

BRICK TIE SPECIFICATION GUIDE

JUN25

AS 2699.1:2020 states that all wall ties (brick ties) are required to be tested and classified for durability and duty

Durability classes:

R1, R2, R3, R4 and R5

Duty classes:

Light, Medium and Heavy Duty.

Durability classifications detail the type and mass of the coating material

Durability Classification of masonry wall ties manufactured from steel sheet, extracted from Table 3.1 of AS 2699.1:2020

Durability class	Material or protective coating specification
R1, R2	Galvanised steel sheet to AS 1397 Z600 (minimum average coating thickness $\geq 42 \mu\text{m}$) Galvanised after manufacture to AS/NZS 4680 HDG300 (minimum average coating thickness $\geq 42 \mu\text{m}$)
R3	Galvanised after manufacture to AS/NZS 4680 HDG470 (minimum average coating thickness $\geq 65 \mu\text{m}$) Stainless steel grade ASTM A240 304 L
R4	Stainless steel grade ASTM A240 316 L

To conform to the requirements of this standard, VUETRADE supply wall ties in appropriate clearly marked packaging with easy access to further resources.



Duty classifies the mean strength rating of the wall tie

The Performance Criteria of AS2699.1 classifies Type A ties into light, medium or heavy duty classes.

The ties are classified in accordance with their mean strength as specified in the table below.

Type A veneer ties and Type A cavity ties mean strength (f_t) extracted from Table 2.1 of AS 2699.1:2020

Duty Classification	Mean Strength	
	Tension	Compression
Light Duty	0.30 kN	0.36 kN
Medium Duty	0.60 kN	0.72 kN
Heavy Duty	1.50 kN	1.80 kN

To determine what strength classification of masonry tie is required (such as light duty or medium duty), will be depend on the site application of the ties.

A qualified architect or structural engineer must be consulted to determine which brick tie rating is required during building construction. This usually derives from specific load demands of the building site and also from the requirements listed in NCC 2022 Housing Provisions 5.6.5.



As a supplier of wall ties VUETRADE is required to provide clear information and, upon request, a copy of testing reports to prove each of the wall ties duty and durability classifications.

However it is up to the entity installing the wall tie to determine which wall tie durability and duty classifications are required for use in their project, in order to comply with the relevant building codes and Australian Standards.

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National Construction Code 2022 – ABCB Housing Provisions

Table 5.6.5d from ABCB Housing Provisions of the NCC 2022 provides corrosion protection requirements for masonry wall ties in different exposure conditions along with recommended corrosion protections.

Table 5.6.5d Corrosion protection for wall ties

Exposure condition	Tie specification (minimum corrosion protection)
Areas less than 1km from breaking surf; or less than 100 m from salt water not subject to breaking surf; or within heavy industrial areas.	Grade 316L stainless steel; or engineered polymer complying with the requirements of AS 2699.1.
Areas 1km or more but less than 10km from breaking surf; or 100m or more but less than 1km from salt water not subject to breaking surf.	Sheet steel and bar ties galvanised after manufacture - 470 g/m ² on each side; or galvanised wire ties - 470 g/m ² coating mass; or Grade 304L stainless steel.
All other areas	Galvanised sheet steel - 300 g/m ² coating on each side; or sheet steel ties galvanised after manufacture - 300 g/m ² on each side.

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SELECTION OF SUITABLE CORROSION PROTECTION ON VUETRADE PRODUCTS

VUETRADE offers products designed for use specifically in each exposure condition with adequate corrosion protection as per the requirement. These are categorised into three main categories:



STANDARD / GALVANISED

- Internal / enclosed
- Exterior/exposed inland areas except if in contact with fresh water or non-saline wetting & drying



MARINE ENVIRONMENT – SS304

- Marine Environment – 100m up to 1km from a non-surf coast and from 1km up to 10km from a surf coast
- External applications in contact with freshwater or subject to non-saline wetting and drying
- Minimum steel grade required Stainless Steel 304



SEVERE MARINE – SS316




- Severe Marine – 100m from a non-surf coast and up to 1km from a surf coast
- Minimum Steel Grade Stainless Steel 316
- No 'Tea Staining', a superficial 'rust' look that occurs on lower grades of Stainless Steel including 304.

Using the chart below, the necessary level of corrosion protection can be easily identified. It is highly recommended to adhere and comply to the minimum requirement of corrosion protection as failure to do so may lead to severe corrosion that will critically alter the structural integrity of a building.

Corrosion protection usage outside of what has been recommended in this guideline should be consulted and confirmed by the site engineer/structural engineer to ensure building compliance.

These classifications are based on AS2699.1:2020.



VUETRADE ICON	DURABILITY CLASSIFICATION	MATERIAL
	R2	Z600 Galvanised
	R3	304 Stainless Steel
	R4	316 Stainless Steel