

Höverstahl – for the next generation of special technology

We are your partners – from the manufacture of the prototype up to the production run. With selected materials and creative semi-finished products for everything from fuselage to power unit. We assist you in the selection of the right material with Höverstahl Aeralloy special alloys and special steels, from ultrapure refined heats, precisely formed and heat treated, with optimum mechanical properties and excellent corrosion-resistance. The perfect solution for the perfect system. From experts for experts. That's the sort of safety which gives you reserves when you need them.

We manufacture to

- Drawings (premachined and final machined condition)
- Supply regulations
- Codes and standards

as

- Open-die forgings
- Seamless forged and rolled rings
- Forged discs
- Shaped, upset shafts or bars

from

- Highly refined heats of special steels
- Stainless steels
- Titanium and titanium alloys
- Cobalt alloys
- Zirconium

e.g.

- With special heat treatment
- Fully tested and certified.

Höverstahl – Special Technology

Material	No.	Trade designation*	Alloy type
Special steels for aerospace and specialised technologies			
Aer Alloy 440	1.3544	AlSI-440-C	X 102 CrMo 17
Aer Alloy 431-C	1.4044	AlSI-431-C	X 16 CrNi 17.2
Aer Alloy PH 13-8 Mo	1.4534	PH 13-8 Mo	X 3 CrNiMoAl 13.8.2
Aer Alloy 321	1.4544	AlSI-321	X 7 CrNiTi 18.9
Aer Alloy 15-5 PH	1.4545	15-5 PH	X 5 CrNiCuNb15.5.4
Aer Alloy 347	1.4546	AlSI-347	X 5 CrNiNb 18.10
Aer Alloy 17-4 PH	1.4548	17-4 PH	X 5 CrNiCuNb17.4.4
Aer Alloy 17-7 PH	1.4564	17-7 PH	X 7 CrNiAl 17.7
Aer Alloy 15-7 Mo PH	1.4574	15-7 Mo PH	X 7 CrNiMoAl 15.7
Aer Alloy AM-355	—	AM 355	(15Cr-4Ni-3Mo)
Aer Alloy C-455	—	Custom 455	(12Cr-9Ni-2Cu)
Aer Alloy Greek Ascoloy	—	Greek Ascoloy (AlSI 418)	(13Cr-3W-2Ni)
Aer Alloy 4934	1.4934	—	X 20 CrMoWV 12.1
Aer Alloy M152	1.4939	Jethete M 152	X 12 CrNiMo 12
Aer Alloy A 286	1.4943	A 286	X 4 NiCrTi 25.15
	1.4944	A 286	X 5 NiCrTi 26.15
Aer Alloy V 57	—	V 57	X 8 NiCrTi 27.15
Aer Alloy N155	1.4974	N 155	X 12 CrCoNi 21.20
Aer Alloy MAR-300	1.6354	Maraging 300	X 2 NiCoMo 18.9.5
	1.6358		X 2 NiCoMo 18.9.5
Aer Alloy MAR-350	1.6356	Maraging 350	X 2 NiCoMoTi 18.12.4
Aer Alloy MAR-250	1.6359	Maraging 250	X 2 NiCoMo 18.8.5
Aer Alloy 6604	1.6604	—	30 CrNiMo 8
Aer Alloy 6944	1.6944	—	38 NiCrMoV 7.3
Aer Alloy S 5000	—	SAE 4340	~40NiCrMo 6
Aer Alloy 300 M (4340 mod.)	~1.6928	300 M	~41SiNiCrMoV 7.6
Aer Alloy HY-TUF	—	HY-TUF	(.27C-1.5Si-1.5Mn-.4Cr-.45Mo-1.9Ni-.1V-.1Cu)
Aer Alloy D 6 AC	—	D 6 AC	~48 CrMoNiV 4.10
Aer Alloy HP-9-4-20	—	HP-9-4-20	(9Ni-4.5Co-1Mo)
Aer Alloy HP-9-4-30	1.6974	HP-9-4-30	(7.5Ni-4.5Cu-1Mo)
Aer Alloy 7734	1.7734	15 CDV 6	14 CrMoV 6.9
Aer Alloy 7736	1.7736	—	ESU-14 CrMoV 6.9
Aer Alloy H 11	1.7784	H 11	X 41 CrMoV 5.1
Special steels with defined coefficients of thermal expansion for ultra-high precision components in aerospace, research, instrumentation, lasers			
Coralloy ALPHA 36	1.3912	INVAR 36	Ni 36
Coralloy ALPHA 42	1.3917	INVAR 42	Ni 42
Non-magnetising steels for specialised ship construction			
Coralloy Perm 3914	1.3914		X 2 CrNiMnMoNNb 21.15.7.3
Coralloy Perm 3952	1.3952		X 2 CrNiMoN 18.14.3
Coralloy Perm 3964	1.3964		X 2 CrNiMnMoNNb 21.16.5.3
Coralloy Perm 3974	1.3974		X 2 CrNiMnMoNNb 23.17.6.3

Nickel- and cobalt- materials



Material	No.	Alloy type	Standard designation*	Application
Aerloy 41 Precipitation hardenable high-temperature and corrosion resistant nickel-based alloy	(2.4973)	NiCr 19 CoMo	Rene 41	Gas turbines
Aerloy 75 High-temperature and corrosion resistant nickel-based alloy	2.4630 (2.4951)	NiCr 20 Ti	Nimonic 75	Industrial furnaces, gas turbines, nuclear industry
Aerloy 80 A Precipitation hardenable high-temperature and corrosion resistant nickel-based alloy	2.4631 (2.4952)	NiCr 20 TiAl	Nimonic 80 A	Gas turbines
Aerloy 81 Modification of Aerloy 80A with increased chromium content	—	NiCr 30 TiAl	Nimonic 81	Gas turbines
Aerloy 90 Precipitation hardenable high-temperature and corrosion resistant nickel-based alloy	2.4632 (2.4969)	NiCr 20 Co 18 TiAl	Nimonic 90	Gas turbines, high-temperature springs
Aerloy 91 Modification of Aerloy 90 with increased chromium content	—	NiCr 29 Co 20 TiAl	Nimonic 91	Gas turbines
Aerloy 101 Modification of Aerloy 105 with increased chromium content	—	NiCr 25 Co 20 TiMo IN 597	Nimonic 101	Gas turbines, (burner zone)
Aerloy 105 Precipitation hardenable high-temperature alloy on Ni-Co-Cr basis	2.4634	NiCo 20 Cr 15 MoAlTi	Nimonic 105	Gas turbines, springs
Aerloy 188 Heat resistant cobalt-based alloy	— (2.4683)	CoCr NiW	HS 188	Gas turbines
Aerloy C-263 Precipitation hardenable high-temperature alloy on Ni-Co-Cr basis	2.4650	NiCo 20 Cr 20 MoTi	Nimonic C-263	Gas turbines, high-temperature furnaces
Aerloy A-286 Precipitation hardenable high-performance special steel, high temperature and corrosion resistant	1.4944 1.4943 (1.4980)	X 5 NiCrTi 26.15 X 4 NiCrTi 25.15	A-286	Gas turbines
Aerloy 500 Austenitic Ni-Cr-Co alloy, precipitation hardenable	2.4983	NiCr 18 Co	Udimet 500	Turbine blades and rings
Aerloy 520 Precipitation hardenable Ni-Cr-Co alloy, high-temperature and corrosion resistant	—	NiCr 19 Co 12 MoTiAlW	Udimet 520	Gas turbines, stationary
Aerloy L-605 Heat resistant cobalt-based alloy	2.4964 (2.4967)	CoCr 20 W 15 Ni	L-605 Haynes 25 Stellite No. 25	Gas turbines
Aerloy 617 Heat resistant nickel-based alloy with very good mechanical properties at high temperatures	2.4663	NiCr 23 Co 12 Mo	Inconel 617	Gas turbines, nuclear industry, air heaters
Coralloy 625 Nickel molybdenum niobium chrome alloy with high strength and toughness from ultra-low temperatures to 1100°C	2.4856	NiCr 22 Mo 9 Nb	Inconel 625	Aerospace, chem. process engineering, offshore rigs, nuclear industry
Aerloy 718 Aerloy 718 Fine Grain Precipitation hardenable high-temperature and corrosion resistant nickel-based alloy	2.4668	NiCr 19NbMo	Inconel 718	Gas turbines, pumps, nuclear industry, offshore rigs
Aerloy 720 Precipitation hardenable Ni-Cr-Co alloy, high-temperature and corrosion resistant	—	NiCr 18 Co 15 MoWTiAl	Udimet 720	Gas turbines, stationary
Aerloy Waspaloy Aerloy Waspaloy Fine Grain Precipitation hardenable high-temperature nickel-based alloy, oxidation resistant up to approx. 815°C	2.4654	NiCr 19 Co 14 Mo 4 Ti	Waspaloy	Turbine discs, compressor discs

Nickel- and cobalt- materials



Material	No.	Alloy type	Standard designation*	Application
Aerloy X Corrosion and heat resistant nickel alloy	2.4665 2.4603	NiCr 22 Fe 18 Mo	Hastelloy X Nimonic P 13	Gas turbines, petrochemistry, nuclear industry
Aerloy X-750 Precipitation hardenable nickel-chrome alloy, corrosion and oxidation resistant with high creep fracture resistance up to 815°C	2.4669	NiCr 15 Fe 7 TiAl	Inconel X-750	Gas turbines, nuclear industry, disc springs, vacuum shrouds
Aerloy 751 Modification of the X-750 variant	2.4694	NiCr 16 Fe 7 TiAl	Alloy 751	Gas turbines, petrochemistry
Aerloy 901 Precipitation hardenable high-temperature and corrosion resistant iron-nickel alloy	2.4662	NiCr 13 Mo 6 Ti 3	Nimonic 901	Gas turbines

Titanium and Titanium alloys



Material	No.	Application
Pure titanium		
Aerloy CP Ti-1 Pure titanium Gr. 1	3.7024	Pure titanium shows an outstanding corrosion resistance in oxidizing media. The mechanical properties are basically achieved through specified oxygen contents. Used for structural parts in aircraft, the chemical industry and heat exchangers. Pure titanium variant with good ductility and cold mouldability, adequate mechanical strength. Outstanding weldability. High corrosion resistance in strongly oxidizing (e.g. HNO ₃) to weakly reducing environments, including chlorides.
Aerloy CP Ti-2 Pure titanium Gr. 2	3.7034	Most usual pure titanium variant. Good availability. Good balance between mechanical strength and ductility.
Aerloy CP Ti-4 Pure titanium Gr. 4	3.7064	High mechanical strength and good weldability distinguish pure titanium Gr.4, accompanied by adequate corrosion resistance in neutral to oxidizing environments, including chlorides. An improvement in corrosion resistance in reducing media is achieved by the addition of about 0.2 wt.-% palladium (Pd) for the pure titanium variants Coralloy CP Ti-1/Ti-2/Ti-3. The mechanical properties are not influenced by this.
Near-Alpha-Titan		
Aerloy Ti-Cu 2 Pure titanium alloyed with Cu	3.7124	Precipitation hardenable and weldable titanium variant. High resistance to creep and corrosion.
Aerloy Ti-6-2-4-2 Titanium alloy, near- α Ti-6Al-2Sn-4Zr-2Mo	3.7144	High-temperature alloy for service up to approx. 480°C, also for compressors in engines, e.g. discs, blades, impellers, seals. Also for valves in car engines.
Aerloy Ti-6-2-4-2 S Titanium alloy, near- α Ti-6Al-2Sn-4Zr-2Mo additionally 0,08 Si	—	Si-alloyed variant has still further improved creep resistance.
Aerloy Ti-8-1-1 Titanium alloy, near- α Ti-8Al-1Mo-1V	—	High-temperature alloy for service up to approx. 480°C, compressors in engines, e.g. discs, blades. Excellent creep resistance.
Aerloy Ti-834 Titanium alloy, near- α Ti-5.8Al-4Sn-3.5Zr-0.7 Nb-0.5Mo-0.35Si-0.06C	—	High-temperature alloy for service up to approx. 550°C, with peaks up to 600°C; improved mechanical strength and creep figures.
Alpha-Beta-Titanium		
Aerloy Ti-6-4 Titanium alloy, α/β Ti-6Al-4V	3.7164	Most popular titanium material (alloyed). Used in the chemical industry, motor racing, aircraft construction, aerospace, in turbines (compressors) and jet engines (compressors).
Aerloy Ti-6-6-2 Titanium alloy, α/β Ti-6Al-6V-2Sn	3.7174	High performance variant, even better mechanical properties than Aerloy Ti-6-4.
Aerloy Ti-4-4-2 Titanium alloy, α/β Ti-4Al-4Mo-2Sn	3.7184	High performance variant for aircraft structures, but also used in jet engines up to approx. 350°C, with peaks of up to 400°C.
Near-Beta-Titanium		
Aerloy Ti-10-2-3 Titanium alloy, near- β Ti-10V-2Fe-3Al	—	Highly suitable for near-net-shape forming technology. Excellent fracture toughness/strength ratio.

Titanium and Titanium alloys



Material	No.	Application
Beta-Titan		
Aeralloy Ti-15-3-3 Titanium alloy, β Ti-15V-3Cr-3Al-3Sn	–	Precipitation hardenable, meta-stable β alloy. Fundamentally this is a classical plate alloy, but because of its excellent cold formability it can also be used in combined processes. Where high temperatures play no excessively great role, it can be substituted for Ti-6-4.
Aeralloy Ti-3-8-6-4-4 Titanium alloy, β Ti-3Al-8V-6Cr-4Zr-4Mo	–	Meta-stable β alloy, cold formable and precipitation hardenable. Everywhere where high temperatures play no excessive role, Ti-Beta-C can be substituted for Ti-6-4. Above all its vibration resistance is better. However its specific gravity is some 15% higher than that of Ti-6-4.

We can offer you further materials and variants on request.

*) Standard trade designations of: General Electric, Cabot, Haynes, Special Metals, Teledyne, Inco Group, VDM Nickel Technology, Republic Steel, IMI, United Technologies, Carpenter