

ISO 16371-1:2011-10 (E)

Non-destructive testing - Industrial computed radiography with storage phosphor imaging plates - Part 1: Classification of systems

Contents		Page
Foreword		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	2
4	Personnel qualification	3
5	CR quality indicators	3
5.1	Description of CR quality indicators for user and manufacturer tests	3
5.1.1	General	3
5.1.2	Contrast sensitivity quality indicator	3
5.1.3	Duplex wire quality indicator	3
5.1.4	Converging line pair quality indicator	3
5.1.5	Linearity quality indicators	3
5.1.6	T-target	4
5.1.7	Scanner slipping quality indicator	4
5.1.8	Shading quality indicator	4
5.1.9	Central beam alignment quality indicator (BAM-snail)	4
5.2	Application procedures for CR quality indicators	4
5.2.1	General	4
5.2.2	Exposure of CR quality indicators (user test)	4
5.2.3	Initial assessment of CR quality indicators (user test)	4
5.2.4	Periodical control (user test)	5
5.3	Imaging plate fading	5
6	Procedure for quantitative measurement of image quality parameters	5
6.1	Measurement of the normalized Signal-to-Noise Ratio	5
6.1.1	Step Exposure Method (manufacturer test)	5
6.1.2	Step Wedge Method (manufacturer test and enhanced user test)	8
6.1.3	Contrast sensitivity measurement (manufacturer and user test)	9
6.2	Measurement of minimum read-out intensity of computed radiographs (manufacturer procedure)	9
6.3	Determination of un-sharpness	10
6.3.1	General	10
6.3.2	MTF-method (manufacturer test)	10
6.3.3	Duplex wire method (manufacturer and user test)	11
6.3.4	Converging line pair quality indicators (manufacturer and user test)	12
6.4	Other tests	12
6.4.1	Geometric distortions (manufacturer and user test)	12
6.4.2	Laser beam function (manufacturer and user test)	12
6.4.3	Blooming or flare (manufacturer and user test)	13
6.4.4	Scanner slipping (manufacturer and user test)	13
6.4.5	Shading (manufacturer and user test)	13
6.4.6	Erasure (manufacturer and user test)	13
6.4.7	IP artefacts (user test)	13
7	CR System Classification and Interpretation of Results	14
7.1	General	14

7.2	Range of CR System Classification	14
7.3	Determination of ISO Speed (manufacturer procedure)	15
Annex A (informative) Example for IIPx measurement		16
Annex B (informative) Example of CR test phantom		20
B.1	Location and alignment of CR Quality Indicators in a CR Phantom	20
B.2	Shading test	21
B.2.1	General	21
B.2.2	Shading Quality Indicator	21
B.2.3	Procedure	21
B.3	Central beam alignment	21
B.3.1	CR Alignment Quality Indicator (BAM-snail)	21
B.3.2	Procedure	22
B.4	Contrast sensitivity quality indicator	22
Annex C (informative) Guidance for application of various tests and test methods		23
C.1	Manufacturer tests	23
C.2	Tests after repair, upgrade or the use of an improved IP	23
C.3	User tests for long-term stability	23
Bibliography		25