

# ISO 15708-3:2017-02 (E)

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

---

Contents	Page
<b>Foreword .....</b>	<b>iv</b>
1 <b>Scope .....</b>	1
2 <b>Normative references .....</b>	1
3 <b>Terms and definitions .....</b>	1
4 <b>Operational procedure .....</b>	1
4.1 <b>General .....</b>	1
4.2 <b>CT system set-up .....</b>	2
4.2.1 <b>General .....</b>	2
4.2.2 <b>Geometry .....</b>	2
4.2.3 <b>X-ray source .....</b>	3
4.2.4 <b>Detector .....</b>	3
4.3 <b>Reconstruction parameters .....</b>	3
4.4 <b>Visualization .....</b>	3
4.5 <b>Analysis and interpretation of CT images .....</b>	4
4.5.1 <b>General .....</b>	4
4.5.2 <b>Feature testing/defect testing .....</b>	4
4.5.3 <b>Dimensional testing .....</b>	4
5 <b>Requirements for acceptable results .....</b>	7
5.1 <b>Image quality parameters .....</b>	7
5.1.1 <b>Contrast .....</b>	7
5.1.2 <b>Noise .....</b>	8
5.1.3 <b>Signal to noise ratio .....</b>	9
5.1.4 <b>Contrast to noise ratio .....</b>	9
5.1.5 <b>Spatial resolution .....</b>	10
5.2 <b>Suitability of testing .....</b>	12
5.3 <b>CT examination interpretation and acceptance criteria .....</b>	12
5.4 <b>Records and reports .....</b>	12
5.5 <b>Artefacts .....</b>	13
5.5.1 <b>General .....</b>	13
5.5.2 <b>Beam hardening artefacts .....</b>	13
5.5.3 <b>Edge artefacts .....</b>	14
5.5.4 <b>Scattered radiation .....</b>	15
5.5.5 <b>Instabilities .....</b>	15
5.5.6 <b>Ring artefacts .....</b>	15
5.5.7 <b>Centre of rotation error artefacts .....</b>	16
5.5.8 <b>Motion artefacts .....</b>	17
5.5.9 <b>Artefacts due to an insufficient number of projections .....</b>	18
5.5.10 <b>Cone beam artefacts .....</b>	18
<b>Annex A (informative) Spatial resolution measurement using line pair gauges .....</b>	<b>19</b>
<b>Bibliography .....</b>	<b>23</b>