Welding of TriWear 450

Along with high performance TriWear 450 has great weld ability. Conventional welding methods can be used when welding TriWear 450 to other weldable steel.

Mechanical Properties					
Steel grade	**Hardness [HBW] Min – max**	**Yield strength[1] (MPa)**	**Elongation A_5[1] (%)**	**Impact toughness CVL[1] t=20 mm**	**Thickness (mm)**
TriWear 450	425-475	1100-1300	10	50J-40°C	3-130

Chemical Composition (ladle analysis)									
Steel grade	**C Max %**	**Si Max %**	**Mn Max %**	**P Max %**	**S Max %**	**Cr Max %**	**Ni Max %**	**Mo Max %**	**B Max %**
TriWear 450	0.26	0.70	1.60	0.025	0.010	1.40	1.50	0.60	0.005

Create A Welding area:

Be sure that all welding area if free of moisture, oil, corrosion or any impurities before welding. It is important to: Chosee appropriate consumables, preheat and interpass temperatures, check heat input and decide prior the weld sequence and size of root gap in the joint.

Consumables for Welding: see Table 1 for more detail

Unalloyed and low-alloyed consumables with maximum yield strength of 500 MPa is generally recommended for TriWear. Consumables of higher strength (R_e max. 900 MPa) may be used in the thickness range of 0.7-6.0 mm. The use of low-alloyed consumables result in higher hardness of the weld metal are essential, the top cap of the joint could be welded with consumables used for hardfacing.

Table 1: Recommended Consumables for TriWear 450

Welding Method	AWS classification	EN classification
MAG, solid wire	AWS A5.19 ER70X- X AWS A5.2 ER80X-X	EN ISO 14341-A-G 38XXXXXXX
MAG, metal cored wire	AWS A518 E7XC-X AWS A5.28 E8XC-X	EN ISO 17632-A- T 42XXXXXH5 ENISO 17632-A -T 46XXXXXH5
MAG, flux cored wire	AWS A5.29 E7XT-X AWS A5.29 E8XT-X AWS A5.20 E7XT-X	EN ISO 17632 –A-T42XXXXXH5 EN ISO 17632-A-T 46XXXXXH5
MMA	AWS A5.5 E70X AWS A5.5 E80X AWS A5.1 E70X	EN ISO 2560-A-E 42XXXXXXH5 EN ISO 2560-A-E 46XXXXXXH5
SAW	AWS A5.23 F7X AWS A5.23 F7X AWS A5.17 F7X	EN ISO 14171-A-S 42XXXX EN ISO 14171-A-S 46XXXX
TIG	AWS A5.18 ER70X AWS A5.28 ER80X	EN ISO 636-A-W 42XX EN ISO 636-A-W 46XX

*HYDROGEN CONTENT OF WELDING CONSUMABLES:

The hydrogen content should be lower than or equal to 5 ml of hydrogen per 100 g of weld metal when welding with unalloyed or low alloyed welding consumables.