

## Cold working dies

### GENERAL DESCRIPTION

Surfacing and repair of cold working tools, machine parts, cutting tools and dies.  
 Repair and surfacing of cast iron dies requiring a hardness of at least 48 HRC.  
 Due to the special carbon-vanadium composition, this alloy can be flame hardened.  
 High shock and wear resistance.  
 Good machinability after annealing.

### APPLICATIONS

Construction, repair or modification of dies, percussion tools, plungers, cutting knives.  
 Automotive Industrie: repair of lamellar cast iron VE-GG25 and nodular cast iron GGG-60  
 Tools for deep drawing and bending.  
 Surfacing of machine parts subjected to wear.

Hardness as deposited: 58 - 60 HRC  
 Hardness after hardening: up to 65 HRC (water cooling)

### CHEMICAL COMPOSITION (%) (Typical values, all weld metal)

C :	0.60	Cr :	1.20	Mo :	0.80	V :	0.70	Mn :	0.90
Si :	0.40	Fe :	Balance						

### MECHANICAL PROPERTIES (Typical values, all weld metal)

Yield Strength N/mm <sup>2</sup>	Tensile Strength N/mm <sup>2</sup>	Elongation 5d (%)	Impact Strength Charpy V notch (ISO-V)

### GENERAL INFORMATION

<b>Welding positions</b>	All, except vertical down		
<b>Shielding gas</b>	NA		
<b>Packing</b>	5 Kg in a plastic box		
<b>Polarity</b>	AC or DC, Reverse polarity (electrode positive)		
<b>Diameter (mm)</b>	2.5	3.2	4.0
<b>Length (mm)</b>	350	350	350
<b>Approx. current (A)</b>	60 - 90	85 - 130	140 - 220

#### Tips & Tricks

Clean the work pieces.  
 Complicated or hardened work pieces should be preheated up to the tempering temperature.  
 Weld short beads, avoid heat-accumulation.  
 On difficult to preheat dies apply a first layer with a ductile electrode (Modi Lastek 43 on cast iron, Modi Lastek 9066 on die steel).  
 Thermal treatment:  
 - annealing: 770-790 °C (1420-1460 °F)  
 - hardening: 780-820 °C (water cooling) (1430-1500 °F)  
 - tempering: 180-230 °C (350-450 °F)

*The information in this document is based on intensive tests and is accurate to the best of our knowledge. Do note that these values are only typical values for tests in accordance to prescribed standards. The suitability of the product should always be confirmed by qualification tests before use in any application. The information can be changed without previous notice.*