

ISO 16371-2:2017-09 (E)

Non-destructive testing - Industrial computed radiography with storage phosphor imaging plates - Part 2: General principles for testing of metallic materials using X-rays and gamma rays

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Symbols and abbreviated terms	5
5 Personnel qualification	6
6 Classification of computed radiographic techniques and compensation principles	6
6.1 Classification	6
6.2 Compensation principles, CP I and CP II	6
7 General	7
7.1 Protection against ionizing radiation	7
7.2 Surface preparation and stage of manufacture	7
7.3 Identification of radiographs	7
7.4 Marking	7
7.5 Overlap of phosphor imaging plates	7
7.6 Types and positions of image quality indicators and IQI values	8
8 Recommended techniques for making computed radiographs	9
8.1 Test arrangements	9
8.2 Choice of X-ray tube voltage and radiation source	9
8.2.1 X-ray equipment	9
8.2.2 Other radiation sources	10
8.3 CR systems and screens	11
8.3.1 Minimum normalized signal-to-noise ratio	11
8.3.2 Metal screens and shielding	11
8.4 Maximum unsharpness and basic spatial resolution for CR system selection	13
8.4.1 System selection	13
8.4.2 Compensation principle II	13
8.5 Alignment of beam	15
8.6 Reduction of scattered radiation	15
8.6.1 Metal filters and collimators	15
8.6.2 Interception of back scattered radiation	15
8.7 Source to object distance	15
8.7.1 General requirements	15
8.7.2 Testing of planar objects and curved objects with flexible IPs	15
8.7.3 Testing of curved objects with IPs in cassettes	16
8.7.4 Exceptions for panoramic projection exposures with the source in the centre of the pipe	16
8.8 Maximum area for a single exposure	18
8.9 Erasure of imaging plates	19
8.10 Data processing	19
8.10.1 Image processing	19
8.10.2 Monitor, viewing conditions and storage of digital radiographs	19

9	Test report	19
Annex A (normative)	Determination of basic spatial resolution, SR_b^{detector}	21
Annex B (normative)	Determination of normalized SNR_N from SNR_{measured}	26
Annex C (normative)	Determination of minimum grey value	28
Bibliography		31