

# **Building Product Information Sheet**

**BPIR** 

**PRODUCT FORM** 

## Product Name:

BIS-PE Gen 3 Pure Epoxy Injection Adhesive

#### Product Line:

**ICCONS** Chemselect

#### Product Description and its intended use:

Designed for applications fixing threaded rod, rebar and internally threaded sockets into concrete. Ideal for major civil and infrastructure projects such as tunnels, road and rail construction where design requirements specify 100-year design life. For new structures BIS-PE GEN3 Pure Epoxy is the only choice.

Key technical specifications:

- Product type: Chemical Anchor
- Load rating: Extreme
- Cracked concrete suitable: Yes
- Earthquake Seismic Approval: C1 and C2
- ETA Approved
- Fire Tested: Yes
- CE Certification: Yes
- Suitable for: Rebar, Threaded stud / Insert
- Working Time (mins) @ 20C (Dry Holes): 30 minutes
- Curing Time (mins) @ 20C (Dry Holes): 10 hours
- National Code Compliant: AS 5216
- Dustless drilling suitable
- Green Projects: LEED A+ Approved Low VOC
- Applications: overhead applications, water filled holes, core drilled holes.
- 100 Year Design Life in accordance with EAD 330499-01-0601 (ETA December 2018: Bonded Fasteners for use in Concrete).

## **Product Identifier**

BIS-PE Gen 3 Pure Epoxy Injection Adhesive

#### Place of Manufacture:

Overseas

#### Manufacturer:

ICCONS PTY LTD

#### Importer:

Sesto Fasteners Limited

Address:	5e Piermark Drive
	Rosedale, Auckland
Postcode:	0632
Website:	www.sestofasteners.co.nz
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# Date of Report:

25 / 09 / 2023



Class 1

## Relevant Building Code Clauses:

- B1 Structure: Performance clauses B1.1, B1.2, B1.3.1, B1.3.2, B1.3.3, B1.3.4
- B2 Durability: Performance clauses B2.2
- F2 Hazardous Building Materials: Performance clause F2.3.1
- H1 Energy Efficiency: Objective clause H1.1

#### Statement on how the building product is expected to contribute to compliance:

• B1 Structure: clauses B1.1, B1.2, B1.3.1, B1.3.2, B1.3.3, B1.3.4:

- ICCONS BIS-PE GEN 3 Pure Epoxy is compliant with the requirements referenced in the National Construction Code (NCC), AS 5216:2018 and European Assessment (ETA) Documents and Guidelines (ETA-19/0850 of 16 January 2020). AS 5216 (Design of post-installed and cast-in fastenings in concrete) outlines the minimum requirements for the selection, design and assessment of cast-in anchor channel and post installed fasteners.

- ICCONS BIS-PE GEN 3 Pure Epoxy is approved for use in cracked and non-cracked concrete C20/25 to C50/60.
- Suitable for use with Anchor Rods M8-M30, Rebar Ø8-32 mm and Threaded Sleeves M6-M20.
- Seismic Action C1: M8-M30, Ø8-32 mm.
- Seismic Action C2: M12-M24.
- Suitable for hammer/air drilled holes.
- Suitable for hollow drilled holes and diamond drilled holes.
- Suitable for installation in dry and wet holes, and installation in flooded holes.
- Suitable for overhead installation.
- Fire Rating F120 (2 Hours). Assessed for use in temperatures up to 160°C.
- Extreme strength load performance.
- Potable Water approved.
- Slow curing.
- CE certified.
- ETA assessed for the installation in flooded holes (ETA 19/0850).

- ICCONS BIS-PE GEN 3 Pure Epoxy holds ETA Assessment as a bonded anchor for use in concrete (ETA-19/0850 of 16 January 2020). Refer to document 'BIS-PE Pure Epoxy European Technical Assessment - Seismic Approval' for the performance data, available in the link below. Note, the performances given in Section 3 are only valid if the anchor is used in compliance with the specifications and conditions given in Annex B of the document:

https://sestofasteners.co.nz/products/bis-pe-gen-3-pure-epoxy?\_pos=1&\_sid=e10390dbc&\_ss=r

- Testing data is available for installation dimensions and design resistance in dry and wet holes across a range of embedment depths and concrete classes. Values vary based on application, rebar size and the conditions of the tests performed. Refer to document 'BIS-PE Pure Epoxy Technical Information' for the testing data available in the link below:

https://sestofasteners.co.nz/products/bis-pe-gen-3-pure-epoxy?\_pos=1&\_sid=e10390dbc&\_ss=r

- Processing time, curing time in dry holes and in wet holes varies based on concrete temperature. Cartridge Temperature must be between +5°C and +40°C. Refer to document 'BIS-PE Pure Epoxy Technical Information' (page 4) for these values, available in the link above.

- Combined tension and shear loading data is performed in accordance with New Zealand standard EN 1992-4:2018 (Design of concrete structures, Design of fastenings for use in concrete) and Australian standard AS 5216:2018 (Design of post-installed and cast-in fastenings in concrete. Refer to document 'BIS-PE Pure Epoxy Technical Information' for performance data, available in the link above. Refer to ICCONS Designfix software or contact ICCONS engineering department engingeering@iccons.com.au for further information.

#### • B2 Durability: Performance clauses B2.2

- ICCONS BIS-PE Gen 3 Pure Epoxy is ICCONS next generation pure epoxy that has been developed to provide ultimate performance. One of the only injectable concrete adhesive anchors with a true 100-year design life approval.

 Designed for applications fixing threaded rod, rebar and internally threaded sockets into concrete. Ideal for major civil and infrastructure projects such as tunnels, road and rail construction where design requirements specify 100-year design life. BIS-PE GEN 3 Pure Epoxy is also designed for use in high rise commercial construction when fastening structural steel connections such as steel beams, columns, sound barriers, balustrades and facades to concrete. ICCONS BIS-PE GEN 3 Pure Epoxy is the safest long-term solution. ICCONS BIS-PE GEN 3 Pure Epoxy is the most comprehensive injectable concrete adhesive on the market.

- 100 Year Design Life in accordance with EAD 330499-01-0601 (ETA December 2018: Bonded Fasteners for use in Concrete).

- ICCONS BIS-PE Gen 3 has been tested for application in a range of base material temperatures. Values vary based on application. Refer to document 'BIS-PE Pure Epoxy Technical Information' for temperature values for threaded rod and rebar applications, available in the link below:

https://sestofasteners.co.nz/products/bis-pe-gen-3-pure-epoxy?\_pos=1&\_sid=b4b0da728&\_ss=r

- ICCONS BIS-PE Gen 3 Epoxy has been tested for chemical resistance against a range of chemical substances. The data available is applicable to brief periods of chemical contact with full cured adhesive (e.g. temporary contact with adhesive during a spill). Refer to document 'BIS-PE Pure Epoxy Technical Information' (page 31 and 32), available in the link below: https://sestofasteners.co.nz/products/bis-pe-gen-3-pure-epoxy?\_pos=1&\_sid=b4b0da728&\_ss=r

• F2 Hazardous Building Materials: Performance clause F2.3.1

- ICCONS BIS-PE Gen 3 Epoxy is suitable for dustless drilling applications. No hole cleaning is required when used with ICCONS DE / Heller duster expert hollow drill bits. For ETA Assessment for use with ICCONS DE / Heller duster expert hollow drill bits (and class M Vacuum), refer to ICCONS Technical data sheet for further details.

- Chemwatch Hazard Alert Safety Data Sheets (ref. 5370-71, composition A and 5370-72, composition B) are available for this product according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements.

- ICCONS BIS-PE Gen 3 Epoxy (Component A) has been assessed under Chemwatch Hazard Alert Code 2 (moderate hazardous chemical). Refer to document 'Chemwatch SDS Form A' for guidelines of use, available below:

https://sestofasteners.co.nz/products/bis-pe-gen-3-pure-epoxy?\_pos=1&\_sid=b4b0da728&\_ss=r

- ICCONS BIS-PE Gen 3 Epoxy (Component B) has been assessed under Chemwatch Hazard Alert Code 4 (moderate hazardous chemical). Refer to document 'Chemwatch SDS Form B' available in the link above.

- Refer to the Chemwatch SDS forms for full guidelines regarding the relevant use, hazards identification, first aid measures, safe storage, and other hazardous product requirements.

- Good judgment, protective measures and care is required to ensure this product is used safely. Read both SDS documents, and apply all relevant safety requirements in use, storage and handling.

• H1 Energy Efficiency: Objective clause H1.1

- ICCONS BIS-PE Gen 3 Epoxy is A+ LEED tested as having low volatile organic compounds, suitable for green projects.

#### Limitations on the use of the building product:

- Working times and curing times are based on 20°C dry concrete. Curing time temperatures stated in document 'BIS-PE Pure Epoxy Technical Information' require that cartridge temperature must be between +5°C and +40°C.

- ICCONS / B+BTec BIS-PE GEN3 Injection mortar may be applied in the temperature ranges given in the technical document (page 3). An elevated base material temperature leads to a reduction of the bond resistance.

- The data provided in the above technical document is subject to the specific requirements as stated in (page 6). Correct setting, standard embedment depth and temperature ranges are required. See 'BIS-PE Pure Epoxy Technical Information' available in the link below:

https://sestofasteners.co.nz/products/bis-pe-gen-3-pure-epoxy?\_pos=1&\_sid=b4b0da728&\_ss=r

- Performance standard AS 5216:2018 covers post installed fasteners for 'Safety Critical' applications in concrete only. Safety critical applications are where failure may endanger human life, result in collapse or partial collapse of the structure, and/or cause considerable economic loss. All other types of fastening design including seismic design, fire design and stress development of rebar (ref. to AS3600) etc. For applications outside the scope of AS 5216:2018 / SA TS 101:2015 please refer to anchor manufacturers for guidance. Can I use a fastener with an ETA (European Technical Assessment/approval)? Yes, products that carry a current ETA comply with the requirements in AS 5216:2018 / SA TS 101:2015. A suitably qualified design engineer must determine suitability of these fasteners prior to use.

Refer to document 'NCC FAQ' for full information regarding the use of AS 5126:2018 products. Note, AS 5216:2018 is an Australian standard that establishes the minimum requirements for the selection, design and assessment of cast-in anchor channel and post installed fasteners. It does not hold binding legal obligation in the New Zealand market as in the Australian market, but is useful when considering the applicability of NCC complaint products to your application. If you are unsure, consult a suitably qualified design engineer prior to use. Available in the link below:

- ICCONS BIS-PE Gen 3 Epoxy is a Code 2 (moderate) (Comp. A) and Code 4 (extreme) (Comp. B) hazardous product, that must be handled, used, stored and disposed of safely. Good judgment, training, protective equipment and care is required. Refer to the documents 'Chemwatch SDS Form A' and 'Chemwatch SDS Form B' or information regarding proper use, required safety procedure and toxicity data, available in the link below:

https://sestofasteners.co.nz/products/bis-pe-gen-3-pure-epoxy?\_pos=1&\_sid=b4b0da728&\_ss=r

- ICCONS Chemselect products should be stored away from direct sunlight. Chemselect adhesives, foams and sealants & fillers are
perishable products. Shelf life, storage conditions and identification on packaging varies based on product. Refer to document
'Adhesive Shelf Life' as well as the information on the product label to determine the product's useful life, available in the link below:
https://sestofasteners.co.nz/products/bis-pe-gen-3-pure-epoxy?\_pos=1&\_sid=b4b0da728&\_ss=r

#### Design requirements that would support the use of the building product:

ICCONS BIS-PE Gen 3 Pure Epoxy Injection Adhesive has been designed for use in the following applications:

- Infrastructure construction (roads, viaducts, sound barriers, crash barriers, harbours, high rise construction, steel construction).

- Production Facilities (installation of cranes, robots, conveyor lines etc.)

Use Conditions:

- Installation in cracked and non-cracked concrete C20/25 to C50/60
- For anchor rods M8 M30, rebar 8 Ø32mm and threaded sleeves M6 M20
- Seismic action C2: M12 M12
- For hammer / air drilled holes
- For hollow drilled holes
- For diamond drilled holes
- Installation in dry, wet and flooded holes
- Overhead installation allowed.

- Refer to tech data sheet 'BIS-PE Pure Epoxy Technical Information' for more information, available in the link below:

https://sestofasteners.co.nz/products/bis-pe-gen-3-pure-epoxy?\_pos=1&\_sid=e10390dbc&\_ss=r

Features that support the use of the product:

- EXTREME Load Performance
- Complaint to the National Construction Code 2019
- ETA for 100-year design life in accordance with EAD 330499-01-0601
- Complies to minimum requirements in accordance with AS 5216:2018
- Designed for cracked and non-cracked concrete
- ETA assessed for dry, wet and flooded holes
- For use with hollow drill bits providing dustless solution
- Designed for use in sustained load application i.e. overhead
- Seismic C1 and C2 assessed for threaded rod and reinforcing bar
- Fire Rated (F120 2 Hours).
- ICCONS Designfix software available for easy and quick design calculations.
- Available in 440ml and 1400ml jumbo tube.

#### Installation requirements:

- Installation requirements and steps vary based on the application and method used (i.e. Hammer Drilling, Hollow Drilling). Refer to document 'BIS-PE Pure Epoxy Technical Information' for installation information, available in the link below:

https://sestofasteners.co.nz/products/bis-pe-gen-3-pure-epoxy?\_pos=1&\_sid=e10390dbc&\_ss=r

- Refer to ETA document (ETA-19/0850) 'BIS-PE Pure Epoxy European Technical Assessment - Seismic Approval' for detailed installation requirements, available in the link below:

www.sestofasteners.co.nz

https://sestofasteners.co.nz/products/bis-pe-gen-3-pure-epoxy?\_pos=1&\_sid=e10390dbc&\_ss=r

#### Maintenance requirements:

N/A, no on-going maintenance required.

## Is the building product subject to warning or ban under section 26?:

No