AS ISO 12647.7:2012
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Australian Standard®

Graphic technology—Process control for the production of half-tone colour separations, proof and production prints

Part 7: Proofing processes working directly from digital data

STANDARDS Australia

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- Australian Paper Industry
- Lithographic Institute of Australia, NSW
- Printing Industries Association of Australia
- TAFE NSW

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Graphic technology—Process control for the production of halftone colour separations, proof and production prints

Part 7: Proofing processes working directly from digital data

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PREFACE

This Standard was prepared by the Standards Australia Committee EX-004, Graphic Technology.

The objective of this Standard is to specify requirements for systems that are used to produce hard-copy digital proof prints intended to simulate a printing condition defined by a set of characterization data.

This Standard is identical with, and has been reproduced from ISO 12647-7:2007, *Graphic technology—Process control for the production of half-tone colour separations, proof and production prints*—Part 7: *Proofing processes working directly from digital data*.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

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References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian Standard*	
ISO		AS ISO	
12647	Graphic technology—Process control for the production of half-tone colour separations, proof and production prints	12647	Graphic technology—Process control for the production of half-tone colour separations, proof and production prints
12647-1	Part 1: Parameters and measurement methods	12647.1	Part 1: Parameters and measurement methods

Only international references that have been adopted as Australian or Australian/New Zealand Standards have been listed.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the annex to which they apply. A 'normative' annex is an integral part of a Standard, whereas an 'informative' annex is only for information and guidance.

CONTENTS

INTRODUCTION

Part 1 of ISO 12647 serves to provide definitions, the general principles, the general order, the material to be covered in the subsequent parts 2 to 7 of ISO 12647, the definition of the data, the measurement conditions and the reporting style.

This part of ISO 12647 relates to the subject of digital proofing and establishes proofing requirements for the most stringent part of the printing and publishing market.

This part of ISO 12647 mainly lists values or sets of values, and their tolerances, of the primary parameters specified in ISO 12647-1, especially for digital proof printing. Primary parameters that define a printing condition include the screening parameters, where applicable, the colours of the solids, the colour of the print substrate, colours intermediate between these and the tone value increase curve. Adherence to these values essentially ensures that a grey, which at the colour separation stage was composed for a particular printing condition, also prints as a grey colour in proofing and printing. Remaining deviations from grey due to differences in trapping can then be removed by adjusting the coloration within the tolerances provided. This part of ISO 12647 further specifies test methods for those properties of digital proof prints and their substrates that are considered relevant for stable and reliable conditions, and thus for a certification procedure.

The graphic technology industry makes extensive use of proofing to predict the rendering of digital data files by a wide variety of high-definition, high-quality off-press printing processes and applications. Each such prediction is based on a characterization data set that defines a particular printing condition.

Typically, the specified printing condition is defined through an International Color Consortium (ICC) profile or the associated characterization data set, both of which relate source data and colorimetrically defined printed colour. Such data may be derived from printing conditions conforming to the pertinent process standard of the ISO 12647 series by industry trade groups or individuals.

The purpose of a proof print is to simulate the visual characteristics of the finished production print product as closely as possible. In order to visually match a particular printing condition, proofing processes require a set of parameters to be specified that are not necessarily identical to those put forward in ISO 12647-1 or another part of ISO 12647. This is caused by differences in colorant spectra or phenomena such as gloss, light scatter (within the print substrate or the colorant), and transparency. In such cases, it is also found that spectrocolorimetry takes precedence over densitometry.

Another problem area is the matching of a double-sided production print on a lightweight printing substrate, such as often used in heat-set web and publication gravure printing, to a digital proof on a nearly opaque substrate. If the proof was produced using a colour management profile based on measurements with white backing, there will be an unavoidable visual and measurable difference between the proof on the one hand and the production print placed on black on the other hand. A black backing is required for double-sided production printing of non-opaque prints, as specified in the pertinent parts of ISO 12647. The possible occurrence of such differences needs to be well communicated, in advance, to all parties concerned.

Historically there has been no consistency in the way that either the characterization data or the criteria and limits for a satisfactory match have been provided. This has led to significant redundancy and inconsistencies in the evaluation of proofing systems for different, but similar, applications, and a cost and time burden on the industry. This International Standard therefore attempts to provide guidance in this area by providing specifications and associated testing procedures.

Annex A gives the requirements for the digital proof prints listed in the main body of this part of ISO 12647; these are weighted with respect to their relevance in two typical situations:

— requirements with which a proof print, made for a particular printing condition, must comply if it is to be referenced in a contract between the printer and the provider of the digital data (“Certified Proofing System”);

— requirements with which a vendor's proofing system, comprising hardware and software, must comply if it is to be considered capable of reliably producing digital contract proofs for a particular printing condition (“Certified Proofing System”).

AUSTRALIAN STANDARD

Graphic technology—Process control for the production of half-tone colour separations, proof and production prints

Part 7:
Proofing processes working directly from digital data

1 Scope

This part of ISO 12647 specifies requirements for systems that are used to produce hard-copy digital proof prints intended to simulate a printing condition defined by a set of characterization data. Recommendations are provided with regard to appropriate test methods associated with these requirements. In addition, guidance with respect to the certification of proofing systems related to specific printing condition aims is also included.

This part of ISO 12647 is independent of the method used to produce a digital proof print.

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 3664, *Viewing conditions — Graphic technology and photography*

ISO 8254-1, *Paper and board — Measurement of specular gloss — Part 1: 75° gloss with a converging beam, TAPPI method*

ISO 12040, *Graphic technology — Prints and printing inks — Assessment of light fastness using filtered xenon arc light*

ISO 12639, *Graphic technology — Prepress digital data exchange — Tag image file format for image technology (TIFF/IT)*

ISO 12640-1, *Graphic technology — Prepress digital data exchange — Part 1: CMYK standard colour image data (CMYK/SCID)*

ISO 12642-2, *Graphic technology — Input data for characterization of 4-colour process printing — Part 2: Expanded data set*

ISO 12647-1:2004, *Graphic technology — Process control for the production of half-tone colour separations, proof and production prints — Part 1: Parameters and measurement methods*

ISO 13655:1996, *Graphic technology — Spectral measurement and colorimetric computation of graphic arts images*