TECHNICAL REPORT

ISO/TR 19300

First edition
2015-09-01

Graphic technology — Guidelines for the use of standards for print media production

Technologie graphique — Lignes directrices pour l'utilisation des normes pour la production de supports d'impression

Reference number
ISO/TR 19300:2015(E)

© ISO 2015



COPYRIGHT PROTECTED DOCUMENT

© ISO 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

 © ISO 2015 – All rights reserved

Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Terms and definitions **1**
3 Graphic supply chain **1**
3.1 Stakeholders, roles, and responsibilities 1
3.2 Use cases and product relationships 3
4 Base concepts **4**
4.1 Viewing conditions 5
4.2 Colour measurements 5
4.3 Printing condition 5
4.4 Characterization 6
4.5 Grey reproduction and grey balance 6
5 Workflows **6**
5.1 Design stage 6
5.1.1 RGB images 7
5.1.2 Process-dependent and process-independent design workflows 7
5.1.3 Preflighted press-ready files 8
5.1.4 Proofing systems 9
5.2 Prepress stage 10
5.3 Printing stage 12
5.4 Postpress stage 12
6 Carbon footprint calculation **13**
7 Interrelation of printing standards **13**
Bibliography **15**

© ISO 2015 – All rights reserved

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 130, *Graphic technology*.

© ISO 2015 – All rights reserved

Introduction

Standards are documented consensus agreements containing safety, technical specifications, or other precise criteria to be used consistently as rules, guidelines, or definitions of characteristics for materials, products, processes, and services. In many cases, they provide uniformity, which allows worldwide acceptance and application of a product or material. The aim is to facilitate trade, exchange, and technology transfer. Standards help to remove technical barriers to trade leading to new markets and economic growth for the industry.

Today, companies are facing fundamental changes in the way they do business. Strategies and business practices are continuously being evaluated to determine how to maintain and increase market share, reduce costs, increase productivity and safety, and achieve and maintain a competitive edge.

Graphic arts companies face these changes starting from a point at which the standards are not completely adopted by the market even if they provide complete technical guidelines. Graphic industries are only a small part of the graphic market made up of micro and small handcraft companies throughout the world. During recent years, many transformations have occurred in the market. Digital communications and digital media technology have driven restructuring in the graphic arts industry. ISO/TC 130 is working to reflect these changes in the standard development structure with new approaches and ideas to follow today's market and trends and anticipate future requirements.

All graphic arts companies can use the structure of the published standards to support their business and to harmonize production workflows irrespective of the size of the company. Published standards for the printing, publishing, and finishing industries enable processes to run faster, more predictably and more efficiently, and to be more cost effective by

— providing uniform, defined procedures, and tools that help users produce quality products for their customers,

— facilitating interconnectivity and process integration among systems,

— allowing users to communicate easily with one another,

— enhancing product quality and reliability at a reasonable price,

— increasing distribution efficiency and ease of maintenance,

— improving health, safety, and environmental protection, and

— reducing waste.

The language used to write standards in recent decades mainly reflects the needs of printers and the printers' suppliers, ignoring the other actors in the printing supply chain. This Technical Report tries to describe the relationship between standards with all the actors in the graphic supply chain taken into account, preparing the market for tomorrow's standards structure.

The composition of the graphic arts supply chain varies depending on the kind of product manufactured and the size of the graphics project measured in terms of the number of copies, but tends to be similar around the world. Every actor or stakeholder in the supply chain may be a single person, a small company, or a big organization. In every case, thanks to the digitalization of the graphic arts supply chain achieved mainly over the past 20 years, instruments, methodology, and production standards can be the same irrespective of the size of the stakeholder's organization. Today, a single freelance designer can use the same software and provide the same results as a gigantic multi-national agency and there is no technical reason why they should not use the same standards. The same is true for printers. A small printing company with the ability to produce at the same quality level can compete or collaborate with big companies if both follow the ISO standards. .

All the ISO/TC 130 standards, particularly the process control standards, aim to describe the so-called "standard quality". Many people in the graphic arts industry think that this "standard quality" is good for big production companies distributed worldwide, but not for small regional production companies.

© ISO 2015 – All rights reserved

This was not the intention of ISO/TC 130 because if the “standard quality” reflects the minimum set of warranties that a supplier needs to give to customers, in terms of fulfilling the expectation of a small variability within printing runs, most of the companies that ignore ISO standards have big problems in maintaining a constant level of predictable quality of the final results. Without such predictability, the result is likely to change in every printing run and the final product will be a unique handcrafted printed product, which in most cases, is unlikely to fulfill the needs of customers in any scenario.

The set of parameters used to define the print quality attributes of a final graphic product have not been described in any document up to now, but ISO/TC 130 is working with other ISO committees to define such a set. ISO/TC 130 standards describe and define certain parameters for a printing product, together with their tolerances, but ignore most of them. Since most ISO standards are related to properties of materials and to process control, the quality is here defined by parameters related to single and unfinished print. Within ISO aims and tolerances, there is the possibility of delivering different products so that small companies making regional products can benefit from standardization and produce something both unique and precious. At the same time, big companies can follow ISO aims and tolerances strictly to guarantee predictability and consistency around the world. Quality control of the final product is not, in most cases, standardized so finishing processes such as lamination, varnishes, and binding, which affect customer satisfaction, will depend on the ability of printers, finishers, or converters.

Digital printing is more and more widely used in graphic arts production and its processes interrelate and overlap with traditional printing. There are many different fast-changing digital printing technologies and it is now included in many conventional printing companies. We can consider a printing process as digital either when the image is transferred to the substrate by a digital technology and there is no printing form or when the process has the ability to change the image with every print. Digital printing influences workflows and process control. International Standards that support digital printing are under development within ISO/TC 130, for instance, the ISO 15311 (all parts). Other ISO documents can be used in a digital printing workflow, for instance, the ISO PAS 15339 (all parts).

© ISO 2015 – All rights reserved

Graphic technology — Guidelines for the use of standards for print media production

1 Scope

This Technical Report provides guidelines to enable print industry stakeholders to use ISO/TC 130 and related standards in print media production workflows. The use of these standards is intended to enhance production quality, business performance, profitability, and sustainability.

2 Terms and definitions

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

2.1
International Colour Consortium profile
ICC profile
collection of transforms, encoded as specified in the ICC profile specification which is used to convert image data between device space and profile connection space

[SOURCE: ISO 12637-2:2008, 2.71]

2.2
preflighted press-ready file
prepress file which contains all technical elements required by printing and postpress processes defined for the production, verified by a preflight software

2.3
proof
hard or soft copy reproduction made using various technologies to simulate an intended printing output

[SOURCE: ISO 12637-2:2008, 2.104]

2.4
use case
category that combines graphic products that have been developed for the same marketing purpose

2.5
validation print
print produced directly from digital data early in the production chain, meeting the requirements of ISO 12647-8 representative of the concept for the final product

[SOURCE: ISO 12647-1:2013, 3.42]

2.6
stakeholder
any person or organization that is involved in graphic supply chain or can give inputs for print process

3 Graphic supply chain

3.1 Stakeholders, roles, and responsibilities

A complete and coherent description of the graphic supply chain, as referenced by ISO/TC 130 standards, is not explicitly declared in any document. Depending on the use case and the product concerned, stakeholders may play different roles and share different responsibilities as stated in Table 1.

© ISO 2015 – All rights reserved