

INTRODUCING DH2F

**MODIFIED H-13
PREHARDENED 37-41 HRC**

APPLICATIONS:

- *Plastic Molds*
- *Zinc Diecasting Dies*
- *Short Run Aluminum Die Casting Dies*
- *Plunger Tips, Sprue Bushings*
- *Die Plate Strippers*
- *Dies for Aluminum Extrusions*
- *Pattern's and Core Boxes*
- *Others*

KNOCK OUT THE COMPETITION



FEATURES:

- Prehardened to 37-41 HRC. No additional heat treating required. Suited for complex molds and dies susceptible to deformation.
- Good machinability
- Reduced manufacturing time due to no additional heat treating.
- DH2F has better wear resistance than H-13 at like hardness.



DAIDO STEEL

DH2F is distributed by
International Mold Steel, Inc.,
a Daido partner company



INTERNATIONAL MOLD STEEL, INC.

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1-800-625-6653 • Web: www.imsteel.com

Quality Characteristics I

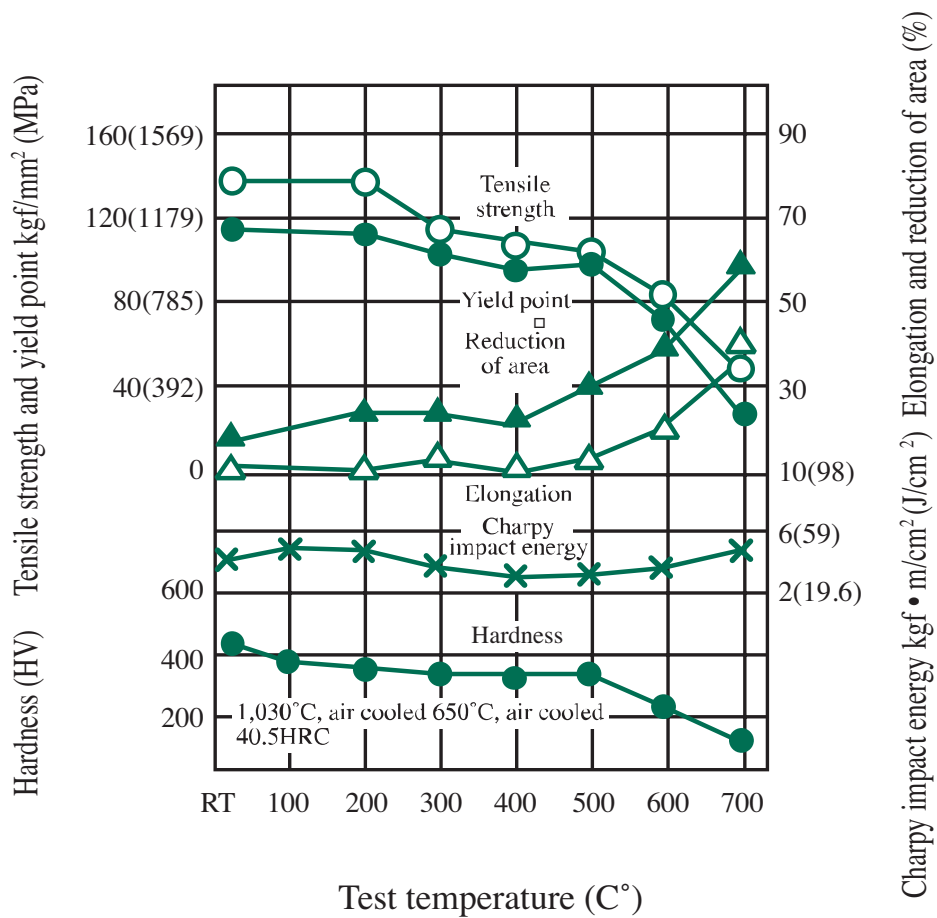
COEFFICIENT OF THERMAL EXPANSION

- Average Coefficient of Thermal Expansion for DH2F

($\times 10^{-6}/^{\circ}\text{C}$)

Spec.	20-100°C	20-200°C	20-300°C	20-400°C	20-500°C	20-600°C	20-700°C
DH2F	8.9	10.8	11.9	12.6	13.1	13.7	13.9

MECHANICAL PROPERTIES



Test piece size

Tension test : 8 mm dia. x 90mm

Charpy impact test : JIS No. 3 test piece (R1,2 mm hole depth)

obtained from the material in the rolling direction

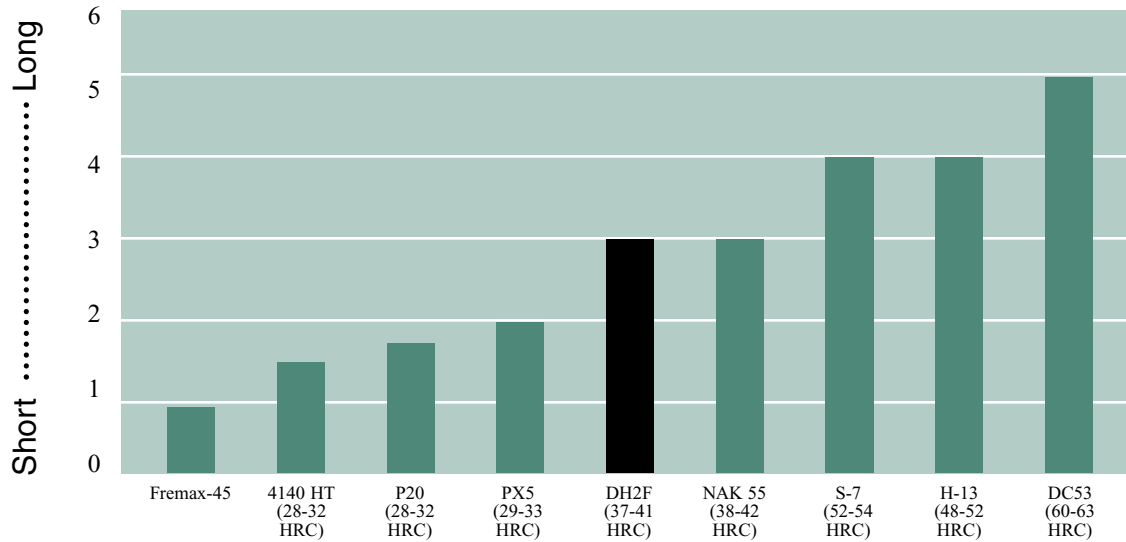
Chemical Composition

GENERAL CHEMISTRY

MATERIAL	HARDNESS	CHEMICAL COMPOSITION (%)							AISI GRADE
		C	S	Si	MN	CR	MO	V	
DH2F	37-41 HRC	.32 - .42	.12 - .15	≤1.50	≤1.5	4.50 - 5.50	1.00 - 1.50	.40 - 1.20	H-13

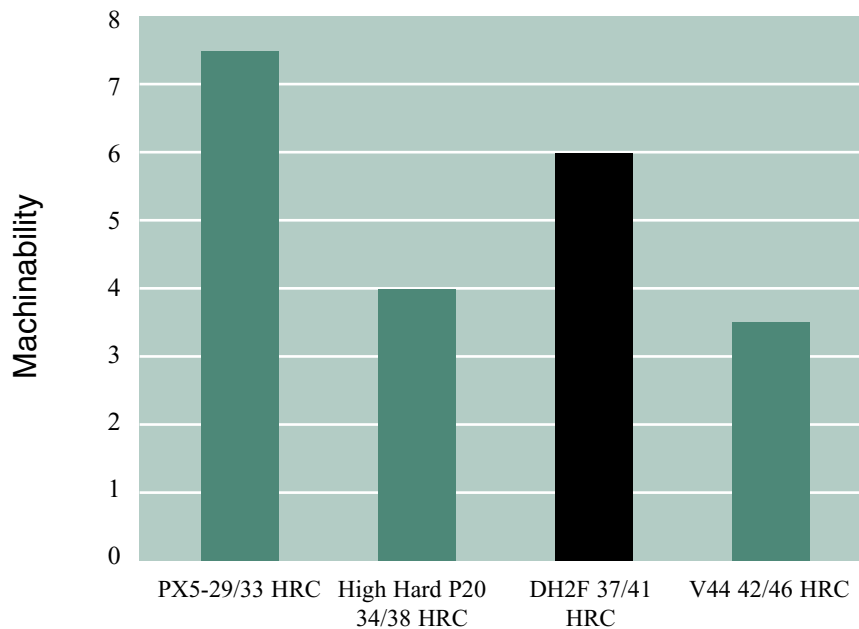
Quality Characteristics II

MATERIALS / MOLD LIFE



Quality Characteristics III

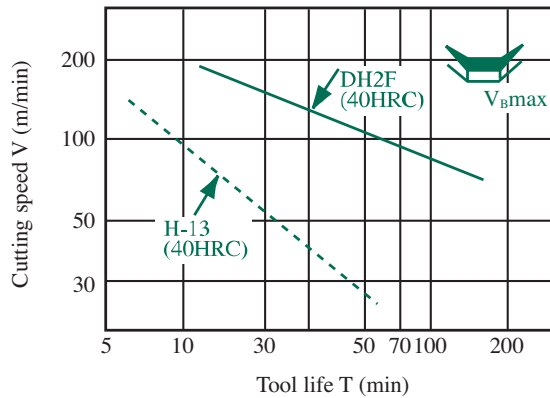
MACHINING CHARACTERISTICS



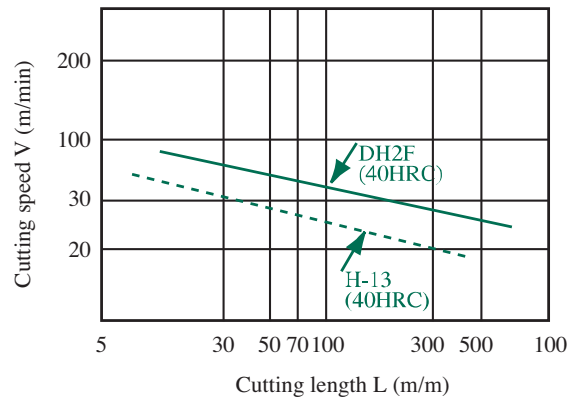
Quality Characteristics III cont'd

MACHINABILITY

- An example of tool life of face milling cutter



- An example of tool life of HSS drill bit



- Cutting parameters

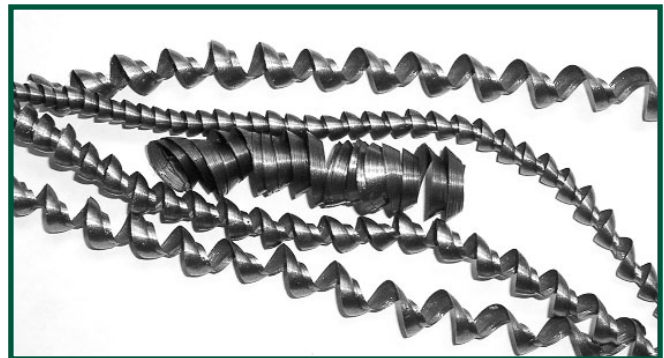
Parameters	Tool material	Tool shape	Cutting fluid	Feed	Cut	Cutting speed (m/min)	Test piece size (mm)	Hardness (HRC)	Tool life and point
Face milling center	M20	NP-100R	None	0.075mm/tooth	1.5mm	66-165	80° x 50' x 200'	40	$V_{Bmax}=0.3mm$
Drill bit	M2	10mm dia. tapered-shank drill $\alpha = 118^\circ$	None	0.1mm/rev	30mm deep hole	20-40	80° x 50' x 200'	40	Tool erosion

CHIP SHAPE

- DH2F (modified (H13) Prehardened)



- H-13 (40 HRC)



CUTTING PARAMETERS:

Tool : M2, 10 mm dia., tapered-shank drill $\alpha=118^\circ$
 Feed : 0.10mm/rev
 Hole depth : 30 mm

Cutting speed : 25m/min
 Test piece hardness : 40HRC
 Test piece size (mm) : 100 x 200 x 300



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