

DIN EN ISO 15708-3:2019-09 (E)

Non-destructive testing - Radiation methods for computed tomography - Part 3: Operation and interpretation (ISO 15708-3:2017)

Contents

| | Page |
|--|------|
| European foreword..... | 3 |
| Foreword..... | 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..... | 6 |
| 4.2.1 General..... | 6 |
| 4.2.2 Geometry..... | 6 |
| 4.2.3 X-ray source..... | 7 |
| 4.2.4 Detector..... | 7 |
| 4.3 Reconstruction parameters..... | 7 |
| 4.4 Visualization..... | 7 |
| 4.5 Analysis and interpretation of CT images..... | 8 |
| 4.5.1 General..... | 8 |
| 4.5.2 Feature testing/defect testing..... | 8 |
| 4.5.3 Dimensional testing..... | 8 |
| 5 Requirements for acceptable results..... | 11 |
| 5.1 Image quality parameters..... | 11 |
| 5.1.1 Contrast..... | 11 |
| 5.1.2 Noise..... | 12 |
| 5.1.3 Signal to noise ratio..... | 13 |
| 5.1.4 Contrast to noise ratio..... | 13 |
| 5.1.5 Spatial resolution..... | 14 |
| 5.2 Suitability of testing..... | 16 |
| 5.3 CT examination interpretation and acceptance criteria..... | 16 |
| 5.4 Records and reports..... | 16 |
| 5.5 Artefacts..... | 17 |
| 5.5.1 General..... | 17 |
| 5.5.2 Beam hardening artefacts..... | 17 |
| 5.5.3 Edge artefacts..... | 18 |
| 5.5.4 Scattered radiation..... | 19 |
| 5.5.5 Instabilities..... | 19 |
| 5.5.6 Ring artefacts..... | 19 |
| 5.5.7 Centre of rotation error artefacts..... | 20 |
| 5.5.8 Motion artefacts..... | 21 |
| 5.5.9 Artefacts due to an insufficient number of projections..... | 22 |
| 5.5.10 Cone beam artefacts..... | 22 |
| Annex A (informative) Spatial resolution measurement using line pair gauges..... | 23 |
| Bibliography..... | 27 |