

ES400 FLUX

Product description

Fluoride-basic non-alloying agglomerated flux for electroslag strip cladding with a wide range of stainless steels and nickel base alloys. Basicity Index (according to Boniszewski) is ~4.2.

Specifications

BS EN 760 S A AF2 63 AC

ASME IX Qualification

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

Materials to be welded

Suitable for electroslag strip cladding with stainless steel (data sheet B-85) and nickel based (data sheet D-85) strip.

Base materials being clad are most commonly those associated with pressure vessels eg. CMn boiler plate, CrMo and CrMoV.

Applications

Metrode ES400 can be used with both stainless steel and nickel based strips. ES400 flux has neutral characteristics with respect to the strip. The flux has good slag detachability and produces smooth deposits with side aspect to produce flat overlays.

Typical applications include **cladding of vessels** for the **petrochemical, refinery** and **chemical industries**.

Welding guidelines

Specific welding guidelines will depend on the alloy being clad so preheat, interpass and PWHT requirements should be applied for the material being clad.

Typical parameters

Designed for DC with strips up to 120mm wide and ~2500A.

30, 60, 90, 120mm x 0.5mm strips are used with the appropriate current level and commensurate with the base material thickness; typical parameters are:

30 x 0.5mm:	750A, 25V
60 x 0.5mm:	1150-1250A, 25V
90 x 0.5mm:	1750A, 25V
120 x 0.5mm:	2250A, 25V

Travel speed as a minimum in all cases is 180mm/min however it can be increased with a proportional increase in current to maintain dilution level for 60 x 0.5mm strip.

Magnetic steering will be necessary for strip widths ≥60mm.

Packaging data

Metrode ES400 flux is supplied in sealed moisture resistant 25kg bags.

Storage

Preferred storage conditions: <60%RH, >18°C.
If flux has become damp or has been stored for a long period, it should be redried in the range 300-400°C for 1-2 hours.

Fume data

Electroslag fume is negligible.

Typical weld deposit analysis, wt%

Strip	Layers	C	Mn	Si	Cr	Ni	Mo	Nb	N	Cu	Fe	FN
EQ308L	Two	0.02	1.4	0.4	19.6	10.3	0.1	<0.1	0.03	0.1	Bal	8
EQ347	Two	0.02	1.4	0.3	19.8	10.6	0.1	0.4	0.03	0.1	Bal	8
EQ625	Two	0.01	0.1	0.4	21.8	Bal	8.9	3.3	-	0.1	2.1	-

Base material: Pressure vessel quality CMn plate. Welding conditions: 1150-1250Amps, 24-26V, 180mm/min.