

## Product Data Sheet: Basilisk Healing Agent (HA)

**Basilisk Healing Agent (HA) may be applied in repair mortars and concrete mixtures. It is composed of a bio-based biodegradable granular additive which enables self-healing (sealing and waterproofing) of cracks with a crack width of up to 1 mm. Permanent sealing occurs due to formation of Calcium Carbonate (limestone), which is a common material within the concrete matrix. HA is compatible with most commercially available concrete mixtures.**

### ***Technology***

Healing Agent consists of dormant bacterial spores and nutrients. When cracking occurs in the concrete structure and water penetrates these cracks the dormant bacteria are activated. The bacterial activity results in Calcium Carbonate formation within the crack until the crack is sealed and water is no longer able to penetrate.

### ***Advantages***

- Autonomous healing of cracks
- Permanent sealing
- Compatible with commercially available concrete mixtures
- Project specific tailor-made solutions

### ***Typical application field***

- Tunnel elements
- Liquid-containing reservoirs
- Basement walls
- Subsurface structures
- Marine structures
- Bridge- and parking decks
- Flooring systems

### ***Tailor made solutions***

Healing Agent can be added as a precautionary measure in the original mix design or as a tool for crack management. A Basilisk technical specialist will be able to advise a dosage for a typical application and concrete mixture, providing a tailor-made solution for your project. Additional testing with the specific mixture is always recommended.

### **Mixing**

Always add the Healing Agent to the wet concrete mixture. Once added the HA, apply mixing until a homogeneous mixture is obtained, typically a mixing time of approximately 3 minutes is sufficient depending on the type of mixture is used.

When adding HA to the concrete mixture at the ready-mix plant, always add the HA when the concrete is poured into the truck. Apply 3 minutes of high intensity mixing in the truck at the plant. During transport, keep the truck mixer running as usual. When at the site, apply additional 3 minutes high intensity mixing before pouring the concrete.

### **Dosage**

The dosage of HA may vary between 1 – 4% of the amount of Portland cement clinker in the concrete mixture depending on the desired healing capacity (crack width). For use of HA in mixtures with a composite cement type (e.g. blast-furnace slag cement) the percentage of Portland cement clinker should be at least 50%. For clinker-percentages lower than 50%, a lower maximum dosage is advised depending on the effect on strength development and workability. Additional testing with the specific mixture is recommended.

Typically, the dosage for precautionary purposes is between 4 – 7.5 kg/m<sup>3</sup> of concrete. Addition of HA to the concrete mixture may affect the workability and strength development slightly depending on the mixture. However, when using a dosage of 4 – 7.5 kg/m<sup>3</sup>, the influence can be considered negligible. For addition to new mixtures (with no experience with HA) or higher dosages, it is advised to test the effect on workability (slump) and strength development (3, 7 and 28 days).

### **Packaging**

Available in small and large bags:

- HA small bags: 2.5 kg (on demand)
- HA large bags: 25 kg

### **Storage**

Keep in a dry and well ventilated area in original packaging. Keep below 40 °C.  
Shelf life: 1 year after production date.

### **Health and environmental aspects**

Non-flammable / nonexplosive. For further health and environmental aspects, see Material Safety Data Sheet.