

SupremEX® 225XE

A high quality aerospace grade aluminum alloy (2124A) reinforced with 25 vol.% silicon carbide particles which produces a metal matrix composite (MMC). **225XE** is manufactured via a powder metallurgy route using a mechanical alloying process to ensure a homogeneous reinforcement distribution, providing a refined grain structure enhancing mechanical properties. The MMC is heat treatable offering high strength and modulus for structural applications and is available in billet, forged and extruded forms. Billet material is available supplied to AMS4355, designation: – 2124A/SiC/25p (3µm).

225XE ADVANTAGES:

- Weight saving
- High Strength
- Increased component stiffness
- High fatigue resistance
- Hardness, wear resistance & low friction characteristics
- Good machinability using conventional techniques
- Homogenous stable microstructure

PRODUCT FORMS:

- Billet / Shaped Billet (DPT)
- Forgings
- Near-net-shape forgings
- Plate
- Extrusions

PHYSICAL PROPERTIES

Density g/cm ³ (lbs/in ³)	2.88 (0.104)	Thermal Conductivity W/m ² K (BTU/hr. ft. °F)	150 (87)
Elastic Modulus GPa (msi)	115 (16.7)	Thermal Expansion ppm/°C (ppm/°F) at 25°C	16.1 (8.9)
Specific Stiffness GPa/g/cm ³	39	Solidus °C (°F)	548 (1,018)
Poisson's Ratio	0.3	Specific Heat Capacity J/g°C (BTU/lb/°F)	0.836 (0.200)

TYPICAL MECHANICAL PROPERTIES

Material	225XE					
	Billet			Forged Plate		Extruded Bar (30:1)
Heat Treatment	T4 CWQ	T6 HWQ	T6 PGQ	T4 CWG	T6 PGQ	T6 PGQ
R _{p0.2} MPa (ksi)	470 (68.2)	440 (63.8)	400 (58.0)	440 (63.8)	400 (58.0)	400 (58.0)
R _m MPa (ksi)	570 (82.7)	550 (79.8)	535 (77.6)	610 (88.5)	570 (82.7)	600 (87.0)
Elongation to Failure %	1.8	1.9	2	3-4	3-4	4-5

Data is for information purposes only, it does not constitute a guarantee.

CWG refers to Cold Water Quench, HWQ refers to Hot Water Quench and PGQ refers to Poly-Glycol Quench.