KANTHAL®

KANTHAL APMT™ AND KANTHAL APM™ FeCrAl ALLOYS FOR HIGH-TEMPERATURE CONSTRUCTIONS

TECHNICAL SPECIFICATION

HIGH-TEMPERATURE ALLOYS FOR DEMANDING APPLICATIONS

Kanthal APMT™ and Kanthal APM™ are advanced powder metallurgical FeCrAl alloys for service in the temperature range 800 to 1,300°C (1,470 to 2,370°F). They combine excellent resistance to oxidation and hot corrosion with high creep resistance and superior form stability.

The formation of a dense and adherent alumina layer on the alloy surface provides excellent resistance to hot corrosion in most industrial environments. It also offers major advantages compared to conventional chromia-forming high-temperature materials, in terms of maximum operating temperature and service life.

SUPERIOR PERFORMANCE

The performance of Kanthal APMT™ and Kanthal APM™ is particularly superior in sulphur containing and carburizing environments where the alumina scale offers much better protection than the chromia scale of conventional alloys. In addition, Kanthal APMT™ offers better form stability than NiCr(Fe) high-temperature alloys in many applications, partly due to its lower density and lower thermal expansion. Offering a unique combination of strength and corrosion resistance at extreme temperatures, Kanthal APMT™ and Kanthal APM™ alloys are suitable for use in a wide range of applications for high-temperature structural parts.

OLD TRUTHS ARE CHANGING

Kanthal® high-temperature alloys are traditionally known for their performance in electrical heating applications. However, old truths are changing with the introduction of Kanthal APMT™ and Kanthal APM™, advanced powder metallurgical alloys for various types of construction.

Kanthal alloys offer high creep strengths at temperatures of 1,100–1,300°C (2,012–2,372°F) where conventional metallic materials cannot operate. The performance, energy efficiency and productivity of many high-temperature processes within heat treatment, chemical processing and power generation can be improved by introducing the advanced material technology contained in Kanthal APMT™ and Kanthal APM™.

KEY BENEFITS:

- Excellent resistance to oxidation and hot corrosion
- Can withstand most industrial atmospheres
- Better form stability than NiCr(Fe) high-temperature alloys
- Can withstand higher temperatures than conventional materials, thus suitable for high-temperature structural parts
- More energy efficient in high-temperature processes than conventional materials
- Higher process performance and productivity than conventional materials
- Can replace ceramic materials in many applications

KANTHAL APMT™ AND KANTHAL APM™ FOR HIGH-TEMPERATURE CONSTRUCTIONS

WELDING

Kanthal APMT™ and Kanthal APM™ can be welded by TIG/GTAW and laser. A pre-heat treatment at 250°C (482°F) and a post weld heat treatment at 850°C (1562°F) for one hour are recommended.

FORMING

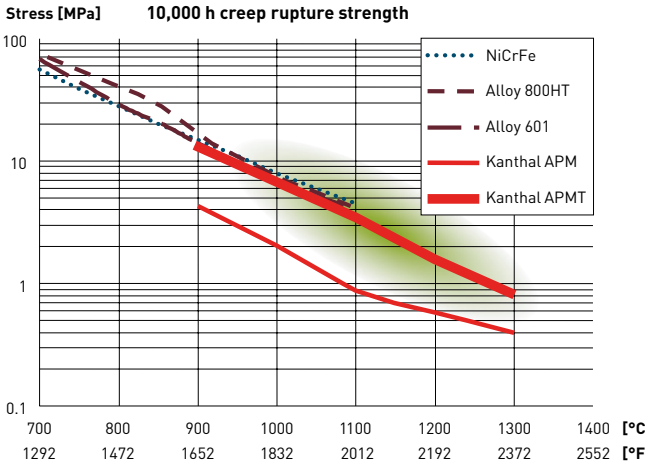
Kanthal APMT™ and Kanthal APM™ have good ductility in delivery condition and are cold formed and machined in the same way as high chrome ferritic stainless steels.

PRODUCT FORMS

Kanthal APMT™ and Kanthal APM™ are available as billets, seamless extruded tubes, bar, plate, hot and cold rolled strip, rod and wire, as well as fabricated parts.

DETAILED SPECIFICATIONS AND CONTACT INFORMATION

For detailed specifications, welding, shaping and machining guidelines – please visit www.kanthal.com



Kanthal APMT™ and Kanthal APM™ offer high creep strengths at 1100–1300°C (2012–2372°F) where conventional materials cannot operate. (Within the green area on the graph.)

PRODUCT FORMS		DIMENSIONS (MM)	DIMENSIONS (INCH)
PLATE	W	⩽ 1200	⩽ 47.24
	T	3 – 20	0.12 – 0.79
	L	⩽ 3000	⩽ 118.44
EXTRUDED TUBES	OD	26 – 260	1.05 – 10.24
	WT	2.87 – 11.0	0.11 – 0.43
	L**	3000 – 13000	118.11 – 511.81
COLD ROLLED STRIP*	W	⩽ 205	⩽ 8.07
	T	0.2 – 3	0.01 – 0.12
WIRE	Ø	0.2 – 9.5	0.01 – 0.37
ROD	Ø	5.5 – 12	0.22 – 0.47
ROUND BAR	Ø	⩽ 100	⩽ 3.94
	L	⩽ 4500	⩽ 177.17
FORGING BLANKS	W	⩽ 500	⩽ 19.69
	T	35 – 170	1.38 – 6.69
	L**	⩽ 3000	⩽ 118.11
SQUARE BAR		⩽ 150	⩽ 5.91
	L	⩽ 4500	⩽ 177.17

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