INTERNATIONAL STANDARD

ISO 12634

First edition
1996-11-15

Graphic technology — Determination of tack of paste inks and vehicles by a rotary tackmeter

Technologie graphique — Détermination de la consistance des encres et excipients projetés, à l'aide d'un consistomètre rotatif

Reference number
ISO 12634:1996(E)

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.

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.

International Standard ISO 12634 was prepared by Technical Committee ISO/TC 130, *Graphic technology*.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Introduction

The tack value is a well-established criterion for assessing a paste ink or vehicle, although the parameter tack is poorly defined. The tack cannot be regarded as a material property that can be derived from basic physical phenomena. However, the tack may predict in some cases the behaviour of ink in a printing press.

Parameters that affect tack are:

— dimensions, hardness and elasticity parameters of elastomeric rollers;
— surface properties of rollers;
— nip pressure;
— roller speed;
— the temperature of rollers and environment;
— the temperature of the sample;
— the ink film thickness;
— influence of the ink or vehicle on the properties of the elastomeric rollers (e.g. absorption of solvents);
— the condition of the elastomeric rollers due to the cleaning process;
— the condition of the elastomeric rollers due to long-term use;
— the properties of the test sample.

Respecting all differences, this International Standard is a guideline so that users of comparable equipment obtain comparable results when working under the same conditions. This International Standard cannot replace the technical manuals.

This page intentionally left blank

Graphic technology — Determination of tack of paste inks and vehicles by a rotary tackmeter

1 Scope

This International Standard specifies the procedure for determining the tack value of paste inks and vehicles which have low volatility and are unreactive under normal room conditions during the time span required for testing.

This International Standard contains a basic description of the rotary tackmeters most commonly used.

2 Definition

For the purposes of this International Standard, the following definition applies.

2.1 tack: Restoring force between two rotating rollers of a given width caused by the splitting of an ink or vehicle film on the roller surfaces.

NOTES

1 Tack is a rheological parameter indicative of internal cohesion and other physical/chemical properties of the fluid.

2 The term "apparent tack" is deprecated because all tack values are instrument specific by nature.

3 Test method

3.1 Principle

A rotary tackmeter consists of a roller system of at least 3 rollers. One roller is driven by a motor while another is connected to a sensor measuring the force at which the roller is displaced from its equilibrium position. The third is an oscillating roller used for sample distribution. Measurement of the restoring force induced by the splitting of the ink or vehicle film provides an instrument-specific value of tack.

3.2 Apparatus

The apparatus used for the test shall include:

— rotary tackmeter; [1)]

1) The following are examples of suitable tackmeters available commercially (in alphabetical order):

— Betta Tech 2000;

— Prüfbau Inkomat;

— Prüfbau Tackomat;

— Tack-o-scope;

— Thwing-Albert Inkometer;

— Toyoseiki Inkograph.

This information is given for the convenience of users of this International Standard and does not constitute an endorsement by ISO of this (these) product(s).