



SLOVENSKI STANDARD SIST ISO 2836:2004

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Graphic technology -- Prints and printing inks -- Assessment of resistance of prints to various agents

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Technologie graphique -- Impressions et encres d'imprimerie -- Évaluation de la résistance des impressions à divers agents

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INTERNATIONAL STANDARD

**ISO
2836**

Third edition
2004-03-15

Graphic technology — Prints and printing inks — Assessment of resistance to various agents

*Technologie graphique — Impressions et encres d'imprimerie —
Évaluation de la résistance des impressions à divers agents*

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Contents

Page

Foreword.....	iv
1 Scope.....	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	2
4.1 Liquid and solid agents	2
4.2 Solvents and varnishes	2
4.3 Acids.....	2
5 Agents	2
5.1 General	2
5.2 Water	2
5.3 Alkali.....	2
5.4 Oils and fats.....	2
5.5 Cheese.....	3
5.6 Detergents.....	3
5.7 Soaps.....	3
5.8 Waxes	3
5.9 Spices.....	3
5.10 Solvents and varnishes	3
5.11 Acids.....	3
5.12 Other agents	4
6 Apparatus and reagents	4
6.1 Equipment and apparatus	4
6.2 Solvents and varnishes	5
7 Preparation of test pieces	5
8 Test methods	5
8.1 Liquid agents	5
8.2 Solid agents	5
8.3 Meltable solid agents (waxes)	6
8.4 Solid spices	6
8.5 Solvents and varnishes	6
8.6 Acids.....	6
9 Evaluation of results	7
9.1 Liquid and solid agents	7
9.2 Solvents and varnishes	7
9.3 Acids.....	7
10 Test report.....	8
11 Test conditions.....	8

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 2836 was prepared by Technical Committee ISO/TC 130, *Graphic technology*.

This third edition cancels and replaces the second edition (ISO 2836:1999). It also incorporated the requirements of, and cancels, ISO 2837:1996 *Graphic technology — Prints and printing inks — Assessment of resistance to solvents* and ISO 11628:1995 *Graphic technology — Prints and printing inks — Determination of resistance of prints to acids*.

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Graphic technology — Prints and printing inks — Assessment of resistance to various agents

1 Scope

This International Standard specifies methods of assessing the resistance of printed materials to liquid and solid agents, solvents, varnishes, and acids.

It applies to printing on all substrates by all of the traditional printing processes and digital imaging processes such as ink-jet, electrophotography, etc. using marking materials appropriate to the printing process used.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2834:1999, *Graphic technology — Test print preparation for offset and letterpress inks*

ISO 105-A03:1993, *Textiles — Tests for colour fastness — Part A03: Grey scale for assessing staining*

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3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

agent

liquid or solid to which a sample of printed material is exposed for the purpose of determining the resistance characteristics of that printed sample

3.2

resistance

ability of a printed material to withstand exposure to a specified agent as determined by the tests defined in this International Standard

ISO 2836:2004(E)

4 Principle

4.1 Liquid and solid agents

A test piece cut from the print is brought into contact with the agent used. Assessment is made of any changes in the print and in the receptor surface which has been in contact with the print.

4.2 Solvents and varnishes

A test piece cut from the print is immersed in the prescribed solvent or test varnish for a given time. The colour change of the solvent or varnish and the discoloration and any change of the test piece are noted and reported.

4.3 Acids

A test piece cut from the print is pressed between two sheets of filter paper previously wetted with a solution of the relevant acid. An assessment is made of any change to the print and any bleeding of the colour onto the filter paper.

NOTE 1 The type and concentration of the acid and the duration of exposure are not standardized, but should be chosen according to the intended application of the print. Table 1 gives a list of commonly used types, concentrations and exposure durations.

NOTE 2 The test piece includes both printing ink and substrate, because resistance may be affected by ink, substrate or the interaction between them.

Test samples may be taken from existing printed material, or may be prepared to be representative of a planned printed product.

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5 Agents

5.1 General

The type of agent used and its concentration shall be reported.

5.2 Water

This International Standard does not specify the type of water used for the assessment of resistance of prints. It may be tap water, distilled water, deionized water, natural water, carbonated water, sea water, etc.

5.3 Alkali

This International Standard specifies a 1 % by mass solution of sodium hydroxide in distilled water used for the assessment of resistance of prints.

5.4 Oils and fats

This International Standard does not specify the oil or the fat to be used for the assessment of resistance of prints. It may be animal, vegetable, mineral, essential or synthetic, e.g. fish oil, olive oil, liquid paraffin, lavender oil, silicone oil, butter, margarine, lanolin, grease.

5.5 Cheese

This International Standard does not specify the type of cheese, e.g. soft cheese or hard cheese, used for the assessment of resistance of prints. However, the cheese shall be used as a solid agent in a natural state, i.e. not liquefied.

5.6 Detergents

This International Standard does not specify the type of detergent, e.g. liquid or solid, used for the assessment of resistance of prints, only its concentration: 1 % by mass.

5.7 Soaps

This International Standard does not specify the type of soap, hard or soft, used for the assessment of resistance of prints, only its concentration: 1 % by mass.

5.8 Waxes

This International Standard does not specify the type of wax to be used for the assessment of resistance of prints, i.e. animal, vegetable, mineral or synthetic, e.g. beeswax, carnauba wax, paraffin wax, Fischer Tropsch wax.

5.9 Spices

This International Standard does not specify the spice to be used for the assessment of resistance of prints.

5.10 Solvents and varnishes

This International Standard specifies solvents and varnishes, e.g. denatured ethanol, a mixture of ethanol, ethyl acetate and 1-methoxy-propanol-2, or any other solvent or varnish for assessing the resistance of prints.

5.11 Acids

This International Standard does not specify any particular acid or concentration, but does give examples of acids that are commonly found in commerce and in the home which can be used for the assessment of resistance of prints. The acid and concentration should be chosen according to the intended application of the print. The following acids are mentioned in this International Standard:

- lactic acid to simulate cheese and cheese products;
- citric acid to simulate the juice of citrus fruits;
- acetic acid to simulate pickles and vinegars;
- hydrochloric acid to simulate products with pH values < 2;
- sulfuric acid.