Protocol:

DETERMINATION OF THE PROPERTIES OF INSULATING MATERIALS

A2

Instructor: Ing. Šimon Baránek, Ing. Jindřich Melichar, PhD.

A. TASK ASSIGNMENT AND BASIC PROPERTIES OF INSULATION TEST SAMPLES

Determine the key properties of insulating materials:

- Bulk density ρ_v [kg/m^3],
- Thermal conductivity coefficient λ_{sam} [W/(m.K)],
- Water absorption during partial immersion W_p [kg/m^2],
- Stress at 10% deformation σ_{10}, [kPa].

Description and basic properties of test samples:

Description of the material (test specimen):

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Average thickness of test sample d_m = ……. **m**,

Length of test specimen: l_1 = ……. **m**,

Width of test sample: l_2 = ...**m**,

Weight of test sample/initial weight of sample intended for water absorption test by partial immersion according to method A: m / m_0 = ... **kg**.

Volume weight of material: ρ_v =..... **kg/m^3.**

Determination of the thermal conductivity coefficient in a steady state using the plate method according to ČSN 12667 (heat flux meter method according to ISO 8301):

Brief description of the test procedure:

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Average thickness of the test sample: d_m = ...**m**,

Surface temperature of the warm side of the test sample: θ_{hd} = ... **°C**,

Surface temperature of the cold side of the test sample: θ_{cd} =.....**°C**,

Voltage on the heat flux density meters: U =.....**V,**

Calibration constant: k_m= .....**W/(V.m^2),**

Thermal conductivity coefficient: λ_{sam} =... ..... **W/(m.K).**

Determination of water absorption during partial immersion according to ČSN EN ISO 29767:

Brief description of the test procedure:

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Initial weight of the test sample determined according to method A: m_0 = ... **kg,**

Weight of the test sample after partial immersion for 24 hours: m_{24} =… ..... **kg**,

Area of the bottom surface of the test sample: A_p = ... m^2.

Water absorption during partial immersion: W_p =…….. **kg/m²**

Determination of stress at 10% deformation (compressive strength) according to ČSN EN 826

Brief description of the test procedure:

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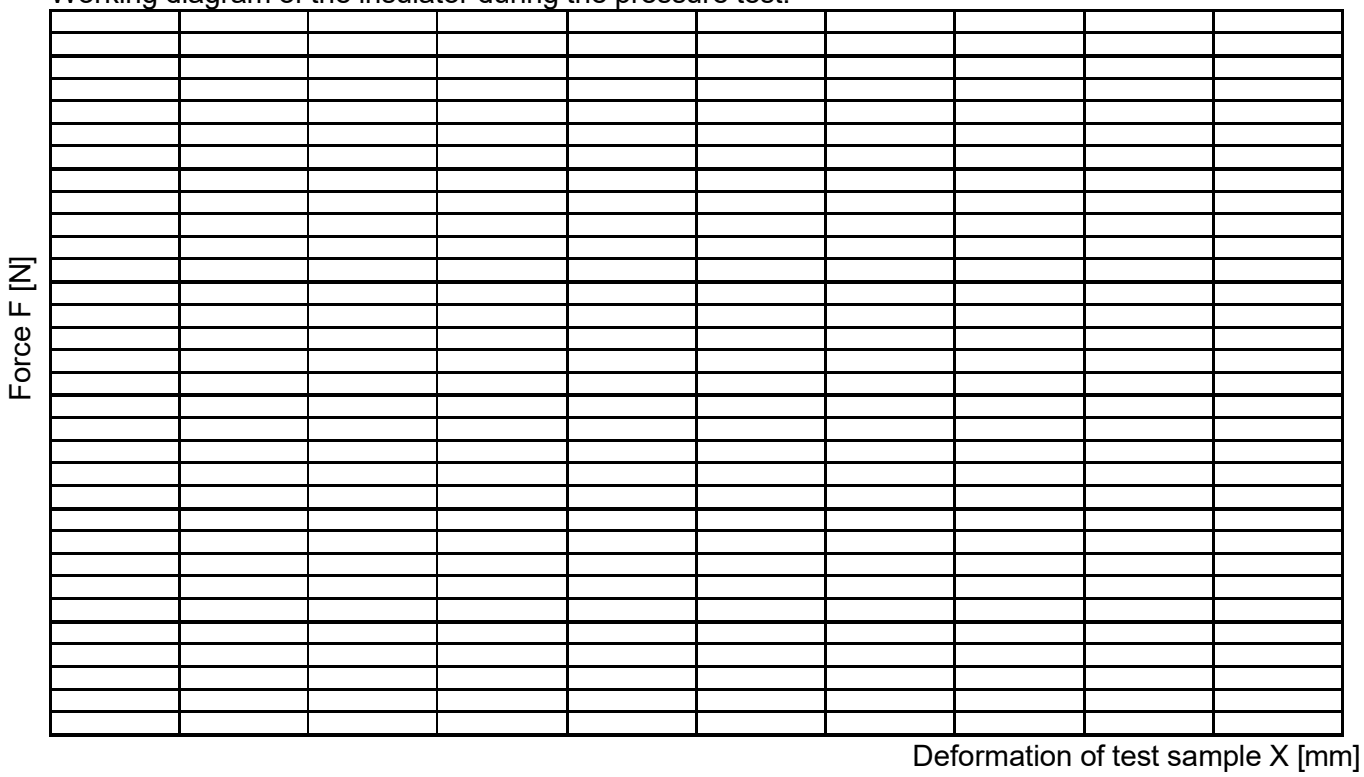
Working diagram of the insulator during the pressure test:



Initial deformation: X_0 = ... **mm,**

10% deformation X_{10} = ... **mm,**

Deformation for force value at normalized 10% deformation: X =.....**mm,**

Force at 10% deformation: F_{10} = ... **N,**

Stress at 10% deformation: σ_{10} = ... **kPa**

Conclusion:

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Tests performed and report prepared by: _____