

### Wipro 3D – HX

Nickel Alloy HX is a high-strength, oxidation-resistant nickel-chromium-iron-molybdenum alloy, effective up to 1200°C.

### Characteristics of the Alloy:

- Good Oxidation Resistance
- Good Fabrication and Welding
- Better Corrosion Resistance
- Excellent Creep and Rupture Strength

### Applications

- Gas turbine engines (combustion chambers, afterburners, tail pipes).
- Industrial furnaces (fans, roller hearths).
- Nuclear engineering.

### Chemical Composition

Chemical composition of raw material and built parts is compliant to table given below.

Element	Limitations
Cr	20.5-23.0
Mo	8-10
P	0.04max
Fe	17.0-20.0
W	0.2-1.0
Ti	0.15max
Al	0.5max
Co	0.5-2.5
Si	1.0max
Mn	1.0max
C	0.1max
Se	0.005max
S	0.03max
B	0.01max
Ni	Balance

### Mechanical properties

Mechanical properties of built parts confirm to below.

Properties	HT condition
Tensile Strength (MPa)	>650
Yield Strength (MPa)	>300
Elongation (%)	>40
Reduction in Area (%)	>

There are various heat treatment methods for improving strength and/or elongation, hence if the user provides exact requirements, it can be discussed to achieve these properties.

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