

Product Information

HDT/Vicat Allround A1

CTA 46236 46206



HDT/Vicat 3-300 A1 with 3 measuring stations



HDT/Vicat 3-300 A1, detail

Applications

Determination of heat deflection temperature (HDT)

- as per ISO 75, Parts 1 to 3, and ASTM D648, Method B, on thermoplastics, hard rubber and fiber-reinforced and filled thermosets.

Determination of Vicat softening temperature (VST)

- of thermoplastics as per ISO 306 and ASTM D1525 .

Determination of creep behavior

- under flexural load

Function description

ZwickRoell's HDT/Vicat Allround instruments are designed to enable convenient testing in research and development, goods inwards checks and production monitoring as well as for educational and training purposes. The instruments are available in various versions with up to 6 testing stations according to requirements. Test-sequence parameterization and display of measured values are conveniently handled via ZwickRoell testing software.

Automatic test sequence

As soon as the heat-transfer fluid has reached the starting temperature, the specimens are inserted into the measuring stations and lowered (motor-driven) into the oil bath. In the next step the test weight specified in the standards is applied manually and the test sequence is started by the PC software.

On completion of preconditioning under the influence of force, the displacement signals are zeroed (program-

controlled) and heating of the heat transfer fluid at the previously set rate is started. As soon as the required deflection, outer-fiber strain or penetration is attained, the heating is switched off and the test is ended.

Re-cooling of the heat-transfer fluid is started automatically via a solenoid valve. Afterwards, the specimens can be removed.

Functions, elements and interfaces

- Built-in programmable logic controller (PLC) for temperature control and measured-value acquisition
- Re-cooling controlled by solenoid valve
- Motorized lowering of measuring stations
- Safety thermostat
- Electronic level-monitoring
- Test control and data acquisition via PC with Zwick-Roell testing software (RS232 interface in PC required)
- Integrated compensation for heat expansion
- Manual application of test weights (type A1 instrument)

Re-cooling the Heat Transfer Fluid

Cooling for Type A1 HDT/Vicat instruments is by means of a cooling coil located in the oil-bath. Coolant can be pumped in via a connection located on the left-hand side of the instrument. Cooling is started automatically via a solenoid valve, however only at 130°C or above. For faster re-cooling a connection for an external re-cooling unit is available (option).

Product Information

HDT/Vicat Allround A1

Technical data

HDT/Vicat Allround with coolant connection

Temperature range	+20 ... +300	°C
Temperature measurement		
Display accuracy at 250°C	± 0.5	°C
Spatial temperature gradient	± 0.2	°C
Temperature measurement resolution	0.1	°C
Heating rate	50, 120 or freely adjustable	K/h
Displacement measurement		
Measurement range	1 ... 15	mm
Display accuracy	± 0.01	mm
Measuring system	Inductive LVDT measuring transducers	
Required PC interface	RS232	
Power input specifications		
Power supply	230/240	V
Power frequency	50/60	Hz
Power	3 000	W

HDT/Vicat Allround with coolant connection

Type	HDT/Vicat 3-300 A1	HDT/Vicat 6-300 A1
Item No.	326038 ¹⁾²⁾	326096 ¹⁾²⁾
Measuring stations, equipped	3	6
Measuring stations, possible	3	6
Dimensions		
Height	460	460 mm
Width	560	780 mm
Depth	700	700 mm

1) Water supply required

2) Instruments are supplied without heat transfer fluid as standard. Order the corresponding amount from the accessories.

Description	Value		
Specimen data			
VST specimen dimensions, max.	10 x 6.5 x 10		mm
HDT specimen dimensions, max.	13 x 15 x 130		mm
HDT spans	64, 100 and 101.6		mm

Accessories required

Vicat flat-ended needle

Description	ArticleNumber
Vicat flat-ended needle (1x required per measuring station)	326070

Product Information

HDT/Vicat Allround A1

Weight set for Vicat

Description	ArticleNumber
Vicat weight set: 10N and 50N as per ISO 306 and ASTM D1525 (1x required per measuring station)	326074

Die for HDT

Description	ArticleNumber
HDT die (1x required per measuring station)	326078

Calibration and centering tool for HDT

Description	ArticleNumber
HDT calibration and centering tool for alignment of the HDT die (1x required)	326076

Weight set for HDT (1x required per measuring station)

Description	ArticleNumber
HDT weight set, ISO 75-2 flatwise For specimen size 4 x 10 mm (thickness x width \pm 0.05 mm) and 80 mm length (\pm 2 mm), for flexural stresses of 1.8, 0.45 or 8 MPa. Adherence to specimen dimensions within \pm 0.05 mm is required.	326084
HDT weight set, ISO 75-2 edgewise For specimen size 10 x 4 mm (thickness x width \pm 0.05 mm) and 120 mm length (\pm 10 mm), for flexural stresses of 1.8, 0.45 or 8 MPa. Adherence to specimen dimensions within \pm 0.05 mm is required.	326086
HDT weight set as per ASM D648 Methods A and B For specimen size 3.175 x 12.7 mm (thickness x width), for flexural stresses of 1.82 / 0.455 MPa	1015942
HDT weight set as per ASM D648 Methods A and B For specimen size 6.35 x 12.7 mm (thickness x width), for flexural stresses of 1.82 / 0.455 MPa	085404

Calibration set for HDT/Vicat

Description	ArticleNumber
Calibration set for measurement transducer. For Vicat and HDT tests (1x required)	326090

Universal set of weights for HDT/Vicat

Description	ArticleNumber
Universal set of weights for Vicat/HDT test standards (1x required per measuring station) As alternative to the weight sets listed above. All loads from 1 to 5500g can be formed in 1g steps. The weights are stackable; the set comprises 21 individual weights: 10 x 1 g, 2 x each of 10 g, 100 g and 1000 g and 1 x each of 20 g, 50 g, 200 g, 500 g and 2500 g.	326088

Heat-transfer fluid for HDT/Vicat (1x required)

Description	ArticleNumber
Heat-transfer fluid, 10 liters ¹⁾	326092
Heat-transfer fluid, 5 liters ¹⁾	326094

¹⁾ The instruments are supplied as standard without heat-transfer fluid. The appropriate quantity of fluid can be ordered from the accessory list. Please see the information for the basic instruments (oil capacity) for the required amount of heat-transfer fluid.

Product Information

HDT/Vicat Allround A1

Optional accessories

External re-cooling for HDT/Vicat Standard and Allround A1

Description	ArticleNumber
Optional re-cooling unit: external re-cooling for oil baths, manually switched Re-cooling time from 300°C to 30°C approx. 20 minutes, rating 500 W (at 12 °C coolant temperature) ¹⁾	326189

1) A water supply is required

Specimen cutters for Vicat

Description	ArticleNumber
Vicat specimen cutters for dimensioning Vicat specimens, with stop for specimen length of 10 mm	750485