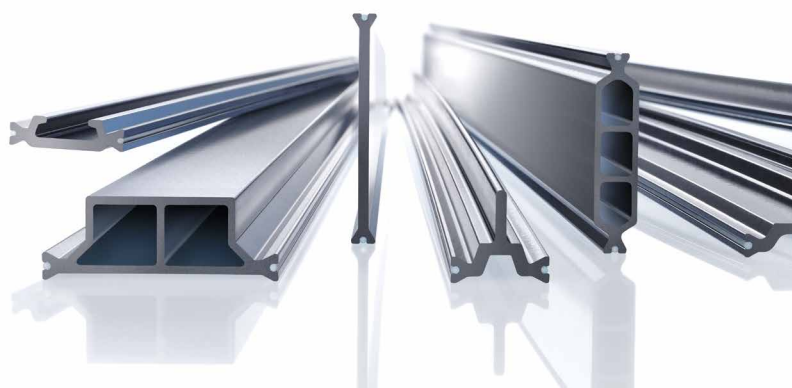




insulbar® LI -
New star takes centre stage!



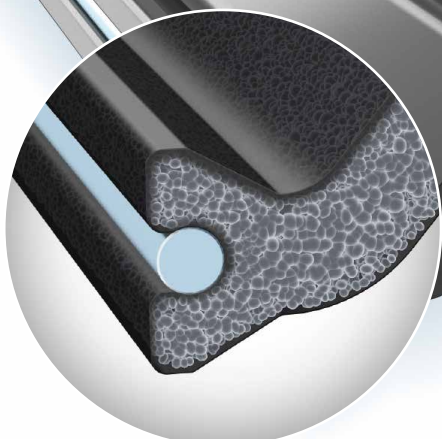
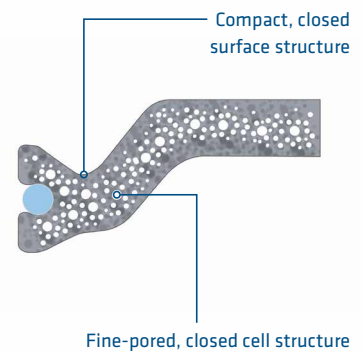
Maximum efficiency for the middle insulating segment!

With insulbar® LI, Ensinger is placing a new insulating profile on the market which offers a smart combination of energy and cost-efficiency. This new Ensinger product makes it possible to improve U_f values in a cost-effective manner even in the middle insulating segment. This is because insulating bars like insulbar® LI fit perfectly into the gap between the standard product insulbar® REG - tried and tested for decades - and the lambda-optimized insulating profile insulbar® LO.

Thermally improved material

insulbar® LI combines the advantages of the established material PA 66 GF with the thermal improvements which are characteristic of our profiles in the high-efficiency category. Compared with standard profiles made from solid polyamide, the lambda value of insulbar® LI can be reduced from 0.3 W/mK to 0.21 W/mK*. This is a value which noticeably improves the thermal separation of aluminium outer and inner shells, specifically in the middle insulating segment, and which makes it possible to achieve smaller installation depths while maintaining the same U_f value, or alternatively to optimize the U_f while keeping the installation depth the same.

* Product optimum



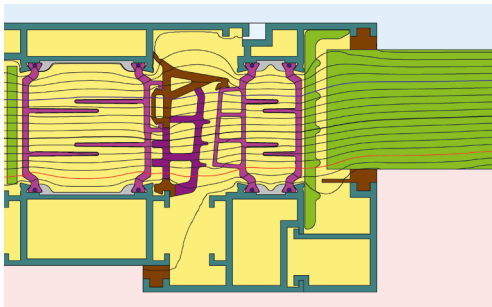
Smooth shell, foamed core: The fine-pored structure in the core of the profile reduces the thermal conduction capacity. The compact, smooth structure of the surface ensures a perfect visual appearance and reliability in the coating process.

Low lambda value but optimum strength

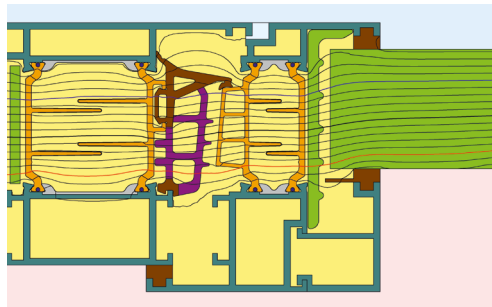
The reduced thermal conduction capacity of insulbar® LI is achieved by means of a special production process in which glass fibre reinforced polyamide is foamed. Thanks to the integral pore

distribution across the cross section, insulbar® LI ends up with a lower density than solid PA 66 GF. The outer profile skin is closed and there are therefore no differences regarding visual appearance, quality or workmanship.

U_f value optimization with insulbar® LI



U_f value = 1.3 W/m²K: window system with installation depth = 73 mm and insulbar® REG

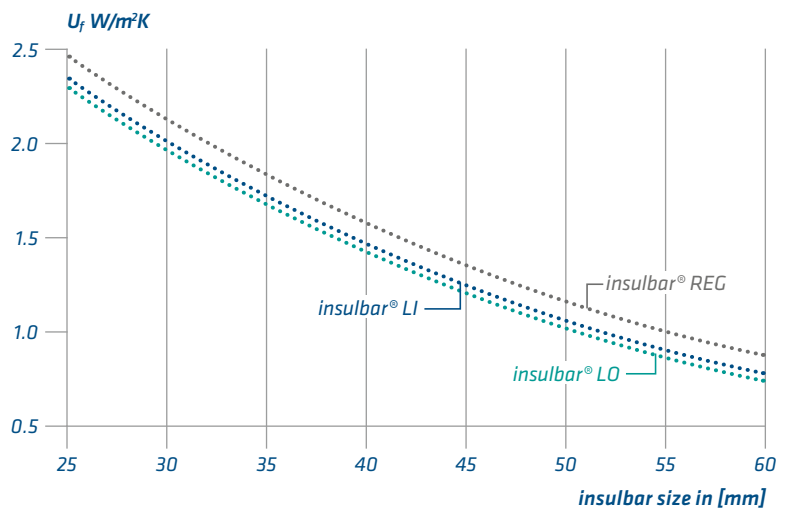


U_f value = 1.18 W/m²K: identical window system with insulbar® LI

System optimization made easy

Existing window systems can easily be thermally improved through a switch to insulbar® LI and/or be offered in additional variants with different U_f values – without further system or process changes. This is because the new insulating bar stands out for narrow tolerances and is also available with Coex wire on request. Depending on the original system, a switch to insulbar® LI makes it possible to reduce the U_f values by around 0.1 W/m²K.

U_f improvement or reduction in the installation depth



insulbar® LI permits – as illustrated here – identical U_f values with smaller insulating bars or optionally improved values while retaining the same profile size.



insulbar® LI – values to impress.



*More profile than anybody else:
all positions perfectly filled!*

insulbar® LI complements our profile range and makes Ensinger into a full-range supplier for high-quality insulating bars: manufactured from solid or foamed PA 66 GF, foamed polymer blend or recycled polyamide. Regardless of whether you have exacting requirements in relation to the U_f value, the installation depth, the sustainability or the cost-effectiveness of a system, our expertise in materials and methods means we are in a position to offer you the profile that is exactly right for your task.

insulbar® LO – lambda-optimized for extremely low U_f values and delicate systems

- Low thermal conduction capacity for very low U_f values
- For the toughest demands in relation to thermal insulation
- Ideal with small installation depths and narrow visible widths
- Transverse tensile strength and shear strength in accordance with DIN EN 14024

insulbar® RE – 100 % recycled polyamide for maximum sustainability

- Optimized for environmental protection and sustainability
- Ideal for “green” construction/building certifications
- Complete with environmental declaration: EPD to DIN ISO 14025 and EN 15804
- Cradle to Cradle Material Health Certificate in Gold

insulbar® LEF – simply ideal for reflecting heat

- Flag with highly reflective Low-E film for optimum U_f values
- Ready-to-install delivery, straightforward, reliable processing
- Cost-effective and reliable alternative to insulating foams
- Suitable for use in powder coating in the assembly

insulbar® REG – universally usable and adaptable

- The universal profile for common metal frame profiles
- Can be used in all common applications
- Extremely robust, made from solid, glass fibre reinforced PA 66
- Suitable for powder coating and anodizing in the assembly



insulbar®: *Everything that makes thermal separation better!*

insulbar® is synonymous with effective insulating profiles which are impressive both in technical and quality terms. Further, behind the insulbar® brand is the global player Ensinger – the inventor of the plastic insulating bar and the embodiment of outstanding plastics expertise. This know-how, along with comprehensive engineering and service expertise, generates solutions which make thermal separation better – and means that you as a customer are more satisfied and more successful.

Engineering competence: **The best solution for every need!**

- Over 50 years of experience – inventor of the plastic insulating profile
- Strong on innovation – with numerous patents
- Solid know-how – in application and process engineering
- Customised product design – in close cooperation with the customer

Material expertise: **The optimum plastic for every requirement!**

- From Ensinger – the plastics expert in demand worldwide
- Perfect properties tailored to the task – thanks to in-house production and compounding
- Consistently high quality – continuously tested, e.g. in line with ISO 9001:2015

Service expertise: **The reliable partner for your project!**

- Comprehensive advice – thanks to committed and competent experts with experience in the field
- Efficient, secure supply chain – worldwide, punctual, also just in sequence
- Optimum data flow – thanks to state-of-the-art IT and relevant interfaces
- Support with product development – rapid prototyping, expert project support



insulbar® Germany

Ensinger GmbH
Rudolf-Diesel-Straße 8
71154 Nufringen
Tel. +49 7032 819 0
Fax +49 7032 819 270
E-mail insulbar@ensingerplastics.com

Ensinger GmbH
Wilfried-Ensinger-Straße 1
93413 Cham
Tel. +49 9971 396 0
Fax +49 9971 396 570
E-mail insulbar@ensingerplastics.com



insulbar® worldwide

USA
Ensinger Inc.
1 Main St.
Grenloch, NJ 08032
Tel. +1 856 227 0500
Fax +1 856 232 1754
E-mail insulbar@ensinger-ind.com

United Kingdom
Ensinger Building Products Ltd.
Wilfried Way
Tonyrefail
Mid Glamorgan
CF39 8JQ
Tel. +44 1443 678 400
Fax +44 1443 671 153
E-mail ebp-uk@ensingerplastics.com

Italy
Ensinger Italia S.R.L.
Via Franco Tosi 1/3
20020 Olcella di Busto Garolfo
Tel. +39 331 562 111
Fax +39 331 567 822
E-mail insulbar.it@ensingerplastics.com

Spain
Ensinger S.A.
Girona, 21-27
08120 La Llagosta
Tel. +34 935 74 57 26
Fax +34 935 74 27 30
E-mail insulbar@ensinger.es

China
Ensinger (China) Co., Ltd.
1F, Building A3
No. 1528 Gumei Road
Shanghai 200233
Tel. +86 21 522 851 11
Fax +86 21 522 852 22
E-mail info@ensinger-china.com

The profile professionals!

