

# GEEFLUX 541

## IDENTIFICATION

GEEFLUX 541

## CLASSIFICATION

AWS/SFA 5.17 : F7A(P) 5EH10K

AWS/SFA 5.17 : F7A6 EM12K

AWS/SFA 5.17 : F7A(P) 6EH12K

AWS/SFA 5.17 : F7A(P) 4EH14

AWS/SFA 5.23 : F7A(P) 2EA2-A2

AWS/SFA 5.23 : F8A(P) 4EA3-A3

AWS/SFA 5.23 : F9 A(P) 5 EF2-F2

AWS/SFA 5.23 : F9 A(P) 4 EF3-F3

## DESCRIPTION

Geeflux 541 is a fluoride-basic flux with high basicity and low impurity levels such as P and S. As a result of low oxygen levels in the weld deposits uniform mechanical properties with high toughness values a low temperature are achieved. Because of the almost neutral slag-reactions the chemical analysis of the weld metal can be excellently controlled through the selection of appropriate wire electrodes.

## APPROVALS

IOT
<b>GEESAW EH14 X GEEFLUX 541</b>

### CHEMICAL COMPOSITION OF THE WIRE (AS PER AWS/SFA 5.17)

Wires	C	Mn	Si	S	P	Cu
<b>EH10K</b>	0.07 - 0.15	1.30 - 1.70	0.05 - 0.25	0.025 max	0.025 max	0.35 max
<b>EM12K</b>	0.05 - 0.15	0.80 - 1.25	0.10 - 0.35	0.030 max	0.030 max	0.35 max
<b>EH12K</b>	0.06 - 0.15	1.50 - 2.00	0.25 - 0.65	0.025 max	0.025 max	0.35 max
<b>EH14</b>	0.10 - 0.20	1.70 - 2.20	0.10 max	0.030 max	0.030 max	0.35 max

### CHEMICAL COMPOSITION OF THE WELD METAL (AS PER AWS/SFA 5.23)

Wires	C	Mn	Si	S	P	Mo	Cu	Ni
<b>EA2-A2</b>	0.12 max	1.40 max	0.80 max	0.03 max	0.03 max	0.40 - 0.65	0.35 max	-
<b>EA3-A3</b>	0.15 max	2.10 max	0.80 max	0.03 max	0.03 max	0.40 - 0.65	0.35 max	-
<b>EF2-F2</b>	0.17 max	1.25 - 2.25	0.80 max	0.03 max	0.03 max	0.40 - 0.65	0.35 max	0.40 - 0.80
<b>EF3-F3</b>	0.17 max	1.25 - 2.25	0.80 max	0.03 max	0.03 max	0.40 - 0.65	0.35 max	0.70 - 1.10

### MECHANICAL PROPERTIES OF THE WELD METAL (RANGE) IN AS-WELDED CONDITION

Wire	UTS (MPa)	YS (MPa)	EL (%) (L=4D)	CVN Impact Value	
				Temp.	Joules
<b>EH10K</b>	520 min	460 min	24 - 32	-46°C	50 - 120
<b>EM12K</b>	480 - 600	400 - 520	22.0 - 30.0	-40°C	50 J
<b>EH12K - As welded</b>	570 min	490 min	26 min	-51°C	60 J
				-62°C	50 - 60
<b>EH12K - After SR</b>	550 min	455 min	28 min	-51°C	60 J
				-62°C	
<b>EH14</b>	510 - 620	440 min	22 - 28	-46°C	50 - 120
<b>EA2</b>	570 - 680	480 - 560	22 - 28	-40°C	50 - 120
<b>EA3</b>	570 - 690	500 min	22 - 28	-40°C	50 - 120
<b>EF2</b>	620 min	545 min	17 min	-51°C	50 min
<b>EF3</b>	630-680	560 - 585	20 min	-40°C	50 min

## CHARACTERISTIC CHEMICAL CONSTITUENTS

SiO <sub>2</sub> + TiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub> + MnO	CaO + MgO	CaF <sub>2</sub>
15	20%	40%	25%
<b>Basicity according to Boniszewski: ~3.0</b>			

## APPLICATION

Low hydrogen levels after redrying according to the recommendation on the flux labels and optimum mechanical properties, whilst observing recommended heat control, enable the welding :

- Tick-walled constructional steels with yield strengths of upto 420 MPa.
- Off-Shore applications upto 460 MPa yield strengths on steels such as BS 4360-Grade 50 D and S355 2G3 according to DIN EN 10025 (previous designation St 52-3N).
- Fine grain structural steels for low temperature requirements with impact toughness at -60°C or below.
- High tensile fine grain steels such as S690QL1 and N-A-XTRA 70.
- Boiler and vessel steels such as 16Mo3/A204 Grade A, 13CrMo4-5/ A387 Grade 12 or 10CrMo9-10/ A387 Grade 22.

**REDRYING TEMPERATURE** : 300 - 400°C / 2 hours min.

**CURRENT CONDITION** : AC / DC (+)

**PACKING PARAMETERS** : 25.0 kg in a polythene coated gunny bag.

**FLUX DENSITY** : 0.95 Kg/ dm<sup>3</sup> (i)

**GRAIN SIZE ACCORDING TO ISO 14174** : 2-20 (Tyler 8 x 65)

**CURRENT-CARRYING CAPACITY** : Upto 800A (DC or AC) using on wire.

\* **DIFFUSIBLE HYDROGEN CONTENT H<sub>5</sub>** : Determined in deposited metal according to the method described in ISO3690.

**TYPE OF CURRENT DC** : Redrying conditions 300-350°C.