

| No. | Testing Systems | Type | Building materials | Force range | Components | Test specimens |
|-----|---|---------------------------|---|--|--|---|
| 1. | Tensile and compression testing machines | | | | | |
| 1.1 | Universal testing machines up to 250 kN | Allroundline Z250 | <ul style="list-style-type: none"> - Steel bars & wire and strands - Reinforcement steel: Coils, bars & welded mesh - Material & component testing <p>Shear testing:</p> <ul style="list-style-type: none"> - welded mesh & reinforcement products | Load cell: 10 kN, 200 kN and 250 kN | <p><u>Contacting extensometer:</u> 10 – 700mm</p> <p><u>Specimen grip for test on round specimens:</u></p> <ul style="list-style-type: none"> - Ø 3 – 15 mm - Ø 15 – 55 mm <p><u>Specimen grip for test on flat specimens:</u> 0 – 55 mm</p> | Reinforcement steel: Ø: until 25 mm (depending on force range) Length: 400-800 mm Component testing: depending on the free test space, different attachments are available |
| 1.2 | Universal testing machines up to 600 kN | Allroundline Z1494 | <ul style="list-style-type: none"> - Steel bars & wire and strands - Reinforcement steel: Coils, bars & welded mesh - Material & component testing | Load cell: 10 kN and 600 kN | <p><u>Contacting extensometer:</u> 10 – 700mm</p> <p><u>Specimen grip for test on round specimens:</u></p> <ul style="list-style-type: none"> - Ø 8 – 18 mm - Ø 18 – 34 mm - Ø 30 – 100 mm <p><u>Specimen grip for test on flat specimens:</u> 0 – 100 mm</p> | Reinforcement steel: Ø: until 40 mm (depending on force range) Length: 500-800 mm Component testing: depending on the free test space, different attachments are available |
| 1.3 | Universal testing machines up to 1000 kN | Amsler/Zwick 100 SZDA 230 | <ul style="list-style-type: none"> - Reinforcement steel - Prestressing steel strands - Prestressing steel wire - Tests on prestressing and anchorage systems | Load cell: 1000 kN | <p><u>Video optical measurement of extension or with clip-on extensometer</u></p> <p><u>Specimen grip for test on round specimens:</u></p> <ul style="list-style-type: none"> - Ø 9 – 18 mm - Ø 15 – 30 mm - Ø 41 – 50 mm | Reinforcement steel: Ø: 20 -70 mm (depending on force range) Length: 1000 - 1400 mm <u>Strands:</u> Max. length: 1800 mm free length: 1100 mm |

| 2. | Dynamic and Fatigue Testing Systems | | | | | |
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| 2.1 | High frequency dynamic testing machine (HFP) | Amsler | - Strands - Reinforcement steel coils | 100 kN | With regulation by PC, Rumul Credo Load cell 100 kN | Ø: until 14 mm Max. length: 400 mm free length: max. 210 mm |
| 2.2 | High frequency dynamic testing machine (HFP) | RUMUL Testronic Typ 8601 | - Strands - Reinforcement steel coils | Max. dynamic load: 50 kN (±25kN) and 150 kN(±75kN) range of frequency: 40 - 300 Hz max. stroke: ±2.5 mm | With regulation by PC TOPP, Software: Wöhler, Riss, Anschwingen, Wöhler Evaluation, Pro-Test | Ø: until 16 mm space between the supports: 500 mm Max. length: 400 mm free length: 210 mm |
| 2.3 | Hydraulic testing machine 1000 kN | Amsler Pulsator P131 Nr. 3 | Fatigue testing machine for reinforcement steel, prestressing steel strands | Frequency: 4.5 / 9 Hz | With electronic Control and regulation unit | Steel strands: Max. length: 2000 – 2200 mm free length: 1700 – 1800 mm |
| 2.4 | Hydraulic testing machine 1000 kN | Amsler Pulsator P960 Nr. 2 | Fatigue testing machine for reinforcement steel, prestressing steel strands | Frequency: 4 / 8 Hz | | |
| 2.5 | Hydraulic testing machine 300 kN | Amsler Pulsator P960 Nr.1 | Fatigue testing machine for reinforcement steel, prestressing steel strands and wire | Frequency: 0.5 bis 7 Hz | | |
| 2.6 | Servohydraulic dynamic machine 300 kN | Schenck PBV | Fatigue testing machine for reinforcement steel | Max. stroke: 50 mm with inductive displacement sensor | With electronic Control and regulation unit IST 8400 | Reinforcement steel: until 30 mm Max. length: 1400-2000 mm free length: 210 mm |

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| 3. | Deflection tensile machine | Empa-self-made | Deflection tensile tests on prestressing steel strands | Max. 300 kN | <ul style="list-style-type: none"> - Load cell HBM MG501D - Hydraulic pressure - Strands type 0.5" and 0.6" according SIA 262/1, FprEN10138-3 und NF A35-035:2001 | Strands: 2000 – 2200 mm |
| 4. | Universal bending machine | Gressel Type RB-56 | Bending test for reinforcement steel | Radial angle to 180° | | Min. 700 mm |
| 5. | Heating oven | Heraeus Type UT 6420 | For artificial ageing of reinforcement steel | Temperatur range 20° C to 300° C | | |
| 6. | Rib measurement system | Type RM 301, ECM Daten-systeme | Measurements on reinforcement steel | Diameters from 5 to 40 mm | Calibration stick: Ø 7.975 and 14.955 mm Software Version 6.1 CNC- controller: 11 142-1 | <u>Samples up to Ø 16 mm:</u> 150 - 400 mm <u>Samples up to Ø 40 mm:</u> 250 - 500 mm |
| 7. | Determination from nominal mass per metre | Mettler scale and Electronic caliper | Nominal mass per metre for reinforcement steel | | | Weight: 0 - 6100 g Length: 0 – 1200 mm |