

## Military Application

### ECOBOND GS30

Inspiring by nature and currently still in the development phase, ECOBOND GS30 is a novel biomimetic formulation designed to facilitate rapid construction of tactical and emergency self-healing runways in the operational theatre.

Designing for maximum load stress and worst-case weather conditions, traditional runway pavement designs are complex, whilst construction is time consuming and costly as it relies on the importation of specific materials and binders. Not ECOBOND GS30.

ECOBOND GS30 Self Healing Runways reduces the need to remove in-situ material and import engineered pavement materials.

Instead, in-situ material is stabilized using advanced polymers. It provides a combination of damage prevention and damage management simultaneously. This specialized formulation has intrinsic properties to protect against crack nucleation and propagation. Its encapsulating mechanism assists in avoiding micro crack propagation, and resultant macro crack initiation. The result is an advanced solution that facilitates the design of minimum thickness pavements, which are resilient against failure.

This same technology can be used to polymer seal surfaces producing water impermeable, ultra-thin and dust free runways when applied on existing sufficiently strong pavements.

The ECOBOND GS30 polymer mix will provide substantial increases in compression as well as tensile strength. Resultant flexible pavements will provide failure resilience, particularly protecting against high-energy events associated with landing, and maximum loadings associated with fully fuelled and laden aircraft during taxi and taking off.

"Natural selection is continually trying to economise every part of the organization." Charles Darwin.

### Benefits

Operational benefits include:

- Greatly reduces in-air re-fuelling and sortie times by providing closer to action airfields
- Greatly reduced time to target
- Greatly increased time over target

### Applications

Designed to serve specific needs for a particular service life, ECOBOND GS30's key engineering applications include:

- A 2 km runway completed within two weeks
- Dust free, all weather runways
- Fit for purpose design for expected loads rather than maximum overload situations
- Faster demolition and reclamation of decommissioned runways