
Standard Specification for Structural Steel for Bridges

AASHTO Designation: M 270M/M 270-20

Technical Subcommittee: 4f, Metals

Release: Group 2 (June)

ASTM Designation: [A709/A709M-18](#)



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1. SCOPE

- 1.1. This specification covers carbon and high-strength low-alloy steel structural shapes, plates, and bars and quenched and tempered alloy steel, and stainless steel for structural plates intended for use in bridges. Twelve grades are available in five yield strength levels as follows:

Table 1—Yield Strength Levels

Grade SI [U.S.]	Yield Strength, MPa [ksi]
250 [36]	250 [36]
345 [50]	345 [50]
345S [50S]	345 [50]
QST 345 [QST 50]	345 [50]
QST 345S [QST 50S]	345 [50]
345W [50W]	345 [50]
345CR [50CR]	345 [50]
HPS 345W [HPS 50W]	345 [50]
QST 450 [QST 65]	450 [65]
QST 485 [QST 70]	485 [70]
HPS 485W [HPS 70W]	485 [70]
HPS 690W [HPS 100W]	690 [100]

- 1.1.1. Grades 250 [36], 345 [50], 345S [50S], 345W [50W], and 345CR [50CR], QST 345 [QST 50], QST 345S [QST 50S], QST 450 [QST 65] and QST 485 [QST 70] are also included in [ASTM A36/A36M](#), [A572/A572M](#), [A992/A992M](#), [A588/A588M](#), [A514/A514M](#), and [A1010/A1010M](#). When the supplementary requirements of this specification are specified, they exceed the requirements of [A36/A36M](#), [A572/A572M](#), [A992/A992M](#), [A588/A588M](#), [A514/A514M](#), and [A1010/A1010M](#).
- 1.1.2. Grades 345W [50W], 345CR [50CR], HPS 345W [HPS 50W], HPS 485W [HPS 70W], and HPS 690W [HPS 100W] have enhanced atmospheric corrosion resistance (Section 13.1.2). Product availability is shown in Table 2.
- 1.2. Grade HPS 485W [HPS 70W] or HPS 690W [HPS 100W] shall not be substituted for Grade 250 [36], 345 [50], 345S [50S], 345W [50W], 345CR [50CR], or HPS 345W [HPS 50W]. Grade 345W [50W], 345CR [50CR], or HPS 345W [HPS 50W] shall not be substituted for Grade 250 [36], 345 [50], or 345S [50S] without agreement between the purchaser and supplier.

- 1.3. When the steel is to be welded, it is presupposed that a welding procedure suitable for the grade of steel and intended use or service will be utilized. See Appendix X3 of [ASTM A6/A6M](#) for information on weldability.