

contain the highest number of effective parameters and reveal a correlation of above 90%.

The equations extracted from the models will be helpful in designing woven fabrics as we can determine the fabric air permeability even before a fabric is produced.

The differences in weave structures mainly affect the fabric properties. Multiple regression equations of air permeability are derived from the weave structure parameters, and the values predicted almost exactly agree with the values from the measurement system measured.



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# INSTITUTE OF BIOPOLYMERS AND CHEMICAL FIBRES

## LABORATORY OF METROLOGY

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The **Laboratory** is active in testing fibres, yarns, textiles and medical products. The usability and physico-mechanical properties of textiles and medical products are tested in accordance with European EN, International ISO and Polish PN standards.

### Tests within the accreditation procedure:

- linear density of fibres and yarns, ■ mass per unit area using small samples, ■ elasticity of yarns, ■ breaking force and elongation of fibres, yarns and medical products, ■ loop tenacity of fibres and yarns, ■ bending length and specific flexural rigidity of textile and medical products

### Other tests:

- **for fibres:** ■ diameter of fibres, ■ staple length and its distribution of fibres, ■ linear shrinkage of fibres, ■ elasticity and initial modulus of drawn fibres, ■ crimp index, ■ tenacity
- **for yarn:** ■ yarn twist, ■ contractility of multifilament yarns, ■ tenacity,
- **for textiles:** ■ mass per unit area using small samples, ■ thickness
- **for films:** ■ thickness-mechanical scanning method, ■ mechanical properties under static tension
- **for medical products:** ■ determination of the compressive strength of skull bones, ■ determination of breaking strength and elongation at break, ■ suture retention strength of medical products, ■ perforation strength and dislocation at perforation

### The Laboratory of Metrology carries out analyses for:

- research and development work, ■ consultancy and expertise

### Main equipment:

- Instron tensile testing machines, ■ electrical capacitance tester for the determination of linear density unevenness - Uster type C, ■ lanameter