

PARALLOY H48T

28/48/5 Cr/Ni/W 0.5%C

Cast Heat Resisting Alloy

APPLICATION

PARALLOY H48T may be used in applications up to 1200°C in conditions where the maximum resistance to carburisation and oxidation are required.

For example, applications for this alloy include: Pyrolysis Hangers, Furnace Rollers, Radiant Tubes and Retorts, and Heat Treatment Furnace components such as Trays and Fixtures.

PARALLOY H48T is also used for Catalyst Tubes in high temperature Reformer Furnaces such as Hydrogen Furnaces in Direct Reduction Plants, which operate over 1000°C.

DESCRIPTION

PARALLOY H48T is a weldable chromium-nickel heat-resisting steel containing 28% Cr and 48% Ni and further alloyed with a tungsten addition.

The result is an alloy which displays an excellent combination of creep strength along with resistance to carburisation and oxidation at high temperatures up to 1200°C.

The alloy is readily welded by the standard metal arc (SMAW) welding processes using matching composition type electrodes.

NOMINAL COMPOSITION%					
C	Si	Mn	Cr	Ni	W
0.5	1.5	1	28	48	5



PHYSICAL PROPERTIES			
COEFFICIENT OF THERMAL EXPANSION (mm/mm°C)	THERMAL CONDUCTIVITY (W/m²K)	DENSITY (kg/m³)	SPECIFIC HEAT (J/kgK)
20 – 100°C – 15.3 x 10 ⁻⁶	100°C – 14.2	8.35 x 10 ³	495
20 – 800°C – 17.3 x 10 ⁻⁶	800°C – 23.9		
20 – 1000°C – 17.7 x 10 ⁻⁶	1000°C – 26.4		
20 – 1100°C – 17.9 x 10 ⁻⁶	1100°C – 27.6		

PARALLOY H48T

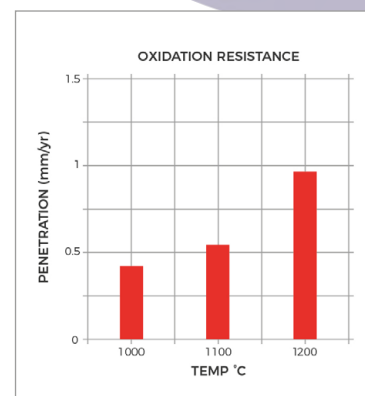
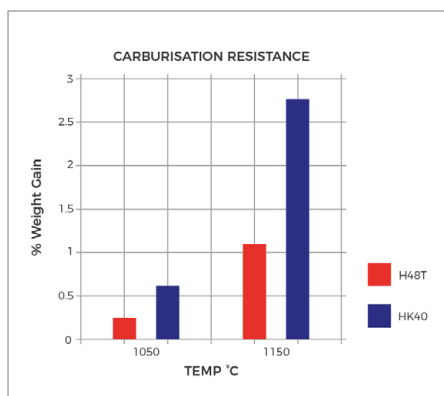
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MECHANICAL PROPERTIES

ROOM TEMPERATURE TENSILE PROPERTIES (Minimum Values)

UTS (N/mm ²)	430
Proof Stress 0.2% (N/mm ²)	235
Elongation (%)	7 (tube) 3 (static)

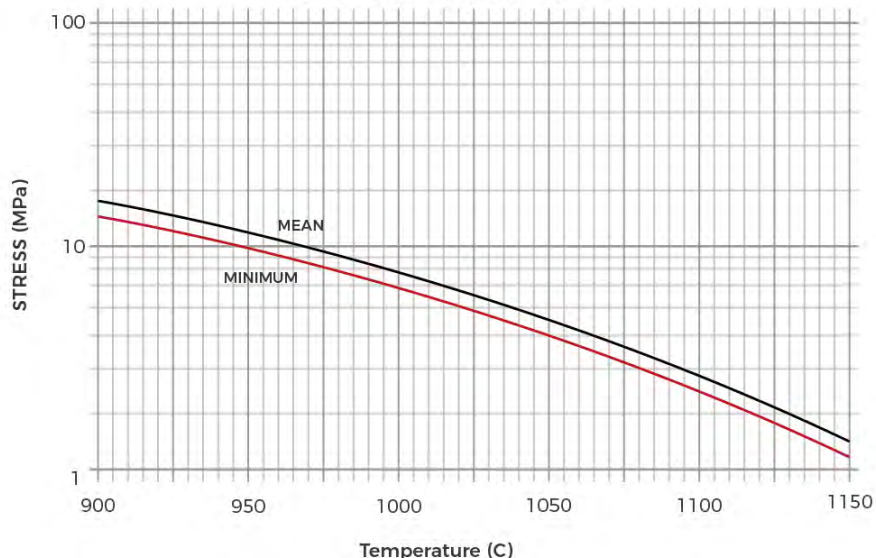


In this severe test an oxidation rate of 1.3mm/yr in air is considered to be satisfactory

ELEVATED TEMPERATURE TENSILE PROPERTIES (Typical Values)

TEMPERATURE (°C)	UTS (N/mm ²)	PROOF STRESS 0.2% (N/mm ²)	ELONGATION (%)
800	265	-	25
900	177	-	32
1000	108	-	38
1100	79	-	46

100000 hr Stress Rupture Values



Note: Creep curves are subject to periodic review as new test data is added.