

# Window Sealing Systems Guide



Intelligent airtight  
and windtight  
building systems



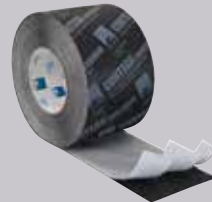
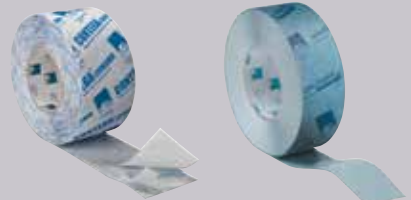
Phonotherm® 200

## PRODUCT GUIDE

Exterior  
Weather  
Protection

Self Sealing  
Sill Flashing

Interior  
Air Sealing





## Airtightness and Windows in Buildings

Research shows that up to half of all heat loss in buildings can be due to air leakage and uncontrolled ventilation. Insulation levels have increased substantially over the last few decades, but heated air is still escaping and can be pinpointed as a major source of energy loss. A typical house loses at least 10% of its heat through windows.

Thermally efficient quality windows also lead to significant improvements in comfort, air tightness and acoustics. With the introduction of more stringent requirements to reduce heat loss people of making significant investments in high performance windows.

We have come a long way from single glazed windows which attained a U value of 4.8W/m<sup>2</sup>K. Modern triple glazed windows can attain a U value of 0.78W/m<sup>2</sup>k or lower, a reduction of heat loss by over 6 times.

The thermal performance of the window though is very much dependent on how it is installed. This is particularly pertinent in not only new construction but particularly in the retrofit of moderately or poorly insulated buildings.

An incorrectly installed, high performance window, can lead to a substantial reduction in performance from 0.78W/m<sup>2</sup>K to 1.19W/m<sup>2</sup>K/ (Passivhaus conference 2012).

**A improved installation can lead to:**

- Improved comfort
- Reduced air infiltration and therefore reduce heat loss and save energy
- Faster return on investment
- Reduced risk of thermal bridging
- Reduced risk condensation and mould
- Improved acoustics
- More durable solution

This guide provides a brief synopsis of key junctions and details to realise optimum performance and continuity between windows and the building fabric utilising pro clima Intelligent airtight and windtight solutions and BOSIG PHONOTHERM compressive resistant insulation.

### Why pro clima?

- Pioneers of Intelligent airtight solutions for over 20 years.
- Independent consumer testing\* confirms pro clima is the 'Best Airtight Layer'.
- Every solution to achieving air & windtight constructions in block and timberframe buildings.
- Highest performing Intelligent Airtight Vapour Check - INTELLO PLUS
- Superior protection against condensation, mould & structural damage.
- Primary pro clima airtight tapes independently tested for an expected life of at least 100 years.
- High performance solid acrylic glues, tapes & grommets designed to last the lifetime of the building. -IAB approved Intelligent airtight & windtight system.
- Sentinel Haus Approved.
- pro clima window and door sealing components have been verified by IFT Rosenheim, the leading testing institute in Germany and Europe for windows and facades.

**BOSIG PHONOTHERM 200**, is a compressive resistant thermal insulation. BOSIG, the manufacturer of PHONOTHERM 200 was founded in Germany over 35 years ago.

This guide shows some key details and products required to build airtight and windtight buildings, reducing the carbon footprint of our built environment and making energy savings, leading to comfortable, healthy, low energy buildings.

### Environmental protection:

PHONOTHERM 200 is 100% recyclable. Phonotherm® 200 is free of formaldehydes and does not emit physiologically significant quantities of chemical substances.

### Processing:

Use conventional tungsten-carbide tipped woodworking machinery for working. In principle, we recommend a dust extractor.

The dust created during machining (sawing, grinding, milling) is physiologically harmless and not fibrous. Pre-drill before screwing or use self-drill screws. Phonotherm® 200 can be screwed, the material can be milled, ground and drilled and can be glued together.

### Gluing:

Gluing of butt joints of boards, cuts and strips is simple, using 2-component polyurethane adhesives for instance. Single or 2-component polyurethane adhesives are suitable for gluing of surfaces. For assistance please enquire about your specific application.

### Storage and transport:

Phonotherm® 200 should be stored dry and on a flat surface.



Thermal bridge free window installation with PHONOTHERM 200



## Ecological Building Systems Ltd

has been at the forefront of environmental and sustainable building product solutions for over a decade, gaining sole agency in Ireland and the UK for pro clima, the eminent and well established German brand of Intelligent Airtight and Windtight building solutions. Ecological also supply a range of natural insulations and GUTEX wood fibreboards.

### Technical Sales Service and Back Up

Ecological Building Systems is pleased to provide technical advice on how to incorporate pro clima products into different forms of constructions for new build and refurbishment projects.

- We offer a technical sales helpline.
- CPDs and airtight installation training.
- Copies of more in-depth relevant reports, studies and samples.
- Help and advice on meeting the requirements of Building Regulations.
- Specification Clauses available from GreenSpec.
- Hygro-thermal modelling using WUFI.
- Airtightness and Windtightness construction details available on request.
- Airtight installation DVD and videos available on our website.
- On-site support, where possible.
- U Value Calculations and Dew Point Assessments.
- Bespoke Training Centre and Showroom.
- Free in house drawing review and consultation service.

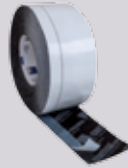


## Other pro clima Tapes and Glues



### CONTEGA SOLIDO SL D

Vapour resistant masonry plaster sealing tape. Includes double sided tape and may be pre applied to windows



### CONTEGA SOLIDO EXO D

Diffusion open masonry plaster sealing tape. Includes double sided tape and may be pre applied to windows



### TESCON INVIS

A black tape for use with SOLITEX FRONTA QUATTRO for concealing taping junctions



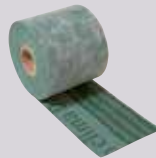
### ORCON MULTIBOND

Joint adhesive used to bond membranes & tapes directly from the roll to create adhesive bonds to many substrates.



### TESCON PROTECT

Pre-folded corner sealing tape



### DA-S

Airtight vapour check sealing strip

For Stockists contact

Ireland T. +353 (0) 46 9432104

UK T. +44 (0) 1228 711511

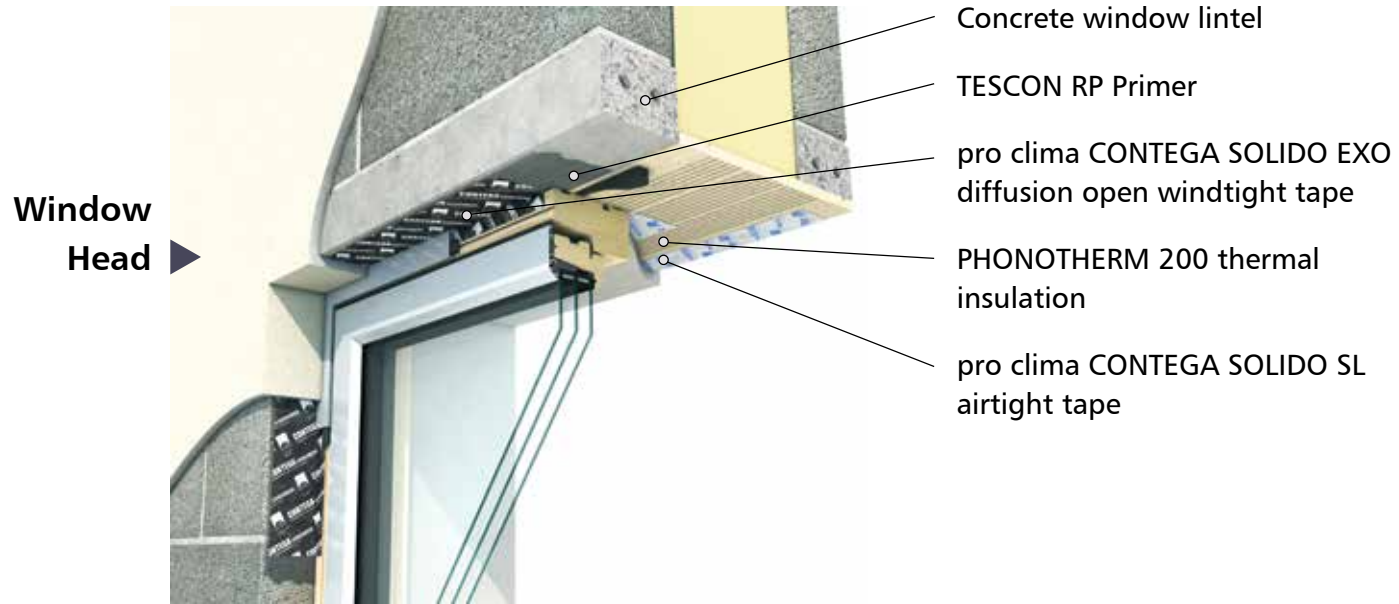
E. [info@ecologicalbuildingsystems.com](mailto:info@ecologicalbuildingsystems.com)

[www.ecologicalbuildingsystems.com](http://www.ecologicalbuildingsystems.com)




# Making Windows and Doors - Airtight, Windtight and Thermally Efficient

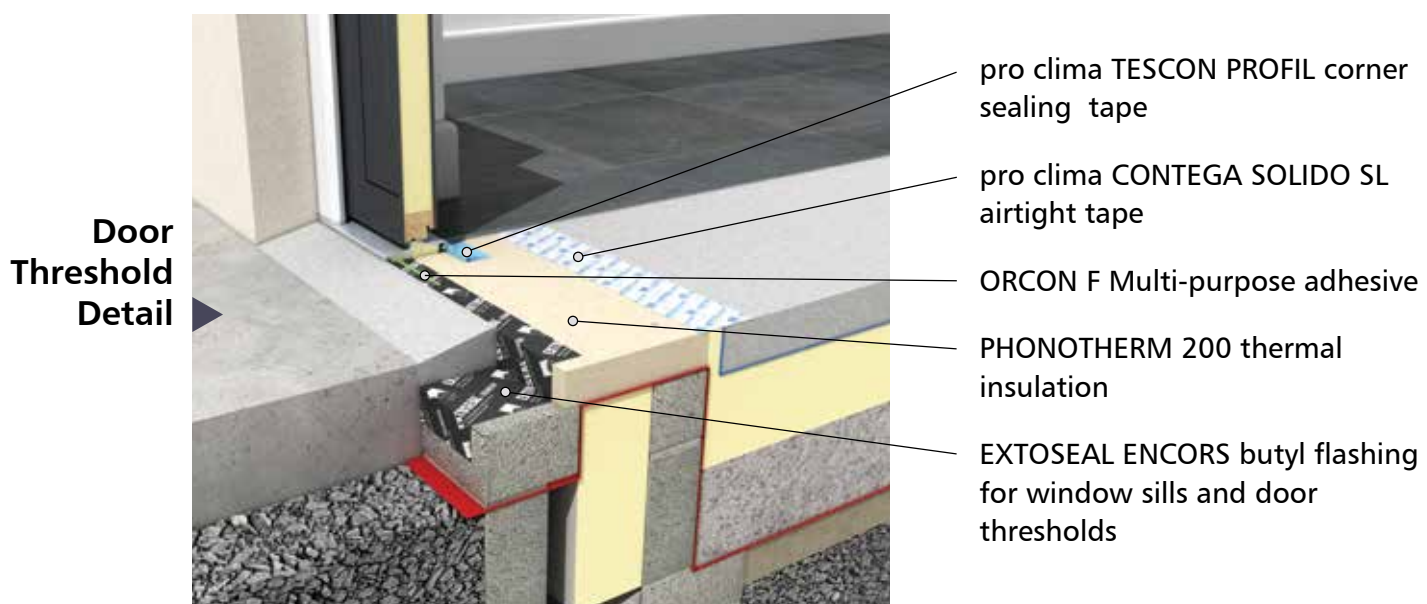
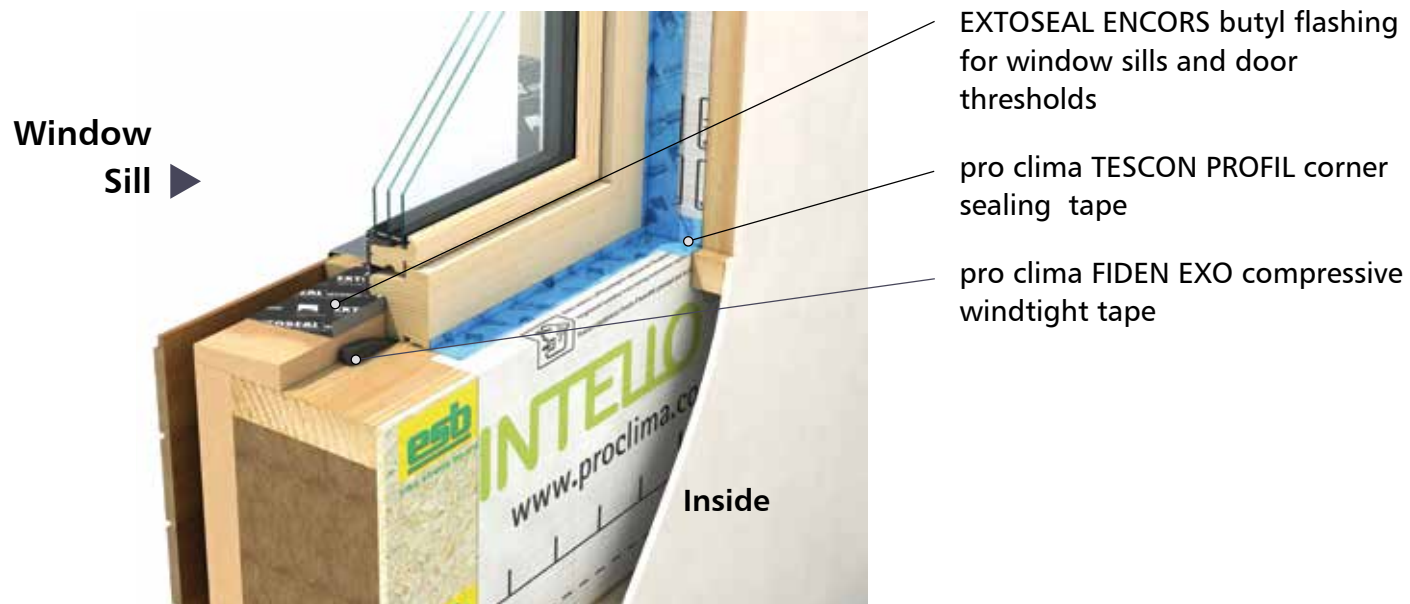
## Masonry Window Detail





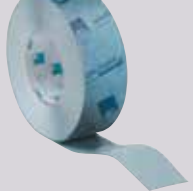

### Airtight Products for Masonry Walls

-  **CONTEGA SOLIDO SL**  
Vapour resistant masonry plaster sealing tape
-  **CONTEGA SOLIDO EXO**  
Diffusion open plaster sealing tape for windows
-  **TESCON PROFIL**  
Multi-purpose flexible corner sealing tape for windows, doors and corner joints
-  **CONTEGA FIDEN EXO**  
Pre-compressed joint sealing tape for exterior use
-  **PHONOTHERM 200**  
Compressive resistant thermal insulation

## Timberframe Window Detail



### Airtight Products for Timberframe Walls

-  **ORCON F**  
Multi-purpose adhesive
-  **CONTEGA SOLIDO SL**  
Vapour resistant masonry plaster sealing tape
-  **EXTONSEAL ENCORS**  
Butyl flashings for window sills and door thresholds
-  **TESCON PROFIL**  
Multi-purpose flexible corner sealing tape for windows, doors and corner joints
-  **CONTEGA FIDEN EXO**  
Pre-compressed joint sealing tape for exterior use