

10 MN Compression Testing Machine

Key words

Concrete, strength, compression, testing machine

Fields of application

Strength tests of building materials

Methodology and instrumentation

Compression testing machine with two columns.

On the lower cross head the hydraulic cylinder is mounted and the differential piston has a hydrostatic bearing. The piston stroke reaches 100 mm.

The platens for compression tests have a size of 820 mm x 820 mm. The upper platen has a spherical seat.

Up to 5 MN the test can be performed with a load cell on which a 420 mm x 620 mm platen with a spherical seat is fastened.

The columns distance of 1050 mm limits the testing area, which is infinitely variable by changing the position of the upper cross head with an electric motor up to 1700 mm.

Items tested

Specimens with plane and parallel surfaces; specimens with cross-sections < 820 mm x 820 mm

Quantities / characteristics tested

Strength, deformation, stiffness

Uncertainty / reliability of results

The uncertainty of the results of the displayed load is < 1 %

Qualification and quality assurance

Due to its technical variability and maximum load, this test machine is unique in Germany.

Comparable test machines have lower load ranges and smaller test areas.

The possibility to exchange the upper plate and spherical seat allows testing of small specimens with high strength, e.g. high-performance concrete.

Contact:	Dr.-Ing. Frank Weise	Phone:	+49 30 8104 1715
E-mail:	frank.weise@bam.de	Fax:	+49 30 8104 1717
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Further information

Further characteristics

Four load ranges 1 – 3 – 5 – 10 MN. All ranges belong to class 1 DIN 51223, ISO 7500-1, respectively. The upper platen can be changed with a smaller platen which contains a spherical seat as well and is equipped with a load cell. In this case the maximum load reaches only half of the full machine capacity with platens of 420 mm x 620 mm in size. The machine has an analogous load indicator and is controlled by hand. Optionally an electronic controller can be linked to the testing machine.



Fig. 1:

10 MN Compression testing machine with 420 mm x 620 mm platen (interchangeable) and 5 MN load cell