Building Products Information Sheet – Class 1

Product Name:	SE72 Large Mesh 6060 X 2430 12.36 Sqm
Product Line:	Seismic mesh grade 500E
Product Description and its Intended Use:	Seismic® reinforcing steel welded mesh is a structural component of a building. Wire diameter 7mm. Dimension 6060mm x 2430mm. Pitch 200mm. Made from high tensile, high ductility Seismic® micro-alloy steel grade 500E AS/NZS 4671. Net cover area: 12.36 m2. Main cross bar section area 192.42mm2 Strength 96.21 [KN/meter width]. Weight per square meter 3.021Kg/m2 and weight 46.56Kg/sheet. Designation R500SE72. Minimum overlap required 250mm + overhang. Non-combustible. Test Certificates are available for every production batch of this product from United Steel IANZ accredited laboratory. Usage: Foundation, residential and commercial slabs, floors, walls, concrete column, bridges, structural walls, pre-cast walls. Purpose to reinforce concrete. Help concrete resist from cracking, and to improve the concrete's flexural strength. Designed to meet the department of building & housing (DBH) B1/VM1 compliance standard.
Product Identifier:	GTIN 09421027502765
Place of Manufacture:	New Zealand
Legal & Trading Name of Manufacturer:	United Steel Limited
Address for Service:	23 Trugood Drive, East Tamaki, Auckland 2013, New Zealand
Website:	www.unitedsteel.co.nz
Email Address:	akl.sales@unitedsteel.co.nz
Phone Number:	0800 800 649
NZBN:	9429032129502
Relevant Building Code Clauses:	Clause B1 Structure - B1.3.1, B1.3.2, B1.3.3 a,b,f,g,h,m,q), B1.3.4 Clause B2 Durability - B2.3.1 (a), B2.3.2 (a,b) Clause E2 External moisture - E2.3.3,E2.3.7 Clause F2 Hazardous building materials - F2.3.1

Building Products Information Sheet – Class 1

How our building product is expected to contribute to compliance:

Clause B1 Structure - B1.3.1, B1.3.2, B1.3.3 a,b,f,g,h,m,q), B1.3.4 According to paragraph 14.0 B1/VM1 of building code handbook an acceptable verification method for the measurement of mesh uniform elongation (%), tensile yield stress (MPa), ultimate tensile strength (MPa), ratio and shear strength of joins are contained in NZS 4671 Appendix A and Appendix B. United Steel mesh is manufactured according to standard AS/NZS 4671 appendix A and B and mechanical testing is conducted according to ISO 17025, ISO 15630-2, ISO 6892-1. Samples are tested by IANZ accredited United Steel testing laboratory. Product batch test certificates are available upon customer request. Seismic® mesh grade 500E is a ductile steel mesh that provides reinforcing for concrete structures such as slabs, walls, floors. The product increase concrete's flexural strength and helps to prevent cracking and failure. Seismic grade 500E has uniform elongation equal or greater than 10% and yield strength between 500 to 600MPa. This mesh complies with NZS 3604 minimum weight per m2 (2.27 kg/m2)

Clause B2 Durability - B2.3.1 (a), B2.3.2 (a,b) Once certified and installed seismic® mesh grade 500E has a durability minimum 50 years as per building code B2.3.1 (a) and NZS3101 3.3.1 (Storage time and conditions must be observed as per maintenance requirement in this document). Mesh exposed to saline spray such as marines, aggressive conditions, chemicals should observe special coat protection and concrete requirements as per NZS 3404, NZS3101, AS/NZS 4680. Minimum concrete require cover for mesh reinforcing must be observe as per NZS3101. Long time exposure to such elements can lead excessive corrosion and consequently compromise the integrity of the steel. Uniform elongation must be equal or greater than 10% and yield strength between 500 to 600MPa. Aging test (Agt) is conducted according to NZS 4671, ISO 17025, ISO 15630-2, ISO 6892-1. Long-term quality testing are performed by internal IANZ accredit laboratory and statistic data are available upon request.

Clause E2 External moisture - E2.3.3, E2.3.7

Reinforcing mesh is a steel product therefore it does not absorb or transmit moisture in any quantity. Mechanical properties are not affected by short term exposure to moisture. However in harsh environments with high exposure to saline and wet conditions or corrosive substances it is recommended to hot dip galvanize or epoxy coat before installation. The coating will provide an anti-corrosion protection.

Clause F2 Hazardous building materials - F2.3.1

Ductile steel mesh is safe to be handled. It does not emit any harmful substance, gas or liquid. When manually handling or installing the product it is recommended to wear personal protective equipment such as leather gloves, safety footwear, long sleeves and trousers. Mesh may have sharp wire edges that can cause cuts upon accidental contact with skin.

Building Products Information Sheet – Class 1

Limitations on the use of the building product:

The design of a structure and the specification of the relevant mesh shall be the responsibility of the design engineer. As product manufacturer United Steel Ltd has the responsibility to supply the mesh meeting the specification of AS/NZS 4671 Grade 500E The project should be calculated and designed considering main mesh cross bar section of 192.42 mm2 and load strength not greater than 96.21 [KN/meter with] and weight per square meter 3.021Kg/m2. United Steel batch test certificate certifies the mesh at time of manufacture and according to all requirements of ASNZS 4671. Welding of mesh is not permitted for assembly unless carried out in compliance with NZS 1554.1

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

The project design must comply with New Zealand Standards:

- NZS 3101 Concrete structures standard
- NZS 3109 Concrete construction
- NZS 1170 Structural design actions
- AS/NZS 1554 Welding of reinforcing steel
- AS/NZS 4671 Steel for the reinforcing of concrete
- NZS 3604 Timber-framed buildings
- NZS 3404 Steel structures standard
- AS/NZS 2312 Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings
- AS/NZS 2311 Guide to the painting of buildings
- AS/NZS 4680 Hot-dip galvanized coating details for galvanizing

The project design and execution must comply with New Zealand legislations. Special attention to:

- New Zealand Building Act
- New Zealand Building Code

Installation requirements:

Minimum overlap of 250mm plus overhang, except if the project design specifies differently, in which case the most conservative overlap should prevail. Use of leather gloves with long sleeves and trousers are recommended during the installation of the mesh as the product can contain sharp wire edges. Observe surface and exposure environment as per AS/NZS 3101 and apply recommendations as per such. Bar chairs, wagon wheel, spacers must be applied to secure position of the mesh and correct concrete cover as per AS/NZS 3101. Tie wires must be used to connect two or more steel fabric together and avoid movement during concrete pouring/vibration.

Building Products Information Sheet – Class 1

Maintenance Requirements:

Ensure the product is not exposed to corrosive chemical substances. In case the reinforcing steel is going to be stored during a long period (more than 2 years). We recommend to protect the mesh against weather conditions and direct rain. The steel mesh is a ferrous material that is susceptible to natural oxidation. Light rust doesn't affect mechanical properties of steel. However direct contact with saline conditions, abrasive, or chemicals should be observed. If required samples of mesh can be re-tested.

The building product is not subject to a warning or ban under section 26.

Issued: 17 November 2023