



## HS PH13

### HIGH-QUALITY HOT WORKING DIE STEEL

#### Introduction

As modified hot work die steel with high roughness and high isotropy, HS PH13 optimizes the alloy element ratio on the basis of traditional H13, reduces the content of harmful elements such as P and S, so that it has good thermal stability and thermal fatigue resistance.

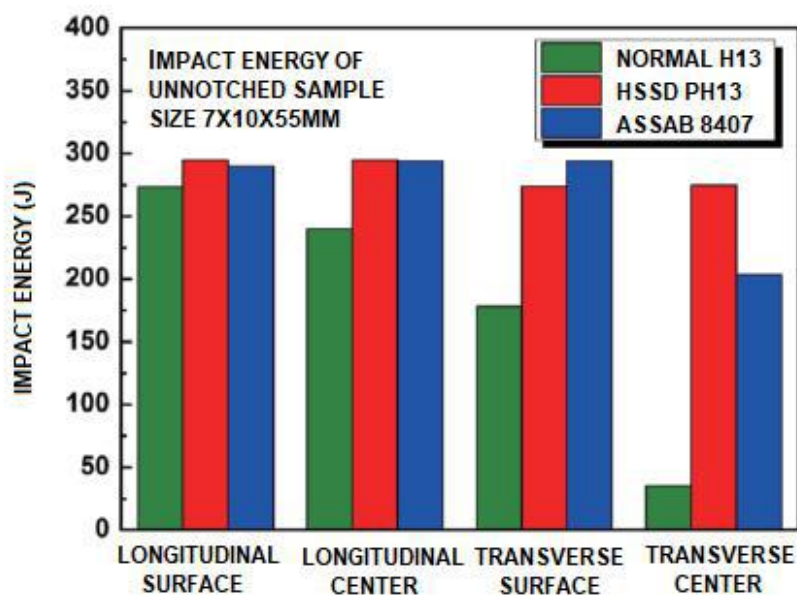
#### Chemical properties

Steel Grade	C	Si	Mn	P	S	Cr	Mo	V
HS PH13	0.35~0.40	1.00~1.20	0.40~0.60	≤0.010	≤0.002	4.80~5.20	1.20~1.40	0.90~1.00

#### Features

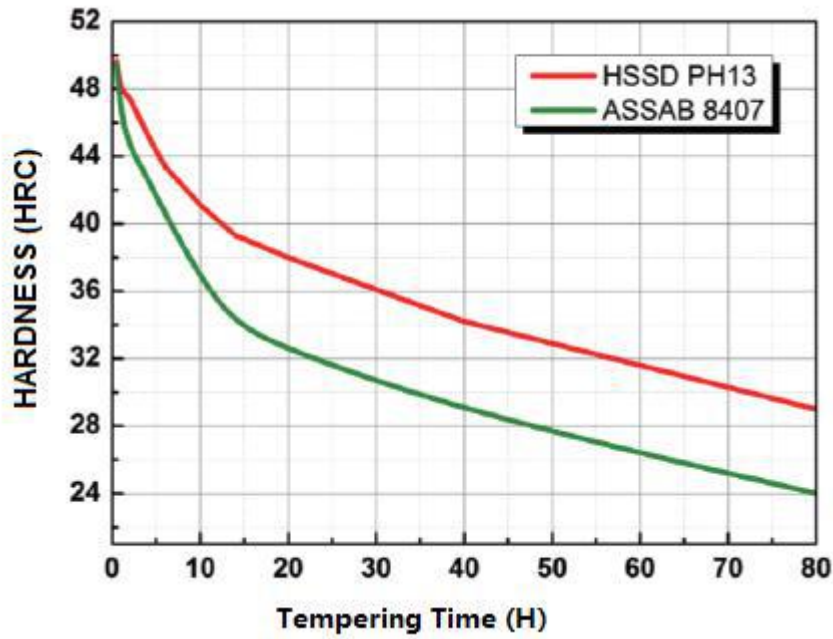
- With electro slag remelting, diffusion annealing process and ultrafine heat treatment, it has good microstructural homogeneity and finely dispersed carbides.
- Good Tempering performance, high toughness, high high-temperature strength, good thermal stability and thermal fatigue resistance.
- High isotropy, aspect ratio  $\geq 0.8$ .
- Annealing hardness  $\leq 230\text{HB}$ , quenching hardness 51~55HRC, tempering hardness 46~50HRC.

#### Mechanical Properties

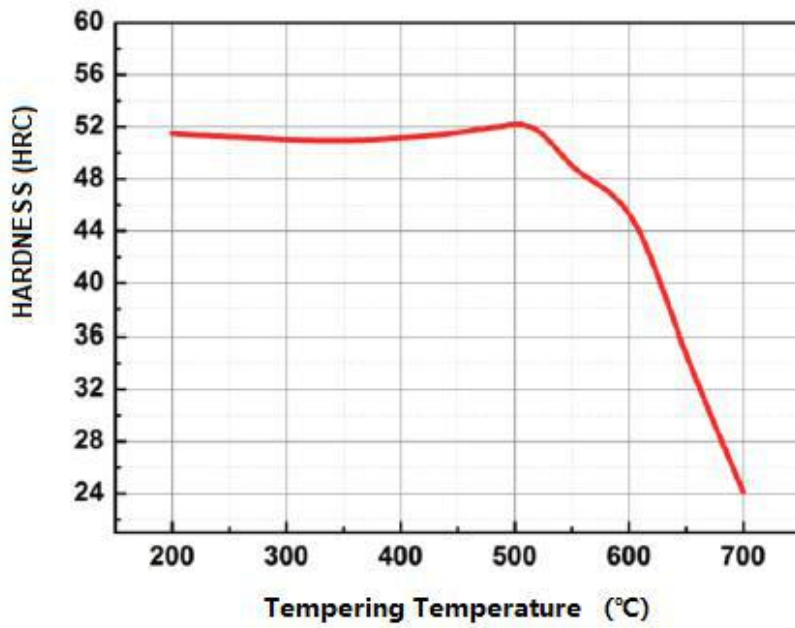




Good Thermal Stability



Tempering Curve



Recommend Heat Treatment

Heating Temperature/°C			Cooling Way	Hardness (HRC)	Tempering Temperature/°C	Tempering Numbers	Hardness (HRC)
First Preheating	Second Preheating	Last Heating					
500~600	820~860	1010~1040	Oil Cooling	53~55	560~620	2~3	46~50