



IPCOTE - IP9183&R1 HIGH HEAT RESISTANT SACRIFICIAL ALUMINIUM COATING

IP CODE NUMBER: IP9183 & IP9183/R1

PRODUCT DESCRIPTION

This sacrificial aluminium product is the first in a range of corrosion resistant coatings designed for use in challenging environments such as aero engine and marine situations. Normally spray applied, Ipcote is used, for example, on turbine blades, rotors, shafts and landing gear to protect components from salt laden atmospheres, high temperature oxidation, chemicals and abrasives.

Used in a wide variety of applications, Ipcote provides corrosion and oxidation protection on iron, steel, heat treated stainless steel alloys, titanium and other metallic substrates at temperature up to 700°C (1300°F). Ipcote can also be super or vibro polished (RPS619) to enhance flow of air in aircraft engines where smooth surfaces enhance energy efficiency (see also Ipseal IP9184 and Smoothseal IP9444). IP9183, when vibra polished, achieves a surface finish of 23 micro inches, similar to Sermetal W, Sermetal WFX achieves 17 micro inches, and IP9183/R1 polishes to 12 micro-inches!

APPROVALS / REFERENCES / SPECS

MSRR 9140; OMAT 7/46B; under review to CPW 88; alternative to Sermetal W and WFX :
Messier Dowty P637 ; P639

PERFORMANCE

Panel Preparation

- A.I Standard Cure 540°C (or 515°C) (1004°F) Process
- B.I 190°C (375°F) then 350°C (660°F) Bead Peened
- C.I 190°C (375°F) then 300°C (570°F) Bead Peened
- D.I 190°C (375°F) then 250°C (482°F) Bead Peened
- E.I 190°C (375°F) then 200°C (392°F) Bead Peened

All panels were conductive
Dry Film Thickness. 55-65° 2.2 - 2.7 thou

Salt Spray ASTM B 117 with Ipcote IP9183

| HOURS | A.I | B.I | C.I | D.I | E.I |
|-------|----------------------------|----------------------------|-----------------------------------|-----------------------------------|--|
| 366 | Not Affected | Not Affected | Not Affected | Not Affected | Rust Stains On Scribe 'X' |
| 504 | Not Affected | Not Affected | Not Affected | Not Affected | No Change |
| 1000 | Not Affected | Not Affected | Not Affected | No Change | No Change |
| | Pass. No Rust Or Corrosion | Pass. No Rust Or Corrosion | Pass. No Rust Or Corrosion | Very Slight Rust On Top Of Scribe | Very Little Change from 600 hrs. Slight Rust on Scribe and Small Degree of Corrosion |
| 2000 | Not Affected | Not Affected | Very Slight Rust on Top of Scribe | Slight Deterioration | Panel Removed |
| 2500 | Not Affected | Rust Patches on X Scribe | Rust All Along X Scribe | Rust Patches on Areas of Panel | |
| 3000 | Still on Test | Taken Out | Taken Out | Taken Out | Taken Out |

There are several preferred methods of application depending on several factors, operating temperature, substrate etc. Please apply for application instructions.

This is only part of the Ipcote range. Apply for further information about our Seal coats, thin film versions, and touch ups.

APPLICATION

Appearance: When processed at high temperature (process A) 540-560°C (1000 – 1040°F) - dull matt grey - surface finish approx 70 micro inches.

When processed at 350°C (660°F) (process B) and bead peened - shiny bright aluminium similar to metal. Surface finish approx 70 micro inches. Often over coated with Ipseal for smoothness (see Ipseal IP9184) and to create a non-conductive barrier.

We also have experience of super polishing the material which can give finishes of 20 micro inches. This appears like highly polished aluminium (less than 20 microinches) such that reflections are visible (RPS 619).

Approved by Rolls Royce to MSRR 9140 - OMAT Number 7/46B - RR Code 137616
 Salt spray corrosion resistance - ASTM.B117 - Minimum 1000 hours at 40-50 micron film thickness
 Surface Conductivity - positive over complete film
 Adhesion - 1mm Cross hatch
 Dry Heat - 1000 Hours at 600°C, 1100°F
 Cyclic salt water fog/heat at 450°C, 840°F - 240 Hours (480 Hours with Ipseal)
 Cyclic salt water fog/heat humidity/heat at 450°C, 840°F - 240 Hours (480 Hours with Ipseal)

20 microns per coat ± 5 microns (0.8 thou ± 0.2)
 Normally 2 coats per application giving 45-50 microns (0.8 thou - 2 thou)
 Operating temperature: From -40°C (-40°F) to +700°C (1290°F)
 Coverage - 7 square metres per litre at 25 microns (1 thou)

Viscosity - 27±2 seconds B3 at 20°C, 70°F

Less than 3% Hexavalent chrome

In addition, work has now been carried out on Ipcote resistance to ASTM.B117 salt spray corrosion resistance on mild steel panels after lower temperature curing and bead peening. The following results may be of interest: photos are available on request.

PHYSICAL PROPERTIES

| | |
|-----------------------------|--------------------------|
| Mixing Ratio | One Part Product |
| Thinner | Water or Special Medium |
| Supply Viscosity | Ready for use |
| Colour | Aluminium |
| Gloss Level | Matt or Polished |
| Film Thickness | 20 microns per coat |
| Flash Point / Class / UN No | N/A / 6.1 / Toxic UN3287 |
| Pack Size | 1 and 5 litre containers |
| Shelf Life | 12 months |