

GENERAL DESCRIPTION

LPW 155 Stainless Steel is a martensitic precipitation strengthened stainless steel, with exceptional room temperature strength and good mechanical properties up to 300°C (572°F). As a stainless steel it also possesses good corrosion resistance.

APPLICATIONS

Widely used throughout multiple industries including aerospace, petrochemical and food processing. Any application where high strength and or corrosion resistance is required at room-intermediate temperatures.

CHARACTERISTICS

LPW-155 is an alternative stainless steel powder to LPW-174 for those wishing to achieve similar final properties to LPW-174 but without the requirement for argon atomisation. LPW-155 is precipitation hardenable, and once precipitation hardened, has superior tensile strength and hardness to LPW-174, however it sacrifices ductility.

CHEMICAL COMPOSITION

Element		Minimum wt%	Maximum wt%
C	Carbon		0.04
Cr	Chromium	14.0	14.6
Cu	Copper	3.5	4.0
Fe	Iron	Balance	
Mn	Manganese		0.3
Mo	Molybdenum		0.3
N	Nitrogen		0.1
Nb	Niobium	0.20	0.40
Ni	Nickel	3.8	4.5
O	Oxygen		0.030
P	Phosphorus		0.03
S	Sulphur		0.03
Si	Silicon		0.7

Particle size distribution optimised to suit specific machine platforms and process types (i.e. SLM, EBM, LMD, etc.) Custom sizing also available.

Full powder qualification including (but not exclusive to) the following: Size Distribution, Flow Properties, Chemistry and Morphology.

MECHANICAL PROPERTIES (INDICATIVE ONLY)

Property		As built	After Heat Treatment
Tensile Strength [1]	Horizontal Direction (XY)	1150 - 1250 MPa	1350 - 1550 MPa
	Vertical Direction (Z)	1150 - 1250 MPa	1350 - 1550 MPa
Yield Strength [1]	Horizontal Direction (XY)	950 - 1100 MPa	1250 - 1450 GPa
	Vertical Direction (Z)	865 - 560 MPa	1250 - 1450 GPa
Elongation [1]	Horizontal Direction (XY)	13 - 21 %	12 - 18 %
	Vertical Direction (Z)	10 - 18 %	12 - 18 %
Hardness [2]			40 - 50 HRC

1. Mechanical testing in accordance with ISO 6892

2. Rockwell C (HRC) hardness measurement in accordance with ISO 6508

Range of mechanical properties encompasses expected values across multiple machine platforms

SIMILAR MATERIALS

Company	Alternative Title
LPW	LPW 155 Stainless Steel
UNS	S15500
Other Generic Names	1.4540; 15-5 PH
3D Systems	N/A
Concept Laser	N/A
EOS	PH1
Realizer	N/A
Renishaw	N/A
SLM Solutions	1.4540 (15-5PH)
TRUMPF	N/A