

# VUETRADE BRICK TIE DURABILITY CLASSIFICATION AND DUTY CLASSIFICATION GUIDE



## VUETRADE BRICK VENEER TIE DURABILITY CLASSIFICATION GUIDE

As per requirement from AS/NZS 2699.1:2000, all wall ties are required to be tested and classified in terms of durability classification of R0, R1, R2, R3, R4 and R5. These durability classifications details the type of coating material and its coating mass that is required in the manufacturing of wall ties as per Table 3 of AS/NZS2699.1:2000.

The table below shows the extraction of AS/NZS2699.1:2000 - Table 3 for durability classification of masonry wall ties.

*Table 1: Durability Classification of masonry wall ties manufactured from steel sheet, extracted from Table 3 of AS/NZS 2699.1:2000*

Durability classification	Material requirement
R0, R1, R2	(a) Masonry wall ties manufactured from galvanised steel sheet with a galvanized coating of at least grade Z600 (b) Masonry wall ties galvanised after manufacture from bare steel sheet and complying with AS/NZS 4680 except that the coating mass shall be at least 300g/m <sup>2</sup> on each side
R3	Masonry wall ties galvanised after manufacture from bare steel sheet and complying with AS/NZS 4680 except that the coating mass shall be at least 470g/m <sup>2</sup> on each side
R4	Stainless steel grade AS 1449/316 or AS 1449/316L

VUETRADE Brick Veneer ties are manufactured in Z600 Galvanised Steel to suit Durability Classification R2, Stainless Steel 304 for Durability Classification R3 and Stainless Steel 316 for Durability Classification R4. AS/NZS2699.1:2000 states that these durability classification R0 to R5 are based on the aerosol penetration as per clause 2.4.4 (f) as follow,







Durability Classification	Aerosol Penetration (g/m <sup>2</sup> /day)
R0	Nil
R1	10
R2	20
R3	60
R4	300
R5	Environment outside the above criteria

The application of different brick ties based on durability classification are dependent on the location where the brick tie will be used. Reference can be made to Figure 1 which illustrate the location of brick tie applications and its minimum recommended brick tie material; and Table 2 describes the list of VUETRADE brick ties range along with its respective durability classification.



Figure 1: VUETRADE Brick Tie Specification Area Chart.

Table 2: VUETRADE Brick Ties product range, materials and durability classification table

Product Code	Product Name	Material	Material Stamp	Durability Classification (colour code)	Box Quantity
VBTLDR2	Light Duty with nails	Z600 Galv.		R2	150
VBTMDR2	Medium Duty with screw	Z600 Galv.		R2	150
VBTLDR3	Light Duty with nails	SS304		R3	150
VBTMDR3	Medium Duty with screw	SS304		R3	150
VBTLDR4	Light Duty with nails	SS316		R4	150
VBTMDR4	Medium Duty with screw	SS316		R4	150

## DUTY CLASSIFICATION GUIDE

Apart from the durability classification, AS/NZS2699.1:2000 also requires supplier/distributor/manufacturer to run tests based on methodology listed in the standard's Appendices A to H in order to qualify a product to be 'compliant'. Appendix B in particular is necessary as a requirement to classify Type A ties (not required to have specific seismic design characteristic) into light, medium or heavy duty ties. From the standards, the classification of these ties are determined by the minimum characteristic strength of ties in tension and compression, listed in Table 1 of AS/NZS2699.1:2000. VUETRADE Brick Ties has verified test results on brick ties that classified brick ties into its light duty and medium duty classification depending on the return characteristic strength.

Extract of AS/NZS2699.1:2000 -Table 1 – Minimum characteristic strength of Type A veneer ties and Type A cavity ties

Classification	Minimum characteristic strength	
	Tension	Compression
Light duty	0.20 kN	0.24 kN
Medium duty	0.40 kN	0.48 kN
Heavy duty	1.00 kN	1.20 kN

To determine what ties duty builders would need to use i.e. light duty or medium duty, **are dependent on site application of brick ties**. Qualified architect, structural engineer or building surveyor would need to be **consulted to determine which wall tie duty rating are necessary in the building construction** which takes into account of various requirement such as wall tying requirements and relevant lateral bending capacity for the design of cavity walls. VUETRADE as the supplier of the VUETRADE brick ties are required to provide information of the brick tie duty classification and durability classification, but it is up to the application of brick tie during the wall and building integrity design to determine on what tie duty classification would be needed in order to comply to relevant building codes and Australian Standard.