

**Standard Specification for
Castings, Austenitic,
for Pressure-Containing Parts**

Designation: A 351/A351M-12b



Table 1 Chemical Requirements

Element, %(max, except where range is given)	CF3, CF3A	CF8, CF8A	CF3M, CF3MA	CF8M	CF3MN	CF8C	CF10	CF10M	CH8
Carbon	0.03	0.08	0.03	0.08	0.03	0.08	0.04-0.10	0.04-0.10	0.08
Manganese	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Silicon	2.00	2.00	1.50	1.50	1.50	2.00	2.00	1.50	1.50
Sulfur	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040
Phosphorus	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040
Chromium	17.0-21.0	18.0-21.0	17.0-21.0	18.0-21.0	17.0-21.0	18.0-21.0	18.0-21.0	18.0-21.0	22.0-26.0
Nickel	8.0-12.0	8.0-11.0	9.0-13.0	9.0-12.0	9.0-13.0	9.0-12.0	8.0-11.0	9.0-12.0	12.0-15.0
Molybdenum	0.50	0.50	2.0-3.0	2.0-3.0	2.0-3.0	0.5	0.50	2.0-3.0	0.50
Nitrogen	-	-	-	-	0.10-0.20	-	-	-	-

Table 2 Tensile Requirements

	CF3 J92700	CF3A J92700	CF8 J92600	CF8A J92600	CF3M J92800	CF3MA J92800	CF8M J92900	CF3MN J92804	CF8C J92710	CF10 J92950	CF10M J92901	CH8 J93400
Tensile strength Min, ksi[MPa]	70	77	70	77	70	80	70	75	70	70	70	65
Yield strength Min, ksi[MPa]	485	530	485	530	485	550	485	515	485	485	485	450
Elongation in 2 in. Or 50 mm, min, %	30	35	30	35	30	37	30	37	30	30	30	28
	205	240	205	240	205	255	205	255	205	205	205	195
	35.0	35.0	35.0	35.0	30.0	30.0	30.0	35.0	30.0	35.0	30.0	30.0

Scope:

This specification covers austenitic steel castings for valves, flanges, fittings, and other pressure-containing parts. A number of grades of austenitic steel castings are included in this specification. Since these grades possess varying degrees of suitability for service at high temperatures or in corrosive environments, it is the responsibility of the purchaser to determine which grade shall be furnished. Selection will depend on design and service conditions, mechanical properties, and the high-temperature or corrosion-resistant characteristics, or both.

Supplementary requirements of an optional nature are provided for use at the option of the purchaser. The supplementary requirements shall apply only when specified individually by the purchaser in the purchaser order or contract. The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other.