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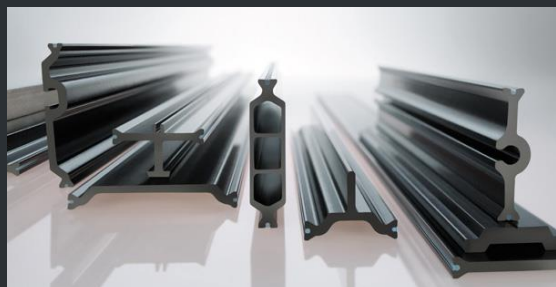
FACADES - PRODUCTS FOR FACADES AND GLASS

SEMI-FINISHED PRODUCTS FOR WINDOW AND DOOR SYSTEMS WITH ALUMINIUM PROFILES

**INSULATING STRIPS MADE OF TECATHERM® FOR ALUMINIUM PROFILES WITH THERMAL BARRIER**

**INSULBAR® REG, INSULBAR® RE, INSULBAR® LI AND INSULBAR® RE-LI**

Valid from 02/05/2025 to 01/05/2030



**Approval holder:**

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A technical approval is a favourable assessment of a construction product by a competent, independent and impartial approval operator appointed by the UBAtc, for a specified intended use.

The technical approval documents the results of the approval examination. This examination is organised as follows:

- identification of the relevant product properties taking into account its intended use and method of installation (or execution),
- product conception,
- production reliability.

The technical approval provides a high level of reliability, due to the statistical interpretation of control results, recurrent monitoring, adjustments in order to keep abreast of the latest technical developments and quality control by the approval holder.

For technical approval to be maintained, the approval holder must continuously provide evidence that he is taking all necessary steps to demonstrate that the product is fit for the intended use. In this respect, monitoring the conformity of the product with the technical approval is essential. This monitoring is entrusted by the UBAtc to a competent, independent and impartial certification operator.

The technical approval and certification of conformity of the product with the technical approval are independent of individual construction works. The contractor and/or architect remain fully responsible for the conformity of the completed works with the provisions contained in works' specifications.

Apart from specifically introduced provisions, the technical approval does not cover site related safety provisions, health aspects and the sustainable use of raw materials. As a result, the UBAtc cannot be held responsible, under any circumstances, for any damage caused by the failure of the approval holder, contractor(s) and/or architect to respect provisions relating to site related safety, health aspects and the sustainable use of raw materials.

## Approval operators



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## FOREWORD

This technical approval concerns an amendment of ATG H730, valid from 01/06/2021 to 31/05/2026. The modifications compared to the previous version are listed below:

| Modifications compared to the previous version                                   |
|----------------------------------------------------------------------------------|
| – Addition of aluminium foil, insulation, Coex-Sealing wire. and aluminium wire. |

Technical approvals are updated regularly. It is recommended to always use the version published on the UBAtc website ([www.butgb-ubatc.be](http://www.butgb-ubatc.be)).

The most recent version of the technical approval can be consulted by scanning the QR code on the front page.

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## NORMATIVE AND OTHER REFERENCES

|              |            |                                                                                                             |
|--------------|------------|-------------------------------------------------------------------------------------------------------------|
| AGCR-RGAC    | 2022-06-30 | UBAtc General Regulations for Approval and Certification                                                    |
| NBN EN 14024 | 2023       | Metal profiles with thermal barrier - Mechanical performance - Requirements, proof and tests for assessment |

# 1 Technical approval of thermal barriers for aluminium profiles with thermal barrier

This technical approval document describes the properties of insulating strips

- insulbar® REG produced from TECATHERM 66 GF in polyamide PA66 reinforced with 25% glass fibres;
- insulbar® RE produced from TECATHERM 66 GF RE in 100% recycled polyamide PA66 reinforced with 25% glass fibres;
- insulbar® LI produced from TECATHERM 66 GF in polyamide PA66 reinforced with 25% glass fibres;
- insulbar® RE-LI produced from TECATHERM 66 GF RE in 100% recycled polyamide PA66 reinforced with 25% glass fibres;

which are used as a thermal barrier in aluminium profiles, in order to improve the thermal performances of door and window systems. These strips meet NBN EN 14024:2005 for suitability of the thermal barrier material (NBN EN 14024:2005 § 5.2) and mechanical durability of the thermal barrier (NBN EN 14024:2005 § 5.3, § 5.4 and § 5.5).

Approval with certification includes continuous monitoring of production by the manufacturer, together with regular external monitoring of production by a certification operator designated by the UBAtc.

The technical product approval with certification covers the strips themselves, but not the assembly systems and processes used for the manufacture of window profiles, manufacture and installation of windows and quality of execution.

## 2 PRODUCT DESCRIPTION

### 2.1 MATERIALS

#### 2.1.1 insulbar® REG produced from TECATHERM 66 GF and insulbar® RE produced from TECATHERM 66 GF RE

The strips insulbar® REG produced from TECATHERM 66 GF are manufactured from polyamide reinforced with 25 % glass fibre.

The strips insulbar® RE produced from TECATHERM 66 GF RE are made of 100% recycled (post industrial)polyamide reinforced with 25 % glass fibres.

Table 1 - insulbar® REG and insulbar® RE.

| Properties                                   | Units             | Standard                      | Criteria for extrusion in the dry state   |
|----------------------------------------------|-------------------|-------------------------------|-------------------------------------------|
| Density                                      | g/cm <sup>3</sup> | NBN EN ISO 1183-1             | 1,30 ± 0,05                               |
| Maximum tensile strength                     | N/mm <sup>2</sup> | NBN EN ISO 527-2/-4           | ≥ 75*                                     |
| Strain at break                              | %                 | NBN EN ISO 527-2/-4           | ≥ 2*                                      |
| Modulus of elasticity                        | N/mm <sup>2</sup> | NBN EN ISO 527-2/-4 (1mm/min) | ≥ 3700*                                   |
| Hardness                                     | ShD               | NBN EN ISO 868                | 81 ± 4                                    |
| CHARPY impact strength                       | KJ/m <sup>2</sup> | NBN EN ISO 179-1fU            | ≥ 26*                                     |
| Ash content                                  | %                 | NBN EN ISO 1172               | 25 ± 2,5                                  |
| Melting temperature                          | °C                | NBN EN ISO 11357-3            | ≥ 250                                     |
| Thermal conductivity coefficient             | W/mK              | NBN EN ISO 10456              | 0,3                                       |
| Linear dilatation coefficient (longitudinal) | 1/K               | ISO 11359-2                   | 2,5.10 <sup>-5</sup> - 3.10 <sup>-5</sup> |
| Maximum water absorption                     | %                 | NBN EN ISO 62                 | 5,8 ± 0,5                                 |
| * Mean value of minimum 5 results            |                   |                               |                                           |

### 2.1.2 insulbar® LI produced from TECATHERM 66 GF and insulbar® RE-LI produced from TECATHERM 66 GF RE

The strips insulbar® LI produced from TECATHERM 66 GF are manufactured from polyamide reinforced with 25 % glass fibre.

The strips insulbar® RE-LI produced from TECATHERM 66 GF RE are made of 100% recycled polyamide (post industrial) reinforced with 25 % glass fibres.

Table 2 - insulbar® LI and insulbar® RE-LI.

| Properties                                   | Units             | Standard                      | Criteria for extrusion in the dry state   |
|----------------------------------------------|-------------------|-------------------------------|-------------------------------------------|
| Density                                      | g/cm <sup>3</sup> | NBN EN ISO 1183-1             | 1,0 ± 0,1                                 |
| Maximum tensile strength                     | N/mm <sup>2</sup> | NBN EN ISO 527-2/-4           | ≥ 35*                                     |
| Strain at break                              | %                 | NBN EN ISO 527-2/-4           | ≥ 1,5*                                    |
| Modulus of elasticity                        | N/mm <sup>2</sup> | NBN EN ISO 527-2/-4 (1mm/min) | ≥ 2600*                                   |
| Ash content                                  | %                 | NBN EN ISO 1172               | 25 ± 2,5                                  |
| Melting temperature                          | °C                | NBN EN ISO 11357-3            | ≥ 250                                     |
| Thermal conductivity coefficient             | W/mK              | NBN EN ISO 10456              | 0,21                                      |
| Linear dilatation coefficient (longitudinal) | 1/K               | ISO 11359-2                   | 2,5.10 <sup>-5</sup> - 3.10 <sup>-5</sup> |
| Water absorption at 23°C 50%RH               | %                 | NBN EN ISO 62                 | 1.6-2.4                                   |
| Maximum water absorption                     | %                 | NBN EN ISO 62                 | ≥ 6                                       |
| * Mean value of minimum 5 results            |                   |                               |                                           |

## 2.2 MATERIALS

### 2.2.1 Standard strips

The standard strips are available in various shapes and dimensions. The areas requiring crimping take on a dovetail or similar shape. The strips are available in different heights, thicknesses and shapes see [https:// www.insulbar.com/de-de/profil-programm](https://www.insulbar.com/de-de/profil-programm).

### 2.2.2 Special strips

- Strips with Coex-Sealing wire.
- Strips with T
- Strips with additional function

Special shapes of strips are possible such as strips with chamber, hooks, nose, asymmetric strips... (see examples Figure 3)

The strips can be provided with Coex-Sealing wire or aluminum wire.

Aluminum foil can be applied to parts of the strips. The emissivity (nominal value) of the aluminum foil is  $0,03 \pm 0,01$  according to EN ISO 10456.

The strips can be provided with PUR insulation.

Additional processing is possible.

## 3 MANUFACTURE

The strips are extruded using polyamide 66 or 66 RE reinforced with glass fibres.

They are manufactured by extrusion in the production unit of ENSINGER GmbH, Wilfried-Ensinger-Strasse 1, 93413 Cham, Germany.

Industrial self-monitoring of manufacturing requires among others the maintenance of a control log and conduct of tests at the factory laboratory and an independent external laboratory on test pieces from the manufacturing process. These tests are conducted on the test pieces collected by an UBAtc delegate during his approval inspection visits.

The strips are packed in plastic and are marked on the packaging (label with ATG No. H730, customer No., date, batch No., etc). The strips are packed and marked according arrangement with the different customers. The standard packaging consists of wooden or metal crates with reference date and reference to ATG.

## 4 PERFORMANCE

### 4.1 Suitability of thermal barrier material

Evaluation of the suitability of the thermal barrier material (NBN EN 14024 § 5.2) is based on the results of measurements of characteristics after immersion in water, exposure to humidity, tensile cracking and fragility tests, as stipulated in NBN EN 14024:2005 (§ 5.2). The results were satisfactory.

### 4.2 Mechanical durability of the thermal barrier

The strips satisfy NBN EN 14024:2005 regarding suitability of the material of the thermal barrier (NBN EN 14024:2005 §5.2) and the mechanical durability of the strips (NBN EN 14024:2005 §5.3, §5.4 and §5.5). Besides this, the assessment of the mechanical durability is based on the results of measurement of the characteristics before and after artificial accelerated "ageing", as described in §3.4.2 and §3.4.3 of the UBAtc guideline "Window in metal profiles with improved thermal properties".

## 5 ASSEMBLY

The strips are crimped in the coated or anodised aluminium profiles before or after surface treatment for insulbar® REG, insulbar® RE, insulbar® LI and insulbar® RE-LI (see Figure 2).

After crimping, the aluminium enters the strip for 0,1 to 0,3 mm.

The actual crimping is not covered by the approval.

## 6 FIGURES

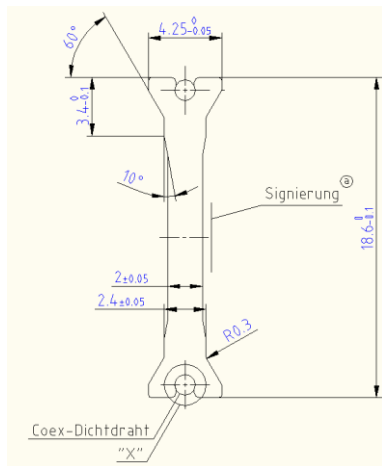


Figure 1: Example of strip

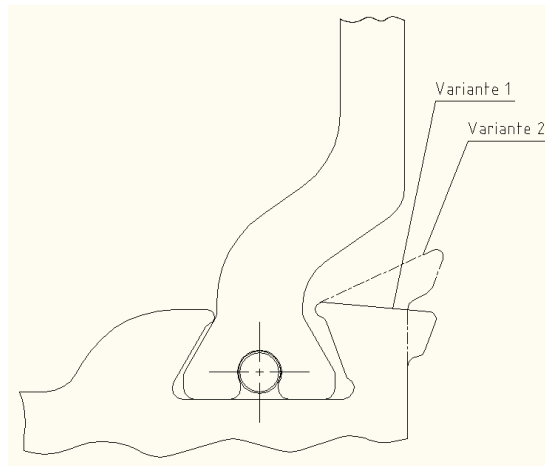


Figure 2: Example of assembling

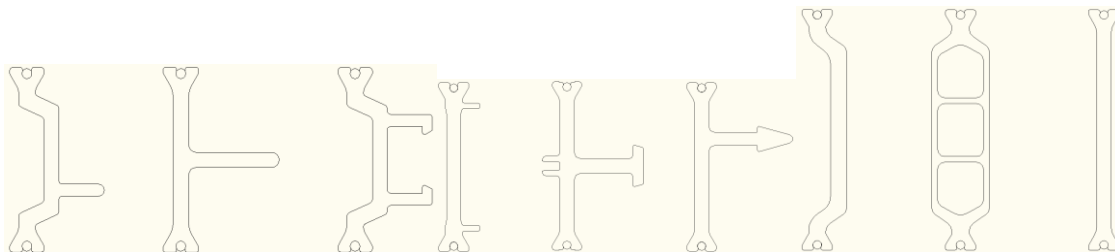


Figure 3: Examples of strips



## CONDITIONS FOR THE USE AND MAINTENANCE OF THE ATG

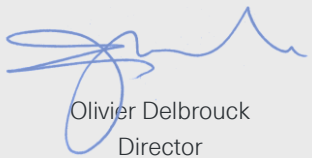
- A.** This technical approval applies exclusively to the construction products referred to on the cover page of this document.
- B.** The approval holder and, if applicable, the distributor are not permitted to make any use of the name of the UBAtc, its logo, the ATG mark, the technical approval or the approval reference to claim assessments of products which do not comply with the technical approval or for a product (and its properties or characteristics) which is not the subject of the technical approval.
- C.** The technical approval is based on the available technical and scientific knowledge and information, together with the information provided by the applicant and completed by an approval examination taking into account the specific nature of the product. Nevertheless, users remain responsible for selecting the product as described in the technical approval, for specific uses intended by the user.
- D.** Only the approval holder and, if applicable, the distributor may assert rights based on the technical approval.
- E.** Any references to the technical approval shall be accompanied by the ATG reference H730 and the validity period.
- F.** The approval holder and, if applicable, the distributor obliged to comply with the examination results specified in the technical approval when making information available to third parties. The UBAtc or the certification operator may take any appropriate action if the approval holder [or the distributor] fails to do so (sufficiently) on its own initiative.
- G.** Information made available in any way by the approval holder, distributor or a recognized contractor or by their representatives to (potential) users of the product covered by the technical approval (e.g. for clients, contractors, architects, consultants, designers, etc.), may not be incomplete or contradict the content of the technical approval or information referred to in the technical approval.
- H.** The UBAtc, the approval operator and the certification operator cannot be held responsible for any damage or adverse consequences caused to third parties as a result of the failure of the approval holder or distributor to comply with the provisions of this document.
- I.** This technical approval shall remain valid, provided that the product, its manufacture and all related processes:
  - are maintained, in order to achieve, as a minimum, the examination results specified in this technical approval;
  - are continuously monitored by the certification operator, which confirms that the certification continues to be valid.

If these conditions are no longer met, the technical approval shall be suspended or withdrawn and the technical approval shall be removed from the UBAtc website. Technical approvals are regularly updated. It is recommended to always use the version published on the UBAtc website.
- J.** The approval holder is at all times obliged to inform in advance the UBAtc, the approval operator and the certification operator of any possible adjustments made to raw materials and products, installation instructions and/or the manufacturing and installation processes and equipment. Depending on the information provided, the UBAtc, the approval operator and the certification operator will assess whether or not it is necessary to adapt the technical approval.

This technical approval has been published by UBAtc, under the responsibility of the approval operator, SECO/Buildwise, and based on a favourable opinion by specialised group "FACADES", expressed on 9 December 2014.

In addition, the certification operator, BCCA, confirmed that the production process meets the conditions for certification and that a certification agreement has been signed by the ATG holder.

Date of issue: 2 May 2025.

|                                                   |                                                                                                                           |                                                                                                                      |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| For the UBAtc, as validating the approval process | <br>Eric Winnepeninckx<br>Director      | <br>Frederic De Meyer<br>Director |
| For the operators                                 |                                                                                                                           |                                                                                                                      |
| Buildwise                                         | <br>Olivier Vandooren<br>Director     |                                                                                                                      |
| SECO Belgium                                      | <br>Bernard Heiderscheidt<br>Director |                                                                                                                      |
| BCCA                                              | <br>Olivier Delbrouck<br>Director     |                                                                                                                      |

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