

PRODUCT DATASHEET

INSULATION RETAINING WASHER



1.0 General Product Application(s)

Evolution Insulation Washers are used in conjunction with various screw types to secure rigid PIR (Polyisocyanurate) and PUR (Polyurethane) insulation panels/ boards to various substrates (commonly timber, steel and masonry).

All washers have a recessed mounting point for the screw heads: this ensures that the screw head is below the surface of the washer and aids in reducing cold-bridging.

2.0 Technical Information

Both Polycaprolactam (commonly referred to as "Nylon 6") and Polypropylene are polymers which are stable under exposure to low levels of ionising radiation (Ultraviolet, X-Ray, etc).

They are also stable under exposure to certain aggressive chemicals.

Products have radial holes and other head surface features to allow render to "key" (mechanically adhere) to the washers.

Table 01: Technical Information

Product code	Nominal Head Diameter (mm)	Nominal Body Length (mm)	Extension to Fixing Length (mm)	Material	Colour	Encapsulated Head
RW5	46.0	5.0	2.0	Polycaprolactam	White	No
RW18		18.0	13.0			
RW35	50.0	35.0	20.0			
RW65		65.0	50.0			
RW105		105.0	80.0			
RW165		165.0	140.0			
EVNW35	35.0	N/A		Polypropylene	Black	
EVPPW50	50.0					
ECW60	60.0	12.0	10.0	Polycaprolactam	White	Yes
ECW90 * Used with ECW60	90.0	N/A	N/A	Polycaprolactam	White	Yes

NOTE: The results expressed in the datasheet are taken as mean loads from a range of empirical tests and are ultimate unfactored loads. Each specifier or end user should make his/ her own decision on what safety factors to use relevant to their design application (such as BS 5950, EN 1991, etc).

Table 02: Polycaprolactam Chemical and Physical Properties

Parameter	Data
Chemical Formula	(C ₆ H ₁₁ NO) _n
Density	1.084 g/ml
Melting Point	493 K
Autoignition Temperature	707 K
Tensile Strength	10.5 MPa

Table 03: Polypropylene Chemical and Physical Properties

Parameter	Data
Chemical Formula	(C ₃ H ₆) _n
Density	0.855 g/ml
Melting Point	403 K
Autoignition Temperature	533 K
Tensile Strength	40.0 MPa

3.0 Conjunction Products

Evolution Fasteners (UK) Ltd recommend that customers always select Evolution Fasteners screws and threaded fasteners to be used in conjunction with Evolution Fasteners Insulation Retaining Washers.

ABOUT OUR TESTING



All test results were derived from empirical testing performed by ETAS (Evolution Testing & Analytical Services), a UKAS (United Kingdom Accreditation Service) accredited testing laboratory (Accreditation No. 7485). The following tests were performed to the following standards.

Testing Procedures



7485

Test/ Parameter	Standard/ Method/ Procedure
Ultimate Tensile	ISO 6892-1: 2009 <i>"Metallic materials – tensile testing – Part 1: Method of test at room temperature".</i>
Ultimate Shear	MIL-STD-1312-13 <i>"Military Standard: Fastener test method (Method 13) Double shear test".</i>
Pull Out (Withdrawal Force)	EN 14566: 2009 <i>"Mechanical fasteners for gypsum plasterboard systems. Definitions, requirements and test methods".</i>
Pull Over	EN 14592: 2008 <i>"Timber structures. Dowel type fasteners. Requirements".</i>
Hardness	ISO 650 7-1: 2005 <i>"Metallic materials – Vickers hardness test – Part 1: Test method".</i>
Corrosion Resistance	EN ISO 9227: 2012 <i>"Corrosion tests in artificial atmospheres. Salt spray tests".</i>
Drilling Time Test	EN 14566: 2009 <i>"Mechanical fasteners for gypsum plasterboard systems. Definitions, requirements and test methods".</i>

Laboratory Contact Details

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