

COMPARISON SUMMARY BETWEEN BISALLOY® WEAR 450 STEEL AND IMPORTED PLATES

| CHARACTERISTIC | BISALLOY® WEAR 450 STEEL | | HARDOX 450* | | QUARD 450+ | |
|---------------------------------------------------------------------------------|-----------------------------------------------|-------------|-----------------------------------------------|--------|------------------------------------------------------------|--------|
| HARDNESS Brinell | 425 - 475 Through hardened to 50mm | | 425 - 475 | | 420 - 480 | |
| IMPACT PROPERTIES Charpy Impact (Longitudinal) -40°C (10mm x 10mm) | Sample Size | Energy | Sample Size | Energy | Sample Size | Energy |
| | 10x10mm | 35 J | 10x10mm | 50 J | 10x10mm | 35 J |
| STEEL TYPE | Low Alloy, Heat Treated | | Low Alloy, Heat Treated | | Low Alloy, Heat Treated | |
| CHEMICAL COMPOSITION | Plate Thickness (mm) | Typical Avg | Typical Avg | | Typical Avg | |
| Carbon Equivalent CE (IIW) CE= C+Mn+Cr+Mo+V+Cu+Ni 6 5 15 | 6 - 20 | 0.46 | 0.49 - 0.52 | | - | |
| | 25 - 50 | 0.58 | 0.60 | | 0.56 | |
| | >50 - 100 | 0.62 | 0.74 | | 0.64 | |
| Carbon Equivalent CET CET= C+Mn+Mo+Cr+Cu+Ni 10 20 40 | 6 - 20 | 0.30 | 0.38 - 0.39 | | - | |
| | 25 - 50 | 0.36 | 0.41 | | 0.37 | |
| | >50 - 100 | 0.40 | 0.43 | | 0.40 | |
| STEEL MAKING PROCESS | Grain Refined, Low Sulphur Vacuum Degassed | | Grain Refined, Low Sulphur Vacuum Degassed | | Desulphurisation in a ladle furnace, fine grain treated | |
| WELDING CONSUMABLES | Low Hydrogen | | Low Hydrogen | | Low Hydrogen | |
| Pre-Heat Joint Combined Thickness ≤40 | Nil | | Nil | | Room Temperature | |
| >40mm ≤60mm | 100°C | | 100°C | | 100°C | |
| >60mm ≤100mm | 125°C | | 125°C | | - | |
| Maximum Interpass Temps | 150 - 175°C | | 150 - 175°C | | 225°C | |
| Maximum Heat Input | 2.0 - 2.5 kJ/mm | | 2.0 - 2.5 kJ/mm | | 1.0 - 1.75 kJ/mm | |
| CUTTING | | | | | | |
| Oxy Methods | OK | | OK | | OK | |
| Plasma | OK | | OK | | OK | |
| Laser | OK | | OK | | OK | |
| Water Jet | OK | | OK | | OK | |
| BENDING | 6 - 50mm Thickness | | 6 - 50mm Thickness | | 8 - 20mm Thickness | |
| Minimum R/T Transverse Bend | 4.0 | | 4.0 | | 4.0 | |
| Longitudinal Bend | 5.0 | | 5.0 | | 5.0 | |
| Minimum Die Opening W/t Transverse Bend | 10.0 | | 10.0 | | 12.0 | |
| Longitudinal Bend | 12.0 | | 12.0 | | 14.0 | |
| DRILLING | | | | | | |
| Cobalt Type HSS | OK | | OK | | OK | |
| Solid Carbide Type | OK | | OK | | OK | |
| Replaceable Carbide | OK | | OK | | OK | |
| Countersinking & Counterboring | OK | | OK | | OK | |
| MACHINING | | | | | | |
| Milling | OK | | OK | | OK | |
| Turning | OK | | OK | | OK | |