

# CARBO S- CrMo 91

# CARBO T- CrMo 91

## International standards

	S = massive wire	T = bare rod
Werkstoff Nr.	1.4903	
EN 12070	SG CrMo91	WSG CrMo 91
AWS A5.28-96	ER90S-B9	

## Approvals

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## Application notes

Wire electrode for welding high temperature, creep resistant martensitic 9-12 % chromium steels such as P91 and T91 and operation temperatures up to 650°C.  
The deposits have good toughness properties even under long term stresses and high creep rupture strength.  
Preheating and interpass temperature 250-350°C, after welding annealing 750°C/> 2h.

## Operating temperature

up to + 650° C

## Base materials

Similar steels  
1.4903 – X10CrMoVNb9-1  
ASTM A199 Gr. T91; A335 Gr. P91 ; A213/213M Gr. T91

## Mechanical properties of all-weld metal ( typical values)

Tensile strength R <sub>m</sub> N/mm <sup>2</sup>	Yield strength R <sub>eL</sub> N/mm <sup>2</sup>	Elongation A <sub>5</sub> %	Impact energy ISO-V J + 20°C
>620	>530	> 16	> 50

## Weld metal analysis (typical, wt %)

C	Si	Mn	Cr	Mo	Ni	V	Nb	N
0,12	0,3	0,5	9,0	0,9	0,7	0,2	0,055	0,04

### S = massive wire

### T = bare rod

## Gas types EN 439

M2, M3, C1

I1

## Current

= +

= -

Diameter mm	0,8	1,0	1,2	1,6	1,6	2,0	2,4	3,2	4,0
Welding amps (A) min.	80	120	180	250					
(A) max.	130	190	250	320					

## coils, weight

B300 15 kg.

10 kg.

Rev. 000