

Second edition  
2006-11-15

---

---

# Graphic technology — Colour and transparency of printing ink sets for four-colour printing —

## Part 1: Sheet-fed and heat-set web offset lithographic printing

*Technologie graphique — Couleur et transparence des gammes d'encre d'impression en quadrichromie —*

*Partie 1: Impression lithographique offset sur feuilles et à chaud*



Reference number  
ISO 2846-1:2006(E)

This is a preview of "ISO 2846-1:2006". [Click here to purchase the full version from the ANSI store.](#)

**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2006

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

This is a preview of "ISO 2846-1:2006". Click here to purchase the full version from the ANSI store.

## Contents

	Page
Foreword.....	iv
<b>1 Scope .....</b>	<b>1</b>
<b>2 Normative references .....</b>	<b>1</b>
<b>3 Terms and definitions.....</b>	<b>2</b>
<b>4 Test method.....</b>	<b>2</b>
<b>4.1 Procedure .....</b>	<b>2</b>
<b>4.2 Test print preparation.....</b>	<b>2</b>
<b>4.3 Colour measurement procedures .....</b>	<b>3</b>
<b>5 Requirements for colour, transparency and ink film thickness range.....</b>	<b>4</b>
<b>5.1 General.....</b>	<b>4</b>
<b>5.2 Colorimetric values.....</b>	<b>4</b>
<b>5.3 Transparency characteristics.....</b>	<b>4</b>
<b>5.4 Ink film thickness.....</b>	<b>4</b>
<b>Annex A (normative) Reference substrate .....</b>	<b>5</b>
<b>Annex B (informative) Extended explanation of the test procedures, including examples .....</b>	<b>6</b>
<b>Annex C (informative) Spectral data.....</b>	<b>10</b>
<b>Annex D (informative) Tristimulus values for 8°:di geometry and illuminant D65 .....</b>	<b>13</b>
<b>Bibliography .....</b>	<b>15</b>

## 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 2846-1 was prepared by Technical Committee ISO/TC 130, *Graphic technology*.

This second edition cancels and replaces the first edition (ISO 2846-1:1997), of which subclauses 4.2 and 5.2 and Annex D have been technically revised. Some very minor changes have been made for the purposes of simplification, and an effort has been made to clarify and update this document in some places. Clauses 4 and 5 have been interchanged with each other. In addition, the test-print preparation requirements have been deleted and referenced to ISO 2834-1. Annex B, describing the history of the development of the colour standard, has been removed and Annex E relettered to Annex B.

ISO 2846 consists of the following parts, under the general title *Graphic technology — Colour and transparency of printing ink sets for four-colour printing*:

- *Part 1: Sheet-fed and heat-set web offset lithographic printing*
- *Part 2: Coldset offset lithographic printing*
- *Part 3: Publication gravure printing*
- *Part 4: Screen printing*
- *Part 5: Flexographic printing*

This is a preview of "ISO 2846-1:2006". [Click here to purchase the full version from the ANSI store.](#)

## Introduction

This part of ISO 2846 defines the colour and transparency of lithographic printing inks. Different sets of inks (both for proof and production printing) conforming to this part of ISO 2846 will produce a similar colour when printed on the same substrate at the appropriate film thickness. This enables colour separations for offset-lithographic printing to be based on known colour references and simplifies the task of consistently printing the same images in multiple printing sites.

It should be noted that the colorimetric characteristics specified can only be obtained when the inks are printed on the reference substrate. However, the similarity of two inks on a reference substrate generally ensures similarity on another substrate, and it is this similarity that has enabled industry specifications or standards such as ISO 12647-2<sup>[1]</sup>, which specifies the colour of these inks on other substrates, to be developed.

The colour specified in the previous edition of this part of ISO 2846 was based on extensive measurements of commercial ink sets made in Europe, Japan and the USA. A working group of ISO/TC 130 process control and material experts examined data sets from various countries at the time that edition was prepared and found that a single set of colour coordinates could adequately represent all three proposals within reasonable tolerances. In addition, they found that the transparency of various inks could also be adequately represented by a new method of evaluation. A review undertaken prior to the revision of this edition suggested that there had been little change in the colour and transparency of the inks commercially available and that the characteristics specified in this part of ISO 2846 could be reconfirmed.