GWELD
SEAL OF TRUST

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
GEESAW EH14 X GEEFLUX 541

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

Wires	C	Mn	Si	S	P	Cu
EH10K	0.07 - 0.15	1.30 - 1.70	0.05 - 0.25	0.025 max	0.025 max	0.35 max
EM12K	0.05 - 0.15	0.80 - 1.25	0.10 - 0.35	0.030 max	0.030 max	0.35 max
EH12K	0.06 - 0.15	1.50 - 2.00	0.25 - 0.65	0.025 max	0.025 max	0.35 max
EH14	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
EA2-A2	0.12 max	1.40 max	0.80 max	0.03 max	0.03 max	0.40 - 0.65	0.35 max	-
EA3-A3	0.15 max	2.10 max	0.80 max	0.03 max	0.03 max	0.40 - 0.65	0.35 max	-
EF2-F2	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
EF3-F3	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
EH10K	520 min	460 min	24 - 32	-46°C	50 - 120
EM12K	480 - 600	400 - 520	22.0 - 30.0	-40°C	50 J
EH12K - As welded	570 min	490 min	26 min	-51°C	60 J
				-62°C	50 - 60
EH12K - After SR	550 min	455 min	28 min	-51°C	60 J
				-62°C	
EH14	510 - 620	440 min	22 - 28	-46°C	50 - 120
EA2	570 - 680	480 - 560	22 - 28	-40°C	50 -120
EA3	570 - 690	500 min	22 - 28	-40°C	50 - 120
EF2	620 min	545 min	17 min	-51°C	50 min
EF3	630-680	560 - 585	20 min	-40°C	50 min

CHARACTERISTIC CHEMICAL CONSTITUENTS

$SiO_2 + TiO_2$	$Al_2O_3 + MnO$	$CaO + MgO$	CaF_2
15	20%	40%	25%
Basicity according to Boniszewski: ~3.0			

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^3 (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 H5** : Determined in deposited metal according to the method described in ISO3690.

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