

DM H13

DM H13 is a hot work tool steel, exhibiting a combination of properties such as thermal fatigue resistance, hardenability, wear resistance and toughness, making H13 a very versatile alloy. It is commonly used in many manufacturing industries for both hot and cold work tooling applications, including forming tools of various kinds, such as extrusion dies and injection molds.

H13 typically sits between D2 and 4140 in terms of hardness and wear resistance, though the final properties can be tailored by varying the post-sintering heat treatments. Out of the three alloys, H13 exhibits the best thermal fatigue resistance, making it the most suitable for hot work applications.

FEATURES

- Resistance to thermal fatigue
- Through hardening
- Great wear resistance and toughness
- Variable properties through heat treatments

COMPOSITION - TYPICAL VALUES

Element	[Weight %]
Fe	Balance
C	0.4
Cr	5.0
Mn	0.4
Mo	1.2
Si	1.0
V	1.0

Related standards and denominations: AISI H13, ASTM A681, 1.2344 / X40CrMoV5-1, UNS T20813, JIS G4404 SKD61

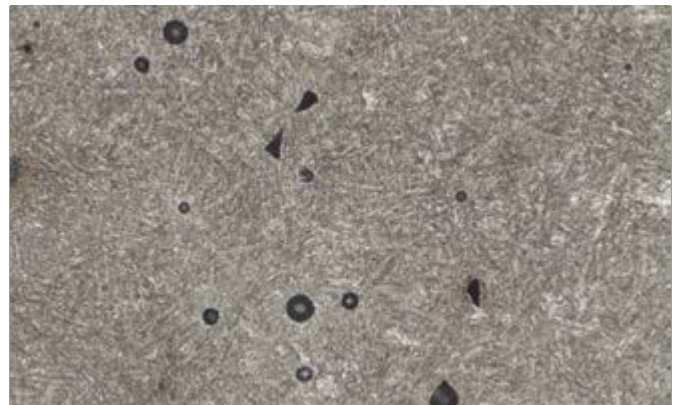
PHYSICAL PROPERTIES - TYPICAL VALUES

Property	As sintered	As annealed	Hardened & tempered*
Ultimate tensile strength [MPa]	1350	625	1200-1450
Yield strength [MPa]	800	285	1000-1300
Elongation [%]	3	>15	4-10
Hardness [HRC]	40	<20	44-52
Relative density [%]	97	97	97

* Final properties vary depending on heat treatment conditions



Sintered and annealed



Hardened and tempered