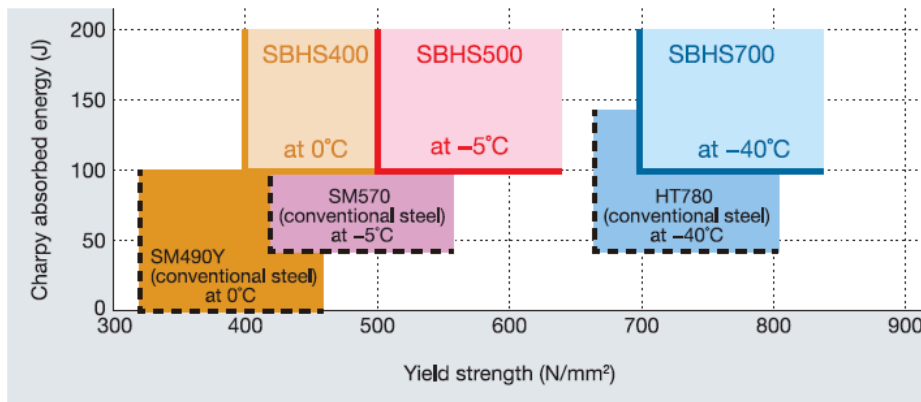


SBHS (Steel for Bridge High Performance Structures)

High-performance, high-tensile strength steels developed to reduce the construction costs of steel bridges. SBHS have several important features:

1) Higher yield strength and uniformity of yield strength regardless of sheet thickness.

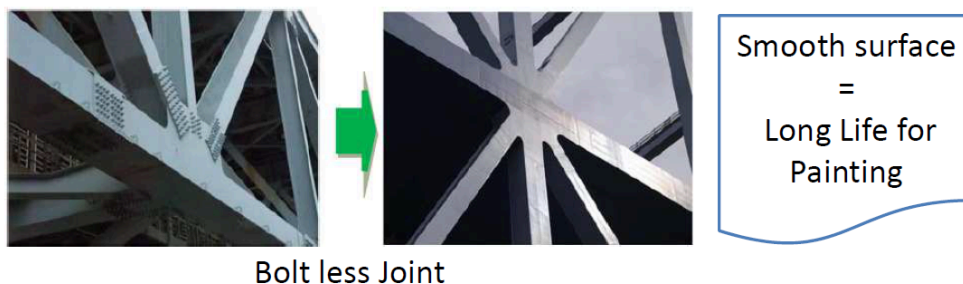
This allows for thinner plates and longer spans to be used without a reduction in strength, reducing the overall weight and cost. Erection and transportation costs are also often reduced. In the example of the Tokyo Gate Bridge, SBHS 500 steel plates accounting for 50% of the total steel weight were used, reducing the cost of construction of the bridge by about 12%.



Graph 1. Comparative Yield Strengths and Charpy Values of SBHS to Conventional Steels

2) Improved fracture toughness and plasticity

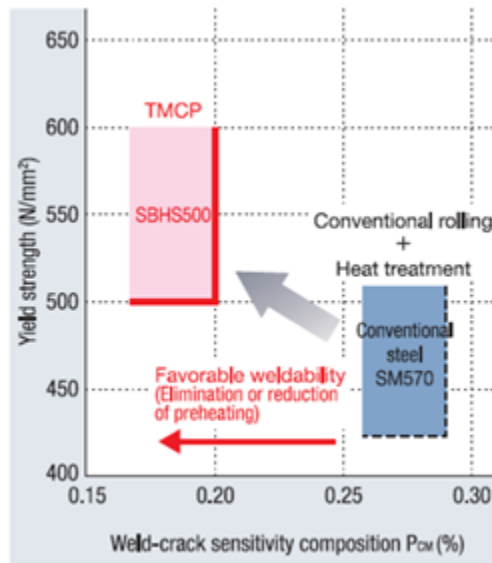
This feature improves ease of welding and cold forming work. Improving fracture toughness of the welded joints can also reduce the need for bolted joints giving a more uniform smooth surface with benefits in painting and on-going maintenance cost reduction.



3) Reduction in pre-heating requirements.

In SBHS high-performance steel plates, unlike conventional steels, high strength is compatible with high weldability and workability. Compositional changes in SBHS steels give a lower weld crack sensitivity factor which eliminates or reduces preheating requirements, (see Graph 2).

Graph 2. Weld Crack Sensitivity of SBHS500 and SM570



4) Higher capacity for heat input during welding.

This allows for a reduction in welding passes for faster, more efficient welding, eg, standard SM570 compared to SBHS 500 steel joint below.



SBHS is available in conventional weathering steel specifications, optimising all the benefits of SBHS Steels with the reduced lifetime maintenance and environmental impact of a weathering steel.

For coastal applications, SBHS is available with CORSPACE® specifications, combining the benefits of SBHS with high corrosion resistance for significant life cycle savings and improved environmental sustainability.

Contact Welding Engineers (NZ) Ltd for more information, Ph 09 634 1949.