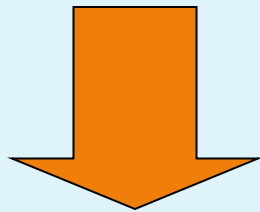


26. Steels for Bridge High-performance Structure (SBHS)

Short, Middle and Long span Bridges

- High-performance steel for bridges (SBHS: Steels for Bridge High performance Structure) reflects Japan's advances in steelmaking technology
 - Finer crystallization of microstructures realized with the use of state-of-the-art thermo-mechanical control process (TMCP) technology
 - Significant advancement in steel materials for bridges compared to conventional steel products in terms of microstructure
 - New material that realizes weldability, strength and fracture toughness with advanced controlled rolling and cooling techniques



Contribution to steel structure development through use of highly economical and internationally competitive steel materials for production and design of bridges



[Conventional steel]
1994 Trans-Tokyo Bay Highway



[SBHS steel]
2012 Tokyo Gate Bridge
SBHS500 Applied



Applicable sector

SBHS is applicable for short, middle and long span bridges. those are expected to realize steel weight reduction and improvement of manufacturing efficiency.



Tokyo Gate Bridge

Feature

Code	Yield point or proof stress (N/mm ²)	Tensile strength (N/mm ²)	Elongation		
			Thickness (mm)	Test specimen	%
SBHS400 SBHS400W	Over 400	490~640	6≤t≤16	Size 1A	Over 15
			16<t≤50	Size 1A	Over 19
			40<t	Size 4	Over 21
SBHS500 SBHS500W	Over 500	570~720	6≤t≤16	Size 5	Over 19
			16<t	Size 5	Over 26
			20<t	Size 4	Over 20
SBHS700 SBHS700W	Over 700	780~930	6≤t≤16	Size 5	Over 16
			16<t	Size 5	Over 24
			20<t	Size 4	Over 16

Code	Test temperature (°C)	Charpy absorption energy (J)	Test specimen & specimen collection direction
SBHS400 SBHS400W	0	Over 100	V notch Right angle to rolled direction
SBHS700 SBHS700W	-5		
SBHS700 SBHS700W	-40		

SBHS has achieved dramatic improvement in strength and weldability and other manufacturing process compared with conventional steel. The effect of reduced steel weight with optimal steel bridge design can be expected.

Track Record

Overseas: Not yet

Japan: Approx. 20,000 tons
including The Tokyo Gate Bridge

Cost

Total works cost reduction of 12%, including 3% work efficiency in steel material weight (total steel weight), according to MLIT.

Contact

The Japan Iron and Steel Federation
Market Development Group

MAIL:sunpou@jisf.or.jp
TEL:+81-3-3669-4815

FAX:+81-3-3667-0245