



AM 4130

Construction steel powder for laser powder bed fusion



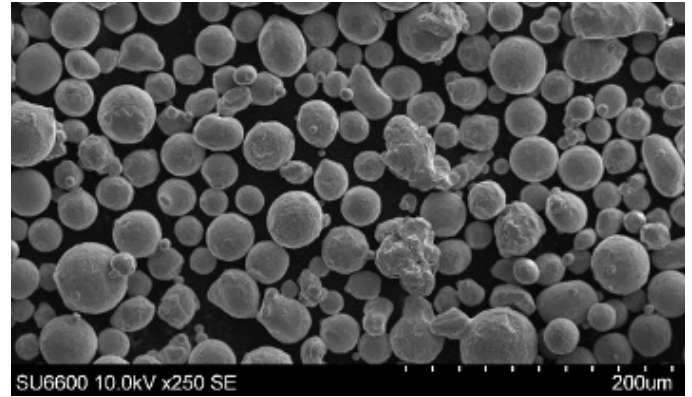
General material description

AM 4130 is medium carbon low alloyed construction steel powder for additive manufacturing. Additional quench and tempering heat treatment allows achieving wide range of strength/ductility combinations. The material is widely used for medium and highly loaded components in automotive and general industry.

Equivalent materials:

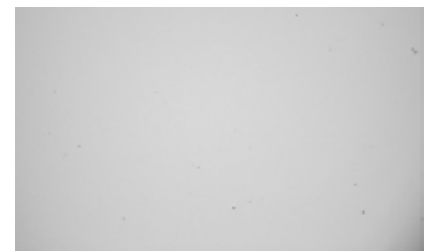
- 25CrMo4
- 1.7218
- SCM 430
- AISI4130

Chemical composition, % (typical values)	
Element	Content, %
Cr	1.0
Mn	0.5
Mo	0.25
Si	0.35
C	0.30
Fe	Balance

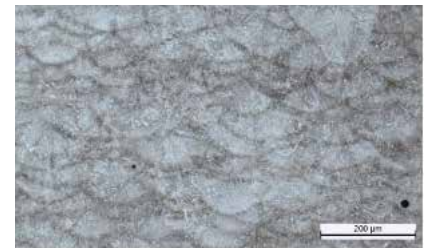


Typical powder properties		
Nominal particle range	20–53 µm (max 5% over- and undersize)	MPIF05, ASTM B214, ISO4497
Hall flow	16 s/50 g	MPIF03, ASTM B213, ISO4490
Apparent density	4.0 g/cc	MPIF04, ASTM B212, ISO3923/1

Typical mechanical properties			
	As printed and stress relieved*	Quenched and Tempered 200 °C**	Quenched and Tempered 550 °C**
Z-direction - Build direction			
UTS (MPa)	1235	1540	1070
YS (MPa)	1100	1150	1020
Elongation (%)	3.5	7.5	12
IE Notch in Y direction		10	50
X/Y-direction – Perpendicular			
UTS (MPa)		1765	1145
YS (MPa)		1385	1085
Elongation (%)		9.7	13
IE Notch in Y direction		15	55
IE Notch in Z direction		15	80
Hardness HV10		500	330



Non etched



Etched

Figure: As printed microstructure of low alloyed steel AM4130

* As printed, stress relieve 200°, 1 hour. Surface condition – as printed.

** Austenisation 830 °C, 1 hour, quench in oil, tempering 1 hour at corresponding temperature. Surface condition - machined.

Standard packaging:

20 kg (4x5 kg plastic bottles packed in carton box)

(Other tailored particle sizes and packaging are available under conditions)