62281 ^{K5)} JESD47 ^{K3)} MIL-STD-883, Meth. 2026 IEC EN 60068-2-27, -29, -31 IEC/EN 60721-3-0 bis -7 ^{K1)} MIL-STD-810, Meth. 516 RTCA DO-160, Sect. 7 ISO 16750-3 EN 61373 IEC/EN 62281 ^{K5)} IEC EN 60068-2-7 ISO 2669 EN 60068-2-32 ISO 16750-3 IEC/EN 62281 ^{K5)} EN ISO 5349-1 EN ISO 5349-2</p>

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Group of products or materials, field of activity	Principle of measurements ²⁾ (characteristics, measuring ranges, type of test)	Test methods, remarks (national, international Standards, in-house test methods)
<p>Material Investigation</p>	<p>Transport Simulation Packages</p> <p>Classification of environmental conditions</p> <p>Light ageing: Solar radiation and UV-ageing</p>	<p>EN ISO 13355 ISTA ASTM D 4169 ^{K4)}</p> <p>IEC EN 60721-1 IEC EN 60721-3-0, -3-1, -3-2, -3-3, -3-4, -3-5, -3-6, -3-7</p> <p>EN ISO 4892-1 / -3 EN IEC 60068-2-5Sb DIN 75 220 ISO 9022-9 MIL-STD-810 Method 505 EN ISO 16474-1 / -3</p>
	<p>Mechanical tests</p> <p>tensile-, pressure-, hardness-tests:</p> <p>Universal testing machine, uniaxial until 100 kN</p> <p>Hardness tests HV, HB, HRC</p> <p>Low load hardness test HV</p> <p>Shore hardness tests</p> <p>Impact tests</p>	<p>EN 10 002 DIN EN ISO 527-1 DIN 53 504 DIN 53 505 DIN 50145 IEC 60068-2-21 DIN 53 283 DIN EN ISO 6506-1 DIN EN ISO 6507-1 DIN EN ISO 6508-1 EN ISO 868 IPC-TM-650 ^{K2)} DIN 53505 DIN 7868 DIN EN ISO 4516 MIL-STD-883, Meth. 2011, 2023 IEC EN 60068-2-75, Tests Ehb IEC EN 60079-0, para. 26.4.2</p>

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Group of products or materials, field of activity	Principle of measurements ²⁾ (characteristics, measuring ranges, type of test)	Test methods, remarks (national, international Standards, in-house test methods)
Connectors for electronic equipment	Metallography	
	X-ray fluoroscopy until max. 100 kV	DIN EN ISO 1463
	Preparation of metallographic specimens	ASTM E 3-1
	Stereo microscope until V=1:70	IPC-A-600F EN 13018
	Metallographic microscope until V=1:1000	IPC-A-610D
	Scanning electron microscope until V=1:10'000 with EDX-Analytics	IPC-TM-650 ^{K2)}
	Quality investigations of electronic products	P. F. DUJARDIN & Co Box A ferrons materials Box B non ferrons materials
	Structural analysis	ASTM E 112-96
	Grading analysis	DIN EN 60352-5
	Coat thickness measuring	ASTM B 633-98 MIL-STD-2118 MIL-P-55110 MIL-C-5543 MIL-STD-883, Meth. 2009, 2010, 2013, 2014, 2016, 2017, 2018, 2032
	Evaluation of paints and varnishes	EN ISO 17872 EN ISO 2409 EN ISO 4628-3, -3, -8 EN ISO 6270-2
	Continuity and contact resistance	IEC/EN 60512-2-1 IEC/EN 60512-2-2
	Insulation resistance	IEC/EN 60512-3-1
	Voltage proof	IEC/EN 60512-4-1
Performance electrical crimps	SAE/USCAR-21	

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Tests carried out in the context of the following product standards	Railway applications - Rolling stock - Electronic equipment	EN 50155
	Electrical Equipment in Marine Applications	Lloyd's Register Type Approval System Test Specification No. 1, except EMC Tests
	Electrical installation in ships	IEC 60092-504, except EMC Tests

In case of contradictions in the language versions of the directories, the German version shall apply.

Abbreviation	Signification
Z1)	Partly using the infrastructure of STS 0001 and STS 0009, D-PL 11114-16-00, D-PL-21470-01,
K1)	Constraint: only warmth, cold, temperature change-/shock, climate, vibration: random and Sinus, Mech. Shock
K2)	Constraint: only temperature change-/shock, climate, waterproofness, vibration: random and sinus, mechanical tests, metallography
K3)	Constraint: only warmth, cold, temperature change-/shock, climate, vibration: random and Sinus
K4)	Standard Practice for Performance Testing of Shipping Containers and Systems
K5)	Safety of primary- and secondary-lithium batteries at transport
K6)	Ear protector

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