



Cast materials

Rely on Our Material Competence for Your Demanding Industrial Processes

Our customer-focused R&D and continuous research on new material options enable us to develop equipment with a strong resistance to corrosion and wear.

Proven expertise

- Continuous research and development
- Specialist in corrosive and erosive applications
- Leading material technology
- One of the largest manufacturers of stainless castings for pumps, mixers and agitators in the world

Experience

- 60 years of experience in the manufacture of duplex steel grades
- 20,000 castings annually, of which roughly 80% corrosion-resistant duplex and super duplex cast steel grades

Own Foundry

- Workshop area 21,853 m²
- Capacity 4,000 tons
- Duplex, super duplex, austenitic and martensitic stainless steels, using the AOD method. Also special cast iron castings.
- For the most corrosive applications AVESTA 654 SMO* and Hastelloy. Sulzer process pumps are also available in titanium.
- ISO certified



Steel melted in the arc furnace is processed in the AOD converter (Argon-Oxygen-Decarburization).

*AVESTA 654SMO is a trademark owned by Outokumpu Stainless, which has granted Sulzer a license to produce this material.

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Internal code	USA ASTM ⁽¹⁾	Nominal chemical composition							General properties and examples of applications	
		C	Cr	Ni	Mo	Cu	N	Others		
Corrosion-resistant cast steels										
Martensitic cast steels	E2	A743 Grade CA-6NM	max. 0.06	11.5-14.0	3.5-4.5	0.40-1.0				Air-hardening steel with good strength properties. Used e.g. in power industry applications.
	4E	A747 Grade CB7Cu-2	max. 0.07	14.0-15.5	4.5-5.5		2.5-3.2		Nb 0.15-0.35	A precipitation hardening grade with good strength properties and corrosion and wear resistance. Used for pump components.
Austenitic cast steels	4C	A743 Grade CF-8	max. 0.08	18.0-21.0	8.0-11.0					Standard stainless steel grade with good toughness and resistance to nitric acid solutions.
	4G	A743 Grade CG-3M	max. 0.03	18.0-21.0	9.0-13.0	3.0-4.0				Improved resistance to hot sulphuric and organic acids due to a high molybdenum content. Molybdenum increases the pitting resistance of steel.
	43	A743 Grade CN-7M	max. 0.07	19.0-22.0	27.5-30.5	2.0-3.0	3.0-4.0			A grade for castings where resistance to sulphuric acid is essential.
	4U	(UNS S32654)	max. 0.025	23.0-25.0	21.0-23.0	7.1-7.5	0.3-0.7	0.40-0.55		Excellent corrosion resistance. Nitrogen also gives very good resistance to pitting and crevice corrosion. Resistant to hot acids with high chloride content. Used in pulp bleaching plants, sea water applications, and in the handling of liquids containing halides.
Duplex steels (austenitic-ferritic)	41	A890 Grade 3A	max. 0.06	24.0-27.0	4.0-6.0	1.75-2.5		0.15-0.25		Steel with better tensile and yield strength compared to austenitic steels. Used for various process industry and seawater applications.
	4L	A890 Grade 1B	max. 0.04	24.5-26.5	4.7-6.0	1.7-2.3	2.7-3.3	0.10-0.25		Similar grade to the previous one. The copper content improves corrosion resistance in e.g. weak sulphuric acid solutions. Molybdenum improves general corrosion resistance.
	4T	A890 Grade 5A	max. 0.03	24.0-26.0	6.0-8.0	4.0-5.0		0.10-0.30		Used for equipment in the chemical and pulp industries. Good resistance to sea water. ⁽⁴⁾
Nickel alloys	4J	A494 Grade CW-6M	max. 0.07	17.0-20.0	balance	17.0-20.0			Fe max. 3.0%	High Mo and Cr contents make the alloy suitable for reducing and oxidizing and otherwise severely corroding conditions. Good resistance to sulphuric acid, and also to hydrochloric acid up to concentrations of approx. 10%.
Carbon and low alloy cast steels										
Carbon steels	46	A216 Grade WCB	max. 0.30						Mn max. 1.0%	Ductile and strong weldable steel, used e.g. in pump support structures. Also used in hot water pumps.
Cast irons										
Grey cast irons	53	A48 Class No 35 B								Used in pump casings, casing covers and parts of bearings.
Ductile cast irons	5H	A395 Grade 60-40-18								Used in casings and covers in various industries.
Wear-resistant cast irons	5B	A532 Class III Type A	2.0-3.3	23.0-30.0	max. 2.5	max. 3.0	max. 1.2			High-chromium white cast iron for wear resistant pumps. The high chromium content guarantees reasonable corrosion resistance. Well suited for wearing applications in alkaline conditions.
Cast titanium										
Titanium	75	B367 C-3								Excellent corrosion resistance in many severe conditions, particularly ones containing chlorine, and in oxidizing conditions. Used in e.g. chlorine dioxide and hypochlorite containing solutions in the pulp and paper and chemical process industry.

⁽¹⁾ Standard corresponding to the internal code is ASTM.

⁽²⁾ The hardness is an informative value.

⁽³⁾ AVESTA 654SMO is a trademark owned by Outokumpu Stainless, which has granted Sulzer a license to produce this material.

⁽⁴⁾ PRE ≥ 40