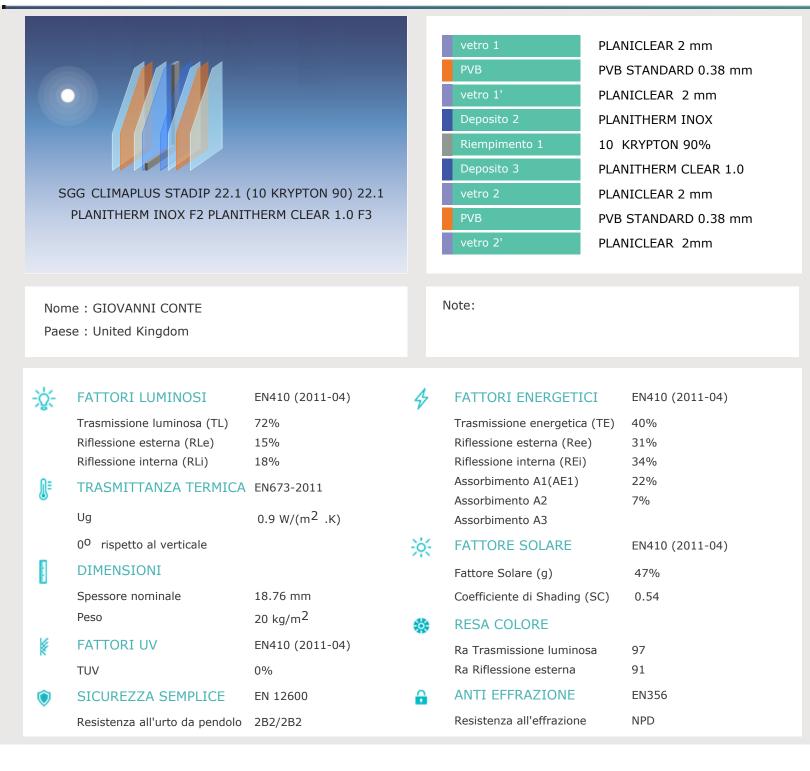
# **Calumen**Live



Questi valori sono calcolati in accordo con la norma EN 410-2011 e la EN 673-2011, con lo standard internazionale ISO 9050, la norma giapponese JIS R 3106/3107, la norma koreana KS L 2514/2525 e la norma NRFC-2010. Per quello che riguarda le norme europee, le tolleranze sono definite secondo la EN 1096-4. Resta intesto che l'utente deve controllare l'esattezza della combinazione della vetrata, particolarmente nei termini dello spessore e del colore. Inoltre è responsabilità dell'utente controllare che il risultato della combinazione dei vetri incontri i regolamenti nazionali, locali o regionali. I valori calcolati sono indicativi. Si prega di utilizzare il software certificato NRFC per valori certificati. Il metodo di calcolo per la EN 410-2011, EN 673-2011, la ISO 9050 (2003) m1.5 e la ISO 9050 (1990) m1.0 e i risultati di CalumenLive usano il motore di calcolo di Calumen 1.2.4 e sono stati validati dal TUV Rheinland Quality Report 11923R-11-33705. I valori di controllo solare sono calcolati secondo i regolamenti termici francesi del 2012 (RT2012). Gli indici di abbattimento acustico rappresentano le prestazioni testate in condizioni di laboratorio di una vetrata di misura 1,23x1,48m (EN ISO 10140-3 e EN 12578). Le misure in situ possono differire in funzione della vetrata, dell'ambiente, della qualità delle finestre, dell'installazione, della fonte del rumore, ... L'accuratezza degli indici resta nel range +/- 1dB (EN 12578). Tutte le immagini delle vetrate sono puramente rappresentative.







Four generations, one goal:

to bring artisan craft skills to levels of excellence in the design and production of wooden windows.

# <u>INDEX</u>

- 1\_ Models and their features
- 2\_ Technological innovations that make our windows unique
- 9\_ Product performance
- 11\_ Brief history of our company

# **MODELS AND THEIR FEATURES**

The *Conte1828* Sash Windows are manufactured **exclusively with electric motors**. This is a mandatory choice in order to obtain the highest technical and quality performance possible in terms of safety, energy saving, noise reduction and glass cleaning convenience. The electric motors allow to move without any effort even heavy windows equipped with anti-burglary and noise insulating glazing. Moreover they allow the use of **STP rubber gaskets** which guarantee a high sealing compared to the common brushes. The electric motors that we install offer an additional safety feature as it is almost impossible to lift the sashes manually: when the power is off the motors get stuck in position.

*Conte1828* does not manufacture manual Sash Windows because using the counterweights we can not get the same high performance as those obtained by the motorized Sash Windows.

| $\uparrow$             | Smart: Single-Hung box sash window with electric opening.  |
|------------------------|--|
|                        | <b>Classic</b> : Double-Hung box sash window with electric opening.  |
|                        | <b>Easy</b> : Single-Hung box sash window with electric opening and pivoting upper sash for an easy glass cleaning.                    |
|                        | <b>Elite</b> : Single-Hung box sash window with electric opening and both pivoting sashes for an easy glass cleaning.                  |
|                        | <b>Top</b> : Double-Hung box sash window with electric opening and both pivoting sashes for an easy glass cleaning.                    |
|                        | WITHOUT ELECTRIC MOTORS:   |
|                        | <b>Double Pivoting</b> : It looks like a sash window but it only has pivoting sashes for an easy glass cleaning and air recirculation. |
|                        | Single Pivoting: It looks like a sash window but it only has one pivoting sash for an easy glass cleaning and air recirculation.       |
| The specific technical | performance meant to improve the comfort in terms of sound insulation,   |

### AVAILABLE WITH ELECTRIC MOTORS ONLY:

The specific technical performance meant to improve the comfort in terms of sound insulation, heat insulation and safety are developed each time together with the customer to ensure a product tailored to every need.

Conte1828 | Electric Sash Windows

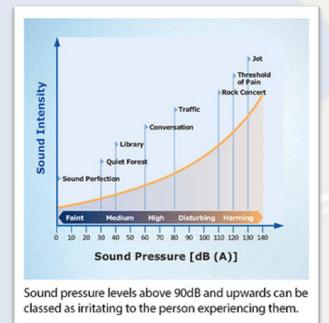
# TECHNOLOGICAL INNOVATIONS THAT MAKE OUR WINDOWS UNIQUE



Conte1828 | Electric Sash Windows



## Soundproofing

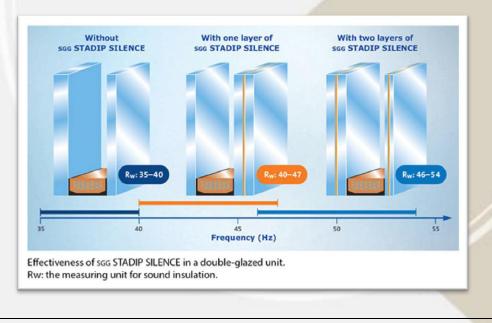


Noise pollution is a serious problem, especially in the metropolitan areas with high traffic congestion. High noise level in the home environment can damage health disturbing sleep and causing increased stress hindering study and concentration.

A comfortable noise level is about 35 dB during the day and 30 dB at night.

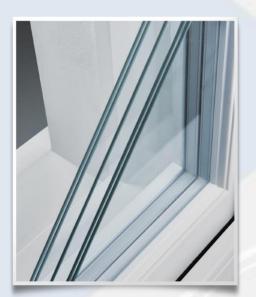
A sash window Conte1828 ensure high sound insulation because of the thickness of its wooden profiles, the patented locking system and the use of laminated glass with high noise reduction.

The **acoustic laminated glass** consists of two glass sheets glued together by a special plastic film which reduces the sound wave propagation from one glass to the other. It absorbs and weakens the sound energy and acts as a barrier against noise. This plastic film, called PVB, also offer additional properties like safety against the attempts at burglary and safety in the event of breakage retaining the shards. ANTI-INJURY CLASS 2B2.

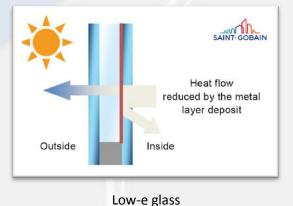


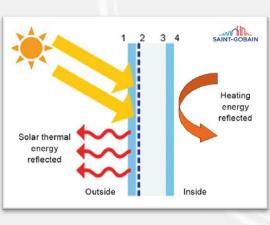


## Thermal insulation



Example of triple laminated glazing.





Selective glass

The sash windows produced by Conte1828 are leader in thermal insulation. The thickness of the wooden profiles, the patented locking system, the rubber gaskets and the low-e double-glazing all together guarantee the absence of unpleasant drafts of cold air and the reduction of heating costs in winter with an effective protection against the overheating in summer. This means:

- **cost savings** due to lower energy bills than those people pay with standard windows;
- more comfortable environment in winter with fewer drafts near doors and windows;
- less condensation because the inside of the glass it's warmer than a standard glazing, reducing internal condensation extending the life time of the windows.

Depending on the needs of the customer we can provide two different kind of glazing, with different benefits:

**Low-e glass**: thanks to a thin and transparent metal layer spread on the glass surface, this kind of glass reflects the warmth of the heating inside the dwelling not allowing it to escape through the windows.

At the same time, it allows light and solar heat to pass through the glass, heating the house and further contributing to the energy efficiency of the windows.

**Selective glass**: it allows to reflect up to 2/3 of the heat of the sun outwards, keeping the inside environment fresher, saving on air-conditioning costs.

We suggest to install them in those houses subject to an excessive overheating in summer. This special glass during the winter keeps the same properties of low-e glass, retaining the house heating inside.

The choice of the type of glass must be optimised taking into account the home geographical location, orientation and the size of the windows.

Conte1828 | Electric Sash Windows



## **Burglary protection**

We adopt many technical solutions to make our windows safe to break-in attempts:

Anti-breakage glass: the two glass panes that make up the safety glazing are equipped with a tough and elastic plastic film (PVB) which prevent the breakthrough of the glazing in case of accidental impact or attack by a

burglar. This film not only increases the shatterproof of the glass but, in case of breakage, it also binds the shards together, preventing injuries.



### Security Hardware:

only on the models equipped with tilting sashes we install several locking points to reduce the risk of unhinging by a burglar. By turning the handle the cams installed on the sash lock into the safety locking terminals fixed onto the frame, creating a strong and reliable locking.



**Block of the manual lifting**: both sashes can not be opened by hand, they can only be lifted or lowered by means of the electric motors (AC 220V).

Just in case we also manufacture a model that offers both the electric and the manual opening, by means of a dedicated handle.





## Conservation area design



As we manufacture bespoken windows we can replace any kind of existing ancient windows with full respect for the original design imposed in the **"Conservation Areas"**, also reproducing any kind of glazing bars and horns.

Even if the new sashes are much thicker than the old –to achieve higher soundproofing and thermal insulation– their design look like the ancient one.

Looking from the sidewalk nobody will notice any difference. Customers instead every single night and every cold and windy day will feel the difference of living in a more comfortable home.



Heritage glazing bars.



Heritage Horns.



## Ease of glass cleaning



Thanks to our **180° tilting hinges** the customer can now tilt inside-out the sashes to easily clean the outside glazing.

Easily, safely and cost saving: with the sash windows Conte1828 is no longer necessary to program any cleaning service.

The glass cleaning is further facilitated by the possibility of opening the glazing bars frame thus allowing to clean the entire surface of the glazing, without the burden of having to clean the individual glazing panels and the glazing bars corners.





### **Electric opening system**

Among the many reasons to choose the sash windows Conte1828, home automation plays a major role.

In our windows dedicated electric motors replace cords and counterweights, reducing the maintenance costs and making easier the use of the window, even for disabled people.



With this technology it is enough to push a button nearby the window to lift up or down both sashes individually. The upper sash can be controlled by the Home Automation in order to make an automatic and efficient air recirculation.

On certain models in the event of a power failure the lower sash can be moved manually, from inside only, by using the provided handle.



All mechanical components are hidden inside the frame; nonetheless they are easily accessible by for maintenance by removing the covers.

# **PRODUCT PERFORMANCE**

| Customer:       | Falegnameria Conte SAS          |
|-----------------|---------------------------------|
| Test report n°: | N901/16                         |
| Issued on:      | 2016-11-30                      |
| Trade name:     | Sash Windows                    |
| Test site:      | Alban Giacomo SPA               |
| Test method:    | PPD.PRO.122-123                 |
| Software:       | Frame Composer ver. 3.0.2. b408 |

- BS EN 14351-1:2010. Windows and doors – Product standard, performance characteristics.

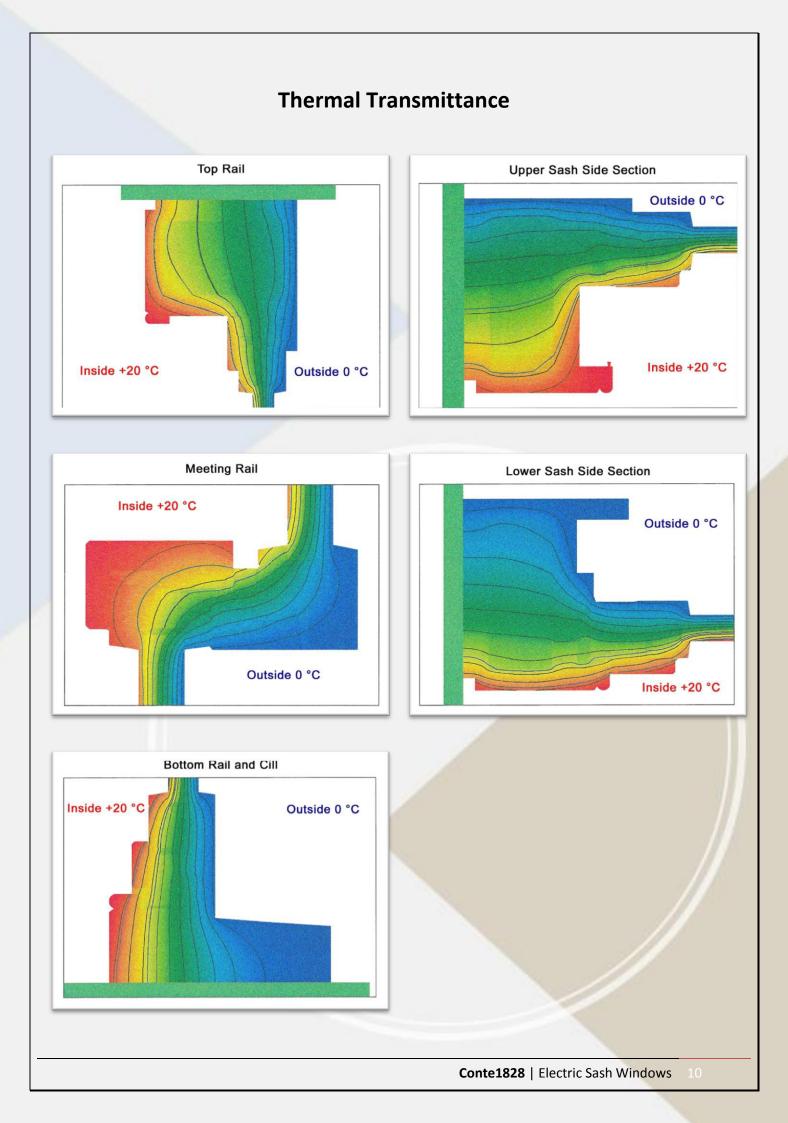
| Air permeability | 3  |  |
|------------------|----|--|
| Watertightness   | 7A |  |
| Wind resistance  | C4 |  |

- BS EN ISO 10077-1:2007. Thermal performance of windows, doors and shutters-Calculation of thermal transmittance.

Thermal transmittanceUw 1,5 Wm²KSample dimensions: b123cm X h148cm

Conte1828 | Electric Sash Windows 9

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# **BRIEF HISTORY OF OUR COMPANY**

### The origin of a tradition.

It all began in 1828, when Domenico Conte, holding an official certificate as "minusiere" (i.e. carpenter) obtained after a period of tough apprenticeship, started his own business by setting up a workshop on the hill above the old town of Castelnuovo (Northern Italy) where he produced wooden carts, barrels, doors, windows, stairs and furniture in baroque or classical style like those still visible in the parish church.



Domenico's work began from the tree which was often bargained for personally in the woods, followed by its felling, sawing and seasoning, which was natural and lasted one year for each centimeter of thickness. The business then passed from father to son up to Sergio who after the 2nd World War, to meet the growing demand generated by the economic boom, moved into a new bigger building making mainly internal doors.

At the end of the 80s Sergio's son, Giovanni, the current owner of the carpentry, moved the headquarter again to get enough room for the fast growing business. The purchase of CNC electronic equipment and the training of highly qualified workers revolutionized and kept the company in line with the times.

### The evolution and the future.

Currently Conte1828 works not only in Piedmont and in Italy but also in England, France and Switzerland. Always looking for the best raw materials -wood- and with the greatest attention to the eco-sustainability of the product and its duration. Not just the processing but also the finishing is done taking into account both the environment and the people, through the use of ecological paints guaranteed to last for many years.

The Carpentry draws its vital experience to its own business from the blend of past and future: CNC machines / the restoration of ancient doors. Windows with high thermal and acoustic performance / the production of traditional design such as '800 Liberty-style windows. At the base of each process, the wood. Less polluting than aluminum and plastic, Conte1828 only purchase wood from FSC<sup>®</sup> forests and carefully select it according to its type and quality. For aesthetic and performance results that defy time.



In the last few years thanks to Simone, the latest generation of the Conte's family, new energy and new inspirations are diversifying and enriching the production with processes and products designed for the latest High-Tech Energy-Efficient Homes (self-sufficient in fuel consumption).



Falegnameria Conte sas

Vat n°: IT01063480055 Tel: +39.011.9876.114 E-mail: <u>info@conte1828.com</u> Web: www.conte1828.com Address:

Strada della Gelosia, 3 Castelnuovo Don Bosco 14022 – AT Italy

### Performance Data

| Product                                       | Thickness<br>Available [mm] | Interior pane [mm]   | Gap           | Exterior pane [mm]   |
|---|-----------------------------|--|---------------|--|
| Pilkington <b>Spacia</b> ™                    | 6.2<br>8.2<br>10.2          | 3 mm Clear<br>3 mm Clear<br>5 mm Clear                             | 0.2 mm vacuum | 3 mm Pilkington <b>Energy Advantage</b> <sup>™</sup> Clear<br>5 mm Pilkington <b>Energy Advantage</b> <sup>™</sup> Clear<br>5 mm Pilkington <b>Energy Advantage</b> <sup>™</sup> Clear |
| Pilkington <b>Spacia</b> ™ STII               | 6.2                         | 3 mm Clear   | 0.2 mm vacuum | 3 mm single silver   |
| Pilkington <b>Spacia</b> <sup>™</sup> Cool    | 6.2<br>8.2<br>10.2          | 3 mm Clear<br>3 mm Clear<br>5 mm Clear                             | 0.2 mm vacuum | 3 mm single silver<br>5 mm single silver<br>5 mm single silver   |
| Pilkington <b>Spacia</b> <sup>™</sup> Shizuka | 9.2<br>9.7<br>10.7<br>11.7  | Laminates a pane to the exterior face of any of the above versions |               |  |
| Pilkington Super Spacia™                      | 8.2                         | 4 mm Clear   | 0.2 mm vacuum | 4 mm single silver   |

| Product                                       | Thickness [mm]    | Maximum Size [mm] | Minimum Size [mm] |
|---|-------------------|-------------------|-------------------|
| Pilkington <b>Spacia</b> ™                    | 6.2               | 2400 × 1500       | 335 × 120         |
| Pilkington <b>Spacia</b> ™                    | 10.2              | 3000 × 2000       | 335 × 120         |
| Pilkington <b>Spacia</b> <sup>™</sup> Cool    | 6.2/ 8.2/10.2     | 2400 × 1500       | 335 × 120         |
| Pilkington <b>Spacia</b> <sup>™</sup> Shizuka | 9.2/9.7/10.7/11.7 | 2400 × 1240       | 335 × 120         |
| Pilkington Super Spacia™                      | 8.2               | 2400 × 1500       | 335 × 200         |

|  |                   | Visible       | e Light (%) | )        |               | Solar Ener  | gy (%)                   |                       |
|--|-------------------|---------------|-------------|----------|---------------|-------------|--------------------------|-----------------------|
| Product                                    | Thickness<br>[mm] | Transmittance | Reflec      | tance    | Direct        | Reflectance | Total solar heat         | Ug-value<br>[W/m²K]** |
|  | []                | Transmittance | External    | Internal | transmittance | Reflectance | transmittance (g-value)* | [,]                   |
| Pilkington <b>Spacia</b> ™                 | 6.2               | 75            | 16          | 17       | 62            | 15          | 68                       | 1.2                   |
| Pilkington <b>Spacia</b> <sup>™</sup> STII | 6.2               | 78            | 13          | 14       | 62            | 17          | 67                       | 1.1                   |
| Pilkington <b>Spacia</b> ™ Cool            | 6.2               | 70            | 23          | 20       | 48            | 34          | 53                       | 0.9                   |
| Pilkington <b>Spacia</b> ™ Shizuka         | 9.2               | 73            | 15          | 17       | 56            | 12          | 63                       | 1.2                   |
| Pilkington Super Spacia <sup>™</sup>       | 8.2               | 69            | 23          | 20       | 47            | 32          | 52                       | 0.7                   |

\* calculated value in general accordance with EN 410

 $\ast\ast$  measured value in accordance with EN 674

| Outer Pane                                       | Cavity – Gas Fill Inner Pane |  | Ug-value [\ | [W/m²K]*** |
|--|------------------------------|--|-------------|------------|
| Outer Pane                                       | Cavity – Gas Fill            | Inner Pane   | Argon       | Krypton    |
| 4 mm Pilkington <b>Optitherm</b> <sup>™</sup> S3 | 16 mm                        | Pilkington <b>Spacia</b> <sup>™</sup> ST II 6.2 mm | 0.6         | 0.6        |
| 4 mm Pilkington <b>Optitherm</b> <sup>™</sup> S3 | 12 mm                        | Pilkington <b>Spacia</b> <sup>™</sup> ST II 6.2 mm | 0.7         | 0.6        |
| 4 mm Pilkington <b>Optitherm</b> <sup>™</sup> S3 | 8 mm                         | Pilkington <b>Spacia</b> <sup>™</sup> ST II 6.2 mm | 0.8         | 0.6        |
| 4 mm Pilkington <b>Optitherm</b> <sup>™</sup> S1 | 16 mm                        | Pilkington <b>Spacia</b> <sup>™</sup> ST II 6.2 mm | 0.6         | 0.6        |
| 4 mm Pilkington <b>Optitherm</b> <sup>™</sup> S1 | 12 mm                        | Pilkington <b>Spacia</b> <sup>™</sup> ST II 6.2 mm | 0.6         | 0.6        |
| 4 mm Pilkington <b>Optitherm</b> <sup>™</sup> S1 | 8 mm                         | Pilkington <b>Spacia</b> <sup>™</sup> ST II 6.2 mm | 0.7         | 0.6        |
| 4 mm Pilkington <b>Optitherm</b> <sup>™</sup> S3 | 16 mm                        | Pilkington <b>Spacia</b> <sup>™</sup> Cool 6.2 mm  | 0.5         | 0.5        |
| 4 mm Pilkington <b>Optitherm</b> <sup>™</sup> S3 | 12 mm                        | Pilkington <b>Spacia</b> <sup>™</sup> Cool 6.2 mm  | 0.6         | 0.5        |
| 4 mm Pilkington <b>Optitherm</b> <sup>™</sup> S3 | 8 mm                         | Pilkington <b>Spacia</b> <sup>™</sup> Cool 6.2 mm  | 0.7         | 0.6        |
| 4 mm Pilkington <b>Optitherm</b> <sup>™</sup> S1 | 16 mm                        | Pilkington <b>Spacia</b> <sup>™</sup> Cool 6.2 mm  | 0.5         | 0.5        |
| 4 mm Pilkington <b>Optitherm</b> <sup>™</sup> S1 | 12 mm                        | Pilkington <b>Spacia</b> <sup>™</sup> Cool 6.2 mm  | 0.6         | 0.5        |
| 4 mm Pilkington <b>Optitherm</b> <sup>™</sup> S1 | 8 mm                         | Pilkington <b>Spacia</b> <sup>™</sup> Cool 6.2 mm  | 0.6         | 0.5        |

\*\*\* calculated in general accordance with EN 673



#### Test report number N1238/18

UNI EN ISO 10077-2:2012 - Calculation of thermal transmittance - Numerical method for frames

| <ul> <li>date of test:</li> </ul> |
|-----------------------------------|
|-----------------------------------|

2016-12-05

- test procedure: PPD.PRO.122-123

- software:

Frame Simulator Pro ver. 3.1.3 b408

#### - Results:

| section | description     | U <sub>f</sub><br>Wm <sup>-2</sup> K <sup>-1</sup> | B <sub>f</sub><br>m | reference attachments |
|---------|-----------------|--|---------------------|-----------------------|
| 1       | lower section   | 1,3  | 0,193               | 17 / 32               |
| 2       | side section 4  | 1,4  | 0,270               | 19 / 32               |
| 3       | side section 5  | 1,4  | 0,270               | 21 / 32               |
| 4       | side section 6  | 1,4  | 0,268               | 23 / 32               |
| 5       | side section 7  | 1,5  | 0,267               | 25 / 32               |
| 6       | upper section   | 1,5  | 0,275               | 27 / 32               |
| 7       | central section | 2,8  | 0,074               | 29 / 32               |

- Legenda:

U<sub>f</sub> thermal transmittance of section

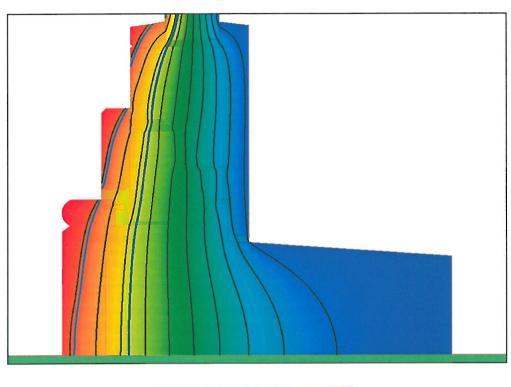
B<sub>f</sub> lenght of section

Laboratory technician Jacopø Amadio 

Unless otherwise indicated the measurement uncertainty (U) is expressed as expanded uncertainty with a k = 2 coverage factor (confidence level of 95%)

RDP.PRO.N123 rev. 03 - 2016-11-02

| Nome progetto:<br>Trasmittanza (Uf):<br>Conduttanza (Lf2D): | sezione inferior<br>1.2950 W/m²K<br>0.4299 W/mK | 20.00 °C<br>0.00 °C | Frame     |
|---|---|---------------------|-----------|
| Lunghezza telaio (Bf):                                      | 193.00 mm                                       |                     | Simulator |



0.02

### Dettagli nodo

|  | 00110       |  |  |  |
|--|-------------|--|--|--|
| Primitive utilizzate per la simulazione:               | 29142       |  |  |  |
| Larghezza telaio (Bf):                                 | 193.00 mm   |  |  |  |
| •  | 190.00 mm   |  |  |  |
| Larghezza visibile pannello isolante (Bp):             |             |  |  |  |
| Spessore pannello isolante (Dp):                       | 31.00 mm    |  |  |  |
| Condizioni al contorno esterne:                        |             |  |  |  |
| Temperatura:   | 0.00 °C     |  |  |  |
| Resistenza superficiale:                               | 0.040 m²K/W |  |  |  |
|  |             |  |  |  |
| Condizioni al contorno interne:                        |             |  |  |  |
| Temperatura:   | 20.00 °C    |  |  |  |
| Resistenza superficiale:                               | 0.130 m²K/W |  |  |  |
| Unidità:   | -           |  |  |  |
|  |             |  |  |  |
| Risultati calcolati secondo la UNI EN ISO 10077-2:2012 |             |  |  |  |
| -  |             |  |  |  |

| Differenza di temperatura interno/esterno: | -                         |
|--|---------------------------|
| Conduttanza 2D (Lf2D):                     | 0.4299 W/mK               |
| Trasmittanza (Uf):                         | 1.2950 W/m <sup>2</sup> K |

Lista materiali:

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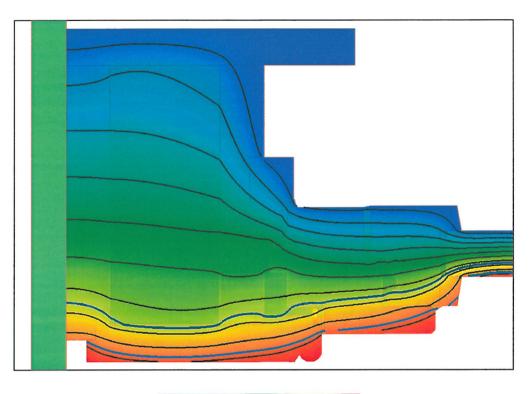
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17 di

RDP r<sup>4</sup> N1238/18

| Nome progetto:  | sezione laterale<br>4                    | 1                        |                     |                    |
|---|--|--------------------------|---------------------|--------------------|
| Trasmittanza (Uf):<br>Conduttanza (Lf2D):<br>Lunghezza telaio (Bf): | 1.3803 W/m²K<br>0.5527 W/mK<br>270.00 mm | T interna:<br>T esterna: | 20.00 °C<br>0.00 °C | Frame<br>Simulator |



0.00

### Dettagli nodo

| •  |                           |
|--|---------------------------|
| Primitive utilizzate per la simulazione:           | 23884                     |
| Larghezza telaio (Bf):                             | 270.00 mm                 |
| Larghezza visibile pannello isolante (Bp):         | 190.00 mm                 |
|  |                           |
| Spessore pannello isolante (Dp):                   | 31.00 mm                  |
| Condizioni al contorno esterne:                    |                           |
| Temperatura:                                       | 0.00 °C                   |
| Resistenza superficiale:                           | 0.040 m²K/W               |
| Condizioni al contorno interne:                    |                           |
| Temperatura:                                       | 20.00 °C                  |
| Resistenza superficiale:                           | 0.130 m²K/W               |
| Unidità:   | -                         |
| Risultati calcolati secondo la UNI EN ISO 10077-2: | 2012                      |
| Differenza di temperatura interno/esterno:         | -                         |
| <ul> <li>Conduttanza 2D (Lf2D):</li> </ul>         | 0.5527 W/mK               |
| Trasmittanza (Uf):                                 | 1.3803 W/m <sup>2</sup> K |
| 11asinillariza (01).                               | 1.0000 W/III IX           |

Lista materiali:

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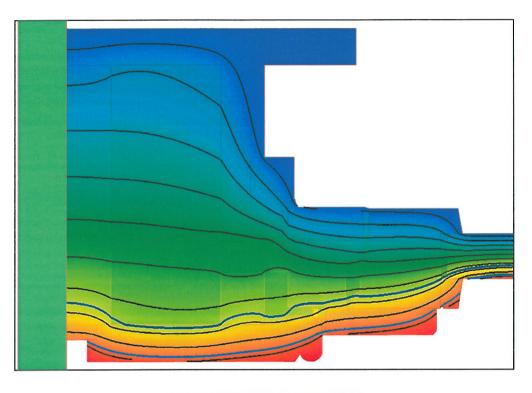
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19 di

RDP n° N1238/18

| Nome progetto:         | sezione laterale<br>5 |            |          |                    |
|------------------------|-----------------------|------------|----------|--------------------|
| Trasmittanza (Uf):     | 1.3849 W/m²K          | T interna: | 20.00 °C |                    |
| Conduttanza (Lf2D):    | 0.5539 W/mK           | T esterna: | 0.00 °C  | Frame<br>Simulator |
| Lunghezza telaio (Bf): | 270.00 mm             |            |          | Simulator          |



0.00

### Dettagli nodo

| Primitive utilizzate per la simulazione:          | 24221                     |
|---|---------------------------|
| Larghezza telaio (Bf):                            | 270.00 mm                 |
| Larghezza visibile pannello isolante (Bp):        | 190.00 mm                 |
| Spessore pannello isolante (Dp):                  | 31.00 mm                  |
| Condizioni al contorno esterne:                   |                           |
| Temperatura:                                      | 0.00 °C                   |
| Resistenza superficiale:                          | 0.040 m²K/W               |
| Condizioni al contorno interne:                   |                           |
| Temperatura:                                      | 20.00 °C                  |
| Resistenza superficiale:                          | 0.130 m <sup>2</sup> K/W  |
| Unidità:  | -                         |
| Risultati calcolati secondo la UNI EN ISO 10077-2 | :2012                     |
| Differenza di temperatura interno/esterno:        | -                         |
| Conduttanza 2D (Lf2D):                            | 0.5539 W/mK               |
| Trasmittanza (Uf):                                | 1.3849 W/m <sup>2</sup> K |
|   |                           |

Lista materiali:

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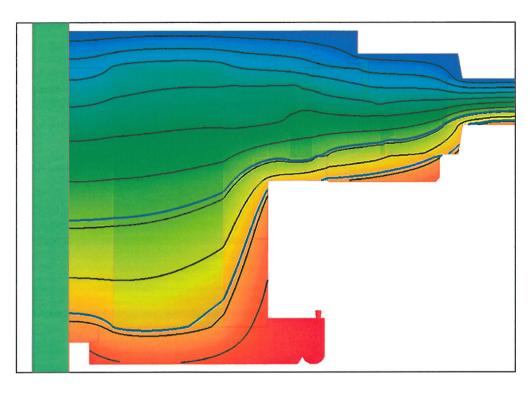
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| Nome progetto:         | sezione laterale<br>6 |            |          |                    |
|------------------------|-----------------------|------------|----------|--------------------|
| Trasmittanza (Uf):     | 1.4488 W/m²K          | T interna: | 20.00 °C |                    |
| Conduttanza (Lf2D):    | 0.5683 W/mK           | T esterna: | 0.00 °C  | Frame<br>Simulator |
| Lunghezza telaio (Bf): | 268.00 mm             |            |          | Simulator          |



### Dettagli nodo

| Primitive utilizzate per la simulazione:          | 27916                     |
|---|---------------------------|
| Larghezza telaio (Bf):                            | 268.00 mm                 |
| Larghezza visibile pannello isolante (Bp):        | 190.00 mm                 |
| Spessore pannello isolante (Dp):                  | 31.00 mm                  |
| Condizioni al contorno esterne:                   |                           |
| Temperatura:                                      | 0.00 °C                   |
| Resistenza superficiale:                          | 0.040 m²K/W               |
| Condizioni al contorno interne:                   |                           |
| Temperatura:                                      | 20.00 °C                  |
| Resistenza superficiale:                          | 0.130 m²K/W               |
| Unidità:  | -                         |
| Risultati calcolati secondo la UNI EN ISO 10077-2 | :2012                     |
| Differenza di temperatura interno/esterno:        | -                         |
| Conduttanza 2D (Lf2D):                            | 0.5683 W/mK               |
| Trasmittanza (Uf):                                | 1.4488 W/m <sup>2</sup> K |
|   |                           |

Lista materiali:

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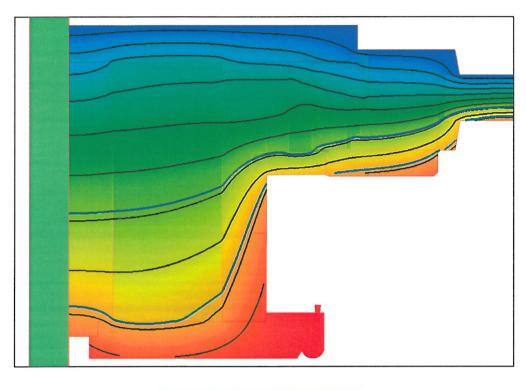
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APPROVA

| Nome progetto:                            | sezione laterale<br>7       | · · · · · · · · · · · · · · · · · · · | 2,1/2,1/1.1/1.1/1.1/1.1/1.1/1.1/1.1/1.1/1.2/1.2 | 5                  |
|---|-----------------------------|---------------------------------------|---|--------------------|
| Trasmittanza (Uf):<br>Conduttanza (Lf2D): | 1.4542 W/m²K<br>0.5682 W/mK | T interna:<br>T esterna:              | 20.00 °C<br>0.00 °C                             | Frame<br>Simulator |
| Lunghezza telaio (Bf):                    | 267.00 mm                   |                                       |   | Simulator          |



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### Dettagli nodo

| Primitive utilizzate per la simulazione:<br>Larghezza telaio (Bf):<br>Larghezza visibile pannello isolante (Bp):<br>Spessore pannello isolante (Dp): | 27956<br>267.00 mm<br>190.00 mm<br>31.00 mm |
|--|---|
| Condizioni al contorno esterne:  |   |
| Temperatura:   | 0.00 °C                                     |
| Resistenza superficiale:   | 0.040 m²K/W                                 |
| Condizioni al contorno interne:  |   |
| Temperatura:   | 20.00 °C                                    |
| Resistenza superficiale:   | 0.130 m²K/W                                 |
| Unidità:   | -   |
| Risultati calcolati secondo la UNI EN ISO 10077-2  | :2012                                       |
| Differenza di temperatura interno/esterno:   | -   |
| Conduttanza 2D (Lf2D):   | 0.5682 W/mK                                 |
| Trasmittanza (Uf):   | 1.4542 W/m²K                                |
|  |   |

Lista materiali:

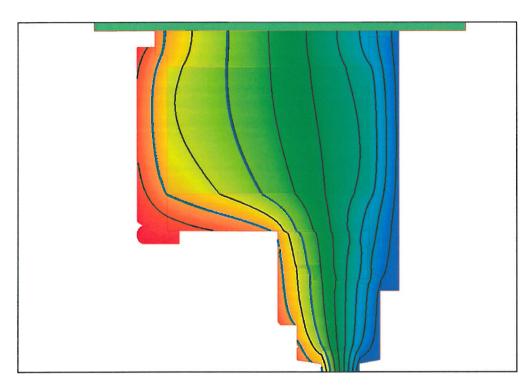
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| Nome progetto:<br>Trasmittanza (Uf):<br>Conduttanza (Lf2D):<br>Lunghezza telaio (Bf): | sezione<br>superiore<br>1.4807 W/m <sup>2</sup> K<br>0.5872 W/mK<br>275.00 mm | T interna:<br>T esterna: | 20.00 °C<br>0.00 °C | Frame<br>Simulator |
|---|---|--------------------------|---------------------|--------------------|
|---|---|--------------------------|---------------------|--------------------|



### Dettagli nodo

| Primitive utilizzate per la simulazione:        | 24991                     |
|---|---------------------------|
| Larghezza telaio (Bf):                          | 275.00 mm                 |
| Larghezza visibile pannello isolante (Bp):      | 190.00 mm                 |
| Spessore pannello isolante (Dp):                | 31.00 mm                  |
| Condizioni al contorno esterne:                 |                           |
| Temperatura:                                    | 0.00 °C                   |
| Resistenza superficiale:                        | 0.040 m²K/W               |
| Condizioni al contorno interne:                 |                           |
| Temperatura:                                    | 20.00 °C                  |
| Resistenza superficiale:                        | 0.130 m <sup>2</sup> K/W  |
| Unidità:  | -                         |
| Risultati calcolati secondo la UNI EN ISO 10077 | -2:2012                   |
| Differenza di temperatura interno/esterno:      | -                         |
| Conduttanza 2D (Lf2D):                          | 0.5872 W/mK               |
| Trasmittanza (Uf):                              | 1.4807 W/m <sup>2</sup> K |

Lista materiali:

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| Nome progetto:         | sezione central | 9          |          |       |
|------------------------|-----------------|------------|----------|-------|
| Trasmittanza (Uf):     | 2.8107 W/m²K    | T interna: | 20.00 °C |       |
| Conduttanza (Lf2D):    | 0.5682 W/mK     | T esterna: | 0.00 °C  |       |
| Lunghezza telaio (Bf): | 74.10 mm        |            |          | Frame |



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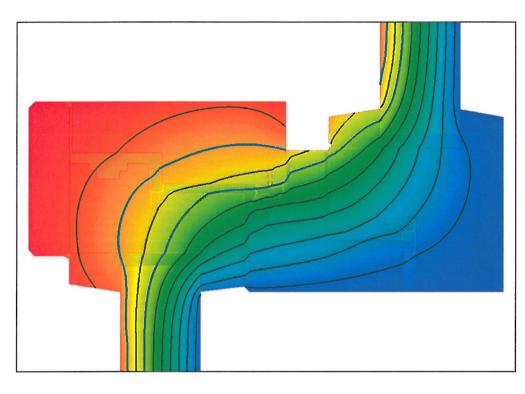
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ATTACHED

### Trasmittanza termica (Uf) calcolata secondo la UNI EN ISO 10077-2:2012



### Dettagli nodo

| Bottagn node   |                                     |
|--|-------------------------------------|
| Primitive utilizzate per la simulazione:<br>Larghezza telaio (Bf):<br>Larghezza visibile pannello isolante (Bp):<br>Spessore pannello isolante (Dp): | 28036<br>74.10 mm<br>380.00 mm<br>- |
| Condizioni al contorno esterne:  |                                     |
| Temperatura:   | 0.00 °C                             |
| Resistenza superficiale:   | 0.040 m²K/W                         |
| Condizioni al contorno interne:  |                                     |
| Temperatura:   | 20.00 °C                            |
| Resistenza superficiale:   | 0.130 m²K/W                         |
| Unidità:   | -                                   |
| Risultati calcolati secondo la UNI EN ISO 10077-   | -2:2012                             |
| Differenza di temperatura interno/esterno:   | -                                   |
| Conduttanza 2D // f2D).  | 0 5682 W/mK                         |

Conduttanza 2D (Lf2D): Trasmittanza (Uf):

0.5682 W/mK 2.8107 W/m<sup>2</sup>K

Lista materiali: