



## TECHNICAL SHEET

## 1 Comparison Standards

W.Nr	DIN	JIS equivalent	AISI/SAE	AFNOR	BS	UNI
-	-	-	-	-	-	-

## 2 Chemical Composition

C	Si	Mn	P (max)	S (max)	Cr	Mo	V	Supply Condition	Supply Hardness (HB)
1.50	0.20	0.40	≤ 0.030	≤ 0.010	11.30	0.90	0.25	Annealed	240

## 3 Main Characteristics and Applications

QC11 is a popular cold work tool steel grade known for its excellent wear resistance, toughness, and high hardenability. It's a versatile material used in various applications, particularly in the tool and die industry.

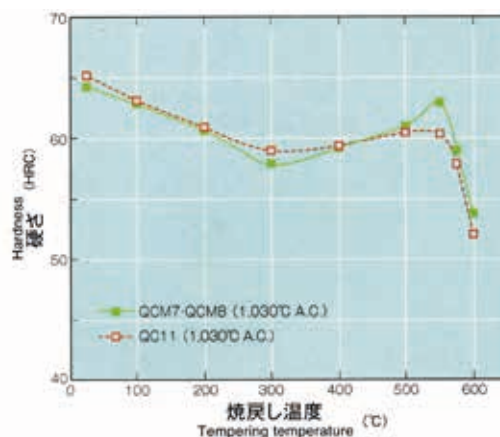
## Applications:

- Punching and Blanking
- Forming
- Shearing Dies
- Reamers and Milling Cutters
- Gauge Blocks
- Precision Measuring Instruments

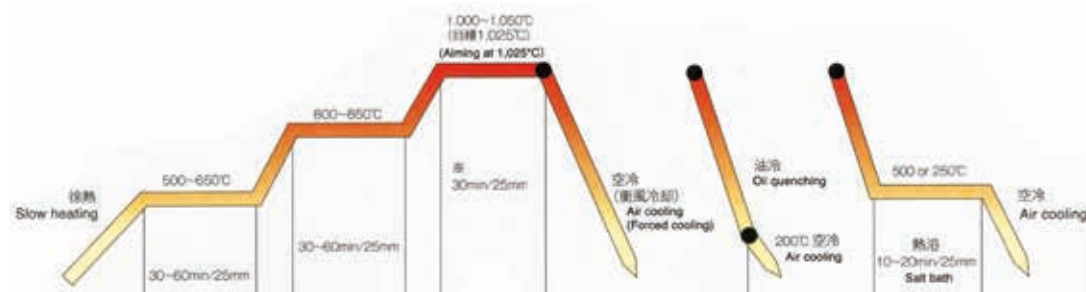
## 6 Heat Treatment

## 4 Production Route

- EAF - LF - VD - Forging / Rolling + Annealing
- Machining if Required



## Quenching



## Tempering



※焼入温度での保持時間  
 雰囲気炉 ..... 30min/25mm  
 ソルトバス ..... 30min/25mm  
 (ただし、浸漬時間とする)  
 真空炉 ..... 45~60min/25mm

(注)  
 焼割れ防止のため、焼入れ後材料の温度が100~50°Cにまで下がりましたら直ちに焼戻しを行ってください。

※Holding time at quenching temperature:  
 Atmosphere-controlled furnace ..... 30min/25mm  
 Salt bath ..... 30min/25mm  
 (immersion time)  
 Vacuum furnace ..... 45~60min/25mm

Note:  
 To prevent quench cracking, tempering should be performed after quenching as soon as the material temperature drops to between 100 and 50°C.

## QC11

- ・耐摩耗性重視  
 For wear resistance  
 150~200°C (60~63HRC)
- ・耐摩耗性と靱性重視  
 For wear resistance and toughness  
 200~250°C (57~60HRC)
- ・靱性と放電加工性重視  
 For toughness and electric-discharge cutting  
 ≥500°C (≤59HRC)



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