FREYSSICARE SOLUTIONS

BODYGARDE™ PROTECTION SYSTEM

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- Protects the entire bearing from ingress of dust, water, salt and contaminants.
- Extends the durability of structural components: bearings, seismic devices, STUs etc.
- Tool-free assembly, Easy to remove for inspections
- Made from innovative, breathable material to avoid condensation

Aim

Bodygarde™ system protects a bridge bearing from water, dust, salt, and debris which can result in the degradation of the components.
It also provides an ultimate dust protection as required by main international standards, including European EN 1337.

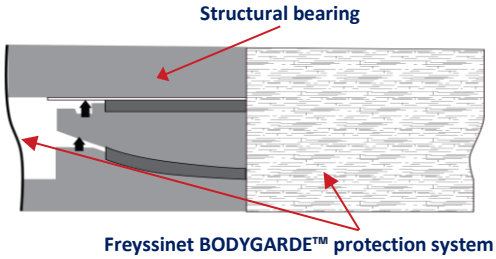
Description

The Bearing Bodygarde™ is an effective encapsulation cover which protects the bearing from external elements.
Custom-designed and made to suit all bearing types and sizes.
Made from materials specially selected to suit the application.

Bearing Bodygarde™

Benefits

- **Protects the bearing sliding material from dust** and contamination, contributing to maintain low friction during entire service life.
- **Improves whole life** of bearings when installed correctly.
- **Breathable** unlike other rubber cover. Air inside does not create corrosive microenvironment. Bearing is kept free of contamination.
- **Easy to remove** / replace during bearing inspections, thanks to unique system of zippers and clamps.
- **Allows free movements** of the bearing, in any directions, without compromising the effectiveness of protection.
- **Custom-designed** and made to fit all bearing types and sizes
- **Wind resistant**, fixing system tested to 135km/h wind speed
- Suitable for different bridge components, including bearings, shock-transmission units and seismic devices
- Like the utility belt, Bodygarde™ allows for the inclusion of internal or external pockets to hold temperature and humidity monitoring equipment so the conditions affecting the bearing can be analyzed.
- Covers can be washed where the environment is participially aggressive such as marine, industrial or areas of with high dust or contamination.



Freyssinet BODYGARDE™ protection system

Protection, prevention, enhancement

The Freyssicare collection offers effective protection to structural components by shielding or diverting rainwater and airborne contaminants, the main cause of corrosion. Maximizing the life of a structural component and avoiding preventable replacement/maintenance works considerably reduces environmental impact and cost to the owner.

Applications

Bodygarde™ protection system find application in all kind of newly-supplied bearings, and specifically:

- When bearings are exposed to high level of dust, like in urban areas.
- To protect bearings from water splash, like in maritime structures. Optionally, fully watertight cover solutions are also available.
- Whenever bearings are installed with sliding plate on the bottom, to ensure protection of the entire sliding surface.
- For highest level of protection of entire bearing and enhancement of its durability.

Bearing Bodygarde™ during bearing replacement works.

Protection system is also commonly used for remedial works on existing bearings, to provide them from degradation.

Sample specification clauses

- The structural product (bearings, seismic devices, STUs etc.) shall be designed and manufactured to incorporation of a Bodygarde™ protective system, as an ultimate dust protection as defined in EN 1337-2 and other specifications.
- Bodygarde™, shall be water resistant, breathable, and fixed utilising an easy release system of straps.
- Bodygarde™ protection system, will comprise of an access system which will resist the ingress of water but allow easy access for inspection.
- Bodygarde™ will allow for sealing where possible at the top and bottom surfaces of the bearing arrangement.
- Bodygarde™ will provide an optional internal storage area to allow the installation of internal monitoring or the use of reusable moisture reduction devices.
- Snagging during normal operation movements is undesirable so the Bodygarde™ will incorporate an anti-snag system so allowing movement of the structure.
- Covers shall not be constructed from non-breathable material and will not be rigid in construction as these could add additional maintenance requirements.

TETRON® SB spherical bearings with Bodygarde™ ready for shipment in Freyssinet factory

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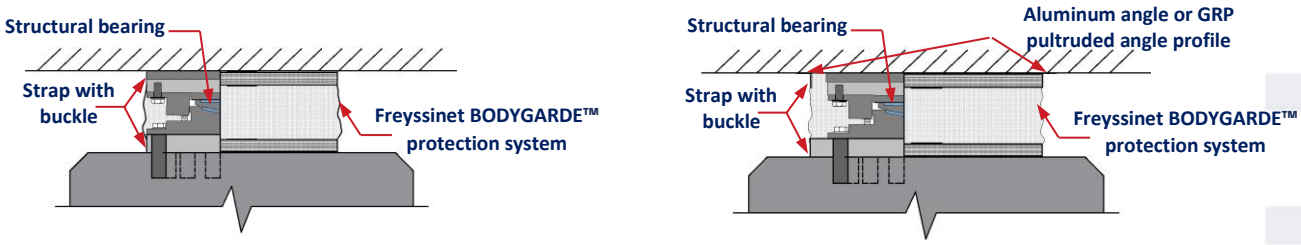
Material specifications

Bodygarde™ cover material complies with the following specifications:

- Tensile strength Warp tested to BS EN ISO 1421
- Coating adhesion according to BS EN ISO 2411
- Hydrostatic head test to BS 3424-26:1990: Method 29A or BS EN ISO 811
- Breathability (MVPI%) to BS 7209:1990: Appendix B or BS EN ISO 11092

Installation



Bodygarde installation options: directly on the bearing body (left), around bearing using angle profiles (right)

Enhanced maintenance - Life extension for existing bearings

Extending life of bearings reduces whole life carbon footprint. Freyssinet local units can assess the structure and work to maximize the life of the structural product.

Steps of life extension of a pot bearing damaged by corrosion

Testing

One of the most important features of the bearings covers is to resist strong winds.
BODYGARDE™ system has been subjected to an independent high velocity wind test, up to 135 km/h, in combination with dynamic water tightness test, according to United Kingdom's Centre for Window and Cladding Technology (CWCT) standards.

Wind and water spray test of Bearing Bodygarde™ above 135 km/h

Bodygarde™ systems are also tested for fitness on bearings, including full movement range.