

## SMAW WELDING FOR HARD SURFACE WEAR RESISTANCE

### DESCRIPTION & APPLICATIONS :

- SH-90HS is a low-hydrogen electric welding rod, and the filler metal is Mo high-speed tool steel.
- Excellent high-temperature hardness, can withstand working temperature to 550 °C, and can obtain extremely stable hardness and toughness after quenching and tempering heat treatment.
- Suitable for welding and repairing cutting tools, dies, high speed steel, hot stamping dies, etc.

### NOTE ON USAGE :

- Before welding, the weld shall be dried at 300 ~ 350°C for 60 minutes. When in use, a small amount shall be taken out and put into a drying cylinder at 100 ~ 150°C. The maximum amount of weld carried out shall be the same day.
- Please perform heat treatment according to the following recommendations:  
Quenching: oil quenching at 1200 ~ 1250°C  
Tempering: air cooling at 540 ~ 570°C

### WELDING POSITION :



### TYPICAL CHEMICAL COMPOSITION OF WELD METAL (wt%) :

C	Mn	Si	Cr	Mo	V	W
1.30	0.33	0.60	5.60	4.60	2.80	8.50

### TYPICAL MECHANICAL PROPERTIES OF WELD METAL :

Condition		Vicker's (HV)	Rockwell's (HRC)	Shores's (HS)
Layer temperature 150 °C under		670	61	83
pile up welding		660	58	79
High temperature hardness	1200~1250 °C oil hardening	200	400	600
	540~570 °C air cooling			

### SIZE AND RECOMMENDED CURRENT RANGE : AC or DC(+)

Diameter (mm)	3.2	4.0	5.0
Length (mm)	350	400	400
Current (Amp)	80-120	120-170	160-210