

Rhinophalt

Downer is entrusted to deliver Rhinophalt, an internationally proven preservation treatment for airports. Rhinophalt delivers numerous benefits to airport owners, such as:

- Doubling the life of airfield pavements
- Eliminating foreign object debris (FOD)
- Reducing water ingress into pavement layers
- No disruption to airport operations.

Overview

Rhinophalt is a penetrative asphalt preservative (PAP) to prevent foreign object debris (FOD) and extend the life of runways, taxiways and aprons. Rhinophalt differs from conventional treatments as it does not impact airport operations. It can be applied during night curfew hours and it maintains runway surface friction characteristics.

This cost-effective spray applied process penetrates the bituminous surface to protect the binder from the effects of environmental oxidation resulting in an increase in pavement life. The University of Nottingham X-Ray CT scan testing of DG14 airport mix from Alice Springs Airport measured the depth of influence of 15.46mm.

Rhinophalt offers airport owners a proven process to prevent the onset of surface distress issues developing on airside pavements to maintain safe airport operations.

Penetrative asphalt preservative for airfield pavements



Improved operational performance

- Maintains surface texture and friction characteristics without impacting runway grooves to ensure continuation of safe airport operations
- Application during curfew periods and overnight operating windows due to certainty of cure time between 30 minutes to two hours, subject to ambient temperature > 5°C
- Extends the service life of major airport pavement assets by preserving the integrity of the bituminous surface and significantly reducing the risk of FOD.



Sustainability

Rhinophalt penetrates the bituminous surface to:

- Protect and preserve the binder properties by delaying aging and oxidation processes
- Reduce water ingress through the surface
- Reinforces the asphalt mortar, improving retention of aggregate and significantly reducing FOD
- Rhinophalt can reduce an airport's carbon footprint by up to 80% when compared to major pavement rehabilitation and resurfacing which requires a significant quantity of raw materials.



World's best practice

Downer has partnered with ASI Solutions Ltd (UK) to deliver Rhinophalt, an internationally proven treatment used by airports in Europe, Asia and the Middle East.

Downer has successfully applied Rhinophalt to major airports, including:

- Sydney Airport 07/25 Runway
- Alice Springs Airport RPT Apron and runway shoulders
- Darwin Airport Taxiway
- Mackay Airport Runway.

All treatments were successfully completed during night curfew periods and under varying climatic conditions.

Sydney Airport

In an Australian-first for a major airport, Downer successfully applied Rhinophalt to Sydney Airport 07/25 Runway. Downer worked with Sydney Airport Corporation Limited (SACL) to deliver the Rhinophalt solution to maintain the integrity of the runway without disrupting airport operations.

Last resurfaced in 2004, the runway condition was losing the fine asphalt matrix, exposing larger aggregates and creating an increased safety risk of FOD.

Following a series of trials at Sydney Airport commencing in 2017, our team was prepared for the key challenges of:

- Unpredictable temperature and weather conditions effecting the cure time required for the treatment and line marking reinstatements
- Precise application tolerances to ensure the runway surface upholds stringent friction characteristics without impacting runway grooves
- Significant operational risk of working within overnight operating windows, as any delay in curfew periods can compromise airport operations.

The application of Rhinophalt including nightly re-line marking of over 50,000m² of runway 07/25 was completed over five shifts during curfew hours in early May 2019. All rubber was removed prior to achieve maximum performance and longevity outcomes.

Downer successfully achieved SACL's service delivery outcomes including resumption of normal airport operations at 5am after each shift and maintaining runway friction characteristics without impacting grooves.

SACL are expecting that the application of Rhinophalt in May 2019 will delay the costly resurfacing of runway 07/25 for a period of three to four years at which time runway 07/25 will achieve a surfacing life of 18 years.