→ Technical Data Sheet

Smootharc™ 16

MMA Electrodes, Low Hydrogen, Hydrogen Controlled.

Electrodes

Description

Smootharc™ 16 is a basic-coated 105% recovery electrode intended for general welding applications where controlled hydrogen and medium tensile properties are required. It has excellent mechanical and X-ray properties.

Application

For the welding of all section steels, tank work and general fabrication. Suitable for unalloyed, micro alloyed and low alloyed steels.

Technique

As with all hydrogen-controlled electrodes, as short an arc as possible should be kept at all times. When starting with a new electrode the arc should be initiated ahead of the start of the weld or crater and worked back over this distance before continuing the weld in the required direction. On larger size joints, several stringer beads should be used in preference to one large weave bead to ensure optimum mechanical properties. DC– should be used for root passes where poor fit-up is a factor that should be taken into account.

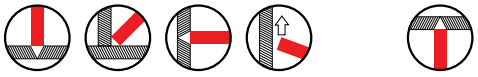
Storage

BOC Smootharc™ 16 electrodes, when removed from a freshly opened pack, will have <4 ml/100g hydrogen. Once the seal is broken, electrodes should be stored in heated cabinets at 80–120°C.

Re-Drying/Conditioning

Basic (low hydrogen) type electrodes are redried at temperatures of 350–400°C for 1–2 hours to achieve a hydrogen level of 5–10 ml/100g of weld metal and restricted to five redries. To achieve extreme low hydrogen levels, <4 ml/100g, 420–440°C is recommended for 1–2 hours and restricted to one re-dry.

Welding Positions



WARNING

Welding can give rise to electric shock, excessive noise, eye and skin burns due to the arc rays, and a potential health hazard if you breathe in the emitted fumes and gases. Read all the manufacturer's instructions to achieve the correct welding conditions and ask your employer for the Safety Data Sheets. Refer to www.boc.com.au or www.boc.co.nz

Specifications

Coating type	Basic
Classifications	AWS/ASME-SFA A5.1 E7016-1 H4
	AS/NZS 4855 B-E 49 16-1 A H5
Welding current*	AC, OCV 60V or DC+-
Metal recovery	105%
Hydrogen content /100g weld metal	<4ml

*DC- is recommended for root passes

Chemical Composition, wt% – All Weld Metal

	C	Si	Mn	P	S
Typical	0.05	0.54	1.16	0.014	0.007

Mechanical Properties – All Weld Metal

	Typical (as welded)	PWHT Typical*
Yield strength	470 MPa	420 MPa
Tensile strength	560 MPa	515 MPa
Elongation	25%	31%
Impact energy, CVN	≥47J @ -40°C	150J @ -40°C

*PWHT 620°C 1 hour

Packaging Data

2 kg pack

Diameter	2.5 mm	3.2 mm	4.0 mm
Part No.	186145VP	186146VP	186147VP
Weight packet (kg)	2.0	2.0	2.0
Quantity (per pack) approx.	101	57	37

Welding Parameters

Diameter	2.5 mm	3.2 mm	4.0 mm
Length (mm)	350	350	350
Current range (A)	60–90	80–160	110–210
Voltage (V)	24	26	25

Deposition Data

Diameter	2.5 mm	3.2 mm	4.0 mm
Weld metal kg/electrodes kg	0.64	0.66	0.66
No. of electrodes/weld metal kg	80	44	29
Weld metal kg/hour arc time	0.9	1.2	1.7
Burn off time/electrode (s)	50	65	70

Data for Welding Horizontal Fillet Joints

Diameter	2.5 mm	3.2 mm	4.0 mm
Throat thickness (mm)	3.2	4.2	5
Leg length (mm)	4.5	6	7
Current (A)	75	115	170
Arc time (s)	55	67	73
Bead length/electrode (mm)	135	160	200
Weld speed (m/hr)	0.64	0.72	0.72

Note: operator technique will influence the values shown

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