

## Heat Deflection Temperature Under Load

### Scope:

Heat deflection temperature is defined as the temperature at which a standard test bar deflects a specified distance under a load. It is used to determine short-term heat resistance. It distinguishes between materials that are able to sustain light loads at high temperatures and those that lose their rigidity over a narrow temperature range.

### Test procedure:

The bars are placed under the deflection measuring device. A load of 0.45 MPa or 1.80 MPa is placed on each specimen. The specimens are then lowered into a silicone oil bath where the temperature is raised at 2° C per minute until they deflect 0.25 mm for ASTM, 0.32 mm for ISO flatwise, and 0.34 mm for ISO edgewise.

### Specimen size:

A standard bar 5" x 1/2" x 1/4" is used for ASTM  
ISO edgewise testing uses a bar 120mm x 10mm x 4mm  
ISO flatwise testing uses a bar 80mm x 10mm x 4mm

### Data:

The temperature at the specified load and deflection is given.

