

Wencon Test Methods

All Wencon Epoxy products are tested according to below mentioned methods. Only the test, important for calculation of which product to choose for which application, are mentioned below:

1. All tests are with the exception of the determination of the heat resistance, executed at room temperature 20°C (68°F).
2. The pot life and "highest temperature during reaction" are determined with 100 grams mixed material. The rise of temperature is measured with the aid of a digital thermometer.
3. For the determination of the heat resistance, the products are coated on steel plates and stored during seven days at room temperature. After those seven days they are stored at elevated temperature and reviewed every 24 hours.
4. Compressive strength:
 - Curing time: 14 days
 - Dimensions of the cubes: 13 x 13 x 13 mm
 - Used testing machine: Wolpert, type TT 1220 25 kN
 - Testing speed: 5 mm / min.

Modulus of elasticity: A calculated factor showing the relationship between the pressure on the material and the deformation.

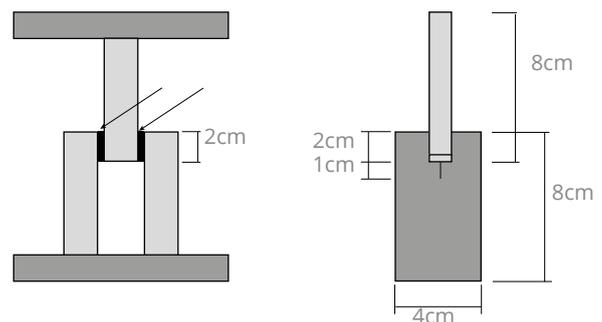
R crack : The point where the material breaks apart

5. Tensile strength:
 - Curing time: 14 days
 - used testing machine: Wolpert, type TT 1220 25 kN
 - Testing speed: 15 mm / min.

Modulus of elasticity: A calculated factor showing the relationship between the pressure on the material and the deformation.

R crack : The point where the material breaks apart

6. Shear adhesion to steel: The shear adhesion is determined according to the subjoined illustration



The test bars are sandblasted to optimise the adhesion of the Wencon product. After the surfaces were glued together with the several Wencon products, they are cured seven days at room temperature.

The shear adhesion is determined using the following testing machine: Wolpert, type TT 1220 25 kN. The shear adhesion is calculated according to following formula:

$$X = P / A$$

X: shear adhesion (N/mm²)

P: pressure at break (N)

A: total of the glued area (mm²)

Test of resistance to liquid pressure

Test of resistance to liquid pressure for Wencon

Product: WENCON RAPID

Test issued by: Flådestation Frederikshavn (The Danish Navy) being accredited test facility for pressure tests.

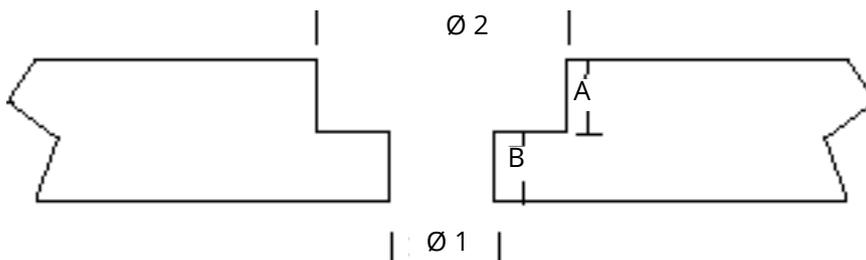
Objective: To establish a description for the product's ability for use in repairing holes and leaks in pressure vessels, pipes, etc.

Description: Two specimens were made, having holes as shown in ill.

1. $\varnothing 1 = 11,2$ mm, $\varnothing 2 = 50,0$ mm, A = 5 mm, B = 7 mm, reinforcement.: None.

2. $\varnothing 1 = 16,0$ mm, $\varnothing 2 = 50,0$ mm, A = 10,0 mm, B = 9 mm, reinforcement : 2 layers of fiber tape

The water pressure was given from the side, where $\varnothing 2$ is situated.



The test pieces were made and were left for curing in 48 hours. Hereafter they were subjected to water pressure.

1. Test piece No. 1 was mounted in the test stand, sealed with klingerit seal for 25 bar. The pressure was raised to 60 bar, at which pressure the seal was blown out. The test stand was renovated and O-ring seats were machined instead. The test was repeated. In the second test, the pressure was raised to 160 bar, at which pressure the flange was deformed to an extent, where the O-rings were blown out.

Conclusion:

At a pressure of 160 bar, there was no sign of damage to the repaired area of Test piece 1.

2. Test piece No. 2 was mounted in the test stand, and the pressure was raised to 425 bar, at which pressure the flange was deformed to an extent, where the O-rings were blown out.

Conclusion:

At a pressure of 425 bar, there was no sign of damage to the repaired area of Test piece 2.

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