



ASTM E9

Test Methods of Compression Testing of Metallic Materials at Room Temperature

These test methods cover the apparatus, specimens, and procedure for axial-load compression testing of metallic materials at room temperature. The specimen is subjected to an increasing axial compressive load; both load and strain may be monitored either continuously or in finite increments, and the mechanical properties in compression determined.

The data obtained from a compression test may include the yield strength, the yield point, Young's modulus, the stress-strain curve, and the compressive strength. In the case of a material that does not fail in compression by a shattering fracture, compressive strength is a value that is dependent on total strain and specimen geometry.

Compressive properties are of interest in the analyses of structures subject to compressive or bending loads or both and in the analyses of metal working and fabrication processes that involve large compressive deformation such as forging and rolling. For brittle or non-ductile metals that fracture in tension at stresses below the yield strength, compression test offer the possibility of extending the strain range of the stress-strain data. While the compression test is not complicated by necking as is the tension test for certain metallic materials, buckling and barreling can complicate results and should be minimized.

If you have any questions concerning this particular ASTM method, please feel free to give our office a call at (800) 334-5432 or email us your inquiry at info@nhml.com.

(E9, E-9, E 9)

ASTM Standard E9, 2007, "Test Methods of Compression Testing of Metallic Materials at Room Temperature," ASTM International, West Conshohocken, PA, 2007, DOI: 10.1520/E9-89a, www.astm.org.