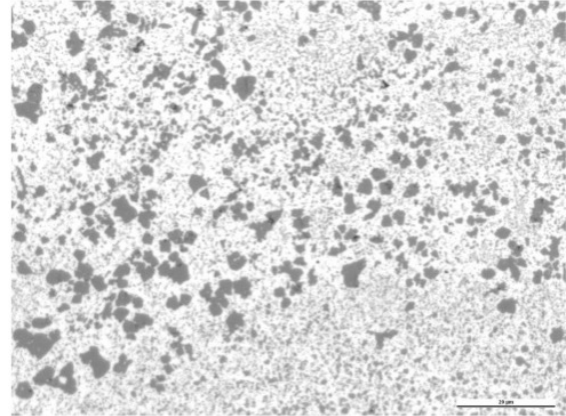


# DispAl<sup>®</sup> S260 AM

DISPAL<sup>®</sup> S260 AM is a high-performance aluminium alloy for additive manufacturing, engineered especially for challenging applications that require high wear resistance. The fine matrix structure of silicon particles, along with Cu and Mg elements, enables the manufacturing of components that are inherently resistant to extreme wear. Because the silicon is evenly distributed across the part, the outstanding properties are achievable without the need of additional coating, for a long lasting and permanent effect.



## Typical applications:

- Oil pump gears
- Hydraulic manifolds
- Spool valves

## Chemical composition

Element	Unit	Value
Al	%	Balance
Si	%	25
Cu	%	4
Mg	%	1

## Physical properties (at 20°C)

Property	Unit	Value
Absolute density	g/cm <sup>3</sup>	2.66 ± 5%
Relative density <sup>1</sup>	[%]	≥ 99.98
Electrical conductivity	MS/m	15.7 ± 0.5
	%IACS	27.1 ± 0.9
Heat capacity	J/gK	0.85 ± 0.02

## Coefficient of thermal expansion

Property	Unit	Value
CTE-value 20 to 100°C	10 <sup>-6</sup> /K	17.2 ± 0.5
CTE-value 20 to 200°C	10 <sup>-6</sup> /K	18.0 ± 0.5
CTE-value 20 to 300°C	10 <sup>-6</sup> /K	18.8 ± 0.5

## Thermal conductivity

Temperature (°C)	30	100	200	300	400
Value (W/mK)	135.5	132.7	131.5	131.9	124.1

## Thermal data

Solidus temperature = (507.1 ± 3)°C  
 Liquidus temperature = (775.1 ± 3)°C

## Mechanical properties<sup>2</sup> Heat treatment condition: (minimum values)

Property	Unit	Stress relieved <sup>5</sup>	T6 <sup>6</sup>
Tensile strength, Rm	MPa	250	436.5
Yield strength, Rp0,2	MPa	150	391.7
Elongation at break, A	%	2.1	0.5
Young's modulus, E	GPa	68	96.5
Hardness <sup>3</sup> , HV30			167

## Roughness measurement<sup>4</sup>

Surface quality depends on the orientation during printing and other process parameters, such as the layer thickness. Listed values represent an indication of what can be expected. Improvement of surface roughness can be achieved based on customer requirements.

As manufactured, vertical	Unit	As built
Roughness average, Ra	µm	8.5
Mean roughness depth, Rz	µm	61.4

[1] Optical density determination at test specimen by light microscopy, on a sample printed with LPBF technology.

[2] Tensile test according to DIN EN Iso 6892-1 Method B at room temperature, test samples were fully machined before the test; values for vertical specimen (Z direction)

[3] Hardness testing according to DIN ISO 6507 – 1/2/3/4

[4] Roughness measurement according to DIN ISO 13565 – ½

[5] Stress relieve 4h at 500°C

[6] Quenching in water at room temperature

The material properties and mechanical characteristics reflect the current knowledge and experience at the time of publication and do not form a sufficient basis for component design and use on their own. Certain part properties are not guaranteed, and it is the responsibility of the user to qualify the properties and their suitability for specific applications.