

# DIN EN 16016-3:2012-12 (E)

## Non destructive testing - Radiation methods - Computed tomography - Part 3: Operation and interpretation

---

<b>Contents</b>		<b>Page</b>
Foreword .....		3
Introduction .....		4
1	Scope .....	5
2	Normative references .....	5
3	Terms and definitions .....	5
4	Operational procedure .....	5
4.1	General .....	5
4.2	CT system set-up .....	5
4.2.1	General .....	5
4.2.2	Geometry .....	5
4.2.3	X-ray source .....	6
4.2.4	Detector .....	6
4.3	Reconstruction parameters .....	7
4.4	Visualisation .....	7
4.5	Analysis and interpretation of CT images .....	7
4.5.1	General .....	7
4.5.2	Feature testing/defect testing .....	7
4.5.3	Dimensional testing .....	8
5	Requirements for acceptable results .....	10
5.1	Image quality parameters .....	10
5.1.1	Contrast .....	10
5.1.2	Noise .....	12
5.1.3	Signal to noise ratio .....	12
5.1.4	Contrast to noise ratio .....	12
5.1.5	Spatial resolution .....	13
5.2	Suitability of testing .....	15
5.3	CT examination interpretation and acceptance criteria .....	15
5.4	Records and reports .....	15
5.5	Artefacts .....	16
5.5.1	General .....	16
5.5.2	Beam hardening artefacts .....	16
5.5.3	Edge artefacts .....	17
5.5.4	Scattered radiation .....	18
5.5.5	Instabilities .....	18
5.5.6	Ring artefacts .....	18
5.5.7	Centre of rotation error artefacts .....	19
5.5.8	Motion artefacts .....	20
5.5.9	Artefacts due to an insufficient number of projections .....	21
5.5.10	Cone beam artefacts .....	21
Annex A (informative)	Spatial resolution measurement using line pair gauges .....	23
A.1	Line pair gauges .....	23
A.2	Principle of measurement .....	24
Bibliography .....		27