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Alloy Steels, Nickel and Cobalt Alloys

Dean Group No	Specification BS3146 PT2 1975	Grade	Type of Steel	Composition % MAX							UTS MIN N/mm2	0.2% PS MIN N/mm2	Hardness MIN HB	Comparable Specifications				Typical Applications
				C	Si	Mn	Ni	Cr	Mo	Co				EN	AISI	Werkstoff	BS 970	
	ANC 1	A	13% Cr2% Ni Martensitic Steel	0.15	1.2	1	1	13.5			540	340*	152	56A	403	1.4008	410 S21	A. Gas, chemical and petroleum industries; high ductility engineering fittings, golf club heads.
N06		B		0.2	1.2	1	1	13.5			620	415*	183	56B	420	1.4027	420 S29	B. Heat resistant parts not subject to high stresses.
N07		C		0.3	1.2	1	1	13.5			695	435*	201	56C	420		420 S37	C. Cutting blades, pump and steam turbine parts.
N08	ANC 2		18%Cr2% Ni Martensitic steel	0.25	1	1	3	20			850	630*	248	57	431	1.4059	431 S29	Pump and valve parts; highly stressed aircraft and general engineering fittings.
N12	ANC 3	A	18% Cr 10% Ni Austenitic steels	0.12	2	2	12	20			460	200		58A	304	1.4312	302 S25	A.Chemical, pharmaceutical textile, dairy and oil industries. e.g. pump and valve parts. B. Exhaust systems and marine fittings to a certain extent. Corrosion/acid resistant parts not heat-treated after welding.
N13		B		0.12	2	2	12	20			460	200		58F	347	1.4552	347 S17	
N17	ANC 4	A	18% Cr 11% Ni 3% Mo Austenitic steels	0.08	1.5	2	14	20	4		500	210*		58J	317	1.4408	317 S16	In the chimical and processing industries e.g. valves and pumps handling acids at high temperatures and also chlorides and salts.
		B		0.08	1.5	2	10 min	20	3		500	210*		58H	316	1.4408	316 S16	
		C		0.12	1.5	2	10 min	20	3		500	210*		58H	318	1.4581	320 S17	
	ANC 5	A	Ni-Cr steels	0.5	3	2	22	27							310	1.4843	310 S24	Furnace parts, salt and lead baths.
		B		0.5	3	2	46	25							330	1.4865		
		C		0.75	3	2	65	20								2.4867		
	ANC 6	A	Cr-Ni steels	0.3	2	1	15	25			460				309	1.4837		Heat treatment parts and super-heaters, welding fixtures. High temperature castings. Nozzle guide vanes for gas turbines.
		B		0.3	2	1	15	25			460			55				
		C		0.15	2	1	18	25			460							

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				C	Si	Mn	Ni	Cr	Mo	Co				EN	AISI	Werkstoff	BS 970	
	ANC 8		Ni-base 20% Cr 0.4% Ti alloy	0.15	1	1	rm	22								2.463	~	Furnace parts.
	ANC 9		Ni-base 20% Cr 2.5% Ti, 1.2% Al alloy	0.1	1	1	rm	22		2						2.4631	~	Diesel engine pre-combustion chambers, gas turbine parts.
	ANC 10		Ni-base, 20% Cr, 16.5% Co,2.4% Ti. 1.3%Al alloy	0.13	1	1	rm	21		18						2.4632	~	Turbine and turbocharger rotors.
	ANC 11		Ni-base, 21% Cr, 10% Co, 10% Mo alloy	0.4	0.45	0.5	rm	23	11	11								Gas burbine stator blades
	ANC 13		Co-base, 26% Cr 10% Ni, 7% W alloy	0.55	1	1	11.5	26.5		rm						2.4966		Impellers, hot metal dies and valve components.
	ANC 14		Co-base, 27% Cr 5.5% Mo, 2.7% Ni alloy	0.3	1	1	3.75	29	6	rm	650	450				2.4979		Impellers, gas turbine components and valve components for high temperature service.
	ANC 15		Ni-base, 28% Mo alloy	0.12	1.2	1.2	rm		30							2.4482		Chemical and petroleum plant components and pickling equipment.
	ANC 16		Ni-base, 17% Mo 16.5% Cr, 4.5% W alloy	0.15	1.2	1.2	rm	17.5	18							2.4537		Chemical and petroleum plant components.
	ANC 17		Ni-base, 9% Si 3% Cu alloy	0.12	10	1.2	rm			4						2.4566		Chemical and petroleum plan components.

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	ANC 18	A	Ni-base, 31% Cu, Si alloys	0.3	1.5	1.5	rm			34						2.4360*		Power plant, marine equipment, chemical and process industry components
		B		0.15	3	1.5	rm			34								
		C		0.15	4.5	1.5	rm			34								
	ANC 19		Ni-base, 20% Cr,7% Nb, 6% Mo.3% Fe.3%W alloy	0.06	0.4	0.5	rm	21	6.5	0.2	2							Diesel engine combustion chamber inserts.
N09	ANC 20	A	14% Cr, 5% Ni, 2% Cu, 1% Mo steels	0.07	2	1	6	15.5	2.5	3.5		950	800					Marine applications where high strength and good corrosion resistance are required.
		B								3.5								
N10	ANC 21		26% Cr, 5% Ni, 2% Cu, 2% Mo steel	0.05	0.75	0.75	6	27	2.25	3.25		700	500					Marine applications.
L11	ANC 22	A	16%Cr 4%Ni 3%Cu	0.06	1	0.7	4.6	16.7		3.5		1230	1030		17/4PH		1.4549	Precipitation hardening steel with good mechanical strength, such as valve seats.
		B										1030	895					
		C										900	830					

Where indicated thus, 0.2% Proof Stress values are for information only

~ Registered trade mark and / or proprietary alloy. Similar material

* Residuals.

Ref Sales Pack / Cast material Tables.