

Measurement of the spatial resolution according to ISO 15708-1

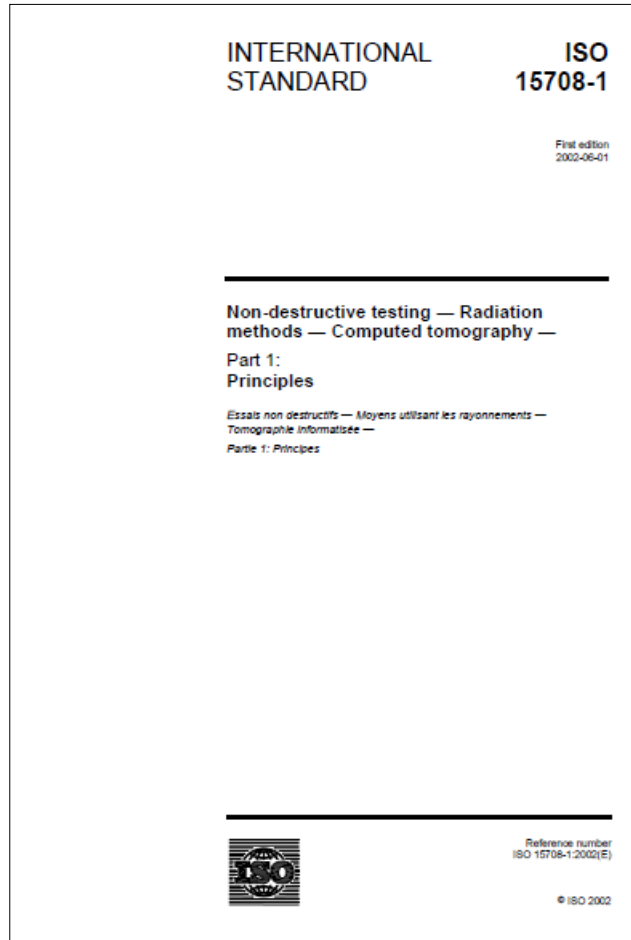


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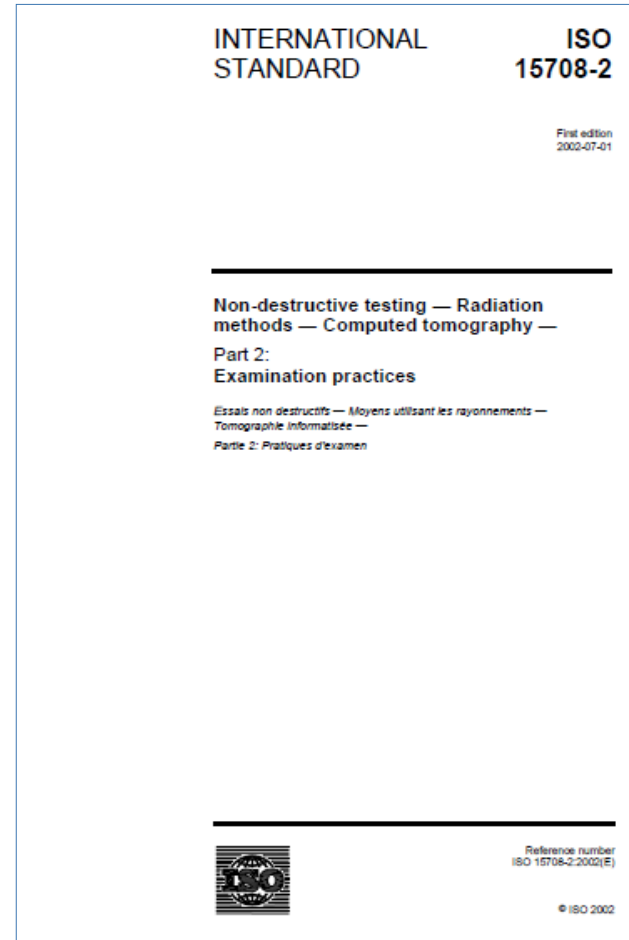
- 1 The ISO 15708 standard
- 2 Spatial resolution as an image quality characteristic
- 3 Measurement of the spatial resolution

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The ISO 15708 standard in NDT



Principles



Examination practices

Scope of part 1:

Part 1 is intended to satisfy two general needs for users of industrial CT equipment:

- a) the need for a tutorial document addressing the general principles of X-ray CT as they apply to industrial imaging;
- b) the need for a consistent set of CT **performance parameter definitions**, including how these performance parameters relate to CT system specifications.

Scope of part 2:

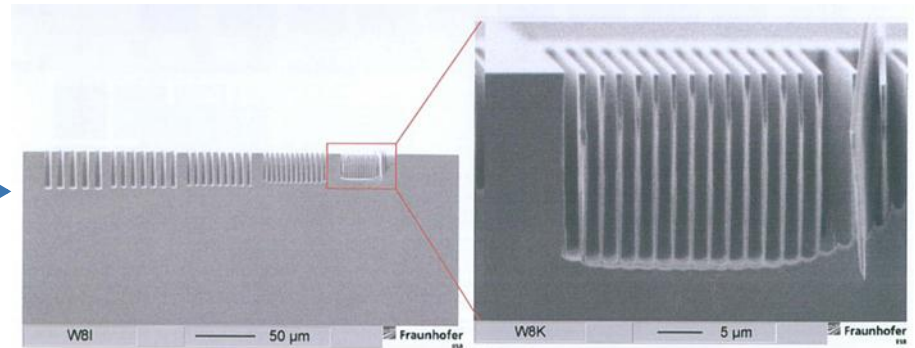
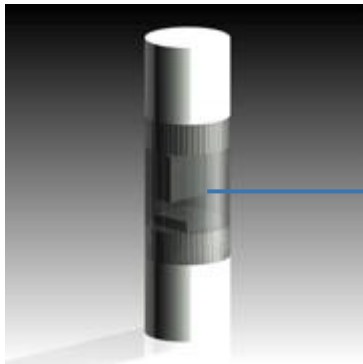
Part 2 gives guidelines for procedures for performing CT examinations.

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Spatial resolution as a metric of image sharpness

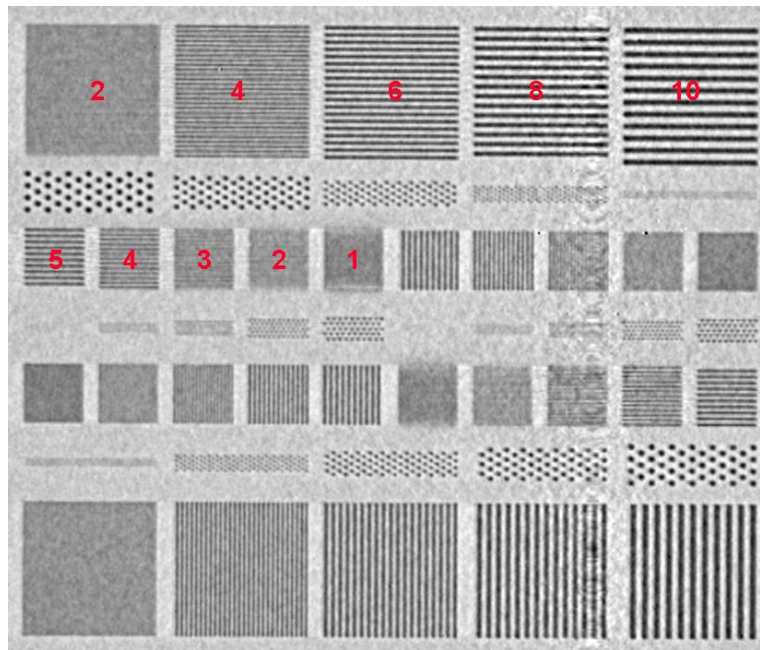


Test object with 3D grid



width 1µm (0,8µm und 1,2µm), depth 23µm

Reconstructed slice



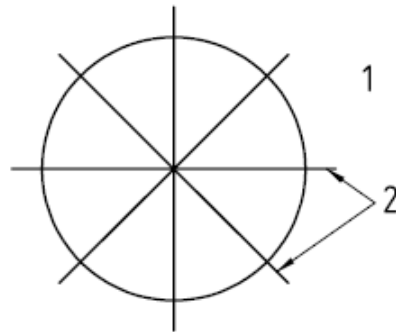
only qualitative evaluation

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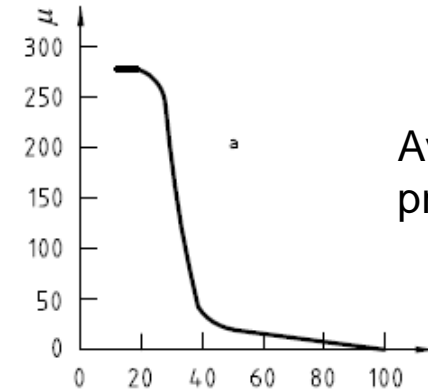
Spatial resolution measurement according to ISO 15708-1 – Measurement of edge blurring



Reconstruction of a cylinder object



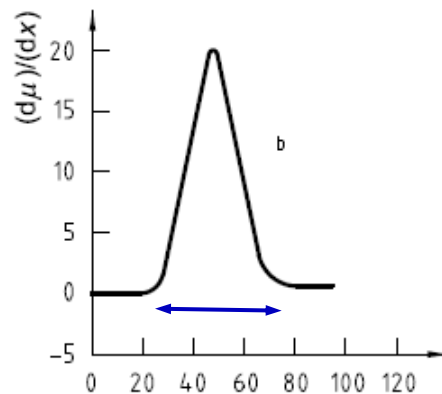
a)



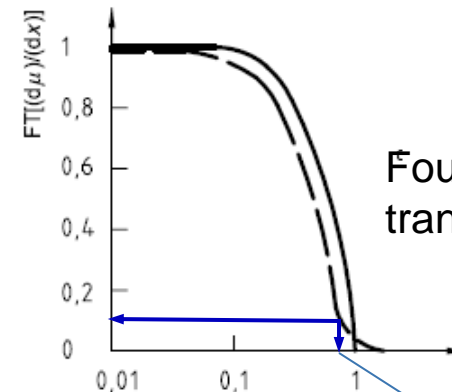
Averaged line profile (ESF)

b)

Derivation of line profile (LSF)



c)



Fourier transformation

— Theoretical
- - Experimental

d)

Value, e.g.
5 μm

Spatial resolution specifications for METROTOM



METROTOM[®] 800



$\varnothing_{\max} = 150 \text{ mm}$

METROTOM[®] 1500



$\varnothing_{\max} = 300 \text{ mm}$

Spatial resolution specifications for METROTOM



Data sheet 2013-05

Auflösung (ISO 15708) ⁵⁾

		METROTOM 800	METROTOM 1500
Maximale Ortsauflösung bei 10 % Kontrast	in μm	3,5 (142,9 lp/mm ⁴⁾)	Detektor 1024 x 1024: 8 (125 lp/mm ⁴⁾) Detektor 2048 x 2048: 3,5 (142,9 lp/mm ⁴⁾)

Spatial resolution for Inline CT system Scanning & evaluation < 1 Minute



100 μm





We make it visible.