

DuMAC 11

An all-in-one solution with comparative advantage

SeAH CSS's DuMAC 11 introduces a new set of standards in cold work tool steel. With SeAH CSS's empirical data and technology, DuMAC 11 is an all-purpose product that show an even better performance than the standard steel grade, STD 11. Wear resistance has been improved by adding C-Cr and damage rate has been reduced by improving impact toughness. These improvements have satisfied our customers and enabled us to become a leader in the domestic market.

Improved impact toughness

Excellent wear resistance

Improved anisotropy

Uniform hardness

Usage

Cold press moulds, forming rolls, industrial shears/slitter knives, cold trimming moulds, TBM cutters, blanking moulds



Shear knives



Plates for press dies

Chemical Composition

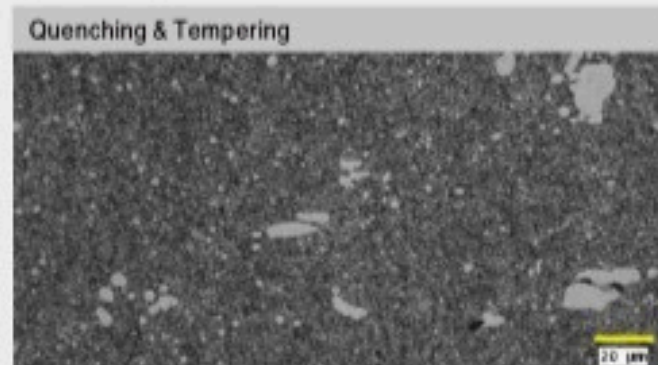
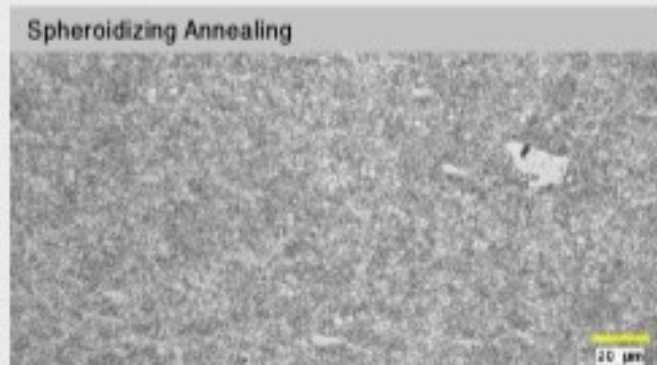
Steel Grade		Chemical Composition (wt%)						
SeAH CSS	KS/JIS	C	Si	Mn	Cr	Mo	V	Other
DuMAC 11	STD 11	1.40			11.0	0.80	0.20	-
	SKD 11	1.60	0.40	0.60	13.0	1.20	0.50	-

Physical Properties

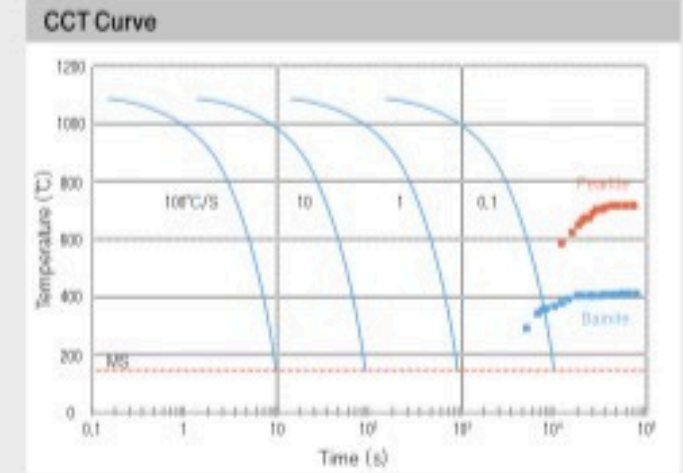
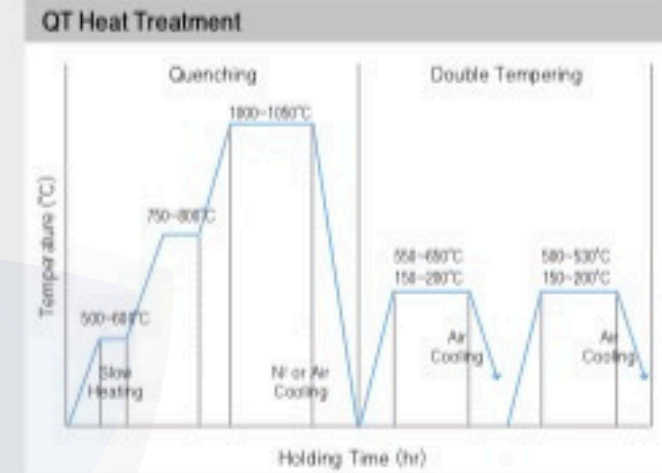
Thermal Expansion Coefficient (x 10 ⁻⁶ /°C)	Specific Gravity (g/cm ³)	Thermal Conductivity (W/m·K)	Young's Modulus (GPa)
11.2(25~200°C)	7.73	20.6	225

Microstructure

• Improved machinability and wear resistance through uniform spheroidization / eutectic carbide distribution

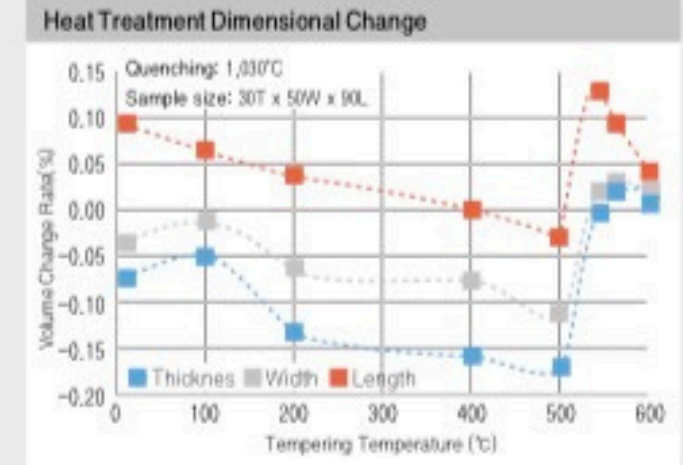
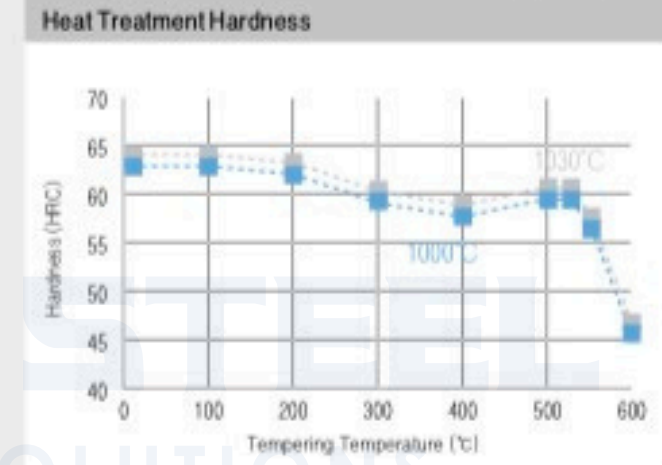


Heat Treatment Conditions



Mechanical Properties

- Hardness of 63 ~ 64 HRC can be secured with low temperature tempering while 58 ~ 60 HRC can be secured with high temperature tempering.
- Minimal dimensional changes after QT heat treatment through improved anisotropy*.
(*The property of substances to exhibit variations in physical properties along different directions)



- Material wear: Greater wear resistance than low-alloy tool steel (SKS3)
- Impact toughness: High impact toughness under the same hardness conditions when compared to cold work tool steel STD 11.

