

# CARBODUR WZ 59 AC

## Standards

DIN 8555	E 4-UM-60-ST
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## Characteristics

Heavy coated AC-weldable electrode with high recovery (150 %) 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. On low alloyed base materials the preheating temperature should be kept between 300 and 450°C, and for hot working steel between 450 and 600°C.

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)

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

## Weld metal analysis ( typical, wt. %)

C	Cr	Mo	W
0.4	4.8	3.7	3.5

## Current

= + / ~ , 65 V

## Welding positions

PA, PB,

## Rebaking

1 h, 350 °C +/- 10 °C (if required)

## Flux-cored wire equiv.

CARBO F- WZ 59

Dia./Length	Amperage (A)	Pcs./ packet	Pcs./ carton	kg / 1000	kg / packet	kg / carton
2,5 x 350	70 - 100	161	645	31,0	5,0	20,0
3,2 x 350	90 - 140	95	381	52,5	5,0	20,0
4,0 x 350	130 - 170	63	252	79,5	5,0	20,0
5,0 x 450	160 - 220	38	150	159,7	6,0	24,0