Product Data Sheet

T 'Tubular cored electrode arc welding'

Shield-Bright 2209

Prepared by	Qualified by	Approved by	Reg no	Cancelling	Reg date	Page
Sasikumar R	P-O Oskarsson	Neil Farrow	EN008308	EN007523	2018-10-26	1 (2)

REASON FOR ISSUE

Ferrite FN update.

GENERAL

Shield-Bright 2209 is and all-position duplex flux cored electrode for use with 100% CO2 or 75~85%Ar / 20~25% CO2 mixed gas. It is designed for the welding of 22Cr-5Ni-2Mo-0.15N duplex stainless steel(UNS S31803), commonly known as 2205. Commercial designations for such steels include SAF 2205(Sandvik), 2205(Avesta), UR 54N(Creusot), AF22(Mannesmann), NK Cr22(Nippon Kokan), SM22Cr(Sumitomo).

Shielding Gas: M21, C1 (EN ISO 14175)
Polarity: DC+
Alloy Type: Ni, Cr, Mo, N
Fill Type: Rutile

CLASSIFICATIONS Weld Metal

SFA/AWS A5.22	E2209T1-4, E2209T1-1
EN ISO 17633-A	T 22 9 3 N L P C1 2
EN ISO 17633-A	T 22 9 3 N L P M21 2

APPROVALS

ABS	E2209T1-1 (C1)
ABS	E2209T1-4 (M21)
BV	2205 (C1)
BV	SA 2205
CCS	2205-S (C1)
CE	EN 13479
CWB	E2209T1-1 (C1)
CWB	E2209T1-4 (M21)
DNV	Duplex (C1)
DNV-GL	Duplex (M21)
LR	S31803 (C1)
RINA	2209 S
VdTÜV	09123

CHEMICAL COMPOSITION

All Weld Metal (%)

	C1		M21	
	Min	**Max**	**Min**	**Max**
C		0.04		0.04
Si		1.0		1.0
Mn	0.50	2.0	0.50	2.0
P		0.030		0.030
S		0.025		0.025
Cr	21.0	24.0	21.0	24.0
Ni	7.5	10.0	7.5	10.0
Mo	2.5	4.0	2.5	4.0
Cu		0.5		0.5
N	0.08	0.20	0.08	0.20
Ferrite FN	35	55	35	55
	Comments: PREN(1) Min-35.0, Typ-36.2 (1) PREN = Cr +3.3Mo + 16N		Comments: PREN(1) Min-35.0, Typ-36.5 (1) PREN = Cr+3.3Mo+16N	

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MECHANICAL PROPERTIES OF WELD METAL

All Weld Metal

	80%Ar/20%CO2 Shielding Gas (M21)		CO2 Shielding Gas (C1)	
	As welded		As welded	
Properties	**Min**	**Typ**	**Min**	**Typ**
Rp0.2 (MPa)	500	670	500	650
Rm (MPa)	700	810	700	800
A4 (%)	25	28	25	28
Charpy V at -46°C (J)	32	52	32	50

ECONOMICS & CURRENT DATA

Dimension (mm)	Current (A)		W	η	H		Feed		U	
Ø	Min	Max	Nom	Nom	Min	Max	Min	Max	Min	Max
1.2	130	220	20	84	1.9	4.6	5.8	14.4	25	30
1.6	170	300	20	83	2.4	5.2	3.9	8.2	25	29

W = Gas consumption (l / min)

η = Recovery, g weld metal / 100g wire (%)

H = Deposit rate (kg weld metal / hour arc time)

Feed = Feeding rate (m/min)

U = Arc voltage (V)