Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER

State Secretariat for Economic Affairs SECO
Swiss Accreditation Service SAS

STS Directory

Accreditation number: STS 0050

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

RUAG Schweiz AG
RUAG Defence
Test Competence Center
Allmendstrasse 86
3602 Thun

Head:	Dr. Stefan Tresch
Responsible for MS:	Jean Daniel Beer
Telephone:	+41 31 376 68 64
E-Mail:	testing.defence@ruag.com
Internet:	http://www.ruag.ch
Initial accreditation:	17.01.1994
Current accreditation:	05.02.2019 to 04.02.2024
Scope of accreditation see:	www.sas.admin.ch (Accredited bodies)

Scope of accreditation as of 05.02.2019

Testing laboratory for simulated environmental testing and (USIM), electromagnetic compatibility (EMC), mechanical, non destructive and metallographic testing of metals (ZfP/ZP)

Group of products or materials, field of activity	Principle of measurement [2] (characteristics, measuring ranges, type of test)	Test methods, remarks (national, international standards, in-house test methods)
	Technical area Enviromental simulation (USIM)	**Technical manager USIM:** René Krummenacher Phone: +41 (0)33 228 30 01
	Thermal- / climatic tests	
Electric, electronic and mechanical devices and units as well as Objects containing explosives	Heat tests: Chambers: up to +180 °C Size: 300 to 4500 l	MIL STD 810, Meth 501, MIL STD 331, Test C6, AECTP 300, Meth 302, IEC 60068-2-2, EN 60068-2-2, V 009 100 “Richtlinie USP“, P-Nr. 101

1) Scope of accreditation type A (fix)
2) Scope of accreditation type B (flexible)
3) Scope of accreditation type C (flexible)

Definition of flexibilty see SAS Document 741

STS Directory

Accreditation number: STS 0050

Group of products or materials, field of activity	Principle of measurement [2] (characteristics, measuring ranges, type of test)	Test methods, remarks (national, international standards, in-house test methods)
Electric, electronic and mechanical devices and units as well as Objects containing explosives	Cold tests: Chambers: down to -60 °C Size: 300 to 4500 l	MIL STD 810, Meth 502 und 521, MIL STD 331, Test C6, AECTP 300, Meth 303, IEC 60068-2-1, EN 60068-2-1, V 009 100 “Richtlinie USP“, P-Nr. 102
	Temperature-shock tests: Chambers: -80 to +200 °C Size: 130 to 1800 l	MIL STD 810, Meth 503, MIL STD 331, Test C7, AECTP 300, Meth 304, EN 60068-2-14, IEC 60068-2-14, V 009 100 “Richtlinie USP“, P-Nr. 103
	Climate test: Chambers: 10 % to 98 % r. F. at 10° to 95 °C Capacity: 500 to 4500 l	MIL STD 810, Meth 507 und 520, MIL STD 331, Test C1, AECTP 300, Meth 306, EN 60068-2-30, IEC 60068-2-30, EN 60068-2-38, IEC 60068-2-38, EN 60068-2-67, IEC 60068-2-67, EN 60068-2-78, IEC 60068-2-78, V 009 100 “Richtlinie USP“, P-Nr. 201, RCTA DO-160, Section 6
	Unterdruck-Prüfungen: Druck: atm. Druck bis 50 mbar Grösse: 2800 l	MIL STD 810, Meth 500 und 520, AECTP 300, Meth 312 , EN 60068-2-13, IEC 60068-2-13, EN 60068-2-39, IEC 60068-2-39, EN 60068-2-40, IEC 60068-2-40, EN 60068-2-41, IEC 60068-2-41, V 009 100 “Richtlinie USP“, P-Nr. 203, RTCA DO-160, Section 4
	Tests on compressive strength	
Control cabinets	Alternating pressure+/- 10 kPa Load Cycles Indirect and direct procedure	ATG LP 45 (Alp Transit Gotthard AG, Dok.: Nr. ATG:BE01-#10021 ID’s Nr.: LP 45.98 & LP 45.99)
	Mechanical Tests	
	Vibration Tests: Shakers vertical and horizontal (Slip-tables) Thurst: 2.2 kN to 88.9 kN with possibility of simultaneous tempering -40 to +100 °C Performance: 5 - 3000 Hz	MIL STD 810, Meth 514, MIL STD 331, Test B1 - B3, AECTP 400, Meth 401 und 406, EN 60068-2-6, IEC 60068-2-6, EN 60068-2-64, IEC 60068-2-64, EN 61373, IEC 61373, V 009 100 “Richtlinie“, P-Nr. 301, RCTA DO-160, Section 8

1) Scope of accreditation type A (fix)
2) Scope of accreditation type B (flexible)
3) Scope of accreditation type C (flexible)

Definition of flexibilty see SAS Document 741

STS Directory

Accreditation number: STS 0050

Group of products or materials, field of activity	Principle of measurement [2] (characteristics, measuring ranges, type of test)	Test methods, remarks (national, international standards, in-house test methods)
Control cabinets	Mech. shock tests: on Shaker: Acceleration for shocks up to 40 g according to Test object and fixture	MIL STD 810, Meth 516, MIL STD 331, Test A1, AECTP 400, Meth 403 und 417, EN 60068-2-27, IEC 60068-2-27, EN 60068-2-53, IEC 60068-2-53, EN 60068-2-55, IEC 6068-2-55, EN 60068-2-57, IEC 60068-2-57, EN 60068-2-59, IEC 60068-2-59, EN 60068-2-80, IEC 60068-2-80, EN 60068-2-81, IEC 60068-2-81, EN 61373, IEC 61373
	on Shock machine with standard table: - Mass of test item: up to ca.85kg - Shape of shockwave: Half sine and rectangular with shock amplifier - Acceleration: 15'000g at 0,1ms - Mass of test item: ca. 5.5 kg - Shape of shock wave: Half sine	EN 60068-2-27, IEC 60068-2-27, V 009 100 “Richtlinie USP“, P-Nr. 302, RCTA DO-160, Section 7
	Drop tests Drop hight: up to 17 m Drop bases: Concrete, Steel, Sand	MIL STD 810, Meth 516, Verf. IV, Tab. 516.4-II, MIL STD 331, Test A3 - A5, AECTP 400, Meth 414, EN 60068-2-31, IEC 60068-2-31, EN 60068-2-75, IEC 60068-2-75, V 009 100 “Richtlinie“, P-Nr. 303
	Dust tests Chamber: 2000 x 800 x 800 mm Mass of Test item: max. 100 kg	MIL STD 810, Meth 510, MIL STD 331, Test C9, AECTP 300, Meth 313, EN 60068-2-68 gemäss, EN 60529 (mit horizontaler Strömung), IEC 60068-2-68 gemäss IEC 60529 (mit horizontaler Strömung), EN 60529, IEC 60529, V 009 100 “Richtlinie“, P-Nr. 204
	Corrosion tests Salt-mist tests Chamber: up to 50 °C Capacity: ca. 250 l	MIL STD 810, Meth 509, EN 60068-2-11, IEC 60068-2-11, EN 60068-2-52, IEC 60068-2-52, ISO 9227, AECTP 300, Meth 309, RCTA DO-160, Section 14

1) Scope of accreditation type A (fix)
2) Scope of accreditation type B (flexible)
3) Scope of accreditation type C (flexible)

Definition of flexibilty see SAS Document 741

STS Directory

Accreditation number: STS 0050

Group of products or materials, field of activity	Principle of measurement [2] (characteristics, measuring ranges, type of test)	Test methods, remarks (national, international standards, in-house test methods)
Control cabinets	**Watertightness tests** Rain test facility: - Test chamber: 17 m3 - Wind: up to 18 m/sec - Rain volume: up to 300 mm/h - Masses of test items for: MIL STD 810: 400 kg EN 60529: 50 kg - Immersion basin: Temp: up to +80 °C, 1550 x 1550 x 700 mm, 1550 x 700 x 550 mm, (h x b x t → h = immerse depth)	MIL STD 810, Meth 506, AECTP 300, Meth 307 und 310, EN 60068-2-17, Tab. II, IEC 60068-2-17, Tab. II, EN 60068-2-18, IEC 60068-2-18, EN 60529, IEC 60529, V 009 100 “Richtlinie USP“, P-Nr. 202, MIL STD 810, Meth 512, RCTA DO-160, Section 10
	Model tests on packages for the transport of dangerous good	
Packages for solid materials and items, except barrels made of natural wood	Drop tests Stockpile tests	Rules for the transport by railway and on the road (Transportreglement) RID/ADR, Teil 6, Kap. 6.1
	Testing laboratory for electromagnetic compatibility (EMC)	**Technical manager EMC:** Andreas Horvath Phone: +41 (0)33 827 66 10
Electrical Equipment	Emission Basic Standards:	
	Harmonic current emissions ≤ 16 A	EN 61000-3-2, IEC 61000-3-2
	Voltage changes, voltage fluctuations and flicker ≤ 16 A	EN 61000-3-3, IEC 61000-3-3
	Disturbance voltages and currents frequency range: f = 9 kHz - 30 MHz	EN 55016-1-1, CISPR 16-1-1, EN 55016-1-2, CISPR 16-2-1, EN 55016-2-1, CISPR 16-2-1, EN 55016-1-1
Electronical Equipments	Disturbance field strength frequency range: f = 30 - 1000 MHz Measuring distance R = 3 m Measuring distance R = 10 m [Y]	EN 55016-1-1, CISPR 16-1-1, EN 55016-1-4, CISPR 16-1-4, EN 55016-2-3, CISPR 16-2-3
	Disturbance field strength frequency range: f = 1 GHz – 18 GHz	EN 55016-1-1, CISPR 16-1-1 EN 55016-1-4, CISPR 16-1-4 EN 55016-2-3, CISPR 16-2-3
	Electrostatic discharge	EN 61000-4-2, IEC 61000-4-2
	High frequency electromagnetic field frequency range: f = 80 MHz – 6 GHz	EN 61000-4-3, IEC 61000-4-3
	Electrical fast transient / burst	EN 61000-4-4, IEC 61000-4-4

1) Scope of accreditation type A (fix)
2) Scope of accreditation type B (flexible)
3) Scope of accreditation type C (flexible)

Definition of flexibilty see SAS Document 741

STS Directory

Accreditation number: STS 0050

Group of products or materials, field of activity	Principle of measurement [2] (characteristics, measuring ranges, type of test)	Test methods, remarks (national, international standards, in-house test methods)
Electronical Equipments	Surge	EN 61000-4-5, IEC 61000-4-5
	Conducted disturbances, induced by radio-frequency fields frequency range: f = 0.15 - 220 MHz	EN 61000-4-6, IEC 61000-4-6
Electromacnetical equipment	Power frequency magnetic field	EN 61000-4-8, IEC 61000-4-8
	Voltage dips, short interruptions and voltage variations	EN 61000-4-11, IEC 61000-4-11
	EMC of products	
	Generic standards	EN 61000-6-1, IEC 61000-6-1, EN 61000-6-2, IEC 61000-6-2, EN 61000-6-3 [T], IEC 61000-6-3 [T], EN 61000-6-4 [T)Y], IEC 61000-6-4[T)Y]
	Product standards:	EMC-tests according to product standards that are fully covered by the above listed basic standards Among others:
Industrial, scientific and medical (ISM) radio-frequency equipment	Emission	EN 55011 [P], CISPR 11 [P], for class A/group 2 see restriction [Y]
Information technology equipment	Emission	EN 55022, CISPR 22
Medical electrical equipment	General requirements for basic safety and essential performance	IEC/EN 60601-1-2
	Technical area **Material testing** **Non destructive testing** **Destructive testing**	**Technical manager:** Karl Köster Phone: +41 (0)33 827 65 80
	Non destructive testing and measuring procedure	(Qualification of personnel in accordance to SN EN 473)
Metals	Detection of surface defects by visula inspection (VT)	EN 13018
	Detection of interior and external defects and measure of thickness of the material by ultrasonic testing (UT)	EN 583-1
	Detection of defects at and near the surface - Measure of crack depth (defectometer)	EN 12084 [A), B)]

1) Scope of accreditation type A (fix)
2) Scope of accreditation type B (flexible)
3) Scope of accreditation type C (flexible)

Definition of flexibilty see SAS Document 741

STS Directory

Accreditation number: STS 0050

Group of products or materials, field of activity	Principle of measurement [2] (characteristics, measuring ranges, type of test)	Test methods, remarks (national, international standards, in-house test methods)
	Eddy Currant method for measurement of thickness of electrical non-conductive coatings on non ferromagnetic basic metals	EN ISO 2360
Metals, polymers	Detection of surface defects by liquid penetration inspection (PT): - Stationary equipment - Liquid dye spraying or brushing	EN 571-1 A), B)
Ferromagnetic materials	Detection of surface or near the surface by magnetic particle inspections (MT): - Stationary equipments - Hand yoke magnet - Various magnetisation methods	EN ISO 9934-1 A), B)
	Magnetic methods of measurement of thickness of non ferromagnetic coatings on ferromagnetic materials	EN ISO 2178 A), B)
	Chemical Composition of Metals	
Iron, aluminum, titanium, copper and nickel base alloys	Mobile plant spectrometry by spark excitation: Fe base: C max. 2,5 %: - Identifications analyses	AAV C1
	Mechanical Materials Testing	
Metals	Measure of the tensile strenght up to 250 kN load measure of elongation until breaking: - Tensile test of standard specimen, bars and wires at room temperature - Test of components	EN ISO 6892-1
	Measure of the compression strength up to 250 kN load: - Compression test of cylindrical specimen - Test of components	DIN 50106
	Measure of bend resistance up to 250 kN Last: - Bend test by three point rest or with punch and die - Test of components	EN ISO 7438
	Measure of absorbed energy up to 300 J: - Charpy impact test from -60°C to +250°C	EN ISO 148-1

1) Scope of accreditation type A (fix)
2) Scope of accreditation type B (flexible)
3) Scope of accreditation type C (flexible)

Definition of flexibilty see SAS Document 741

STS Directory

Accreditation number: STS 0050

Group of products or materials, field of activity	Principle of measurement [2] (characteristics, measuring ranges, type of test)	Test methods, remarks (national, international standards, in-house test methods)
Metals	Hardness testing: Vickers: 0,25 - 1177 N charge, portable test 196 N: Vickers hardness test (stationary and portable) and micro hardness test	EN ISO 6507-1
	Brinell: 9,8 - 29420 N charge: - Brinell hardness test	EN ISO 6506-1
	Rockwell: scale A, C, 15 N, 30 N und 45 N: - Rockwell hardness test	EN ISO 6508-1
	Optical Metallography	
Metals	Magnification from 50 to 1000 times: mircostructural qualification with picture documentation	DIN 50600
	Measure of thickness of layers	EN ISO 1463
	Determination of ferritic or austenitic grain size of steels and ferrous materials	EN ISO 643
	Microscopic examination of special steels using standard diagrams to access the content of non-metallic inclusions	DIN 50602, DIN EN 10247
	Hardness depth of heat-treated parts; determination of the effective depth of carburized and hardened cases, of hardening by flame or induction hardening and of hardening by nitriding	EN ISO 2639, DIN EN 10328, DIN 50190-3, DIN 50190-4
	Determination of depth of decarburization by optical microscopy and low charge hardness test	EN ISO 3887
	Surface Tests	
Metals / surface treatments	Gravimetric method and analogous	EN ISO 1460, EN 12476
	Salt spray tests with different sodium chloride solutions	EN ISO 9227
	Metallic coatings, Vickers and Knoop microhardness tests	EN ISO 4516
Medical electrical equipment	General requirements for basic safety and essential performance	IEC/EN 60601-1-2

1) Scope of accreditation type A (fix)
2) Scope of accreditation type B (flexible)
3) Scope of accreditation type C (flexible)

Definition of flexibilty see SAS Document 741

STS Directory

Accreditation number: STS 0050

Restrictions:

P) Without magnetic fields of induction cooking appliances of group 2

T) Without clicks

Y) Field strength with more severe limits for frequencies f < 200 MHz at measuring distance R = 10 m due to increased measurement uncertainty (NSA)

A) Actually level 3 certification for non-destructive-testing is not available

B) The testing laboratory temporarily does not offer inspections in the field regulated by law.

* / * / * / * / *

1) Scope of accreditation type A (fix)
2) Scope of accreditation type B (flexible)
3) Scope of accreditation type C (flexible)

Definition of flexibilty see SAS Document 741