

PIÈCES DE FONDERIE EN ACIER — DONNÉES TECHNIQUES

ACIERS INOXYDABLES

Cette fiche technique regroupe les aciers inoxydables moulés — martensitiques, ferritiques, austénitiques et duplex — selon les spécifications ASTM A743, A744, A890 et connexes. Résistance à la corrosion, propriétés mécaniques et équivalences internationales incluses.

Résistance à la corrosion pour environnements marins, chimiques, pétroliers et agroalimentaires.

Note : les tableaux techniques ci-après (compositions chimiques, propriétés mécaniques, équivalences de normes) sont présentés en anglais selon les conventions internationales ASTM, BS et DIN.

STEEL CASTINGS - TECHNICAL DATA

CORROSION & HEAT RESISTING STAINLESS STEELS & TOOL STEELS


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ALLOY	ASTM SPECIFICATION	CHEMICAL COMPOSITION (Maximum unless range specified)							MINIMUM MECHANICAL PROPERTIES				EQUIVALENT FOREIGN SPECS			CHARACTERISTICS & APPLICATIONS
		C %	Si %	Mn %	Ni %	Cr %	Mo %	Other %	TENSILE STRENGTH (ksi)	YIELD STRENGTH (ksi)	ELONGATION %	REDUCTION OF AREA %	BRITISH STANDARD	GERMAN STANDARD	USA WROUGHT AISI STD	
MARTENSITIC & PRECIPITATION HARDENING STAINLESS STEEL	A743: CA-15	0.15	1.50	1.00	1.00	11.5-14.0	0.50		90	65	18	30	410C21	1.4008 G-X6CrNi13	410	Good resistance to organic chemicals & gases. Used for impeller rings & sleeves in acid mine environments & especially the petroleum industry.
	A152: Type 415 CA-15F	0.15	1.50	1.25	0.50	11.5-14.0	0.50	S 0.15-0.35	90	65	8	15				This is hardenable chromium stainless steel to which Sulfur has been added to improve the machinability. It is easily hardened by air or oil quenching followed by tempering to produce a wide range of mechanical properties.
	A743: CA-40	0.20-0.40	1.50	1.00	1.00	11.5-14.0	0.50		100	70	15	25	420C28	1.4027	420	Widely used in erosion, cavitation & wear application in mildly corrosive conditions. Application includes impeller sleeves, valve trim seats in boiler feed & acid mine waters.
	A743: CB-30	0.30	1.50	1.00	2.00	18.0-21.0			65	30						Pfully ferritic stainless steel which does not respond to heat treatment. CB-30 is resistant to many acids, alkaline solutions and organic chemicals. Typical applications: furnace brackets and hangers, pump and valve parts.
	A743: CA-6NM	0.06	1.00	1.00	3.5-4.5	11.5-14.0	0.4-1.0		110	80	15	35	429C11	1.4313 G-X6CrNi134		These alloys exhibit high strength and hardness, superior corrosion & cavitation resistance (>CA-15). Applications include high pressure impellers, turbine runners & rotors.
	A743:CB7CU-1	0.07	1.00	0.70	3.6-4.6	15.5-17.0		Cu 2.5-3.2 Cb 0.15-0.35	125-175	97-145	5 10					These castings may be used in services requiring corrosion resistance and high strength at temperatures up to 599 F. They may be machined in solution-annealed condition and subsequently precipitation hardened to desired high-strength mechanical properties with little danger of cracking and distortion.
	A743:CB7CU-2	0.07	1.00	0.70	4.5-5.5	14.0-15.50		Cu 2.5-3.2 Cb 0.15-0.35	125-175	97-145	5 10					Used in hardened condition where a combination of high wear and corrosion resistance is required. Hardness and wear resistance increase with increasing Carbon content while their shock resistance and ductility decrease. Sulfur addition (0.07-0.20% S) improves machinability.
FERRITIC AUSTENITIC DUPLEX STAINLESS STEEL	AMS 5352: 440 C	0.95-1.29	1.00	1.00	0.75	16.0-18.0	0.35-0.75									
	A890: 1A CD4MCu	0.04	1.00	1.00	4.75-6.0	24.5-26.5	1.75-2.25	Cu 2.75-3.25	100	70	16					Duplex Stainless Steels offer a combination of enhanced mechanical properties and excellent corrosion resistance when properly balanced in composition and properly heat treated. These alloys will develop a range of approximately 30 to 60% ferrite with the balance austenite. These steels also exhibit excellent cavitation resistance, wear resistance properties, & stress corrosion cracking properties in chloride containing environments such as saline & sea water.
	A890: 1B CD4MCuN	0.04	1.00	1.00	4.7-6.0	24.5-26.5	1.7-2.3	Cu 2.7-3.3 B 0.10-0.25	125	97	10					
	A890: 2A CD3FW	0.08	1.50	1.00	6.0-11.0	22.5-25.5	3.0-4.5	N 0.10-0.30	95	65	25					
	A890: 2A CD6FN	0.06	1.00	1.00	4.0-6.0	24.0-27.0	1.75-2.5	N 0.15-0.25	95	65	25					
	A890: 4A CD3FN	0.03	1.00	1.50	4.5-6.5	21.0-23.5	2.5-3.5	Cu 1.00 N 0.10-0.30	90	60	25					
	A890: 5A CD3FW	0.03	1.00	1.50	6.0-8.0	24.0-26.0	4.0-5.0	N 0.10-0.30	100	75	18					
	A890: 6A CD3FWCuN	0.03	1.00	1.00	6.5-8.5	24.0-26.0	3.0-4.0	Cu 0.5-1.0 W 0.5-1.0 N 0.2-0.3	100	65	25		G-X2CrNiMoCuN 4508			
AUSTENITIC NON - HARDENABLE STAINLESS STEEL	A743:CF-3	0.03	2.00	1.50	8.0-12.0	17.0-21.0			70	30	35		304C12		304L	These steels have good resistance to strong oxidizing acids, salts & organic acids. These alloys are utilized extensively in valve bodies, paper mills, fiber screens & propellers.
	A743:CF-8	0.08	2.00	1.50	8.0-11.0	18.0-21.0			70	30	35		304C15	1.4308 G-X6CrNi189	304	
	A743:CF-8C	0.08	2.00	1.50	9.0-12.00	18.0-21.0		Ca80C	70	30	30		247C17	G-X7CrNiMo189	347	This is classified as a stabilized steel with superior resistance to intergranular corrosion in welded products, in fact greater than CF8.
	A743:CF-3H	0.03	1.50	1.50	9.0-13.0	17.0-21.0	2.0-3.0		70	30	30		316C12		316L	
	A743:CF-8H	0.08	2.00	1.50	9.0-12.00	18.0-21.0	2.0-3.0		70	30	30		316C16	1.4408 G-X6CrNiMo1810	316	The steel is used in textile paper, dairy, brewery & chemical plants for valves, pumps, casings & the handling of hot organic acids, fatty acids, sulfuric & mild concentration of inorganic acids. The low carbon grade permit welding without the post-weld heat treatments and protect against intergranular corrosion.
	A743:CG-3M	0.03	1.50	1.50	9.0-13.0	18.0-21.0	3.0-4.0		75	35	25				317L	The higher molybdenum content extends the range of use in reducing acids or mixed acids (pickling). Applications are similar to CG3M.
HIGH ALLOY STAINLESS STEELS	A743:CG-8M	0.08	1.50	1.50	9.0-13.0	18.0-21.0	3.0-4.0		75	35	25		316C16	1.4448	317	
	A743: 0X-30CuN	0.03	1.00	1.20	17.5-19.5	19.5-20.5	6.0-7.0	Cu 0.5-1.0 N 0.18-0.24	80	38	35					The high nickel and molybdenum content in these austenitic grades provides superior corrosion resistance to oxidizing acids. These steels are non-magnetic. Properties exhibited are better than the standard CF8M. Applications include pump casings, impellers, valves & mixer components.
	A743:CN-7M	0.07	1.50	1.50	27.5-30.5	19.0-22.0	2.0-3.0	Cu 3.0-4.0	62	25	35		332C11	1.4500 G-X7NiCrMoCuN		
	A743:CN-3M	0.03	1.00	2.00	23.0-27.0	20.0-22.0	4.5-5.5		63	25	30					
	A743:CN-3MN	0.03	1.00	2.00	23.5-25.5	20.0-22.0	6.0-7.0	Cu 7.0-9.25 N 0.18-0.26	80	28	35					

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