Document Disclaimer

The product characteristics included in this brochure are the representative values based on the result of our measurements, and do not guarantee the performance in use of the products.

Please inquire the latest information to our department in charge as the information of this brochure is updated without previous notice as needed.

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High Performance Hot Work Die Steel

Features

High toughness throughout large Die Casting Dies and Forging Dies contributes to prevent from the risk of gross cracking in service

- High hardenability
- High toughness even in large sized Dies
- High hot strength
- Great heat checking and wear resistance
- Double melted
- Homogeneous and almost isotropic properties throughout Dies
Properties

Material size: 200mm H × 800mm W

Microstructure (Quenched and Tempered)
Specimen: 200mmH × 600mmW × 300mmL (Center)
Quenching: 1030℃, Gas quenching with 6-9 bar in vacuum furnace

CCT curves
Austenizing: 1030℃×15min
Quenching: 1030℃, Gas quenching with 6-9bar

Fracture toughness
Specimen: 12.5mm×60mmH×60mmW×30mmL
Quenching: 1030℃, Gas quenching with 6-9bar

Tempering hardness
Specimen: 10mm×15mm×20mm
Quenching: 1030℃×15min, AC

Softening resistance
Specimen: 200mmH×600mmW×300mmL (Center)
Quenching: 1030℃, Gas quenching with 6-9bar

Heat checking resistance
Specimen: 15×5mm
Quenching: 1030℃, Gas quenching with 6-9bar

AI erosion resistance
Specimen: φ10×30mm
Quenching: 1030℃, Gas cooling

Toughness
Specimen: 200mmH×600mmW×300mmL (center)
Quenching: 1030℃, Gas quenching with 6-9bar

Fatigue properties
Specimen: 10X10×155mm
Quenching: 1030℃×1h, Gas cooling

Nitriding characteristics
Nitriding: P5 treatment
Initial hardness: 48HRC

Charpy impact values (J/㎠)
2mmU Notch, H direction
Hardness: 48HRC
1030℃→500℃, Rapid cool

Cooling rate from 400 to 200℃ (℃/min)
2mmU Notch, H direction
Hardness: 48HRC
1030℃→500℃, Rapid cool