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Grafisk teknik – Laboratoriefremställning av provtryck – Del 3: Screentrycksfärger (ISO 2834-3:2008, IDT)

Graphic technology – Laboratory preparation of test prints – Part 3: Screen printing inks (ISO 2834-3:2008, IDT)

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Den internationella standarden ISO 2834-3:2008 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av ISO 2834-3:2008.

The International Standard ISO 2834-3:2008 has the status of a Swedish Standard. This document contains the official English version of ISO 2834-3:2008.

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Foreword

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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 2834-3 was prepared by Technical Committee ISO/TC 130, *Graphic technology*.

ISO 2834 consists of the following parts, under the general title *Graphic technology — Laboratory preparation of test prints*:

- *Part 1: Paste inks*
- *Part 2: Liquid printing inks*
- *Part 3: Screen printing inks*

Introduction

This part of ISO 2834 describes the procedure for the preparation of test prints using screen inks. Test prints need to have a uniform distribution of ink on the substrate to be used for testing. Where such test prints are to be used for optical tests, the level of ink coverage needs to be controlled and reproducible to allow the relationship between reflectance data and ink coverage to be determined. If test prints are intended to only be used for evaluation of mechanical and/or chemical resistance, less accurate preparation methods can be used.

Test prints, as well as production prints, can have an ink film thicknesses that range between 10 µm and more than 100 µm. The viscosity range is from about 300 Pa·s to 2 000 Pa·s. The inks' varnish systems used can be oil-based, solvent-based, water-based, plastisol or energy curing. Print substrates include paper, board, glass, textiles, plastics and metals.

The test print preparation methods described in this document support, and are referenced by, ISO 2846-4 and ISO 2836. The preparation of test prints using paste inks (lithography) is defined in ISO 2834-1 and the preparation of test prints using liquid inks is defined in ISO 2834-2.

Graphic technology — Laboratory preparation of test prints —

Part 3: Screen printing inks

1 Scope

This part of ISO 2834 specifies a test method for preparation of test prints produced with screen printing inks. These test prints are intended primarily for optical tests, such as colorimetry, transparency and reflection density as described in ISO 2846-4. They can also be used for testing gloss, light fastness and the chemical, physical and mechanical resistance to mechanical and chemical attack regarding either printing ink or substrate, or both.

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 187, *Paper, board and pulps — Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples*

ISO 2846-4, *Graphic technology — Colour and transparency of printing ink sets for four-colour-printing — Part 4: Screen printing*

ISO 14981, *Graphic technology — Process control — Optical, geometrical and metrological requirements for reflection densitometers for graphic arts use*

3 Terms and definitions

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

3.1

extender

transparent material (varnish or polymer solution) to reduce the colorant concentration and to adapt ink concentration to print substrates

3.2

flooding

procedure of filling the openings of the screen printing forme with printing ink before the printing process

3.3

flooding device

device not in contact with the mesh used to fill the openings of the screen printing forme with printing ink before the printing process

3.4

ink rest

area on the surface of the screen-printing forme outside the ink trail

3.5

mesh

uniformly spaced arrangement of interlaced or interlocked stands of thread; screen material

3.6

mesh count

number of threads per unit length in a screen mesh

3.7

mesh volume

open space between the threads of a woven screen printing fabric or effective openings of otherwise manufactured screen

3.8

off contact distance

adjustable distance between printing forme and substrate

3.9

printing forme

device consisting of a frame, a mesh and a stencil carrying the image to print

3.10

printability tester

device for uniformly inking a printing forme and transferring a reproducible amount of ink onto a substrate under specified conditions

3.11

retarder

additive to reduce the evaporation speed of the solvent in an ink to prevent drying during the application of ink to the substrate

3.12

squeegee

device for simultaneously pressing the mesh against the substrate, forcing the printing ink through the openings of the forme on the substrate, and scraping the excess ink from the forme, consisting, for example of a holder and a blade or a roll coater (revolving squeegee)

3.13

squeegee angle

angle between the blade and the forme before pressure has been applied

3.14

stencil

blocking layer on or in the mesh, making the mesh impermeable to printing ink at the places which are not to print

3.15

test-ready ink

printing ink of the appropriate composition and viscosity for the purpose of the test