

Standards

| | |
|----------|--------------|
| DIN 8555 | MF4-GF-55-ST |
|----------|--------------|

Characteristics Wire electrode for repairing hot working tools made of steels of same or similar type. The deposited weld metal is highly resistant to extreme abrasive wear as well as medium shock and impact. It also excels by good edge-holding quality. Max. service temperature: 450°C The weld metal structure can still be improved by subsequent heat treatment.

Typical applications shear blades, dies, upper and lower dies, mandrel plugs, hammer mills, swages, crushing and pulverising plants, cutting edges etc.

Recommendations for welding and heat treatment Preheating and interpass temperature should be kept between 400 and 550°C, depending on base material and its heat abduction. The upper temperature limit is recommended in any case for overlaying large areas. Hardness and tenacity can be increased by tempering at 530° C. Repair welding of high speed steel requires previous soft annealing (2 to 4 hours at 850°C) and preheating to 500 – 700°C. Slow cooling (if necessary in oven or sand) is advisable. Reclaimed tools can be rebuilt by welding several layers one on top of the other. Start with heating the base metal up to a hardening temperature, then expose it to still air for an appropriate period of time and stabilise temperature at 400 to 500°C. Welding can now be performed in this temperature range. The structure formed in the weld metal ensures stress relief and high resistance to cracking. Annealing is recommendable after normal cooling-off

Hardness of all-weld metal
(typical values)

| as welded | Annealed 2 h at 530°C | Hardened 1220°C oil cooling | soft annealed 5 h at 850°C |
|-----------|--------------------------|--------------------------------|-------------------------------|
| 59 HRc | 60 HRc | 57 HRc | 250 HB |

Weld metal analysis
(typical, wt. %)

| C | Cr | Mo | W |
|-----|-----|-----|-----|
| 0.4 | 4.8 | 3.7 | 3.5 |

Gas types EN 439 M13: 99% Argon for 1% Oxygen **Current = +**

Current intensity

| DIA (mm) | DIA (inch) | Volt | Amps | Delivering form | |
|----------|------------|---------|-----------|-----------------|-----|
| 1,2 | 3/64 | 19 - 22 | 120 - 220 | G | |
| 1,6 | 1/16 | 20 - 26 | 160 - 260 | O | G |
| 2,0 | 5/64 | 22 - 27 | 220 - 280 | O | G |
| 2,4 | 3/32 | 24 - 28 | 260 - 340 | O | G S |
| 2,8 | 7/64 | 25 - 29 | 300 - 400 | O | S |
| 3,2 | 1 / 8 | 26 - 30 | 320 - 460 | | S |

Delivering form
O = Flux cored wire self shielding
G = Flux cored wire for shielded arc welding
S = Flux cored wire for submerged arc welding

Coils, weight B/BS 300 = 15 kg B 450 = 30 kg pay off pack = 150 / 300 kg
Rev. 000