

IABCO 1944

High basicity flux for electro-slag strip cladding with stainless steel strip

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|-----------------------|---|
| Product name | IABCO 1944 |
| Classification EN | 760: SA FB 2 DC |
| Classification EN ISO | 14174: ES A FB 2B 5664 |
| Flux composition | CaF ₂ : 70% SiO ₂ +Al ₂ O ₃ +TiO ₂ : 20% CaO+MgO: 5% |
| Boniszewski index | 4.6 |
| Grain size, EN760 | 2-14 (0.2 - 1.6mm) |
| Flux density | 1.0 – 1.1 g/cm ³ |
| Applications | <p>IABCO 1944 is a high basic agglomerated flux for use with the electroslag strip cladding (ESW) process for the overlay welding of pressure vessel and other steels. The flux is neutral without any alloying compensation and is suitable for use with stainless steel strip electrodes of the Cr (eg. 410), Cr-Ni (eg. 308L) and Cr-Ni-Mo (eg. 316L) types. The flux can be used with the Extended Stick Out ESW cladding system enabling the highest possible deposition rates to be achieved.</p> <p>IABCO 1944 gives excellent slag removal, without any slag residue even when used in combination with Nb alloyed strips (eg. 309LNb types) in a single layer deposit. When used in conjunction with 309LNb and 309LMo weld strips in a single layer deposits of 347 and 316L chemistries respectively are obtained.</p> <p>IABCO 1944 has a low hydrogen potential, which makes it most suitable for the overlay welding of C-Mn and Cr-Mo pressure vessel steels used in the chemical, petrochemical, offshore and nuclear industries. The weld deposit exhibits a smooth weld bead appearance with good blending at the weld bead toes.</p> |
| Base materials | Suitable for cladding on CMn and CrMo pressure vessel steels. |
| Current capacity | 1,500A DC on single strip 60 x 0.5mm |
| Redry of flux | 300-350°C for 2-4 hours. |
| Packaging | 25kg alufoil bags. |



Quality Assured
Welding Wires

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| Deposit Analysis | | | | | | | | |
|-------------------------|-------------------|-------|------|------|-------|-------|-------|------|
| Strip | Location | C | Mn | Si | Ni | Cr | Mo | Nb |
| EQ309L | Strip | 0.020 | 1.72 | 0.26 | 12.75 | 23.41 | 0.14 | - |
| | Layer 1 | 0.028 | 1.37 | 0.34 | 11.26 | 20.72 | 0.12 | - |
| | Layer 2 | 0.021 | 1.38 | 0.36 | 12.34 | 22.91 | 0.12 | - |
| | Layer 3 | 0.019 | 1.42 | 0.38 | 12.62 | 23.20 | 0.12 | - |
| EQ309LNb | Strip | 0.015 | 1.92 | 0.30 | 12.50 | 23.90 | 0.17 | 0.67 |
| | Layer 1 | 0.032 | 1.49 | 0.41 | 10.68 | 20.05 | 0.15 | 0.53 |
| | Layer 2 | 0.025 | 1.58 | 0.45 | 11.95 | 22.91 | 0.16 | 0.61 |
| | Layer 3 | 0.019 | 1.60 | 0.50 | 12.27 | 23.35 | 0.16 | 0.62 |
| EQ309LNb Procedure 1 | Strip | 0.016 | 2.11 | 0.39 | 12.5 | 23.8 | 0.16 | 0.70 |
| | Clad Surface | 0.04 | 1.67 | 0.52 | 10.2 | 20.1 | 0.15 | 0.57 |
| | 3mm below surface | 0.04 | 1.70 | 0.56 | 10.3 | 20.1 | 0.15 | 0.58 |
| EQ309LNb Procedure 2 | Strip | 0.016 | 2.11 | 0.39 | 12.5 | 23.8 | 0.16 | 0.70 |
| | Clad Surface | 0.02 | 1.70 | 0.60 | 12.3 | 23.2 | 0.14 | 0.62 |
| | 3mm below surface | 0.02 | 1.69 | 0.67 | 12.2 | 23.1 | 0.16 | 0.66 |
| EQ309LMo Procedure 1 | Strip | 0.017 | 1.76 | 0.18 | 13.4 | 20.3 | 2.94 | 0.03 |
| | Clad Surface | 0.03 | 1.66 | 0.40 | 12.3 | 18.3 | 2.66 | 0.03 |
| | 3mm below surface | 0.04 | 1.69 | 0.44 | 12.2 | 18.3 | 2.71 | 0.03 |
| EQ347 | Strip | 0.024 | 2.02 | 0.41 | 10.5 | 19.83 | 0.049 | 0.53 |
| | Layer 1 | 0.031 | 1.57 | 0.49 | 9.13 | 17.21 | 0.051 | 0.43 |
| | Layer 2 | 0.023 | 1.63 | 0.56 | 10.33 | 19.13 | 0.048 | 0.49 |
| | Layer 3 | 0.021 | 1.64 | 0.59 | 10.36 | 19.56 | 0.048 | 0.51 |
| EQ316L | Strip | 0.007 | 1.76 | 0.18 | 13.42 | 19.90 | 2.94 | - |
| | Layer 1 | 0.023 | 1.42 | 0.36 | 12.26 | 18.24 | 2.68 | - |
| | Layer 2 | 0.018 | 1.39 | 0.40 | 12.88 | 19.15 | 2.86 | - |
| | Layer 3 | 0.017 | 1.37 | 0.41 | 13.29 | 19.72 | 2.97 | - |

Base material: Nominally S355 with typical analysis – 0.2% C, 0.5 % Si, 1.5% Mn.

Procedure 1: Single layer ESW – 1200A, 23V, 200mm/min – 60 x 0.5mm strip.

Procedure 2: Two layer ESW – 1100A, 23V, 150mm/min – 60 x 0.5mm strip.