

# Duplex Steel SBS A 903



## General rules for the welding of ferritic austenitic CrNiMoN alloyed duplex steels

Contrary to austenitic CrNiMo steels the mechanical and physical properties and the corrosion resistance of duplex steels are greatly influenced by the proportion of ferrite and austenite as well as by possible precipitations.

When welding operations are performed, particular attention must be paid to this fact and the following general rules must be strictly observed.

- In general, filler metals of similar chemical composition, but of higher nickel content as compared to the base metal (overmatching filler metals) are to be used.
- Coated electrodes and welding flux for submerged arc welding must be dry in accordance with the manufacturer's instructions just before welding.
- Preheating is generally not required, but should be taken into consideration for wall thicknesses  $\geq 20$  mm. In such cases the following preheating and interpass temperatures are to be used.

	Preheating temperature	Interpass temperature
Duplex 1.4462 (S 31803)	100°C	150°C (200°C max.)
Superduplex 1.4501 (S 32760)	100°C max.	100°C max.

(If solution annealing after welding is specified, a higher interpass temperature will be admitted.)

- The actual heat input must generally be limited for wall thicknesses  $\leq 6$  mm. In all other cases it is to be adjusted to the wall thickness involved. The actual heat input should preferably be within the range of 5 and 22 kJ/cm.

This leaflet contains various data which are typical of average values and are given for the purpose of illustration only. They are not intended as warranties.

