Ring Stiffness Tester According to ISO 9969

Description

Ring Stiffness to ISO 9969

The **ring stiffness** of a pipe describes the force-deformation ratio under a radially acting external mechanical load. Ring stiffness corresponds to an upward slope in the force-deformation curve. For thermoplastic pipes, this characteristic is typically measured according to **ISO 9969** or **ASTM D2412**, and according to **EN 1228** for glass fiber-reinforced pipes.

This test compresses pipe sections of a defined length between two flat platens. The length of the section depends on the nominal diameter of the pipe. In the diameter range up to 1500 mm, sections with a length of 300 mm are tested.

In the case of profile pipes and corrugated pipes, deformation is measured by analyzing the inner diameter of the pipe to prevent flattening of the ridges. For this case, we offer special extensometers that are either mounted onto the testing machine, or simply positioned inside the pipe.

The measurement is performed under a deformation of 3% of the initial diameter. The result of the measurement is the initial ring stiffness, which is the force per unit of radial deformation and per unit of length of the pipe. In the SI system, the ring stiffness is usually indicated in kN/m²; in the American inch/pound system it is typically indicated as lbf/in². Ring stiffness is used to classify pipes in the SN classes. An SN 8 pipe has a minimum ring stiffness of 8 kN/m² in the nominal diameter range from DN100 to DN800.

Ring flexibility to DIN EN ISO 13968

The **ring flexibility** describes the ability of a pipe to withstand deformation without undergoing structural damage. The measurement is performed in the same test arrangement as for ring stiffness. According to **ISO 13968**, the test is run until the pipe fails or until deformation of 30% of the outer diameter of the pipe is reached. The results of the test are maximum values of force and deformation, or force and deformation values in which a damage criterion defined in the standard occurs for the first

time.

- Ball screw movement mechanism
- Double column
- Special compression plates for samples up to 300mm
- USB connection port to computer
- Software is based on Windows 7, 8,10
- Reporting in MS EXCEL
- Limit switches for safety
- Chrome coated guide shafts
- Servomotor actuated
- Manual hand key included
- Force capacity up to the customer 20KN, 50KN, 100KN, ….
- Extensometer depending on size and shape of pipe
- solid wall pipes don’t need internal diameter measurement
- Double layer pipes need internal diameter measurement device for pipes
- Extensometer range depending on pipe size