



Recommended practice for radiographic examination of fusion welded joints — Part 1 : Fusion welded butt joints in steel plates up to 50 mm thick

Pratique recommandée pour l'examen radiographique de joints soudés par fusion — Partie 1 : Joints soudés bout à bout par fusion de tôles d'acier d'épaisseur inférieure ou égale à 50 mm

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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 1106/1 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*.

It cancels and replaces ISO Recommendation R 1106-1969, of which it constitutes a technical revision.

Recommended practice for radiographic examination of fusion welded joints —

Part 1 : Fusion welded butt joints in steel plates up to 50 mm thick

0 Introduction

The detection of flaws in an item submitted to X- or γ -radiographic examination depends on the particularities of the technique employed.

Since the quality of the radiograph cannot be fully ensured by the use of an image quality indicator (IQI), this part of ISO 1106 indicates the procedures necessary to obtain comparable radiographs from different origins (see 6.7).

This part of ISO 1106 should have the effect of ensuring more unified practice and thus simplify the interpretation of radiographs.

1 Scope

This part of ISO 1106 specifies general techniques of weld radiography with the object of enabling satisfactory results to be obtained economically. The techniques are based on generally accepted practice and the fundamental theory of the subject.

2 Field of application

This part of ISO 1106 applies to the radiographic examination of fusion welded joints in steel up to 50 mm thick.

It does not lay down radiographic criteria of acceptance for the joints, but is concerned with the radiographic techniques to be used.

In many cases, the techniques described are also applicable to steel of thickness greater than 50 mm; however, the techniques to be used for thicknesses of steel from 50 to 200 mm are described in ISO 1106/2.

NOTES — The IQI values to be accepted for the different types of welded structures are not within the scope of this part of ISO 1106. However, if the techniques described are used correctly, it should be possible to obtain, without difficulty, the IQI values listed in ISO 2504 as minimum requirements.

3 References

ISO 1027, *Radiographic image quality indicators for non-destructive testing — Principles and identification.*

ISO 1106/2, *Recommended practice for radiographic examination of fusion welded joints — Part 2 : Fusion welded butt joints in steel plates thicker than 50 mm and up to and including 200 mm in thickness.*

ISO 2504, *Radiography of welds and viewing conditions for films — Utilization of recommended patterns of image quality indicators (IQI).*

ISO 5576, *Industrial radiology — Non-destructive testing Vocabulary.*¹⁾

ISO 5579, *Non-destructive testing — Radiographic examination of metallic materials by X- and gamma-rays — Basic rules.*²⁾

ISO 5580, *Non-destructive testing — Industrial radiographic illuminators — Minimum requirements.*²⁾

ISO 7004, *Photography — Industrial radiographic film Determination of ISO speed and ISO average gradient when exposed to X- and γ -radiation.*²⁾

IRCP Publication 9, *Recommendations of the International Commission on Radiological Protection.*

4 Definitions

For the purpose of this part of ISO 1106, the definitions given in ISO 5576 apply.

5 Classification of radiographic techniques

The radiographic techniques are divided into two classes :

class A : general techniques for X- and γ -ray examination;

class B : techniques for X- and γ -ray examination with greater sensitivity in the detection of defects.

1) At present at the stage of draft. (Revision of Appendix 1969 to ISO/R 947, ISO/R 1027 and ISO/R 1106.)

2) At present at the stage of draft.