

Summary of Grey Iron Specifications

| Specifying Body | Spec No. | Use | Class | Min. Tensile Strength psi | Other Requirements | | |
|-----------------|----------|---|-------|---------------------------|--|--|--------------------|
| ASTM | A48 | Castings intended for general engineering use where strength is a major consideration. Tensile testing of a test bar representing each specific lot is mandatory. | 25 | 25,000 | I Test bar size shall be related in cooling rate to the critical sections of the casting and so specified. II At least three (3) test bars shall be cast and prepared for each casting lot, the lot size being designated. III Test bars shall be cast in dry silica sand molds similar to that in which the castings are poured. IV Tension test shall be under true axial loading. V Hardness, chemical composition, microstructure, pressure tightness, radiographic soundness, dimension, surface finish, etc. can be established as requirements upon written agreement between the manufacturer and the purchaser. | | |
| | | | 30 | 30,000 | | | |
| | | | 35 | 35,000 | | | |
| | | | 40 | 40,000 | | | |
| ASTM | A159 | Automotive Grey Iron Castings | | | Brinell Hardness | Total Carbon % | Micro Structure |
| SAE | J431 | Cast in sand molds for automobile, truck, tractor, and allied industries | G1800 | | 187 Max | | Ferritic-Pearlitic |
| | G2500 | | | 170-229 | | Ferritic-Pearlitic | |
| | G2500a | | | 170-229 | 3.50 Min. Mandatory | Type VII Graphite size 2-4 15% max ferrite | |
| | G3000 | | | 187-241 | | Pearlitic | |
| | G3500 | | | 207-255 | | Pearlitic | |
| | G3500b | | | 207-255 | 3.40 Min. Mandatory | Type VII Graphite size 3-5 5% max. ferrite or carbide | |
| | G3500c | | | 207-255 | 3.50 Min | Type VII Graphite | |