



PRODUCT DATA

DuraSquirt® DTI (Direct Tension Indicator) Washer

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ASTM F959 Direct Tension Indicating (DTI) Washers

To be used with K0 structural bolting assemblies to ensure minimum tension has been achieved, while complying with the requirements of **AS/NZS 5131**.

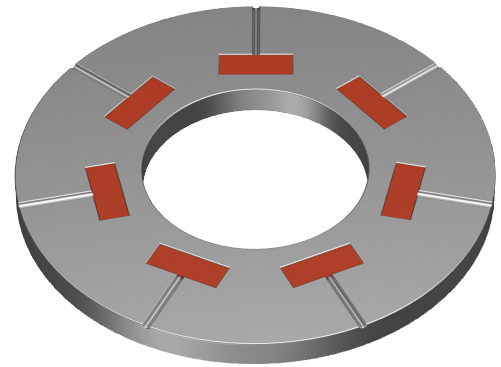
DuraSquirt® indication medium is designed to withstand the attrition from exhaust fans, winds, heavy rain, heat and cold, allowing inspection to take place at any time after installation.

Used for	 8.8 Class 8.8
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Finish	 MGAL Mechanically Galvanised
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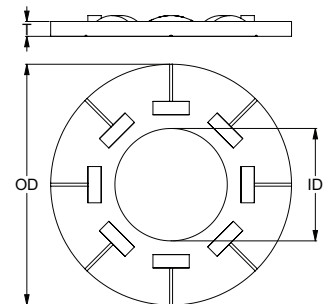
Mechanical Properties			
Nominal Size	Min. Bolt Tensions at Full Indication (1.05 x Min Required Bolt Tension) AS4100/NZS3404	Inspection Gap at Bolt Tension	Hardness (Max.)
	(kN)	(mm)	HRC
M12	54	0.13	37
M16	100		
M20	153		
M24	221		
M30	352		
M36	515		

Part	Diameter	No. of Bumps	Dimension			Min Bolt Tension (as per AS4100)
	Ø (mm)		OD (mm)	ID (mm)	T (mm)	(kN)
WDSTDGM12	M12	4	27.0	12.3	2.5	51
WDSTDGM16	M16	4	33.1	16.4	3.1	95
WDSTDGM20	M20	5	40.4	20.7	3.5	145
WDSTDGM24	M24	5	48.4	24.9	3.9	210
WDSTDGM30	M30	7	58.2	31.1	3.9	335
WDSTDGM36	M36	8	70.2	37.5	4.7	490



Unique 3-Character Trace Code

Provides full traceability and ASTM F959 quality documentation



You can download this Test Certificate and/or Report from our website:

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Pre-Installation

Pre-Installation Verification

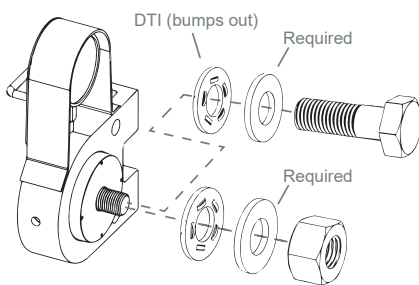
AS/NZS 5131 requires pre-installation verification to be completed on a minimum of 3 bolts per diameter and length of each heat number. Verification should be conducted by the installation crew using the same tools that will be used for installation. Bolt assemblies should be in the same condition as those to be installed. Do not use fresh bolts if those being installed have been exposed to weather.

The purpose of pre-installation verification is NOT to confirm product compliance or pass/fail bolting assemblies.

Testing is used to confirm the suitability of tooling, bolt assembly and installers prior to installation into steelwork.

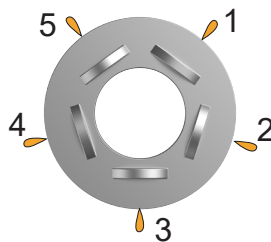
Load Cell Verification

Step 1



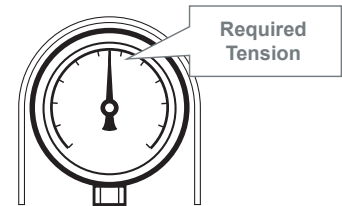
Assemble hardware in a tension calibrator

Step 2



Tighten until the DuraSquirt® DTI has orange visible at all bump locations.

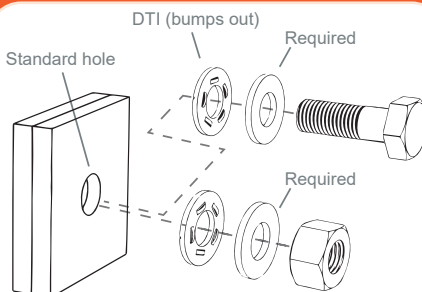
Step 3



Check that minimum tension has been exceeded.

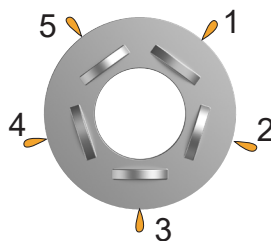
Visual Verification

Step 1



Assemble hardware in representative section of steelwork.

Step 2



Tighten until the DuraSquirt® DTI has orange visible at all bump locations.

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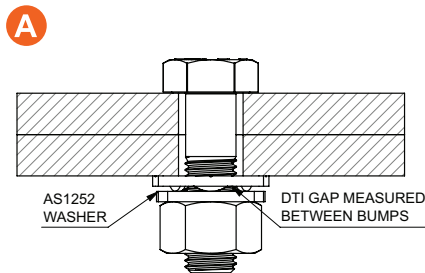
Installation Methods

Installation Guide

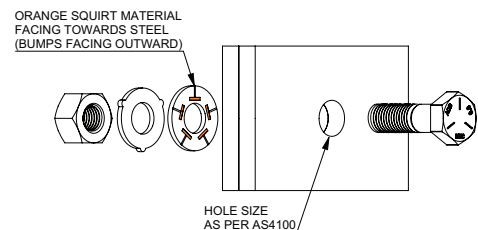
- 1. Assemble connection:** install bolt assembly into connection. DTI bumps MUST bear against the hardened washer.
- 2. Snug the array:** always snug an array of bolts before final tensioning. Snug tight is the tightness attained by a few strikes of an impact wrench or the full effort of someone using a standard podger spanner to bring the steel plies into firm contact. Make sure not to fully compress the DTI during this process.
- 3. Drive it 'till it squirts:** tighten the bolt assembly until the orange indicator media appears at all bump locations (full indication). When full indication is achieved no further inspection needs to be performed.

A Standard Installation

Durasquirt® DTI Washer at the nut end.

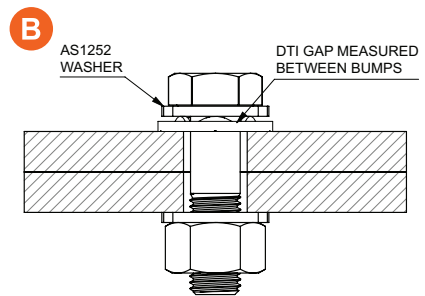


A Nut-side Installation (Recommended)

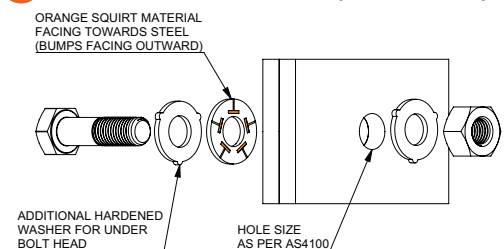


B Alternative Installation

An additional hardened washer is required under the head of the bolt to ensure the correct performance of the Durasquirt® DTI Washer.



B Bolt-side Installation (Alternative)



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