Structural Laboratory in Civil Engineering

2000kN universal loading machine which is one of the equipments in our structural laboratory can conduct a compressive, tensile or bending test for construction materials from element size to full scale of the structural member.

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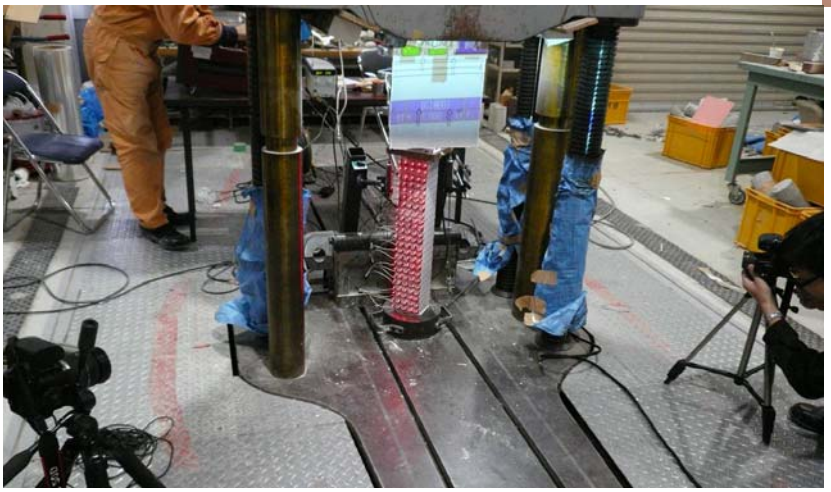
Sensors used in the measurement system for deformation, displacement, strain and amazingly stress on the surface of a material.

Image analysis with LED targets and digital cameras is used for noncontact measurement of strain on the surface of materials. The LED is set into nodes in a finite element, such as 9-node isoparametric element to interpolate from the nodal displacements to strain due to the deformation of the material.



Magnetic anisotropy sensor is used for nondestructive measurement of stress on surfaces of a ferromagnetic material, such as steel. The sensor is built on the principle of the magneto-strictive effect in which changes in magnetic permeability due to deformation of a steel is measured, which then can be translated into the absolute values of stresses existing on the surface of the material.