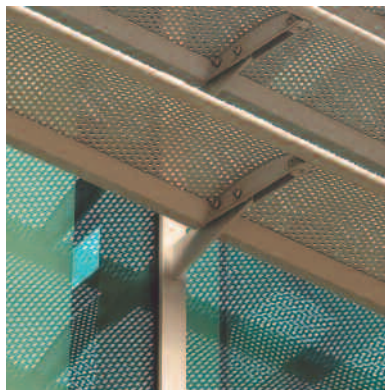


LEVOLUX

TRINITI® BRACKET



The Trinitati® Bracket is a revolutionary Solar Shading support system for curtain walling, that offers a range of impressive benefits:

- ◆ Significant reductions in cold bridging
- ◆ Excellent sound isolation
- ◆ Superior structural integrity
- ◆ Zero interstitial condensation



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Introduction

The Trinitati® bracket is a new Solar Shading support system, which has been specially developed and tested to ensure it satisfies the demands of new building codes and regulations. It is designed to limit solar heat gain, reduce structural heat loss, prevent interstitial condensation and absorb noise energy

When compared to a standard curtain walling bracket, the Trinitati bracket performs significantly better and is compatible with the full range of Levolut Solar Shading systems.

Features and Benefits

The Trinitati bracket has a unique design, which has three key attributes:

- ◆ **Thermal isolation** – reduces cold bridging and eliminates the risk of interstitial condensation.
- ◆ **Acoustic isolation** – prevents noise transmission.
- ◆ **Superior strength** – allows the bracket to accept greater loads, resulting in fewer fixings and penetrations into the building's envelope.



The Trinitati bracket is designed to accommodate the full range of Levolut Solar Shading systems.

System Construction

The Trinitati bracket incorporates the following components:

- ◆ Cast stainless steel spreader plate
- ◆ High performance Firmalyne thermal break
- ◆ Stainless steel adaptor
- ◆ High tensile steel bolts
- ◆ Firmalyne insulated bolt caps and sleeves
- ◆ Extruded aluminium projecting spigot



The Trinitati bracket is designed to suit all curtain walling arrangements, making it extremely versatile for designers and engineers alike.

System Construction

Levolut's Trinitati bracket has been tested by the Centre for Window and Cladding Technology (CWCT) at Bath University to assess its performance in comparison to a standard curtain walling bracket.

The test results proved conclusively that the Trinitati bracket performed significantly better than a standard curtain walling bracket in terms of reducing cold bridging, preventing interstitial condensation and absorbing noise energy.

Heat Transfer Analysis

The following environmental conditions were used to carry out the testing and subsequent analysis:

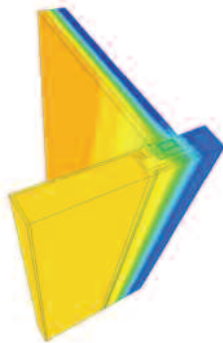
Cold-side	Environmental temp	Te 0.0°C
	Surface resistance	Rse 0.04m ² K/W
Warm-side	Environmental temp	Ti 20.0°C
	Surface resistance (parallel to glazing)	Rsi 0.13m ² K/W
	Surface resistance (perpendicular to glazing)	Rsi 0.20m ² K/W



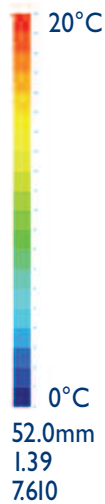
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TRINITI® BRACKET

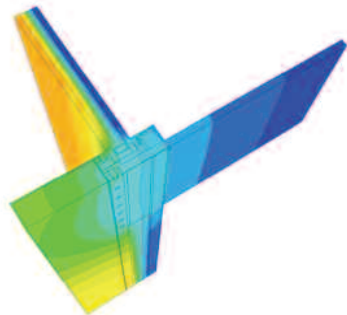
Standard Mullion with 6/16/6 DGU



Mullion system with no bracket
 Width of mullion
 Centre pane U value off DGU
 Frame U value, including edge effect



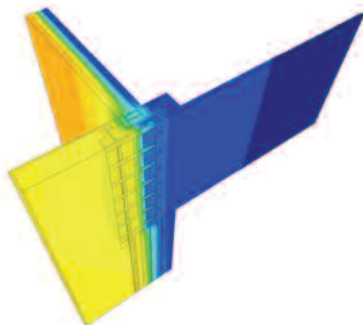
Mullion with DGU & standard bracket



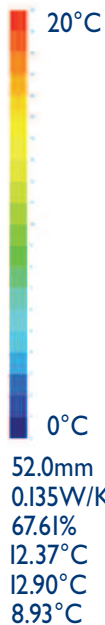
Mullion with standard fixing
 Width of mullion
 Point thermal transmittance, X-value
 X-value improvement
 Surface temperature, Surface A
 Minimum surface temperature, back box
 Minimum surface temperature, glazing



Mullion with DGU & Trinitix® bracket



Mullion with Trinitix bracket
 Width of mullion
 Point thermal transmittance, X-value
 X-value improvement
 Surface temperature, Surface A
 Minimum surface temperature, back box
 Minimum surface temperature, glazing



Levolux Timber Fins, Matrix XL and Glass Fins, secured using the Trinitix bracket at Exchange Place, Edinburgh. This helped the building achieve a BREEAM 'Excellent rating'.

Thermal Report

- ◆ The Trinitix bracket offers superior thermal performance compared to a conventional curtain walling bracket.
- ◆ Heat loss reduction achieved at the cold bridge point is improved by 70%.
- ◆ The minimum internal surface temperature of the back box is increased by 6.4°C.
- ◆ There is a zero risk of interstitial condensation at the surface between the spreader plate and the back plate (Surface A).

Acoustic Report

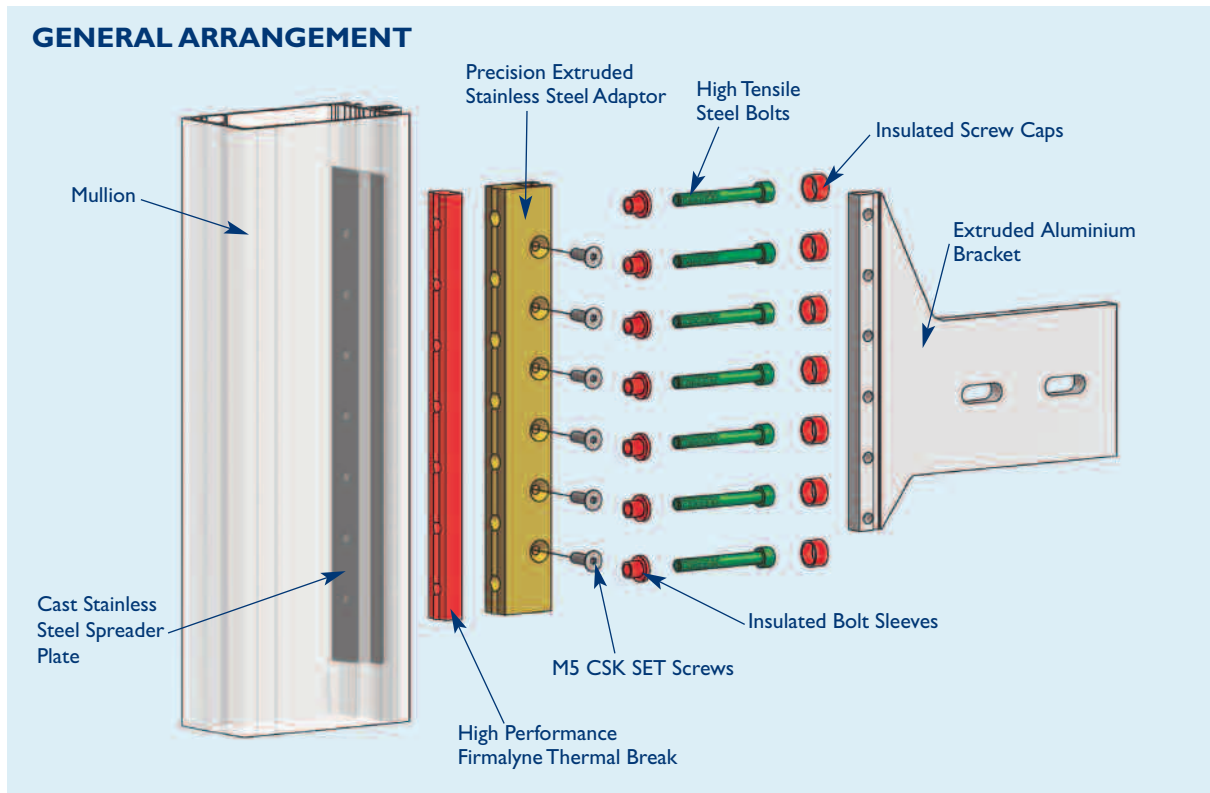
- ◆ The Trinitix bracket offers approximately 95% isolation of audible sound being transferred to the building structure.
- ◆ Sound isolation is effective between 2000-5500Hz (the human ear is most sensitive to this range of frequencies).
- ◆ This range also accounts for the frequencies that can be excited in louvres and associated structural components, due to external factors, such as wind, rain and heavy traffic.

The testing and results above are in accordance with BS EN ISO 10211-1&2, BS EN ISO 5250 and BS EN ISO 13788.



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SPECIFICATIONS

Item: Solar Shading Support System:

Fixing to the Curtain Walling System to be via the Levolux Trinitı® bracket, offering a thermally and acoustically broken, interstitial condensation risk-free system.

The system consists of an extruded, shaped, pre-drilled aluminium bracket, slid into an extruded stainless steel adaptor plate and positioned with countersunk stainless steel set screws. The adaptor is fixed using high tensile steel bolts through a Firmalyne high performance thermal and acoustic break into a cast stainless steel spreader plate within the curtain walling mullion. The bolts are further isolated using Firmalyne insulated bolt sleeves and screw caps.

The bracket should offer a point thermal transmittance X value of 0.135 W/K, 95% sound isolation for the frequency band 2000 Hz to 5500 Hz at the point of the bracket contact with the mullion and zero interstitial condensation risk. The brackets are to be free issued by Levolux to the curtain wall subcontractor/fabricator for installation.

UK Patent No. GB2444257, European design registration number 000832407-0001 and OCT Application No. PCT/PCT/GB2007/004489

THREE-YEAR WARRANTY

All Levolux systems are made with a high-grade material to exacting specifications. This enables us to provide a guarantee providing free of charge replacement parts should any system prove defective within three years of installation.

This guarantee is conditional on the manufacturers recommended fitting and operating instructions having been followed.

FURTHER INFORMATION

For further information on Levolux Solar Shading Systems and effective ways to control light, heat and glare please contact:

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