

# Brief description of the Condemned Machinery:

## MATERIAL TESTING SYSTEM, USA

### ◆ What It Measures

The MTS 1000 kN measures **mechanical strength and deformation characteristics** of materials under controlled loading.

Property Measured	Description
Tensile Strength	Maximum stress the specimen can withstand while being stretched before breaking
Compressive Strength	Stress the material can bear before compression failure
Yield Strength	Stress at which plastic (permanent) deformation begins
Elongation / Strain	Amount of deformation before failure (%)
Modulus of Elasticity (E)	Ratio of stress to strain in the elastic region
Flexural / Bending Strength	Resistance to bending under load
Shear Strength (optional setup)	Resistance to shear forces

### ◆ Capacity / Range

Parameter	Specification
Load Capacity	1000 kN ( $\approx$ 100 tons) maximum
Load Range	Typically 1 kN – 1000 kN, depending on load cell configuration
Accuracy	$\pm$ 0.5% of reading (Class 1 or better, per ISO 7500-1)
Displacement Range	Usually up to 250 mm – 500 mm crosshead travel (depends on model)
Strain Measurement Range	With extensometer: typically up to 50 mm or more, depending on gauge length

### ◆ Typical Test Materials

- Metals and alloys (steel, aluminum, copper, etc.)
- Concrete and rebar
- Composites, plastics, rubbers
- Fasteners and structural components

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