

# Building Product Information Sheet

## Class 1

**Product Name:**ThunderBolt<sup>®</sup>Pro-XTM Hex Head**Date of Report:**

01 / 09 / 2023

**Product Line:**ICCONS ThunderBolt<sup>®</sup> XTM**Product Description and its intended use:**

ICCONS Thunderbolt Pro-XTM Hex Head is the latest approved high tensile screw-in, self-tapping concrete and masonry anchor for use in a wide range of materials used in the construction Industry. Trusted by engineers and architects. Installation is quick and easy, simply drill, clean the hole and screw in the anchor. If you are after the best general purpose Screw Bolt in the business, ICCONS Thunderbolt Pro-XTM Hex Head is your anchor.

**Key technical specifications:**

- Product type: Concrete Screw Anchor
- Finish options: Zinc, Galvanised, Stainless Steel
- Head Type: Flush Hex Head, Countersunk
- Base material: Concrete, cracked concrete, stone, solid brick, hollow brick, aerated concrete
- Special features: Removable, European Assessment, Fire Rated
- Load performance: Medium loads
- Embedment depth, length and other values varies based on part number: refer to document 'ThunderBolt<sup>®</sup>PRO-XTM Technical Information' for specific values per part.

**Product Identifier**ThunderBolt<sup>®</sup>Pro-XTM Hex Head**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](http://www.sestofasteners.co.nz)  
Email: [orders@sestofasteners.co.nz](mailto:orders@sestofasteners.co.nz)  
Phone: +64 94158564  
NZBN: 9429041704103

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## 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, B2.3.1(a), B2.3.2
- C6 Structural Stability (Fire Safety): Performance clauses C6.1, C6.2
- F2 Hazardous Building Materials: Performance clause F2.3.1

## 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:
    - A select range of ICCONS Thunderbolt Pro-XTM bolts comply with AS 5216:2021 (Design of post-installed and cast-in fastenings in concrete). Refer to document 'NCC FAQ' in link below for further information: <https://sestofasteners.co.nz/collections/screw-bolts/products/screwbolt-hex-galv?variant=37578216538281>
    - NCC (National Construction Code) Compliant.
    - ICCONS Thunderbolt Pro-XTM bolts have been ETA assessed for cracked concrete and fire performance (ETA-18/0643). Refer to the ETA document 'ThunderBolt®PRO-XTM European Technical Assessment Approval' (dated 1 November 2018) in link below for further information:  
[https://sestofasteners.co.nz/products/screwbolt-csk-galv?\\_pos=1&\\_sid=ef5209877&\\_ss=r](https://sestofasteners.co.nz/products/screwbolt-csk-galv?_pos=1&_sid=ef5209877&_ss=r)
    - Flanged hex head design with locking serrations designed to resist loosening and improve dynamic load performance.
    - Dual Hardness technology for use in hard concrete.
    - Designed for high load, close to edge applications in both indoor and outdoor environment.
    - Chamfered tip centres anchor and aids installation.
  - B2 Durability: Performance clauses B2.2, B2.3.1(a), B2.3.2:
    - Available finishes: Zinc plated carbon steel, mechanically Galvanised carbon steel, Stainless Steel grade 316.
    - The two step heat treatment process provides greater ductility and ensures effective quick installation in all base material strengths. Refer page 5, document 'ThunderBolt®PRO-XTM Technical Information' for more information.
    - ThunderBolt PRO XTM eliminates hydrogen embrittlement issues. Hydrogen embrittlement corrosion occurs through diffusion of hydrogen into the metal as well as corrosion due to the application environment, brittleness in the metal creates weakness and cracks within the structure of the metal. Also known as Hydrogen assisted corrosion cracking, it fosters an environment in which the product can fail in an unpredictable manner, potentially creating a “safety critical” issue. This issue is controlled in the manufacturing process of the ThunderBolt®ProXTM removing this potential problem.
    - Material content (Refer page 2, document 'ThunderBolt®PRO-XTM Technical Information')
      - 1) Bi-metal screw anchor:
        - Steel grade: Austenitic (316)
        - Steel specification: A4 (1.4401) EEN10263-5
        - Tensile strength (min): 500N / mm<sup>2</sup>
        - Material of hardened tip: Steel according to EN10263-4
        - Coating: N/A
      - 2) Screw anchor:
        - Steel grade: Carbon steel
        - Steel specification: 10B21 (SAE-J403)
        - Tensile strength (min): 850N / mm<sup>2</sup>
        - Material of hardened tip: 10B21 (SAE-J403)
        - Coating: Zinc Electroplated (≥5µm) Mechanically Galvanised (45µm)
  - C6 Structural Stability (Fire Safety): Performance clauses C6.1, C6.2:
    - ICCONS Thunderbolt Pro-SXTB bolts have been ETA assessed for fire performance (ETA-188/0643). Refer to document 'ThunderBolt®-PRO-XTM European Technical Assessment Approval' in link below for testing data (Table C6 and C7):  
<https://sestofasteners.co.nz/collections/screwbolts/products/screwbolt-hex-galv?variant=37578216538281>
  - F2 Hazardous Building Materials: Performance clause F2.3.1:
    - ICCONS Thunderbolt Pro-SXTB bolts are safe when handled.
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## Limitations on the use of the building product:

- Refer to document 'How to Install', 'Install Torque Specs' and 'ThunderBolt®PRO-XTM Technical Information' for comprehensive installation instructions and cautions on use, available in the link below:  
[https://sestofasteners.co.nz/products/screwbolt-csk-galv?\\_pos=1&\\_sid=ef5209877&\\_ss=r](https://sestofasteners.co.nz/products/screwbolt-csk-galv?_pos=1&_sid=ef5209877&_ss=r)
- Use the correct diameter drill bit, drill to the required anchor embedment depth plus at least one anchor diameter deeper.
- Ensure hole is drilled perpendicular to the concrete surface with maximum deviation of up to 5° degrees. Failure to do so may cause anchor breakage
- Clean dust and other material from the hole before installation.
- DO NOT use a worn drill bit outside of drill bit tolerance specification. Worn Drill bits will affect the anchor installation either during installation or post installation.
- When installing with an Impact screw gun do not exceed the recommended torque specifications, failure to comply may result in anchor breakage.
- When securing the screwbolt, do not over tighten and exceed the recommended clamping torque requirements, failure to comply may result in anchor breakage.
- ICCONS Thunderbolt PRO bolts cut a thread in the base material drilled hole during installation and do not require an installation torque setting to ensure proper installation. A clamping torque is recommended for the ICCONS Thunderbolt PRO to ensure that the fixture being fastened is tight against the base material surface. Refer to the document 'Install Torque Specs' in the link below for maximum torque guide values:  
<https://sestofasteners.co.nz/collections/screwbolts/products/screwbolt-hex-galv?variant=37578216538281>
- Impact Screw Gun Torque specification: Always refer to specific product torque specifications prior to installation. This can be found in ICCONS® Technical Data Sheets, ICCONS® Product Guide or on the individual product labels. Link below:  
<https://www.iccons.com.au/support/downloads?type=tech>
- Note: The ThunderBolt® Pro-XTM non-approved anchor range may be used in applications that are considered NOT safety critical. For safety critical applications a design professional responsible for the application must review and approve the product as fit for purpose prior to use. Recommended loads (left) have an appropriate safety factor already incorporated in the loads based on the assessed mode of failure limits. Recommended loads (left) have been calculated based on single anchor installation at characteristic spacing and edge distance parameters. For specific design calculations please refer to ICCONS TDS 1028.1 for full details.

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

- ICCONS Thunderbolt Pro-SXTB have been designed for use in the following applications:
  - Structural fixings in cracked and uncracked concrete
  - Glazing, windows and storefronts
  - Racking and shelving
  - Attaching railings, handrails and balustrades
  - Timber frame construction in concrete
  - Steel frame construction to concrete
  - Facades, scaffolding, stadium seating
  - HVAC and fire services.
- Applicable base materials include:
  - Cracked concrete
  - Hollow Block
  - Non-Cracked concrete
  - Solid sand-lime brick
  - Hollow concrete block
  - Hollow sand-lime brick
- Mechanically galvanised - ideal for outdoor environments.
- Flanged hex head locking serrations designed to resist loosening and improve dynamic load performance.
- Chamfered tip centres anchor and aids installation.
- No expansion, ideal for close to edge applications.
- Removable.
- Asymmetric thread profile provides unparalleled bite in concrete.

Refer to document 'ThunderBolt®PRO-XTM Technical Information' through the link below for design information:

Refer to document 'ThunderBolt®PRO-XTM European Technical Assessment Approval' through the link below for design specification and testing data:

Refer to document 'Install Torque specs' through the link below for torque guide specifications:

<https://sestofasteners.co.nz/collections/screwbolts/products/screwbolt-hex-galv?variant=37578216538281>

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## Installation requirements:

- Refer to document 'How to Install', 'Install Torque Specs' and 'ThunderBolt®PRO-XTM Technical Information' (page 10) for comprehensive installation instructions and cautions on use, available in the link below:

[https://sestofasteners.co.nz/products/screwbolt-csk-galv?\\_pos=1&\\_sid=ef5209877&\\_ss=r](https://sestofasteners.co.nz/products/screwbolt-csk-galv?_pos=1&_sid=ef5209877&_ss=r)

- Suitable for installation with impact drivers.

- Hex Head Installation (refer to document 'ThunderBolt®PRO-XTM Technical Information' as above)

1. Position fixture.

2. With the correct diameter drill bit, drill a hole to a depth of at least 10mm deeper than the required embedment depth.

3. Clean dust and other material from the drilled hole

4. Measure the drill depth and ensure it's equal to h.

5. Screw in the anchor using a torque wrench or impact screw gun. Refer to installation data for details.

6. Continue to tighten the anchor until head is firmly seated against fixture. Do not overtighten.

- Specific installation requirements such as drill diameter and minimum drill depth varies based on the specific bolt finish and dimensions of the ThunderBolt used. Refer to document 'ThunderBolt®PRO Catalogue' in the link below for installation requirements per part.

[https://sestofasteners.co.nz/products/screwbolt-csk-galv?\\_pos=1&\\_sid=ef5209877&\\_ss=r](https://sestofasteners.co.nz/products/screwbolt-csk-galv?_pos=1&_sid=ef5209877&_ss=r)

- Excessive torque during installation may damage the anchor. Training, expertise and good judgment is required. Always adhere to anchor installation max. impact torque tool settings.

- Use the correct diameter drill bit.

- DO NOT use a worn drill bit outside tolerance specification.

- Ensure the hole is drilled perpendicular to the concrete, with a maximum deviation up to 5 degrees. Failure to do so may cause anchor breakage.

- Clean dust and other materials from the hole. Use ICCONS Blow Pump for a perfect result.

- Use a torque wrench or an impact driver

- Ensure correct clearance hole in the fixture

- Apply pressure against the fixing

- Rotate to engage the first thread

- Tighten the anchor until it is firmly seated

- When using an impact driver DO NOT overtighten! Follow the torque guidance table, failure to comply may result in anchor breakage. Refer to ICCONS TDS for further information, available in the link below:

<https://www.iccons.com.au/support/downloads?type=tech>

## Maintenance requirements:

N/A, no on-going maintenance required.

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

No

