



- Specialist in corrosive and erosive applications
- Leading material technology

Rely on our material competence for your demanding industrial processes

Our customer-focused product development and continuous research into new material options enable us to develop equipment with a strong resistance to corrosion and wear.

Proven expertise

- Specialist competence in corrosive and erosive applications, built on leading material technology
- Pump designs consider both the materials of construction and hydraulic requirements to optimize performance in the field
- Continuous research into new material options
- One of the biggest suppliers of stainless castings for pumps, mixers and agitators in the world

Experience

- Over 100 years of experience in manufacturing process pumps with cast parts
- 60 years of experience in duplex steel castings
- 15'000 pumps and agitators manufactured annually with cast parts
- Roughly 75% of deliveries in corrosion resistant duplex and super duplex cast steel grades



Cast materials

	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.
	42	A743 Grade CF-8M	max. 0.08	18.0-21.0	9.0-12.0	2.0-3.0				Molybdenum alloyed grade with better resistance to acids and pitting compared to CF-8.
	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 ⁽²⁾	(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. 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. ⁽³⁾
Ferritic stainless steel	ER ⁽⁴⁾	A743 CC50 (Mod)	0.25-0.35	29.0-30.0	1.50-3.00	1.50-3.00	1.00-1.50	0.10-0.20		Corrosive WPA with solids in phosphate fertilizer industry. Also metal processing like Lx-Sx-Ew plants and other applications especially when good corrosion and wear resistant material is needed.
Carbon cast steels and cast irons										
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.
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	min. 3.0						Si max. 0.6	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		Si max. 1.5	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 and nickel alloy										
Titanium	75	B367 C-3								Excellent corrosion resistance in many severe conditions like chlorine containing and oxidizing. Used in e.g. chlorine dioxide and hypochlorite containing solutions in pulp and paper and chemical process industry.
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%.

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

⁽²⁾ Trademark by Outokumpu Oyj.

⁽³⁾ PRE ≥ 40

⁽⁴⁾ Chemical composition modified.