

DirectAlloy™ F75 Metal Laser Sintering Process (UNS R3007)

DirectAlloy™ F75 is a metal laser sintering process that produces 99.99% dense components in cobalt-chrome characterized by high strength and corrosion resistance¹. DirectAlloy F75 components are processed in an inert argon or nitrogen environment and are suitable for many prototype and production applications where wear resistance and high temperature resistance are necessary. Mechanical properties can be improved through annealing heat treat processes. DirectAlloy F75 components are suitable for prototype and production femoral knee implants and custom trauma fixation devices. Direct Alloy F75 components can often be used as a direct replacement for high nickel superalloys in the hot section of gas turbines and other industrial applications where strength and corrosion resistance are required.

Mechanical Properties (min. value) before heat treat

Tensile Strength, Mpa (Ksi) X,Y Build Direction	Tensile Strength Mpa (Ksi), Z Build Direction	Yield Strength at 0.2% Offset Mpa (Ksi), X,Y Build Direction	Yield Strength at 0.2% Offset Mpa (Ksi), Z Build Direction	Elongation in 5 cm or 4D (%) X, Y Build Direction	Elongation in 5 cm or 4D (%) Z Build Direction
655	655	450	450	8	8
(95)	(95)	(65)	(65)		



Chemical Composition (wt%)		
Element	Range	
	Minimum	Maximum
Al		0.10
B		0.01
C		0.35
Cr	26.00	30.00
Co	Balance	Balance
Fe		0.75
Mn		1.00
Mo	5.00	7.00
N		0.25
Ni		1.00
P		0.02
Si		1.00
S		0.01
Ti		0.10
W		0.20



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¹ After hot isostatic press