

Ships plate

All grades of shipbuilding steels are suitable for welding. Normal shipbuilding steels have a tensile strength of 400-480 MPa. These steels can be divided into 5 categories according to their quality:

Category	A	killed to semi-killed
	B	killed to semi-killed
	C	Al-killed, fine grained
	D	all deoxidizing techniques, not killed
	E	Al-killed, fine grained

The required minimum impact strength values for the materials of categories C, D and E also apply to the filler metals. The values for ISO-V notch specimens are as follows:

Category	1	47 Joule minimum at +20°C
	2	47 Joule minimum at 0°C
	3	47 Joule minimum at -20°C
		61 Joule minimum at -10°C

Those welding consumables classified as per categories 2 and 3 having a low hydrogen content are additionally marked with:

Category	H15	max. H ₂ O 0,5 g/100 g samples = (H _{DM} < 15 ml / 100 gr deposit weld metal)
	H10	max. H ₂ O 0,3 g/100 g samples = (H _{DM} < 10 ml / 100 gr deposit weld metal)
	H5	max. H ₂ O 0,2 g/100 g samples = (H _{DM} < 5 ml / 100 gr deposit weld metal)

Structural steel

In general, the weldability of unalloyed structural steel is easy. As in all welding processes the weld metal needs its mechanical properties to match the base materials to be welded. The welder must avoid forming defects in the weld.

Unlimited weldability for the different welding processes cannot be guaranteed for structural steels. The behaviour of a steel plate during and after welding has a close relationship to the chemical structure of the material itself as well as its dimensions and shape. Furthermore the fabrication and service conditions of the component are important.

Boiler steel

There are no restrictions to the weldability of boiler steels. Please follow the recommendations mentioned in this handbook or mentioned in the classifications of the base materials to be welded.

Fine grain steel

All fine-grained steels can be welded. Restrictions only exist for welding processes involving considerable heat accumulation. Please follow the recommendations mentioned in this handbook or mentioned in the classifications of the base materials to be welded.

Pipe steel

The weldability of pipe steels is not subject to any restrictions. Please follow the recommendations mentioned in this handbook or mentioned in the classifications of the base materials to be welded.

Cast steel

The weldability of cast steels is only subject to restrictions as per EN 10213. Please follow the recommendations mentioned in this handbook or mentioned in the classifications of the base materials to be welded.