

Method for

Determining the resistance to picking of paper and board: accelerating speed method using the IGT tester —

Part 2: Electric model

[ISO title: Paper and board — Determination of resistance to picking — Accelerating speed method using the IGT tester (electric model)]

UDC 676.017.435.2:62 – 83

Cooperating organizations

The Paper Standards Committee, under whose direction this British Standard was prepared, consists of representatives from the following:

- British Paper and Board Industry Federation (PIF)*
- British Printing Industries Federation*
- Envelope Makers' and Manufacturing Stationers' Association*
- HM Customs and Excise
- Her Majesty's Stationery Office*
- Institute of Trading Standards Administration
- National Association of Paper Merchants
- National Economic Development Office
- Pira (The Research Association for the Paper and Board, Printing and Packaging Industries)*
- Royal Institute of Public Health and Hygiene

The organizations marked with an asterisk in the above list, together with the following, were directly represented on the Technical Committee entrusted with the preparation of this British Standard:

- British Fibreboard Packaging Association
- British Wood Pulp Association
- Chemical Industries Association
- Man-made Fibres Producers' Committee
- Ministry of Defence
- Paper Sack Development Association Ltd.
- Post Office
- Society of British Printing Ink Manufacturers
- University of Manchester Institute of Science and Technology

This British Standard, having been prepared under the direction of the Paper Standards Committee, was published under the authority of the Board of BSI and comes into effect on 26 February 1982

© BSI 11-1999

The following BSI references relate to the work on this standard:
Committee reference PAS/11
Draft for comment 75/61962 DC

ISBN 0 580 12601 3

Amendments issued since publication

Amd. No.	Date of issue	Comments

Contents

	Page
Cooperating organizations	Inside front cover
National foreword	ii
0 Introduction	1
1 Scope	1
2 Field of application	1
3 References	1
4 Definitions	1
5 Principle	1
6 Apparatus and materials	1
7 Sampling	2
8 Conditioning	2
9 Preparation of test pieces	2
10 Preparing the tester	2
11 Procedure	3
12 Determination of picking	3
13 Steps for subsequent tests	3
14 Test report	4
15 Bibliography	4
Annex A Diagram of IGT printability tester (electric model) in common use	5
Annex B 1977 version of IGT tester (electric model)	6
Publications referred to	Inside back cover

National foreword

This Part 2 of this British Standard has been prepared under the direction of the Paper Standards Committee and is identical with ISO 3783:1980 “*Paper and board — Determination of resistance to picking — Accelerating speed method using the IGT tester (Electric model)*” published by the International Organization for Standardization (ISO). Part 1 of this standard is identical with ISO 3782:1980 “*Paper and board — Determination of resistance to picking — Accelerating speed method using the IGT tester (Pendulum or spring model)*”. Together these two Parts supersede BS 4885-2:1974 which is therefore withdrawn.

Terminology and conventions. The text of the International Standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is especially drawn to the following.

The comma has been used throughout as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Wherever the words “International Standard” appear, referring to this standard, they should be read as “British Standard.”

Cross references

International Standard	Corresponding British Standard
ISO 186:1977	BS 3430:1980 <i>Method for sampling for testing paper and board</i> (Identical)
ISO 187:1977	BS 3431:1973 <i>Method for the conditioning of paper and board for testing</i> (Technically equivalent)

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

0 Introduction

A number of methods for assessing the picking resistance of paper, i.e. the ability of paper to withstand the forces involved in splitting of ink films in printing processes, have been developed and accepted in different countries. However, it has not been possible to achieve reproducibility between the results obtained by the different methods; nevertheless several of the methods do rank particular papers in the same order and to this extent enable comparisons to be made.

It is hoped that it will eventually be possible to achieve genuine reproducibility, but meanwhile it is considered necessary to provide internationally agreed guidance on the use of instruments that are employed in many countries. One of the most widely used pick testers is the IGT¹⁾ instrument. This International Standard deals with the electric model of that tester. ISO 3782 deals with other IGT instruments (pendulum or spring model), and the preparation of further methods is being considered.

1 Scope

This International Standard specifies a method of operating the electric model of the IGT printability tester in order to provide a measure of the picking resistance of paper and board.

2 Field of application

This International Standard applies to the testing of any kind of paper and board likely to be used for printing, mainly by lithographic or letterpress processes.

3 References

ISO 186, *Paper and board — Sampling for testing.*

ISO 187, *Paper and board — Conditioning of samples.*

4 Definitions

4.1

picking

the rupture of the surface of a paper or board during printing, which occurs when an external tensile force applied to the surface is greater than the cohesion of the paper or board

NOTE In the case of coated papers, the rupture may take the form of particles of coating or fibres wholly or partly detached from the sheet, “blistering” of the surface or gross stripping of the surface. In the case of board, “blistering” is called delamination and this is often reported separately from picking. In the case of uncoated papers the rupture normally takes the form of the removal of fibre aggregates.

4.2

picking velocity

the velocity of printing at which the picking of the surface of the printed paper begins

5 Principle

A strip of paper or board is printed at constant force and increasing velocity with a standard oil.

The minimum velocity at which picking occurs is a measure of the picking resistance of the paper or board.

6 Apparatus and materials

6.1 IGT tester

The tester comprises two separate units: an oil applicator which enables an oil film of known (controlled) thickness to be placed on a printing disc, and a printing unit on which the drive is electric. Printing force is controlled by variable spring loading.

Slightly different versions of the electric model of the IGT tester are in existence, the differences being of detail and affecting mainly the positions of certain controls.

The description of the IGT tester given in **6.1**, together with the detailed instructions given in clauses **10** and **11**, apply to a version of the electric model in common use and a diagram of the printing unit is given in Annex A.²⁾

Annex B gives the amendments required to the text of **6.1.1** and **11.4** when using the version of IGT tester (electric model) available from the manufacturer during 1977²⁾. A diagram of the electric model printing unit, in this version, is included in Annex B.

NOTE If there is any doubt concerning which version of IGT tester is being used, the instrument manufacturer should be consulted.

¹⁾ Stichting Instituut voor Grafische Techniek TNO, Postbus 4150, 1009 AD Amsterdam.

²⁾ See also Bibliography.