Competence creates Confidence.

Model no. 1671

RCP-S4-TESTER

ISO 13477

Determining the critical pressure

The RCP-S4 tester model 1671 is developed to perform tests on pipes up to DN 630. Due to the required sample length of 7xDN according to ISO 13477 and the end closures, anvil, external cage and the internal compression plates required in the standard, there are enormous difficulties with handling as a result of the dimensions and weight, something which makes carrying out the test manually impossible. Standard-compliant implementation of the test, which requires the crack to be initiated within just 3 minutes after removal from the conditioning environment, becomes practically impossible in manual processes, as the sample has to be correctly positioned under the striker blade in this brief period and the pressure is also to be built up within the sample.

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Reliably determining the critical pressure for crack propagation

Automatic sample feed: The RCP tester is connected to the cooling cabinet via rails. A motorized trolley can be moved from the cold store to the tester via these rails through a pneumatically operated opening flap in the side wall of the cooling cabinet. Once the sample has been mounted, it is fixed in place on the trolley in a corresponding mount and connected to the pressure supply.

The test specimen is then transferred to the cooling cabinet for the specified time for conditioning.

Once the conditioning time has elapsed, automatic removal of the sample from the cooling cabinet is triggered. The sample is moved under the striker blade in this process and the pressure starts to be built up while it is still being moved. Operation and visualisation are carried out using the operator terminal with touchscreen. It is installed to protect the operator outside the protected area to be established at the customer's premises (danger of flying plastic parts!)

Position sensors: The correct position of the sample under the striker blade is automatically queried and ensured using the corresponding sensor system and triggering of the striker blade is prevented if the sample is not present.

Conformity and safety: The process described previously was designed, developed and examined together with leading material manufacturers and ensures both standard-compliant implementation of the test and a high degree of safety.

Variable speed of the striker blade: In addition to the speed of the striker blade of 15 m/s required in the standard, the speed can also be set to 10 or 20 m/s for research purposes. Increasing the speed to a maximum of the tolerance range required in the standard may be helpful to achieve a crack length of at least 1xDN (see ISO 13477, Art 10.1). The actual impact speed is detected for each test using high-speed photoelectric barriers and output via the display on the control cabinet.

Conditioning: IPT uses conditioning in a cold cabinet (conditioning in the air) for a variety of reasons

- No negative impact on the material properties
- No contamination of the sample and the environment by refrigerant
- Conditioning also possible at lower temperatures (down to -30°C) in order to determine the critical temperature, for example (for more precise information on the cooling cabinet, please observe the relevant point in your offer)

Standard features

- Protection of the operator by operation of the touch display outside the hazardous area (e.g. behind a suitable protective wall at a safe distance from the tester frame) or outside the test room
- The automatic test procedure guarantees that the test is performed well within in the specified testing time
- Acoustic and visual signals
- Easy connection of the sample via quick-release coupling
- Easy-to-replace sample holders
- Automatic reduction in pressure at the end of the test
- Measurement of the precise impact speed of the blade via a photoelectric barrier
- Motor-operated tester
- Rail system for autom. sample feed (with model V1671-0011/ V1671-0012)
- Conditioning cabinet for samples (with model V1671-0012)
- CE conformity

Options

- Test kits and corresponding striker blades
- Cooling cabinet
- Assembly and disassembly equipment

Accessories NAME DEVICE

Product	Description	Model no.
	Cooling cabinet	H3026

Design of RCP-S4 TESTER		V1671-0010	V1671-0011	V1671-0012	V1671-0017
Sample dimensions	mm	90 – 630 / other dimensions on request			
Speed of the striker blade	m/s	10 – 20 generated via compression springs tensioned by electric motors			
Measurement of speed		Via photoelectric barrier			
Regulation of filling pressure		Manually via pressure reducer			
Regulation of test pressure		PLC controller			
Pressure transducer	bar	Max. 25			
Absolute measuring accuracy	%	0.5 of full scale of pressure transducer			
Operation via		Touch display			
Pressure adjustment		Freely selectable			
Display of filling pressure		On pressure gauge (max. 25 bar)			
Display of test pressure		On touch display			
Compressed air supply		From 30-bar external compressed air supply unit (max. 40 bar), min 750 l/min (not included in the scope of delivery)			
Permissible ambient temperature	°C	+ 5 to + 30			
Permissible relative humidity	%	Max. 70 non-condensing			
Noise emission	dB(A)	< 70 at rest, ≥ 120 when the striker blade strikes the sample (dependent on diameter).			
Width of tester	mm	6,100	Dependent of length of the rail system	On request	On request*
Depth of tester	mm	1,000	1,000	On request*	On request*
Height of tester	mm	3,400	3,400	On request*	On request*
Control panel width x depth x height		700 x 410 x 1,100			
Voltage data		230/400 V, 50/60 Hz / special voltages on request			