

SupremEX® 225XE

A high quality aerospace grade aluminum alloy (AA2124) reinforced with 25% 3-micron silicon carbide which is manufactured via a powder metallurgy route using a high energy mixing process to ensure a homogeneous distribution of the reinforcement and to refine the grain structure to enhance mechanical properties. The alloy is heat treatable offering high strength and modulus for structural applications and is available in billet, forged and extruded forms. Designation: – 2124/SiC/25p.

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)	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)	0.848 (0.203)

TYPICAL MECHANICAL PROPERTIES

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

Typical data for 25mm section at heat treatment. Information is for comparative purposes only and information provided is based on general industry information and material properties can be different based on minimum typical or maximum properties along with specific heat treatment conditions and product forms. CWQ refers to cold water quench, HWQ refers to hot water quench and PGQ refers to poly-glycol quench. Data is for information purposes only, it does not constitute a guarantee.