METRODE PRODUCTS LTD
HANWORTH LANE, CHERTSEY
SURREY, KT16 9LL
Tel: +44(0)1932 566721
Fax: +44(0)1932 565168 Sales
+44(0)1932 569449 Technical
+44(0)1932 566199 Export
Email: info@metrode.com
Internet: http//www.metrode.com

DATA SHEET F-20

SSB FLUX

Product description

Basic non-alloying agglomerated flux for submerged arc welding with a wide range of stainless steels. Basicity Index (according to Boniszewski) is ~2.2. Nominal composition of the flux is:

40%(Al_2O_3+MnO) + 10%(SiO_2+TiO_2) + 50%(CaF_2).

The low level of silica minimises pick-up of Si, and loss of Mn and Cr.

Specifications

BS EN 760 S A AF2 DC
DIN 32522 B FB6 63353 DC8M

ASME IX Qualification

QW432 F-No -, QW442 A-No -.

Materials to be welded

Suitable for most stainless steels including: 304L (data sheet B-30), 347 (data sheet B-31), 316L (data sheet B-32), duplex (data sheet B-60) and superduplex (data sheet B-61); see wire data sheets for further information.

Applications

SSB flux is designed specifically for the butt welding of stainless steels, where high integrity and good mechanical properties are required.

Welding guidelines

Specific guidelines will depend on the alloy being welded but for most alloys that SSB flux is used with no preheat will be required. For austenitic stainless steels the maximum recommended interpass temperature is 250°C but for duplex and superduplex this would normally be restricted to 100-150°C maximum.

Typical parameters

Designed for DC+ only with wires up to 4mm diameter and ~750A. However wires for the materials listed below would normally be 1.6, 2.4 or 3.2mm with a maximum of ~600A; with ER329N and Zeron® 100X the wire diameter is further restricted as are the welding parameters, see alloy data sheets for further information.

Typical parameters for 2.4mm wire are:
270-430A, 27-28V, 350-500mm/min travel speed.

Packaging data

Metrode SSB flux is supplied in sealed moisture resistant 20kg metal drums.

Storage

Preferred conditions for open drums: <60%RH, >18°C.

If flux has become damp or has been stored for a long period, it should be redried in the range 250-400°C for 1-3 hours.

Fume data

SAW fume is negligible.

Typical weld deposit analysis, wt%

Wire	C	Mn	Si	S	P	Cr	Ni	Mo	Cu	N	Other
308S92	0.02	1.2	0.6	0.01	0.02	19.7	10	-	0.1	-	-
347S96	0.03	1.2	0.6	0.01	0.02	19.2	10	-	0.1	-	0.5 Nb
316S92	0.02	1.2	0.6	0.01	0.02	18.2	12	2.6	0.1	-	-
309S92	0.03	1.5	0.6	0.01	0.02	24	12.5	-	0.1	-	-
ER329N	0.02	1.3	0.5	0.01	0.02	22.5	8.5	3.1	0.1	0.15	-
Zeron® 100X	0.02	0.6	0.4	0.01	0.02	24.5	9.3	3.6	0.7	0.21	0.7 W

Typical Mechanical properties

Wire	Tensile strength, MPa	0.2% proof stress, MPa	Elongation on 4d, %	Impact energy, J
308S92	570	450	41	50 at -130°C *
347S96	630	470	35	30 at -100°C
316S92	570	450	41	45 at -130°C *
309S92	600	475	35	70 at -50°C
ER329N	790	630	30	55 at -50°C
Zeron® 100X	890	700	25	40 at -50°C

* For -196°C impact properties with austenitic stainless steel wires LA491 flux is preferred (see data sheet F-15) and batch testing of the selected wire-flux combination is recommended.