Indentation Test According to ISO 21809-3

Description

H.1 General
The test consists of measuring the indentation of a punch into the FJC under fixed conditions of temperature and load.

H.2 Equipment
H.2.1 Chamber or bath, thermostatically controlled to ± 2°C;
H.2.2 Penetrometer, comprised of
? a cylindrical indenter on the top of which is mounted a weight; the assembly, indenter plus weight, shall
produce a pressure in accordance with Table H.1;
? dial gauge or any other measurement system, accurate to ± 0,01 mm.

Table H.1 — Pressure, indenter diameter and mass of assembly

Pressure N/mm^2	Indenter diameter mm	Mass of the assembly kg
0,10	11,2 ± 0,05	1,0
1,00	5,65 ± 0,05	2,5
5,00	1,80 ± 0,05	1,25
10,0	1,80 ± 0,05	2,5

H.3 Procedure
H.3.1 The test shall be performed three times on one coating sample. For heat-shrink polyolefin sleeves and tapes, the sample may be prepared by stripping the coating from the pipe.
H.3.2 The test sample, held within the penetrometer assembly, shall be placed in the thermostatically controlled chamber and set to the test temperature (± 2 °C). The test sample shall be kept in the chamber for 1 h.
H.3.3 The following readings shall be made.

a) t_0 is the reading on the dial gauge placed on an uncovered part of the steel plate or pipe.
b) t_1 is the reading on the dial gauge with the indenter without the mass positioned centrally over the

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sample.

c) t2 is the reading of the dial gauge after the mass, giving the total desired pressure on the indenter for a

minimum duration of 24 h.

H.3.4 If sampling of the test piece is unpractical (e.g. in the case of large-diameter components), the test

can be carried out directly on the coated component in air provided that

a) the surface temperature of the coating is in the range of (20 ± 5) °C, and

b) the experimental assembly (component plus apparatus) is not exposed to heat radiation or vibration during the testing.

H.4 Results

The quantities t

3, the coating thickness; t

4, the residual thickness of the coating; and t

5, the indentation into

the coating, can be calculated on the basis of the measurements described in H.3.3 using Equations (H.1) to (H.3), respectively:

$$t_3 = t_1 - t_0 \tag{H.1}$$

$$t_4 = t_2 - t_0 \tag{H.2}$$

$$t_5 = t_1 - t_2 \tag{H.3}$$

The arithmetic mean of the three individual determinations of each of the thicknesses t3, t4 and t5 shall be calculated and recorded.

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Indentation Tester According to ISO 21809-3

- SS304 inside chamber
- Digital temperature controller
- Digital timer
- Digital displacement indicator 0.01mm resolution
- Indenter diameters 11.2, 5.65, 1.8mm
- Masses of 1, 1.25, 2.5 Kg
- Basement for sample placement
- Temperature range RT-250C

Category

1. Equipment for Standards
2. Standards

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