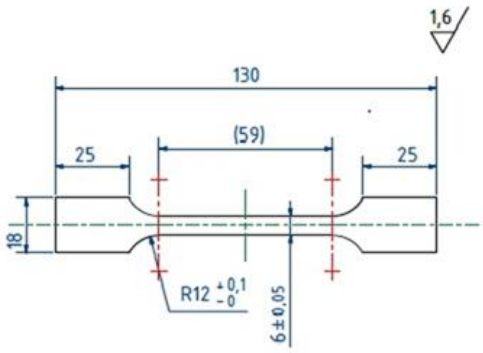
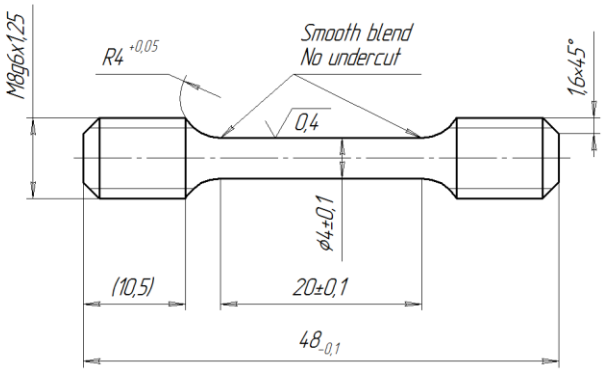
1) Tensile Test – Room Temperature to 1200° C – Flat Dog-Bone Specimen



Maximum Load:

- Up to 900° C: 50 kN
- Up to 1000° C: 25 kN
- Up to 1100° C: 11 kN
- Up to 1200° C: 6 kN

2) Tensile Test – Room Temperature to 1200° C – Round Dog-Bone Specimen



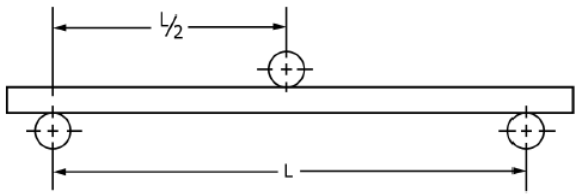
Maximum Load M8:

- Up to 700° C: 50 kN
- Up to 800° C: 19.5 kN
- Up to 1000° C: 5.4 kN
- Up to 1200° C: 1.8 kN

Maximum Load M10:

- Up to 700° C: 50 kN
- Up to 800° C: 28.5 kN
- Up to 1000° C: 7.8 kN
- Up to 1200° C: 2.6 kN

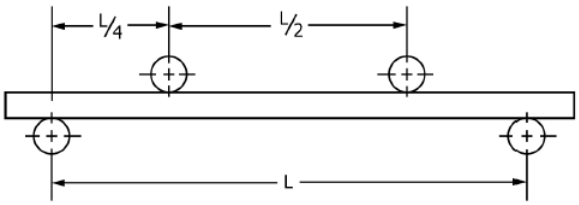
3) Three-Point Flexural Test – Room Temperature



- A: L = 20 mm
- B: L = 40 mm
- C: L = 80 mm
- Maximum width: 30 mm

Maximum load: 10 kN

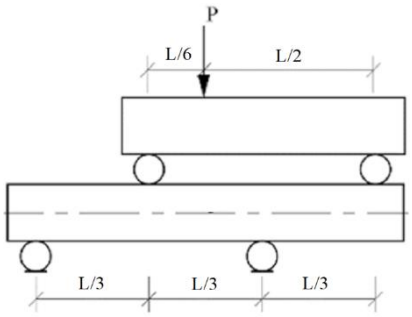
4) Four-Point Flexural Test – Room Temperature



- A: L = 20 mm
- B: L = 40 mm
- C: L = 80 mm
- Maximum width: 30 mm

Maximum load: 10 kN

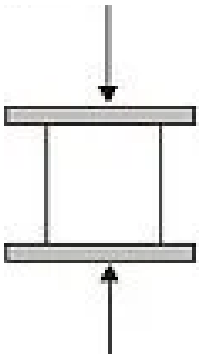
5) Asymmetric Flexural Test – Room Temperature



- A: L = 20 mm
- B: L = 40 mm
- C: L = 80 mm
- Maximum width: 30 mm

Maximum load: 10 kN

6) Compression – Room Temperature

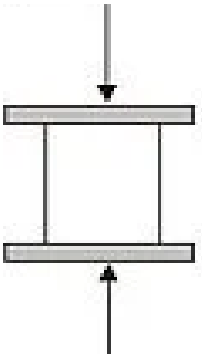


Specimen maximum dimensions:

- Cubic: 100 x 100 x 100 mm (length x width x height)
- Cylindric: 140 x 140 mm (diameter x height)

Maximum load: 50 kN

7) Compression High Temperature – Temperatures up to 1200° C



Specimen maximum dimensions:

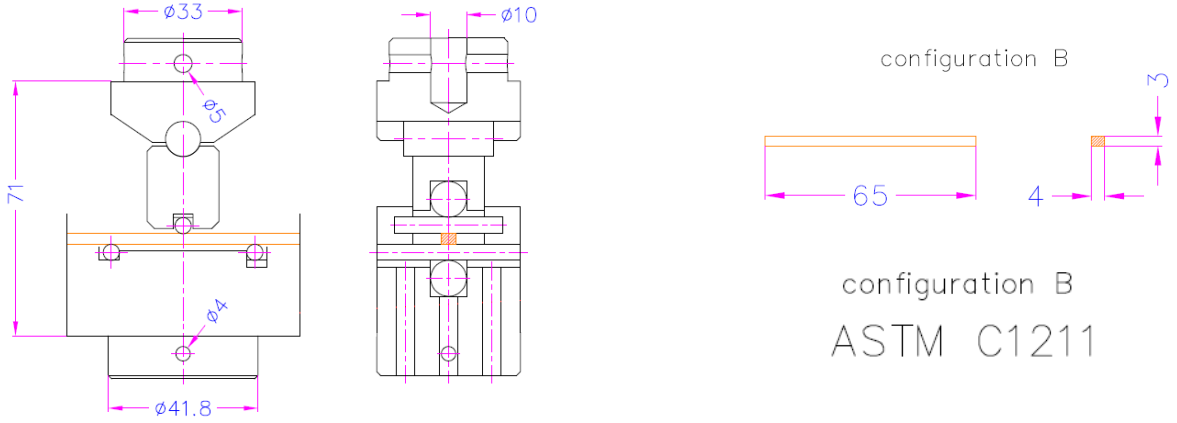
- Cubic: 10 x 10 x 10 mm (length x width x height)
- Cylindric: 14.5 x 14.5 mm (diameter x height)

Use of alumina fixture.

Absolute maximum load for all temperatures: 10 kN

8) Three-Point Flexural Test – Temperatures up to 1200° C

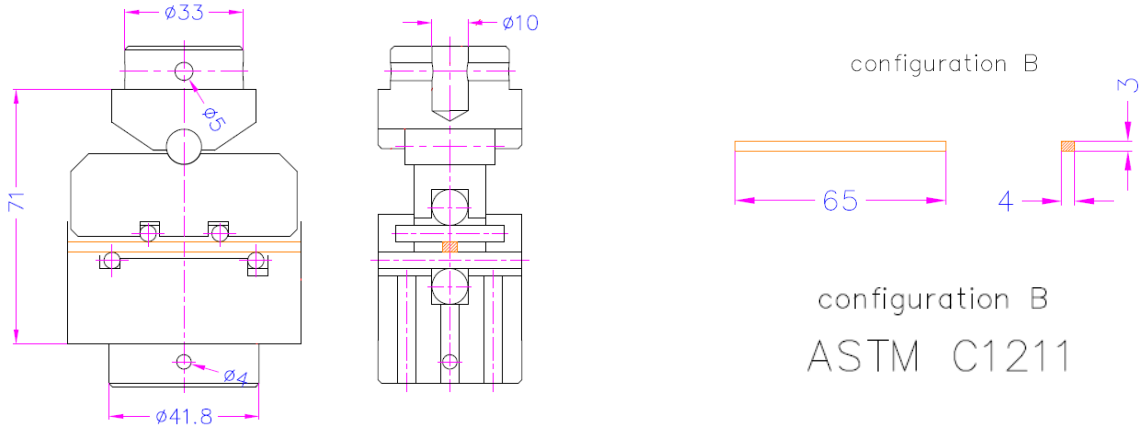
Specimen geometry and testing machine accessories:



Absolute maximum load for all temperatures: 2.5 kN

9) Four-Point Flexural Test – Temperatures up to 1200° C

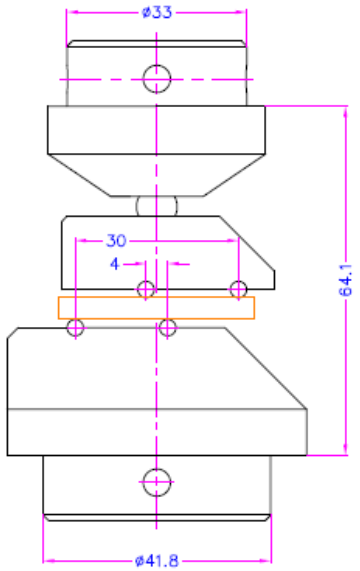
Specimen geometry and testing machine accessories:

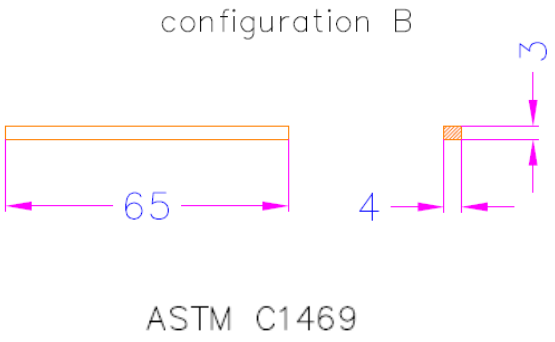


Absolute maximum load for all temperatures: 2.5 kN

10) Asymmetric Flexural Test – Temperatures up to 1200° C

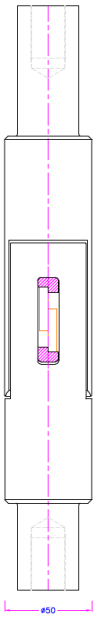
Specimen geometry and testing machine accessories:

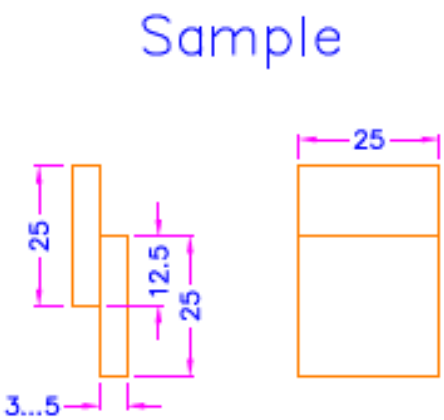


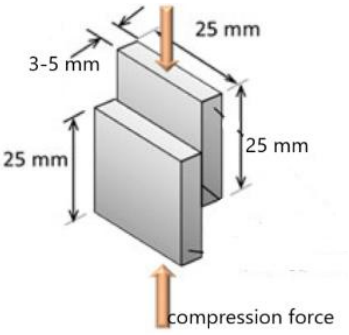


Absolute maximum load for all temperatures: 2.5 kN

11) Single Lap Offset – Room Temperature to 1000° C







Maximum Load:

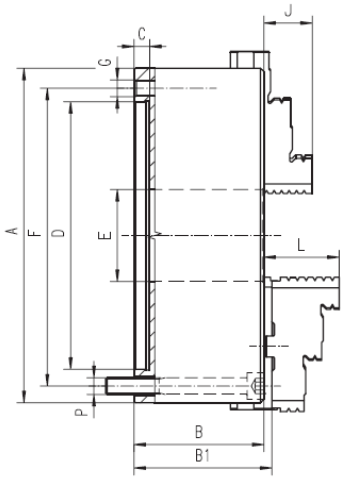
- Up to 900° C: 50 kN
- Up to 1000° C: 25 kN

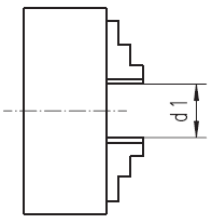
Acceptable dimensions for each joined substrate:

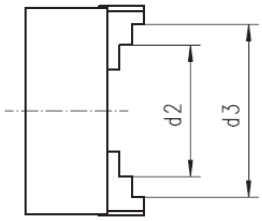
- Thickness range: 3 to 5 mm
- Maximum width x height: 25 x 25 mm

12) Torsion – Room Temperature to 700 °C

Allowable clamping ranges:



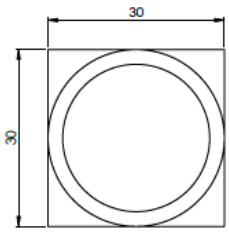


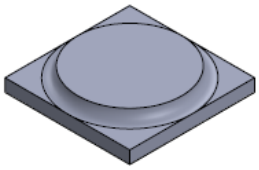


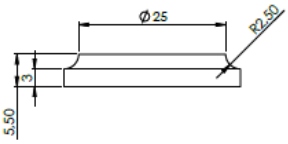
A	B	B1	C	D H7	E	F	G	J	L	P	kg
100	50.0	-	3	70	20.0	83	3xM8	16	-	3xM8	2.8

Chuck size [mm]	d1	d2	d3	d4	d5	Max. swing diameter [mm]
100	3-33	33-62	62-93	25-56	56-87	117

Additional allowed specimen geometry:







Observation: for temperature tests, the samples are required to have an extra 150 mm of length to fit in the oven.

Maximum load: 500 N.m

13) IET – Impulse Excitation Technique – Room Temperature to 1600° C

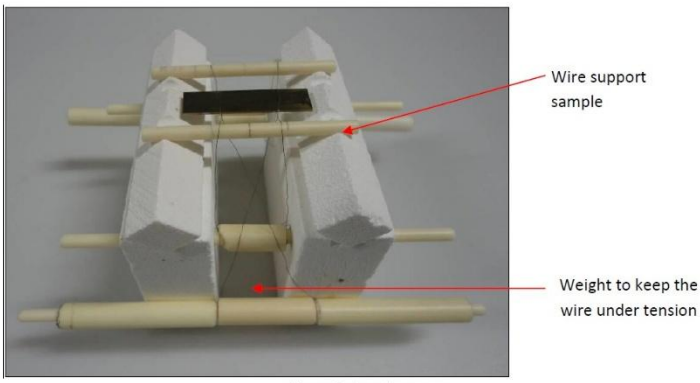
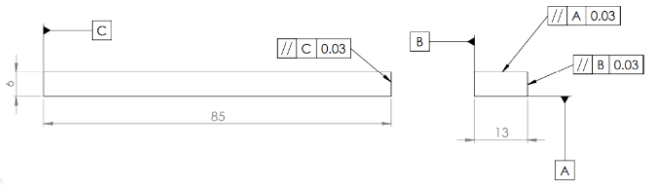


Figure 26: Sample support



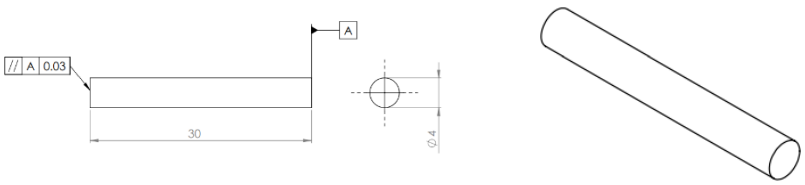
Specimen Dimensions:

- Length: under 200 mm
- Width: under 80 mm
- Thickness/length < 0.250

Flexural and torsional vibration modes, calculates Elastic Modulus, Shear Modulus and Poisson ratio.

Also available in inert atmosphere (Argon).

14) Dilatometry – Thermal Expansion Coefficient – Room Temperature to 1600° C

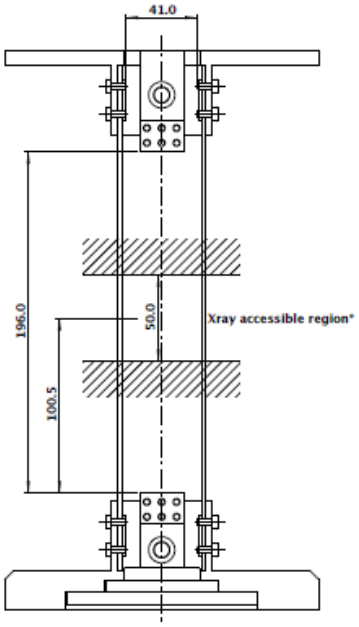


Specimen Dimensions:

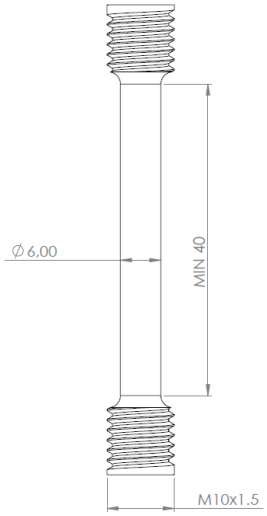
- Length: Between 25 and 40 mm
- Diameter (for cylindric specimens): Between 3 and 7 mm
- Width and height (for prismatic specimens): Square cross section, between 2.2 x 2.2 and 4.8 x 4.8 mm

Also available in inert atmosphere (Argon).

15) In-situ Tensile Test CT-Scan – Room Temperature

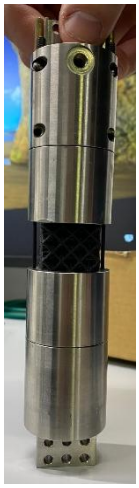


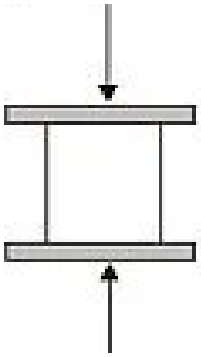
Specimen Geometry:



Maximum load: 10 kN

16) In-situ Compression Test CT-Scan – Room Temperature



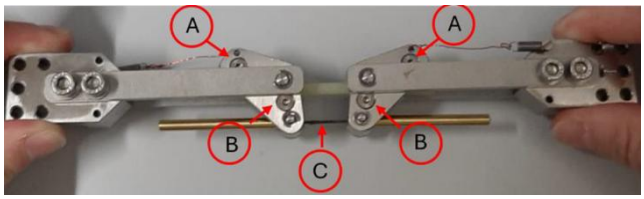


Specimen maximum dimensions:

- Cubic: 25 x 25 x 25 mm (length x width x height)
- Cylindric: 25 x 25 mm (diameter x height)

Maximum load: 10 kN

17) In-situ Four-Point Flexural Test CT-Scan – Room Temperature

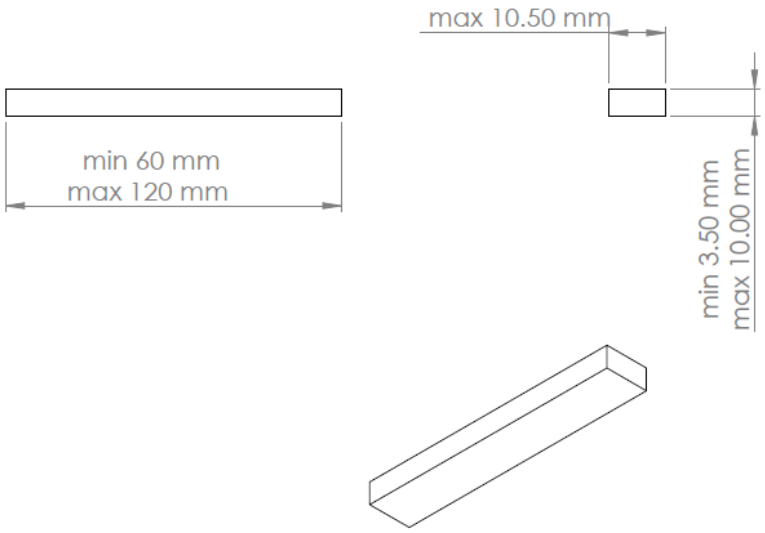


A: supports

B: actuators

C: carbon fibre wire to hold the ensemble

Specimen Geometry:



Maximum load: 10 kN