

FLUXOCORD 31HD is a seamless copper coated basic flux cored wire for submerged arc welding of fine grain structural steels. The deposition rate is increased by ~30% compared to a solid wire of equivalent diameter at the same current, however higher currents can be applied due to its superior welding properties. Single wire 4 mm welded at 900 amps will give deposit rate ~ 15 kg per hour, and in tandem 25 - 30 kg/hour. Thus, FLUXOCORD 31HD clearly contributes to increasing the productivity.

When welding materials with wall thickness up to max 20 mm, the selection of OP 132 or OP 192 allows a higher welding speed. For single run (fillet) welds highest welding speed can be obtained with either OP 181 or OP 191.

For wall thicknesses larger than 20 mm and with limited dilution with base metal, it is advised to use FLUXOCORD 31HD in combination with either OP 121TT or OP 121TTW (both HD <5ml/100gr).

In case of long PWHT, OP 41TTW is to be used for best strength properties.

Classification		
OP 121TTW	EN ISO	14171-A- S 42 6 FB T3
OP 121TT	EN ISO	14171-A- S 42 6 FB T3
OP 121TTW	AWS	A5.17: F7A8-F7P8-EC1
OP 132	AWS	A5.17: F7A6-F7P6-ECG
OP 41TTW	AWS	A5.17: F7P6-EC1
OP 121TT	AWS	A5.17: F7A8-EC1
OP 181	AWS	A5.17: F7A4-ECG

Approvals	Grade
OP 132	DB ●
OP 121TTW	LRS 4Y42M H5
OP 132	TÜV ●
OP 121TT	ABS 4YM
OP 121TT	DB ●
OP 181	DB ●
OP 121TT	DNV VYM
OP 121TT	GL 6YM
OP 121TT	LRS 4Y42M H5
OP 181	TÜV ●

### Chemical analysis (Typical values in %)

		C	Mn	Si
All weld metal	OP 121TTW	0.06	1.7	0.3
All weld metal	OP 132	0.06	1.8	0.4
All weld metal	OP 41TTW	0.08	1.6	0.3
All weld metal	OP 121TT	0.06	1.6	0.25
All weld metal	OP 181	0.06	1.9	0.9

### All-weld metal Mechanical Properties

	Heat Treatment	Yield Strength (MPa)	Tensile Strength (MPa)	Elongation A5 (%)
OP 121TTW	As Welded	≥ 420	500-640	≥ 25
OP 121TTW	620°Cx1h	≥ 400	485-640	≥ 25
OP 121TTW	620°Cx12h	≥ 315	440-600	≥ 25
OP 132	As Welded	≥ 420	500-640	≥ 20
OP 132	620°Cx1h	≥ 420	485-640	≥ 20
OP 41TTW	620°Cx1h	≥ 420	500-640	≥ 25
OP 41TTW	620°Cx12h	≥ 400	485-640	≥ 27
OP 41TTW	635°Cx12h	≥ 370	475-640	≥ 29
OP 121TT	As Welded	≥ 420	500-640	≥ 25
OP 181	As Welded	≥ 420	500-640	≥ 20

### All-weld metal Mechanical Properties - CV

	Heat Treatment	Impact Energy (J)			
		-20 °C	-40 °C	-46 °C	-60 °C
OP 121TTW	As Welded			100	80
OP 121TTW	620°Cx1h			100	80
OP 121TTW	620°Cx12h			80	
OP 132	As Welded			80	50
OP 132	620°Cx1h			80	50
OP 41TTW	620°Cx1h			80	
OP 41TTW	620°Cx12h			80	
OP 41TTW	635°Cx12h			90	
OP 121TT	As Welded			100	80
OP 181	As Welded	80	27		

### Typical applications

	Materials
OP 121TTW	EN: S(P)235 - S(P)420; ASME: A516 (all Grades)
OP 132	EN: S(P)235 - S(P)420; ASME: A516 (all Grades)
OP 41TTW	EN: S(P)355 - S(P)420; ASME: A516 Gr 70; SA 537 Cl2
OP 121TT	EN: S(P)235 - S(P)420; ASME: A516 (all Grades)
OP 181	EN: S(P)235 - S(P)420; ASME: A516 (all Grades)

#### Storage

keep dry and avoid condensation

#### Current Conditions

AC; DC+

### Packaging data

Packaging Type	B450	B450XSEA	B570	DRUMXCL	S760
Diam(mm) / weight(kg)	25	25	90	250	300
2.4	●				
3.2	●				
4.0	●	●	●	●	●
4.8	●				