Euro Corporation Limited

Product Disclosure Information – Grade 300E MA reinforcing bars

Product Name	Product Line	Product Identifier
Tung Ho Vietnam 300E Rebar	Reinforcing steel-300E MA Grade	Refer to item codes

Legal and Trading name of the manufacturer

Place of Manufacturer: Vietnam

Legal Name of the manufacturer: Tung Ho Steel Vietnam Corp, Ltd.

Web site: https://www.thsvc.com.vn/

e-mail: Pingfuco@tunghosteel.com

Legal and Trading name of the importer

Legal Name of the Importer: Euro Corporation Limited, 21 Heritage Way, Otara, Auckland 2019, New Zealand.

Trading names of the Importer: Summit Steel & Wire, and Complete Reinforcing, 21 Heritage Way, Otara, Auckland 2019, New Zealand.

Web site: https://www.summitsteel.co.nz, www.completereinforcing.com

e-mail: sales@summitsteel.co.nz, quotes@completereo.co.nz

Product description and its intended use:

Tung Ho Vietnam rebars are manufactured to Grade 300E MA specification given in AS/NZS 4671:2019 standard.

Rebars are commonly used in the construction of reinforced concrete structures to provide additional strength and durability to the concrete elements.

Item codes:

Item Code	Bar Diameter	Length
D10-300	10 mm	6 meters
D12-300	12 mm	6 meters

Relevant building codes:

B1 Structure: Functional requirements clause B1.2 and performance clauses; B1.3.1, B1.3.2, B1.3.3(f) and B1.3.4(d)

B2 Durability: Functional requirements clause B2.2

S/NZS 4671:2019, Steel for the reinforcement of concrete.

NZS 3101-1 and 2:2006, Concrete Structure Standard, incorporation Amendment No. 1, 2, and 3.

AS/NZS 1554.3, Structural Steel Welding, Part3: Welding reinforcing steel

Contributions to compliance:

Rebars are essential components in the construction of reinforced concrete structures, helping them withstand various types of loads and forces, including bending, shear, and axial loads. Their placement and quantity depend on the specific structural design requirements and the intended use of the concrete element.

NZS 3101-part1:2006 specifies reinforcing bars are to comply to AS/NZS 4671 standard. Grade 300E MA meets the minimum product and testing requirements specified in AS/NZS 4671:2049 in order to satisfy the design requirements.

NZS 3101:2006 requires reinforcing steel to comply with AS/NZS 4671:2019. "E" stands for "Earthquake". Micro alloy (MA) process: trace elements such as vanadium and titanium used to provide strength and ductility.

Chemical Composition

AS/NZS 4671:2019, Clause 7.1, Chemical composition, and weldability

Element	C (Carbon)	S (Sulphur)	P (Potassium)	CEV (Carbon equivalent value) *
Max%	0.24	0.055	0.055	0.51

$$* \text{CEV}=C+\frac{Mn}{6}+\frac{(Cr+Mo+V)}{5}+\frac{(Ni+Cu)}{15}$$

Grade 300E MA rebars that comply to AS/NZS 4671:2019 standard is weldable as per AS/NZS 1554.3, Structural Steel Welding, Part3: Welding reinforcing steel.

Mechanical properties

AS/NZS 4671:2019, Clause 7.2.1, general

	Yield Stress (MPa)	Tensile Ratio	Uniform Elongation at maximum Load (%)
Minimum	300	1.15	15.0

Maximum	380	1.50	

Demonstration of Product conformity

Long term mechanical characteristic values determined statistically in accordance with AS/NZS 4671:2019, Clause B.5.2 and reported as per the clauses B.5.1 (a) and (b). Mill test certificates produced by steel mill holds good for any straight hot rolled rebars sold by Summit Steel & Wire.

Summit Steel & Wire provides LTQ statements as per AS/NZS 4671:2019, Clauses B.2, B.5.2, B.5.1 (a) and (b) for any decoiled rebars.

Mass tolerance

AS/NZS 4671:2019, Clause 7.3.1

The mass per meter length of any size bar shall have a tolerance of $\pm 4.5\%$

Grade 300E Identification – Bar Marking

AS/NZS 4671:2019, Clause 10, Identification, and certificates

Mill test certificates are available upon request for hot rolled straight rebars.

Scope of use

As per NZS 3101: Part2:2006, clause C5.3.2, amendment 3, ductile reinforcement, Grade 300E or Grade 500E, should be used in all structural elements, which may be subjected to:

(a) Yielding due to seismic forces or displacements
(b) Appreciable moment redistribution under any loading combination
(c) Redistribution of structural actions due to stage by stage construction or by creep redistribution of actions
(d) Opening of crack due to shrinkage, thermal and creep movement in the concrete, or due to settlement of foundations

NZS 3101: Part2:2006, clause C5.3.2 amendment A3 states where significant ductility is required then Grade 300E reinforcement is recommended. Grade 300E reinforcement has minimum ductility of 15% compared to 500E with minimum 10% ductility.

Some of the common application of 300E Grade Rebars are used in Reinforced concrete beams, columns, concrete slabs, concrete footings and retaining walls.

Before using 300E Grade Rebars used in any construction project, consult structural engineers and architects who are familiar with NZS 3101 and NZS 3109 standards and regulations. They can provide guidance on the appropriate specifications, placement, and installation to ensure it meets the required standards and contributes to the safety and longevity of the structure.

Limitations on the use of Rebars

Should the test unit not confirm to AS/NZS 4671 then the material of the test unit shall not be used in structural elements being designed to NZS 3101.

Avoid damage such as sharp dents to the surface and excessive bending and stretching as this may adversely affect the bars localised ductility thereby raising the risk of brittle failure.

AS/NZS 1554.3, clause 3.31 does not permit tack welding to any rebars used for structural or seismic purposes.

Processing of coiled steel shall only be carried out in such a way that ensures the material properties of the AS/NZS 4671:2019 standard is met.

NZS 3109 clause 3.3.8 does not permit cold re-bending or straightening of micro alloyed Grade 300E rebars that has been bent.

If reinforcement has been exposed to the weather for long periods, the surface may be corroded to the point where loose or flaking rust is evident on the surface. This is the point at which the surface condition of the reinforcement should no longer be regarded as acceptable, as the loose and flaking rust indicates a loss of steel material that can affect the design capacity, and it will also significantly affect the bond between the steel and concrete. If cleaning of the surface is proposed to remove the loose and flaking rust and reused after cleaning, then the mass of the steel bar after cleaning should be checked by calculating the mass per metre in accordance with Clause C3.3.3 of AS/NZS 4671 and ensuring that the value is no more than 4.5% less than the mass per metre values given in Table 7.5(A) of AS/NZS 4671 for the particular bar size.

Design requirements that would support appropriate use of Rebars.

Design details must be in accordance with New Zealand building code NZS 3101.1:2006, Concrete structures standard, Part 1: the design of concrete structures and Part2: commentary on the design of concrete structures.

Installation requirements

All activities such as bending, welding, and galvanising performed on reinforcing steel shall comply with NZS 3101 and NZS 3109 standards.

Proper installation requires attention to detail and adherence to NZS 3101 and NZS 3109 standards and engineering specifications. Here are some essential installation requirements for rebar:

Design and Engineering Specifications:

Follow the design and engineering drawings and specifications provided for the project, including the type, size, spacing, and location of the rebar.

Cleanliness:

Ensure that the rebar is clean and free from rust, oil, grease, or any other contaminants that could compromise the bond between the rebar and concrete.

Placement and Alignment:

Position the rebar accurately in accordance with the design. Use spacers or chairs to maintain proper cover (the distance between the rebar and the concrete surface) and ensure alignment.

Bending and Cutting:

Bend and cut rebar according to NZS 3109, table 3.1 requirements, and make sure the bends are smooth to avoid stress concentrations. Do not over-bend or straighten rebar excessively, as it can weaken the material.

Overlap and Splicing:

Follow specified overlap and splicing requirements when connecting rebar sections. Proper overlap and splice lengths are essential for maintaining the continuity of reinforcement.

Tying:

Securely tie rebar intersections and connections with wire ties or other approved fastening methods. Ensure that ties are tight enough to prevent movement during the concrete pouring process.

Spacing and Clearances:

Adhere to the specified spacing between rebar and clearances from edges and forms, ensuring that rebar is properly distributed throughout the concrete element.

Inspection and Quality Control:

Regularly inspect the rebar installation to confirm that it meets project requirements, industry standards, and local building codes. Address any discrepancies promptly.

Protection from Environmental Factors:

Protect rebar from exposure to corrosive elements, such as moisture and chemicals. Apply appropriate coatings or corrosion inhibitors as needed.

Documentation:

Maintain accurate records of rebar installation, including the type and size of rebar used, placement details, inspection reports, and any deviations from the original design.

Compliance with industry standards and local building codes is critical to guarantee the quality of the rebar installation.

Warning or ban under section 26 of the Building Act 2004

☐ Yes ☒ **No**

Revision History

Version number	Purpose / Change	Date
Version 1	New Release	09/04/2024