

# Non-Destructive Weld Testing Standards

Non-Destructive Weld Testing Standards cover multiple possible methods of testing welds or metallic materials. Non-destructive testing analysis techniques are used for QA, evaluations, research, in cases where the product is expensive or unique, failure analysis, and so on. With a focus on radiographic testing, these standards also cover magnetic, radiosopic, ultrasonic, and other methods. General rules, guides, terminology, are provided, as well as standard test methods, specific techniques, and acceptance levels, together covering both the broad strokes and the nuanced testing procedures.

- General Standards
- Radioscopic Methods
- Magnetic Methods
- Radiographs - Complement to Radiographic Weld Testing
- Radiographic Methods
- Ultrasonic Methods
- Other Non-Destructive Weld Testing Methods

## General Standards

ISO 17635:2016

Non-destructive testing of welds - General rules for metallic materials

ISO 17637:2016

Non-destructive testing of welds - Visual testing of fusion-welded joints

BS EN 1330-1:2014

Non destructive testing. Terminology. List of general terms (British Standard)

BS EN 1330-2:1998

Non-destructive testing. Terminology. Terms common to the non-destructive testing methods (British Standard)

## Radiographic Methods

ISO 5579:2013

Non-destructive testing - Radiographic testing of metallic materials using film and X- or gamma rays - Basic rules

ISO 17636-1:2013

Non-destructive testing of welds - Radiographic testing - Part 1: X- and gamma-ray techniques with film

ISO 17636-2:2013

Non-destructive testing of welds - Radiographic testing - Part 2: X- and gamma-ray techniques with digital detectors

ISO 10675-1:2016

Non-destructive testing of welds - Acceptance levels for radiographic testing - Part 1: Steel, nickel, titanium and their alloys

ISO 10675-2:2017

Non-destructive testing of welds - Acceptance levels for radiographic testing - Part 2: Aluminium and its alloys

BS EN 12679:2018

Non-destructive testing. Radiographic testing. Determination of the size of industrial radiographic gamma sources (British Standard)

ISO 4993:2015

Steel and iron castings - Radiographic testing

BS EN 12681-2:2017

Founding. Radiographic testing. Techniques with digital detectors (British Standard)

## Radioscopic Methods

BS EN 13068-1:2000

Non-destructive testing. Radioscopic testing. Quantitative measurement of imaging properties (British Standard)

BS EN 13068-2:2000

Non-destructive testing. Radioscopic testing. Check of long term stability of imaging devices (British Standard)

BS EN 13068-3:2001

Non-destructive testing. Radioscopic testing. General principles of radioscopic testing of metallic materials by X- and gamma rays (British Standard)

### **Ultrasonic Methods**

BS EN 1330-4:2010

Non-destructive testing. Terminology. Terms used in ultrasonic testing (British Standard)

ISO 11666:2018

Non-destructive testing of welds - Ultrasonic testing - Acceptance levels

ISO 17640:2018

Non-destructive testing of welds - Ultrasonic testing - Techniques, testing levels, and assessment

ISO 22825:2017

Non-destructive testing of welds - Ultrasonic testing - Testing of welds in austenitic steels and nickel-based alloys

ISO 23279:2017

Non-destructive testing of welds - Ultrasonic testing - Characterization of discontinuities in welds

ISO 13588:2019

Non-destructive testing of welds - Ultrasonic testing - Use of automated phased array technology

ISO 10863:2020

Non-destructive testing of welds - Ultrasonic testing - Use of time-of-flight diffraction technique (TOFD)

ISO 15626:2018

Non-destructive testing of welds - Time-of-flight diffraction technique (TOFD) - Acceptance levels

### **Magnetic Methods**

ISO 17638:2016

Non-destructive testing of welds - Magnetic particle testing

BS EN ISO 12707:2016

Non-destructive testing. Magnetic particle testing. Vocabulary (British Standard)

ISO 23278:2015

Non-destructive testing of welds - Magnetic particle testing - Acceptance levels

### **Other Non-Destructive Weld Testing Methods**

BS EN 1330-10:2003

Non-destructive testing. Terminology. Terms used in visual testing (British Standard)

BS EN ISO 20484:2017

Non-destructive testing. Leak testing. Vocabulary (British Standard)

BS EN 1330-9:2017

Non-destructive testing. Terminology. Terms used in acoustic emission testing (British Standard)

ISO 23277:2015

Non-destructive testing of welds - Penetrant testing - Acceptance levels

ISO 17643:2015

Non-destructive testing of welds - Eddy current testing of welds by complex-plane analysis

### **Radiographs - Complement to Radiographic Weld Testing**

ISO 19232-1:2013

Non-destructive testing - Image quality of radiographs - Part 1: Determination of the image quality value using wire-type image quality indicators

ISO 19232-2:2013

Non-destructive testing - Image quality of radiographs - Part 2: Determination of the image quality value using step/hole-type image quality indicators

ISO 19232-3:2013

Non-destructive testing - Image quality of radiographs - Part 3: Image quality classes

ISO 19232-4:2013

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

ISO 19232-5:2018

Non-destructive testing - Image quality of radiographs - Part 5: Determination of the image unsharpness and basic spatial resolution value using duplex wire-type image quality indicators

ISO 11699-1:2008

Non-destructive testing - Industrial radiographic film - Part 1: Classification of film systems for industrial radiography

ISO 11699-2:2018

Non-destructive testing - Industrial radiographic films - Part 2: Control of film processing by means of reference values

ISO 14096-1:2005

Non-destructive testing - Qualification of radiographic film digitisation systems - Part 1: Definitions, quantitative measurements of image quality parameters, standard reference film and qualitative control

ISO 14096-2:2005

Non-destructive testing - Qualification of radiographic film digitisation systems - Part 2: Minimum requirements

BS EN 1330-11:2007

Non-destructive testing. Terminology. Terms used in X-ray diffraction from polycrystalline and amorphous materials (British Standard)

BS EN 1330-3:1997

Non-destructive testing. Terminology. Terms used in industrial radiographic testing (British Standard)

BS EN ISO 14096-1:2020

Non-destructive testing. Qualification of radiographic film digitisation systems Definitions, quantitative measurements of image quality parameters, standard reference film and qualitative control (British Standard)

BS EN ISO 14096-2:2020

Non-destructive testing. Qualification of radiographic film digitisation systems Minimum requirements (British Standard)

BS EN 14784-1:2005

Non-destructive testing. Industrial computed radiography with storage phosphor imaging plates. Classification of systems (British Standard)

BS EN ISO 16371-2:2017

Non-destructive testing. Industrial computed radiography with storage phosphor imaging plates. General principles for testing of metallic materials using X-rays and gamma rays (British Standard)