

CORROSION RESISTANT STAINLESS STEELS High performance stainless steels

	Material	Material no.	Short name	Application
Chromium and chromium molybdenum steels with 13 - 19% Cr With ground or polished surface, sufficiently resistant to water, steam, strongly diluted lye and lightly oxidising acids .	Coracid 410 Coracid 420 Coracid 410-15 Coracid 420-46 Coracid 4120	1.4006 1.4021 1.4024 1.4034 1.4120	X12Cr13 X20Cr13 X15Cr13 X46Cr13 X20CrMo13	Apparatus engineering and tank construction in the chemical industry, in the food, tobacco and alcohol industry, for shipbuilding, valves, barrel extruders, for power plant and generator engineering.
Good resistance to water, steam, weak acids and lye and to stronger oxidising acids. Materials 1.4057 and 1.4122 are relatively resistant to seawater.	Coracid 431 Coracid 440 B Coracid 4122 Coracid 13-4 Coracid 16-5	1.4057 1.4112 1.4122 1.4313 1.4418	X17CrNi19-2 X90CrMoV18 X39CrMo17-1 X3CrNiMo13-4 X4CrNiMo16-5-1	
Austenitic chromium nickel and chromium nickel molybdenum steels High corrosion resistance and excellent mechanical properties.	Coracid 304 Coracid 303 Coracid 304 L Coracid 4311 Coracid 310 L Coracid 4361 Coracid 316 Coracid 316 L Coracid 4406 Coracid 4429	1.4301 1.4305 1.4306 1.4311 1.4335 1.4361 1.4401 1.4404 1.4404	X5CrNi18-10 X8CrNiS18-9 X2CrNi19-11 X2CrNiN18-10 X1CrNi25-21 X1CrNiSi18-15-4 X5CrNiMo17-12-2 X2CrNiMo17-12-2 X2CrNiMoN17-11-2 X2CrNiMoN17-13-3	Apparatus engineering and tank construction in the chemical industry, in the food, tobacco and alcohol industry, in the grease and soap industry. Textile, pulp and dyeworks industry, reactor industry, offshore technology, flue gas decontamination, tools for automatic lathes (1.4305).
By adding molybdenum, an increased resistance to non oxidising acids and substances containing halogen is achieved. Materials 1.4505 and 1.4539 with the addition of copper display an increased resistance to sulphuric acid; 1.4361 is particularly recommended for attacks of highly concentrated nitric acids.	Coracid 4435 Coracid 4436 Coracid 44439 Coracid 4465 Coracid 4503 Coracid 4505 Coracid 904 L Coracid 630	1.4435 1.4436 1.4439 1.4465 1.4503 1.4505 1.4539 1.4542	X2CrNiMo 18-14-3 X5CrNiMo 17-13-3 X2CrNiMoN 17-13-5 X1CrNiMoN25-25-2 X3NiCrCuMoTi27-23 X4NiCrMoCuNb20-18-2 X1NiCrMoCu25-20-5 X5CrNiCuNb 16-4	By using a high N. content, nitrogen alloyed austenitic steels are suitable for the following applications: - environment engineering (REA) - urea industry - offshore technology - water management (in the event of an increased chlorine ion content) When ensuring at the same time a high degree of purity, these alloys may also be used in high vacuum technology.
Steels containing stabilisers titanium and niobium cannot be brightly polished.	Coracid 321 Coracid 347 Coracid 316 Ti Coracid 4577 Coracid 4583	1.4541 1.4550 1.4571 1.4577 1.4583	X6CrNiTi18-10 X6CrNiMb18-10 X6CrNiMoTi17-12-2 X3CrNiMoTi25-25 X10CrNiMoNb18-12	
Super austenitic, high nickel and molybdenum alloy stainless steels with excellent corrosion resistance. Nitrogen addition for increased strength and toughness. Chromium, molybdenum and nitrogen increase in particular the resistance to pitting. Therefore the critical pitting temperature for super austenitic steels is clearly more favourable.	Coracid 926 Coracid 254 SMo Coracid 31 Coracid 28 Coracid 4565 Coracid 24	1.4529 1.4547 1.4562 1.4563 1.4565 1.4566	X1NiCrMoCuN25-20-7 X1CrNiMoCuN20-18-7 X1NiCrMoCu32-28-7 X1NiCrMoCu31-27-4 X2CrNiMnMoN25-18-6-5 X3CrNiMnMoCuNbN23-17-5-3	For equipment which is in contact with seawater and brackish water. Excellent resistance to crevice and abrasion fretting corrosion and to stress corrosion cracking induced by pitting.
Duplex materials Ferritic-austenitic high performance chromium nickel molybdenum steels High wear resistance and good running properties, resistance to stress corrosion cracking and also resistance to intercrystalline corrosion.	Coracid -D-27.06 Coracid -D-22.05 Coracid -D-24.5.3.A1 Coracid -D-24.5.3.A2	1.4460 1.4462 ~1.4462-A1 ~1.4462-A2	X3CrNiMoN27-5-2 X2CrNiMoN22-5-3 ~ X2CrNiMoN24-5-3 ~ X2CrNiMoN24-5-3	Pulp and dyeworks industry, petrochemical industry, shafts in acid pumps, machine components exposed to seawater.
Super duplex materials Stainless ferritic-austenitic chromium nickel molybdenum steel with Cu addition. Good resistance to stress corrosion cracking and pitting. High resistance to sulphuric substances. Required surface finish: pickled or treated.	Coracid Super D-255	1.4507 (UNS 32550)	X2CrNiMoCuN-25-6-3	Components for the chemical industry, in flue gas desulphurisation plants, in the oil and gas industries, in dyeworks, in pumps exposed to seawater.
Maximum corrosion resistance and good strength. Good weldability. Excellent resistance to stress corrosion cracking (SCC), corrosion fatigue crack, pitting, crevice corrosion and erosion corrosion.	Coracid Super D-25.07 Coracid Super D-100	1.4410 (UNS 32750) 1.4501 (UNS 32760)	X2CrNiMoN25-7-4 X2CrNiMoCuWN25-7-4	Workpieces exposed to seawater, e.g., heat exchangers, booster pumps, injection pumps, chemistry, waste water technology, oil and natural gas production, separators, LCP components, ventilators.



CORROSION RESISTANT STAINLESS STEELS High performance stainless steels

	Material	Material no.	Short name	Application	
HEAT RESISTANT STEELS AND ALLOYS					
Ferritic chromium steels with aluminium and silicon addition. Excellent resistant to oxidising gases containing sulphur; not recommended for low oxygen nitrogenous gases. Resistant to scale up to approx. 800°C in air (1.4713) and up to approx. 1200°C in air (1.4762).	Coracid 4713 Coracid 4762	1.4713 1.4762	X10CrAISi7 X10CrAISi25	Furnace components, temperature measuring equipment.	
Austenitic chromium nickel steels Maximum scale resistance between 800 and 1200°C for nitrogenous low oxygen gases, depending on the steel grade.	Coracid 4828 Coracid 4841 Coracid 4845 Coralloy 330 Coralloy 800 Coralloy 800 H Coralloy 800 HAT Coracid 4878	1.4828 1.4841 1.4845 1.4864 1.4876 1.4958 1.4959 1.4878	X15CrNiSi20-12 X15CrNiSi25-21 X8CrNi25-21 X12NiCrSi36-16 X10NiCrAITi32-21 X5NiCrAITi31-20 X8NiCrAITi32-21 X12CrNiTi18-9	Heat resistant components subject to high mechanical stress, furnace components, high temperature components in the chemistry and petrochemical industry. Refuse incineration, pyrolysis, gasification of coal.	
HEAT RESISTANT STEELS AND ALLOYS					
The heat treatable 12% chromium steels offering satisfactory long term high temperature resistance and good resistance to scale are preferably used up to a service temperature of approx. 600°C. For higher temperatures up to approx. 750°C, austenitic chromium nickel steels are used.	Coracid 9.1 Coracid 4906 Coracid 4913 Coracid 4921 Coracid 4922 Coracid 4923 Coracid 4926 Coracid 4939 Coracid 4948 Coracid 4961 Coracid 4962 Coralloy A 286 Coracid 4981	1.4903 1.4906 1.4913 1.4921 1.4922 1.4923 1.4926 1.4939 1.4948 1.4961 1.4962 1.4980 1.4981	X10CrMoVNb9-1 X12CrMoWVNbN10-1-1 X19CrMoNbVN11-1 X19CrMo12-1 X20CrMoV11-1 X22CrMoV12-1 X21CrMoV12-1 X12CrNiMo12 X6CrNi18-10 X8CrNiMb16-13 X12CrNiWTiB16-13 X6NiCrTiMoVB25-15-2 X8CrNiMoNb16-16	Screws, nuts, fittings and other components in turbine and boiler construction, turbine blades, chemical industry, reactor engineering.	