KUTTER
SPEZIALSTRAßENBAU

RHiNOPHALT®

ASPHALT PRESERVATION | AIRFIELDS

TECHNICAL INFORMATION

RHiNOPHALT® by ASI Solutions is a BBA HAPAS and UKCA/CE Marked, Gilsonite-fortified, cold spray-applied asphalt preservative.

Used on over 70 civil and military airports worldwide, it is a proven solution used to extend the life of asphalt surfaces. RHiNOPHALT is FAA, CAA and Defence Specification compliant and supports global aviation sustainability goals by reducing maintenance carbon emissions and aligning with green infrastructure initiatives.

Applied as part of a preventative maintenance strategy, RHiNOPHALT® extends pavement life by up to 5 years per treatment, deferring the need for a resurfacing intervention. It dries rapidly and can be applied day or night with minimal disruption. This makes it ideal for busy airports requiring high availability and minimal operational downtime.

RHiNOPHALT provides a uniform black finish while maintaining friction and texture for safe operations. It reduces FOD risks (from broken pavement) and offers a cost-effective solution that protects infrastructure and lowers both lifecycle costs and environmental impact.

BENEFITS

- **Reduces FOD risk**
  Strengthens the bond between bitumen and aggregate, reducing surface ravelling and lowering FOD sweep frequency by up to 90%.
- **Minimises operational disruption**
  Enables rapid, large-scale treatment (up to 60,000 m² per shift) with quick curing - ideal for night work and limited access windows.
- **Extends pavement life**
  Slows asphalt ageing, typically adding up to 5 years before re-application is needed. Provides a short-term solution to hold older pavements together and reduce stone loss pending full resurfacing
- **Supports sustainability goals**
  Reduces CO_2 emissions by up to 95% compared to asphalt resurfacing.
- **Protects pavement structure**
  Seals and waterproofs surfaces, helping prevent structural damage from water ingress and extreme climatic conditions.
- **Preserves surface performance**
  Maintains original friction, texture, and noise levels - even on grooved surfaces.

Seals micro-cracks

Reduces ingress of water, salts and contaminants

Improves wear resistance

Reduces binder oxidation

Reduces demand for reactive maintenance

Operational & environmental benefits

HOW RHiNOPHALT WORKS

RHiNOPHALT works before problems become visible - helping you stay ahead of costly and disruptive repairs. It penetrates the asphalt surface through micro-cracks and interconnecting voids to form a hard seal, keeping water out[1] and slowing the bitumen ageing process – keeping the asphalt in good condition for longer.

RHiNOPHALT contains Gilsonite - a natural bitumen and powerful antioxidant. It helps preserve the essential components of asphalt by reducing oxidation, which is the major cause of asphalt failure. This means fewer interventions, longer pavement life and a safer experience for passengers and airside operations staff.

Testing on RHiNOPHALT-treated Dense Marshall Asphalt cores using X-Ray CT scanning has shown the porosity in the top half of the surface course is reduced by up to 25% without adversely affecting surface texture.

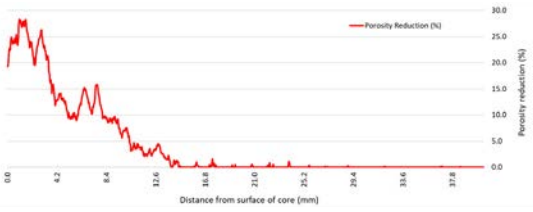


Figure 1
RHiNOPHALT porosity reduction graph

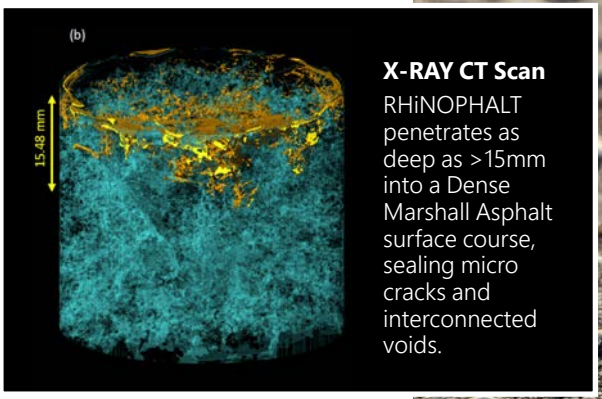
1. Application rate for porous asphalts can be adjusted

SEALING & PROTECTING

Over time as asphalt ages micro cracks form in the surface course allowing water and oxygen to penetrate accelerating the rate of deterioration by weakening the aggregate-bitumen bond.

Treatment with RHiNOPHALT seals the asphalt surface and minimises the ingress of water into the pavement which would typically occur without a preservative treatment.

In-situ permeability testing on a 10-year-old dense Marshall Asphalt surface demonstrated a 99% reduction in water outflow following treatment with RHiNOPHALT (see table).



X-RAY CT Scan
RHiNOPHALT penetrates as deep as >15mm into a Dense Marshall Asphalt surface course, sealing micro cracks and interconnected voids.

SAMPLE TYPE	WATER PERMEABILITY (M/YR)
Untreated	5.879
Treated	0.067

Table 1
Water permeability test results

APPLICATION

RHiNOPHALT can be applied at night which works well with airfield strict maintenance programming, whilst the rapid curing time means that the line markings can be applied in the same closure window.

RHiNOPHALT provides invisible working and increased productivity, allowing up to 60,000m^2 to be treated per shift, and requiring no aftercare or additional construction plant on site.

Surface texture is maintained, and grip is restored by fine grit/dust application or sweeping.

AREAS OF APPLICATION

Civil & military airfields

Runways, taxiways & aprons

All categories of road

Car parks

Incorporating RHiNOPHALT into your asset planning and whole life costing will extend the operational life of your asphalt infrastructure and delay the large costs of resurfacing and repair works. It is also used to extend the life of older pavements to arrest aggregate loss, and to allow time and for a planned surface replacement.

RHiNOPHALT can also enhance the benefits gained from increased aircraft operator perception, improved safety, and less disruption of airfield operations.

Contract case studies are available.

FURTHER INFORMATION

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