Steel alloys

Category:

Ultra high wear resistance
High modulus
Low density
High damping capacity

Steel alloy XMP-21

Steel alloy XMP-21 is made via a mechanically alloying powder process. This alloy shows excellent wear resistance comparable to Tungsten-Carbide. But it has fair machining characteristics in the annealed condition. XMP-21 has due to its composition a higher elastic modulus and lower density compared to other Steel alloys. Because of the very fine microstructure and homogenous Carbide distribution XMP-21 has very high fatigue strength.

General properties

- Ultra high wear resistance
- High modulus
- Low density

Comparison with Standard Steel M50

Advantages: - Higher modulus
- Lower density
- Better wear resistance

Disadvantages: - More expensive

Chemical Composition: **Fe-Cr-Mo-Al-Ti-C**

Mechanical properties

Alloy	Temperature	UTS	YS	Elong.	Modulus	Hardness
		MPa	MPa	%	GPa	HRc
Steel-XMP-21	Rt	1683	1356	0.6	268	60-68

Fatigue resistance: >1100 MPa, rotating bending, 200°C

Physical data

Density: 6.87 g/cm³
CTE: 11x10^-6
Thermal conductivity: 23 W/mK

Applications

- Piston pins
- Gear selector shafts
- Camshafts
- Gears
- Transmission shafts
- Shims

Delivery form

- Bars, Billets, Rectangular shapes, plates

Max. size, 210x140x1200mm.

AMT Advanced Materials Technology Germany Tel.: +49-6257-505-1790
Street: Huegelstrasse 9 Fax.: +49-6257-505-1792
Zip, City: 64404 Bickenbach Mail: DB-AMT@web.de