Facilitates both enrichment and rejuvenation of aged pavements

A two-in-one treatment designed to facilitate both enrichment as well as rejuvenation of aged pavements. SERT® also contains the lighter fractions of bitumen that are lost through the ageing process.

What is surface enrichment and rejuvenation?

The pavement ageing process involves progressive chemical changes and the loss of the more volatile fraction from the bitumen. Gradual hardening of the bitumen follows the natural effects of aging due to temperature and oxidation over time.

Surface enrichment is essentially the replacement of the bitumen lost due to pavement weathering over time as the bitumen hardens and becomes increasingly brittle. Enrichment can be achieved through the use of either bitumen emulsions or cutback bitumen and results in the deposition of the fresh bitumen over the top of the old binder.

Rejuvenation by contrast is the rehabilitation of the existing binder through the use of appropriate bitumen hydrocarbon fractions, generally without any significant contribution to the total bitumen content and hence relies on adequate binder being present in the pavement.

What is SERT?

SERT (Surface Enrichment Rejuvenation Treatment) emulsion is specially formulated to provide a two-in-one treatment, designed to facilitate both enrichment as well as rejuvenation of aged pavements.

Unlike conventional emulsion treatments that are traditionally used for enrichment, SERT also contains the lighter fractions of bitumen that are lost through the ageing process. It is the presence of these hydrocarbons that enables the treatment to soften the aged binder while also replenishing the portion of binder lost due to weathering.

SERT is suitable for use on all aged or bony asphalt surfaces or spray seals. Typical usage areas are runways and taxiways on airfields, rural roads and low traffic residential streets. By enriching and rejuvenating the binder component of the surface, SERT is able to extend the life of what would otherwise be considered to be a fundamentally sound pavement. This is achieved at a fraction of the cost of an overlay or reseal.

Work on airport pavements revealed that SERT treatment achieved a significant reduction in recovered asphalt binder viscosity.

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How is SERT applied?

SERT emulsion may be used for the treatment of aged chip seals as well as oxidised asphalt pavements. Rejuvenated asphalt displays better low temperature and fatigue properties than aged asphalt, and thus extends its longevity.

The treatment of chip seals requires particular care with respect to determining a suitable design application rate appropriate for each location – e.g. light vs. heavily trafficked areas. This may necessitate the application of a light sand cover to prevent pick up on vehicle tyres and track-off by vehicles while the emulsion penetrates the pavement and cures. By contrast, treatment of oxidised asphalt pavements generally does not require sanding as these have sufficient porosity to enable the residual to become rapidly absorbed into the pavement surface.

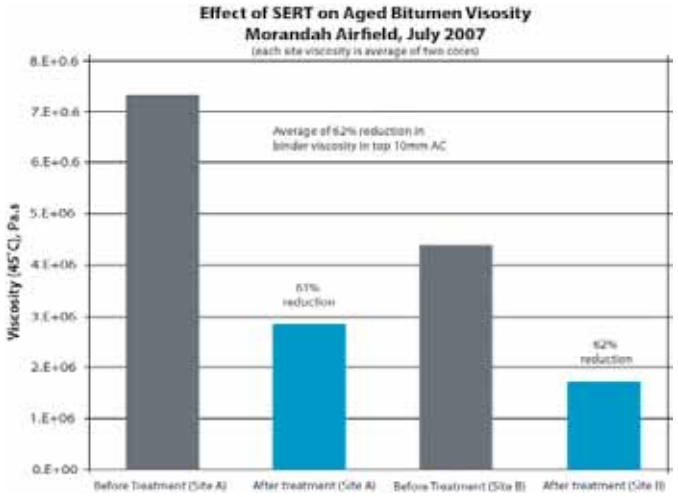
SERT emulsion is normally supplied ready to use and may be applied in two or more spray applications to avoid the risk of run-off and to speed up the rate of break. Traffic access time is within one to two hours of spraying under fine weather conditions.

SERT is designed for the treatment of dry pavements and should never be applied to a saturated pavement or where free surface moisture is present. Treatment must also be avoided when rainfall is imminent i.e. within 24 hours of application.

Treatment Design

Each surfacing is different in relation to the extent of aging, surfacing type, texture and traffic conditions and generally it is necessary to inspect the work site to determine the optimum application rate. Site assessment may involve preparation of small, localised test patches. The treated surface will exhibit some temporary residual tackiness during the curing process.

SERT being applied at Moranbah Airport, Queensland.



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