

# Smootharc™ 12

## MMA Electrodes, Mild Steel, General Purpose.



### Electrodes

**Description** Smootharc™ 12 is a multi-purpose, rutile-cellulosic electrode suitable for a wide range of applications in mild steel. The electrode is fully positional, including very good appeal in the vertical-down position. The electrode welds with a crisp steady arc to produce a smooth weld bead surface to enhance good slag detachability. Performance can be insensitive to rust, dirt and surface coatings, and has good ability to bridge gaps or poor fit-up.

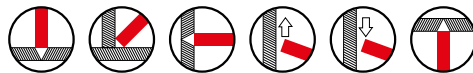
**Application** For the welding of all mild steels, sheet metal, tank work and general fabrication. Combined with the excellent strike/re-strike and a high tolerance to large gaps or poor fit-up, this electrode is easy to use and recommended for all round fabrication work.

**Technique** Either the contact or free-arc technique can be used. For vertical-down welding, the contact weld technique must be used with a high rate of travel.

**Storage** Electrodes, once the seal is broken, should be stored in heated cabinets at 40–50°C.

**Re-Drying/Conditioning** BOC Smootharc™ 12 electrodes are sealed from moisture during manufacture, but all fluxes are hygroscopic and, when left in the opened state for a period of time, will absorb moisture. Moisture is indicated by a noisy or 'digging arc', high spatter, tight slag, undercut or excessive 'cup' on the end of an electrode. Re-dry damp electrodes for two hours at 80–90°C.

### 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](http://www.boc.com.au) or [www.boc.co.nz](http://www.boc.co.nz)

**Specifications**

Coating type	Rutile-Cellulosic
Classifications	AWS/ASME-SFA A5.1 E6013 AS/NZS 4855 B-E 43 13A
Welding current*	AC, OCV >50V or DC+-
Metal recovery	90%

\*DC- is recommended for root passes

**Chemical Composition, wt%  
– All Weld Metal**

	C	Si	Mn
Typical	0.07	0.4	0.5

**Mechanical Properties  
– All Weld Metal**

	Typical (as welded)
Yield strength	470 MPa
Tensile strength	540 MPa
Elongation	24%
Impact energy, CVN	50J @ 0°C

**Packaging Data**

**2.5 kg pack**

	2.5 mm	3.2 mm	–
Diameter	2.5 mm	3.2 mm	–
Part No.	184135DP	184136DP	–
Weight packet (kg)	2.5	2.5	–
Quantity (per pack) approx.	137	82	–

**5 kg pack**

	–	–	4.0 mm
Diameter	–	–	4.0 mm
Part No.	–	–	184137
Weight packet (kg)	–	–	5.0
Quantity (per pack) approx.	–	–	109

**Welding Parameters**

	2.5 mm	3.2 mm	4.0 mm
Diameter	2.5 mm	3.2 mm	4.0 mm
Length (mm)	350	350	350
Current range (A)	70–100	90–145	120–195
Voltage (V)	25	25	25

**Deposition Data**

	2.5 mm	3.2 mm	4.0 mm
Diameter	2.5 mm	3.2 mm	4.0 mm
Weld metal kg/electrodes kg	0.7	0.7	0.7
No. of electrodes/weld metal kg	98	48	33
Weld metal kg/hour arc time	0.8	1.2	1.7
Burn off time/electrode (s)	48	49	58

**Data for Welding  
Horizontal Fillet Joints**

	2.5 mm	3.2 mm	4.0 mm
Diameter	2.5 mm	3.2 mm	4.0 mm
Throat thickness (mm)	2.0	3.5	5.0
Leg length (mm)	2.8	5.0	7.0
Current (A)	65	125	165
Arc time (s)	50	52	59
Bead length/electrode (mm)	201	195	208
Weld speed (m/hr)	15.0	12.4	11.2

Note: operator technique will influence the values shown



BOC Limited  
 ABN 95 000 029 729, 10 Julius Avenue, North Ryde NSW 2113, Australia, 131 262, boc.com.au  
 NZBN 94 290 4095 3946, 56 Cawley Street, Ellerslie 1051, Auckland, New Zealand, 0800 111 333, boc.co.nz