DUAL SHIELD II 101-TC AWS A5.29: E91T1-K2C

FEATURES

Dual Shield II 101-TC is an all-position flux cored electrode developed to meet the U.S. Navy qualification tests for hydrogen levels of less than 0.05 ml/g of deposited weld metal. This unique formulation designed for CO_2 shielding optimizes performance and reduces post-weld cleanup cost. Dual Shield II 101-TC produces exceptional mechanical properties and low temperature impact toughness. It is intended for use on HY-80, ASTM A710, A514, and A517 or other similar HSLA steels.

TYPICAL MECHANICAL PROPERTIES

As Welded MIL-E-24403/2 Vertical-Up HY-80 Base Plate CO_2	
Yield Strength	93 ksi, 640 MPa
Tensile Strength	103 ksi, 710 MPa
Elongation in 2”	23%
AWS A5.29 Requirement Flat Mild Steel Plate CO_2	
Yield Strength	87 ksi, 600 MPa
Tensile Strength	94 ksi, 640 MPa
Elongation in 2”	25%

CLASSIFICATIONS AND APPROVALS

- ASME SFA 5.29
- QPL-24403/2: MIL-101TC
- D.N.V.- IV YMS(H10)
- AWS A5.29: E91T1-K2C

CHARPY V-NOTCH PROPERTIES

Testing Temperature 0°F (-18°C)	
As Welded CO_2	77 ft-lb, 104 J
Testing Temperature -60°F (-51°C)	
As Welded CO_2	43 ft-lb, 58 J

WELDING PROCESS

- FCAW (Flux Core)

WELD METAL ANALYSIS

CO_2	
C	0.03%
Mn	1.32%
Si	0.35%
P	0.014%
S	0.010%
Ni	1.64%

INDUSTRIES

- Shipbuilding
- Mobile Machinery
- General Fabrication

DUAL SHIELD II 101-TC continued

DEPOSITION TABLE - CO_2					
Diameter in (mm)	Amps	Volts	Wire Feed Speed ipm (cm/min)	Deposition Rate lb/hr (kg/hr)	Efficiency %
.045 (1.2)	150	28	200 (508)	4.2 (1.91)	86
	210	29	300 (762)	6.3 (86)	86
	250	30	400 (1016)	8.5 (3.86)	87
	290	33	500 (1270)	10.7 (4.85)	87
.052 (1.4)	155	25	150 (381)	4.4 (2)	87
	245	28	250 (635)	7.3 (3.31)	86
	310	33	350 (889)	10.2 (4.63)	85
	360	36	450 (1143)	13.3 (6.03)	85
1/16 (1.6)	190	27	150 (38)	6.1 (2.77)	87
	300	30	250 (35)	10.2 (4.63)	87
	365	33	300 (762)	12.3 (5.58)	86
	410	33	350 (889)	14 (6.35)	88

DUAL SHIELD II 101-TC continued

FULL RANGE WELDING PARAMETERS							
Gas: CO_2 .045”				Gas: CO_2 .052”			
WFS ipm	Volts	Amps	Tip to Work in	WFS ipm	Volts	Amps	Tip to Work in
150-260	23-26	130-200	3/8-1/2	110-230	23-26	125-235	1/2-5/8
260-380	25-27	200-225	1/2-3/4	230-340	25-29	235-290	5/8-3/4
380-520	26-30	225-265	3/4-1	340-470	29-31	290-350	3/4-1

FULL RANGE WELDING PARAMETERS			
Gas: CO_2 1/16”			
WFS ipm	Volts	Amps	Tip to Work in
110-200	25-28	165-270	5/8-3/4
200-300	27-30	270-345	3/4-1
300-420	28-32	345-415	$1\text{-}1^{1/4}$

PART NUMBER / PRODUCT INFORMATION		
Part Number	Description	UPC
245015995	DS II 101-TC 045X33#PSP VP	662303035525
245016415	DS II 101-TC 052X15#PSP VP	662303071448
245015979	DS II 101-TC 052X33#PSP VP	662303035501
245015987	DS II 101-TC 1/16X33#PSP VP	662303035518