



Ultrasonic testing

Application

Ultrasonically tested heavy steel plates are used in the design and construction of heavily stressed steel structures. The purpose of ultrasonic testing is to register the position and size of any inclusions and laminations.

DanSteel A/S supplies ultrasonically tested heavy steel plates in thickness from 8 to 100 mm and length max. 16000 mm. For the strictest standards, delivery thickness is normally restricted to max. 70 mm (i.e. EN 10160 S2, SEL 072-77 Class 2, BS 5996 Level E3, SIS Level 3).

Ultrasonic testing cannot be carried out for thickness below 8 mm.

Standards

Ultrasonic testing is carried out in accordance with the following standards:
EN 10160 Class 0, 1, 2.

SEL (Stahl-Eisen-Lieferbedingungen) 072-77 Class 2, 3, 4, 5.

ASTM A435 and A578 – A, B or (C).

BS 5996 Level B1, B2, B3, (B4), E1, E2, E3.

SIS 219115 Level 0, 1, 2, (3).

Testing in accordance with other standards/special test methods can be carried out, subject to agreement.

Methods of testing

The surface of the plate is cleaned thoroughly and then sprayed with a coupling fluid (water).

The plate is subsequently tested by a semi-automatic device in accordance with the rules given in the standard.

Any defects are measured and assessed in relation to the standard.

The testing of edges is carried out along all 4 edges.

Example: EN 10160 S1 E1

Permissible defect size and number of defects.

Area

Defect mm ²	Max. number of defects within 1 m ²
100-1000	15

Edges

Defect mm ²	Max. length of defect mm	Number of defects per m Length 25-50 mm
100-1000	50	4

The result of the ultrasonic test is applied to the certificate.

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