



# Non-destructive testing — Image quality of radiographs —

## Part 4: Experimental evaluation of image quality values and image quality tables

The European Standard EN 462-4:1994 has the status of a  
British Standard

# Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee WEE/46, Non-destructive testing, upon which the following bodies were represented:

Aluminium Federation  
 Associated Offices Technical Committee  
 Association of Consulting Engineers  
 BNF (Fulmer Materials Centre)  
 British Airways  
 British Chemical Engineering Contractors' Association  
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 Railway Industry Association of Great Britain  
 Royal Society of Chemistry  
 Society of British Aerospace Companies Limited  
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 Steel Casting Research and Trade Association  
 Welding Institute

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

British Photographic Association  
 National Nuclear Corporation Ltd.

## Amendments issued since publication

Amd. No.	Date	Comments

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The following BSI references relate to the work on this standard:  
 Committee reference WEE/46  
 Draft for comment 91/83302 DC

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## National foreword

This British Standard has been prepared by Technical Committee WEE/46 and is the English language version of EN 462-4: 1994 *Non-destructive testing — Image quality of radiographs — Part 4: Experimental evaluation of image quality values and image quality tables*, published by the European Committee for Standardization (CEN).

EN 462-4:1994 was produced as a result of international discussion in which the UK took an active part.

### Cross-references

Publication referred to	Corresponding British Standard
	BS EN 462 <i>Non-destructive testing — Image quality of radiographs</i>
EN 462-1	Part 1:1994 <i>Image quality indicators (wire type) — Determination of image quality value</i>
EN 462-2	Part 2:1994 <i>Image quality indicators (step/hole type) — Determination of image quality value</i>

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### Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 4, 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.

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ICS 19.100

Descriptors: Non-destructive tests, industrial radiography, photographic images, quality, image quality indicators

English version

## Non-destructive testing — Image quality of radiographs — Part 4: Experimental evaluation of image quality values and image quality tables

Essais non destructifs — Qualité d'image des  
radiogrammes —  
Partie 4: Evaluation expérimentale des indices  
de qualité d'image et des tables de qualité  
d'image

Zerstörungsfreie Prüfung — Bildgüte von  
Durchstrahlungsaufnahme —  
Teil 4: Experimentelle Ermittlung von  
Bildgütezahlen und Bildgütetabellen

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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

**Central Secretariat: rue de Stassart 36, B-1050 Brussels**

## Foreword

This European Standard has been produced by CEN/TC 138 Non-destructive testing, the secretariat of which is held by the French Association for Standardization (AFNOR).

EN 462-4 is a Part of a series of European Standards with the same number; the other Parts are the following:

EN 462-1, *Non-destructive testing — Image quality of radiographs — Part 1: Image quality indicators (wire type) — Determination of image quality value.*

EN 462-2, *Non-destructive testing — Image quality of radiographs — Part 2: Image quality indicators (step/hole type) — Determination of image quality value.*

EN 462-3, *Non-destructive testing — Image quality of radiographs — Part 3: Image quality classes for ferrous metals.*

EN 462-5, *Non-destructive testing — Image quality of radiographs — Part 5: Image quality indicators (Duplex wire type) — Determination of total image unsharpness value.*

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 1995, and conflicting national standards shall be withdrawn at the latest by May 1995.

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## 1 Scope

This standard gives instructions for the determination of image quality values and image quality tables.

If the IQI requirements from Part 3 of this standard cannot be used, because, for example, the absorption coefficients of the IQI material and the inspected material differ by more than 30 %, test exposures are necessary to determine acceptance of image quality values. The image quality values achieved by the test exposures are required for all exposures made under the same radiographic conditions.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 462-1, *Non-destructive testing — Image quality of radiographs — Part 1: Image quality indicators (wire type), determination of image quality value.*

EN 462-2, *Non-destructive testing — Image quality of radiographs — Part 2: Image quality indicators (step/hole type), determination of image quality value.*

EN 462-3, *Non-destructive testing — Image quality of radiographs — Part 3: Image quality classes for ferrous metals.*

## 3 Definitions

For the purposes of this standard, the following definitions apply.

### 3.1

#### **image quality indicators (IQI)**

see EN 462-1 and EN 462-2

### 3.2

#### **image quality**

see EN 462-1 and EN 462-2

### 3.3

#### **image quality value**

see EN 462-1 and EN 462-2

### 3.4

#### **image quality table**

achieved image quality values versus the penetrated wall thickness (see clause 4)

## 4 Experimental evaluation of image quality values

For the experimental determination of image quality values, the same radiographic conditions and IQI shall be used as specified for the subsequent examination.

Two test exposures shall be made under the specified conditions. If the image quality values read from these two exposures are identical, this value shall be accepted as the required image quality value. If the image quality values from the two test exposures are different, the procedure shall be repeated.

## 5 Determination of image quality tables

If different wall thicknesses of the same material are radiographed, an image quality table shall be established. An example of the image quality values for different penetrated thicknesses according to clause 4 is shown in Figure 1. The step curve below the experimental values defines the image quality values and penetrated thickness steps of the image quality table, for an example see Table 1.



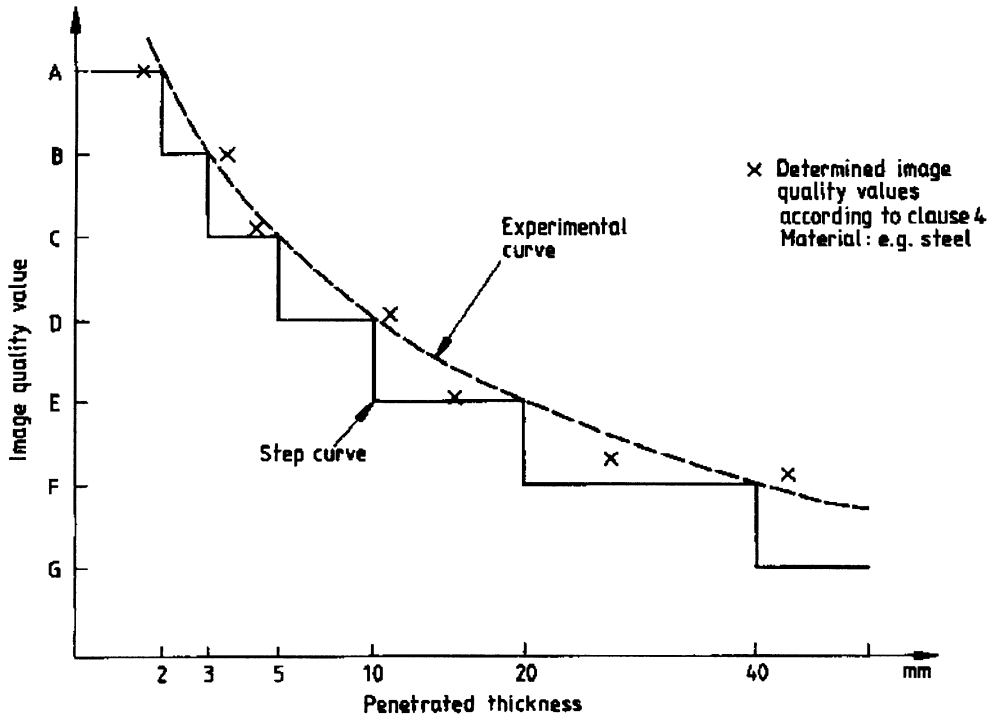


Figure 1 — Example for the determination of an image quality table

Table 1 — Example of an image quality table

Penetrated thickness $w$ mm	Image quality value
Up to 2	A
Above 2 to 3	B
Above 3 to 5	C
Above 5 to 10	D
Above 10 to 20	E
Above 20 to 40	F
Above 40	G

## List of references

See national foreword.

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