

ASTM A709/A709M Standard Specification for Structural Steel for Bridges.



ASTM A709/A709M Standard Specification for Structural Steel for Bridges. ASTM A709/A709M specification covers carbon and high-strength low alloy steel structural shapes, plates and bars, and quenched and tempered alloy steel for structural plates intended for use in bridges. ASTM A709/A709M Standard main steel grade: ASTM A709 Grade 36, 50, 50S, 50W, HPS50W (A709GR36, A709GR50, A709GR50S, A709GR50W, A709GRHPS50W)

Standard: ASTM A709

Grade : ASTM A709Grade 36, 50, 50S, 50W,

Thickness : 8mm-500mm

Width : 1000mm-4000mm

Length : 1000mm-20000mm

MOQ: 1 PC

Product type : Steel plate

Delivery time : Promptly (Stock) or 10-40 days (Production)

Stock : Available

MTC: Available

Delivery condition: AS REQUIREMENTS

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TABLE 4 Grade 50W [345 W] Chemical Requirements (Heat Analysis)

NOTE 1—Types A, B, and C are equivalent to Specification A 588/A 588M Grades A, B, and C, respectively.

Element	Composition, % ^A		
	Type A	Type B	Type C
Carbon ^B	0.19 max	0.20 max	0.15 max
Manganese ^B	0.80–1.25	0.75–1.35	0.80–1.35
Phosphorus	0.04 max	0.04 max	0.04 max
Sulfur	0.05 max	0.05 max	0.05 max
Silicon	0.30–0.65	0.15–0.50	0.15–0.40
Nickel	0.40 max	0.50 max	0.25–0.50
Chromium	0.40–0.65	0.40–0.70	0.30–0.50
Copper	0.25–0.40	0.20–0.40	0.20–0.50
Vanadium	0.02–0.10	0.01–0.10	0.01–0.10

^A Weldability data for these types have been qualified by FHWA for use in bridge construction.

^B For each reduction of 0.01 percentage point below the specified maximum for carbon, an increase of 0.06 percentage point above the specified maximum for manganese is permitted, up to a maximum of 1.50 %.

ASTMA709 -It's used in carbon steel for bridges and low-alloy high-strength structural steels, plates and rods.

- 1.The steel number is basically the same as the alloy structural steel.
- 2.For professional use of low-alloy high-strength steel, it should be marked at the end of the steel number. For example, for 16Mn steel, special steel grades for bridges are “16Mnq”, special grades for automobile girders are “16MnL”, and special steel grades for pressure vessels are “16MnR”.

● The main steel numbers are: Q345E (16Mn) Q390E (15MnV) Q420E (15MnVN) Q460CSM490B St52-3 S275JR S355JR WH60A WH70B BB41BF BB503 CortenB SHT60 A633D A633E SM520 SM570 Q550CFC StE355 StE460 1E1006 1E0650 S275J0 S275J2 S275NL S355J0 S355K2 S355J2 S355NL NR400ZL A572Gr50 A588GrBA709Gr50.

● The main uses of steel plate include: manufacturing plant, general construction and various types of construction machinery, such as rigs, shovels, electric wheel dump trucks, mining vehicles, excavators, loaders, bulldozers, etc. Crane, coal mine hydraulic support and other mechanical equipment and other structural parts.

ASTMA709 [steel plate](#) is characterized by high strength and good welding performance. Although the general domestic high-strength steel has reached a certain strength to yield, but it has lost the hardenability, welding performance simply can not be compared with the American standard ASTMA709 steel. A709 has high strength, even at very low temperatures, it can still maintain the mechanical properties of the steel plate itself. Good fatigue resistance; high toughness and low brittle transition

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temperature; good cold forming performance and welding performance; good corrosion performance and certain wear resistance. Therefore, it cannot be replaced by the national standard steel plate, otherwise it will give the purchaser and the factory's manufacturing and processing a huge loss, causing economic disputes.