

ATG Technical Approval with Certification



**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, insulbar® LO**

Valid from 02/10/2020
to 01/10/2025

Approval and Certification Operator



Belgian Construction Certification Association
Rue d'Arlon, 53 1040 Brussels
www.bcca.be - info@bcca.be

Approval holder

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1 Objective and scope of the technical approval

This Technical Approval is a favourable evaluation of the product (as described above) by an independent approval operator designated by UBAtc, BCCA, for the intended use specified in this technical approval.

The Technical Approval specifies the results of the approval examination. This examination comprises: identification of relevant product properties taking into account its intended use and installation and execution, its design and reliability of production.

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.

In order to retain the technical approval, 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. Monitoring the conformity of the product with the Technical Approval is essential. This monitoring is entrusted by the UBAtc to the independent certification operator, BCCA.

The approval holder [and distributor] is/are required to adhere to the examination results specified in the Technical Approval when making information available to third parties. The UBAtc or certification operator may take any appropriate steps if the approval holder [or the distributor] fails to do so (to a sufficient extent).

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.

Note: in this Technical Approval, the term "contractor" will always be used when referring to the entity that completes the work. This word has the same meaning as other frequently used words, such as "installer" and "fitter".

2 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® LO produced from TECATHERM 66+PPE GF 20 in polyamide 66 with polyphenylene ether, reinforced with 20% 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 UBAf.

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.

3 PRODUCT DESCRIPTION

3.1 MATERIALS

3.1.1 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 polyamide reinforced with 25 % glass fibres.

Table 1 - insulbar® REG en insulbar® RE.

Properties	Units	Standard	Criteria for extrusion in the dry state
Density	g/cm³	NBN EN ISO 1183-1	1,30 ± 0,05
Maximum tensile strength	N/mm²	NBN EN ISO 527-2/-4	≥ 75*
Strain at break	%	NBN EN ISO 527-2/-4	≥ 2*
Modulus of elasticity	N/mm²	NBN EN ISO 527-2/-4 (1mm/min)	≥ 3700*
Hardness	ShD	NBN EN ISO 868	81 ± 4
CHARPY impact strength	KJ/m²	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 ⁻⁵ - 3.10 ⁻⁵
Maximum water absorption	%	NBN EN ISO 62	5,8 ± 0,5

* Mean value of minimum 5 results

3.1.2 insulbar® LI produced from TECATHERM 66 GF

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

Table 2 - insulbar® LI

Properties	Units	Standard	Criteria for extrusion in the dry state
Density	g/cm³	NBN EN ISO 1183-1	1,0 ± 0,1
Maximum tensile strength	N/mm²	NBN EN ISO 527-2/-4	≥ 35*
Strain at break	%	NBN EN ISO 527-2/-4	≥ 1,5*
Modulus of elasticity	N/mm²	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 ⁻⁵ - 3.10 ⁻⁵
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

3.1.3 Insulbar® LO produced out of TECATHERM 66 GF+PPE GF 20

The strips insulbar® LO produced out of TECATHERM 66 GF+PPE GF 20 are manufactured from Polyamide 66+PPE GF 20 in polyamide PA66 with polyphenylene ether reinforced with 20 % glass fibres.

Table 3 - Insulbar® LO

Properties	Units	Standard	Criteria for extruded profiles
Density	g/cm³	NBN EN ISO 1183-1	0,95 ± 0,03
Maximum tensile strength	N/mm²	NBN EN ISO 527-2/-4	≥ 45*
Strain at break	%	NBN EN ISO 527-2/-4	≥ 1,5*
Modulus of elasticity	N/mm²	NBN EN ISO 527-2/-4 (1mm/min)	≥ 3200*
Ash content	%	NBN EN ISO 1172	20 ± 2,5
Melting temperature	°C	NBN EN ISO 11357-3	≥ 250
Thermal conductivity coefficient	W/mK	NBN EN ISO 10456	0,18
Linear dilatation coefficient (longitudinal)	1/K	ISO 11359-2	2,5·10 ⁻⁵ - 3·10 ⁻⁵
Water absorption at 23°C 50%RH	%	NBN EN ISO 62	1,2 ± 0,2
Maximum water absorption	%	NBN EN ISO 62	≥ 4

* Mean value of minimum 5 results

3.2 MATERIALS

3.2.1 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>

3.2.2 Special strips

- Strips with glue 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 fig. 3)

4 MANUFACTURE

The strips are extruded using polyamide 66, 66 RE or polyamide 66+PPE 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 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.

5 PERFORMANCE

5.1 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.

5.2 Mechanical durability of the thermal barrier

The strips satisfy NBN EN 14024 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 EUatc guideline "Window in metal profiles with improved thermal properties".

6 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® LO (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.

7 FIGURES

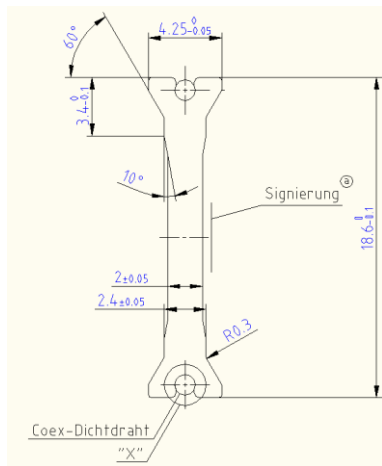


Figure 1: Example of strip

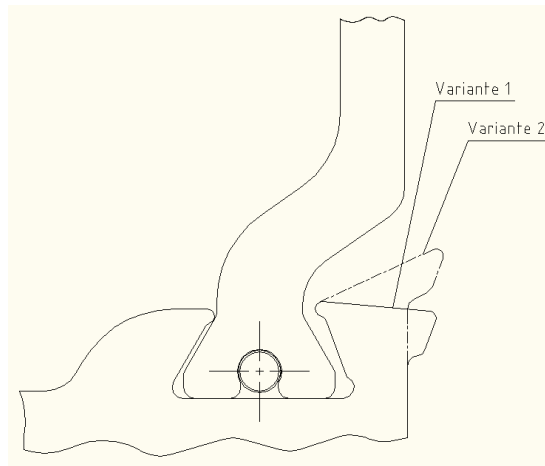


Figure 2: Example of assembling

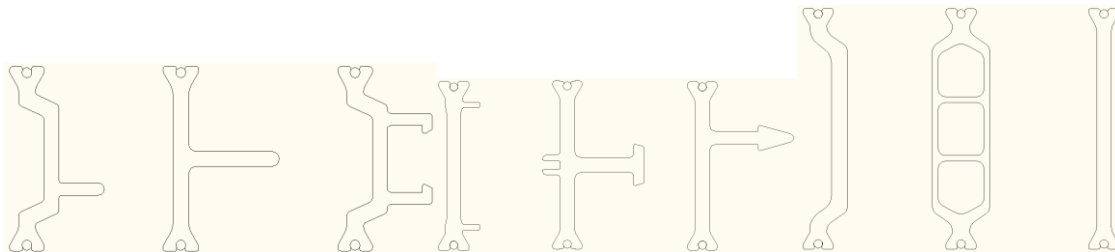


Figure 3: Examples of strips

9 CONDITIONS

- A. This technical approval exclusively covers the product mentioned on the cover page of the Technical Approval.
- B. Only the approval holder and, if applicable, the distributor may assert rights based on the Technical Approval.
- C. The approval holder and, if applicable, the distributor are not permitted, in any way, to use the name of the UBAtc, its logo, the ATG mark, the Technical Approval or the approval reference for product evaluations that fail to comply with the Technical Approval or products, kits or systems, including their properties or characteristics, which do not form the object of the Technical Approval.
- D. Information provided in any way by the approval holder, distributor or a recognized contractor or by their representatives to (potential) product users (e.g. for clients, contractors, architects, consultants, designers, etc.), which is specified in the Technical Approval may not be incomplete or contradict the content of the Technical Approval or information referred to in the Technical Approval.
- E. The approval holder is at all times obliged to provide UBAtc, the approval operator and the certification operator with prompt and prior notification of any adjustments made to raw materials and products, installation instructions and/or the manufacturing and installation processes and equipment. Depending on the information communicated, the UBAtc, the approval operator and the certification operator will judge whether it is necessary to adjust the Technical Approval.
- F. The Technical Approval is based on the available technical and scientific knowledge and information, complemented by information provided by the applicant and completed by an approval examination, which takes account of the specific nature of the product. Nevertheless, users remain responsible for selecting the product as specified in the Technical Approval, for specific uses intended by the user.
- G. The intellectual property rights associated with the Technical Approval, including the copyright, belong exclusively to the UBAtc.
- H. Any references to the Technical Approval shall be accompanied by an ATG reference (ATG H730) and the validity period.
- I. The UBAtc, the approval and certification operator cannot be held responsible for any damage or adverse consequences suffered by third parties (e.g. the user) that result from the failure of the approval holder or distributor to respect the provisions of Article 9.

This technical approval has been published by UBAtc, under the responsibility of the Approval Operator BCCA, and based on favourable feedback from the Specialized Group "FACADES", issued on 12 September 2014 .

In addition, the Certification Operator, BCCA, has confirmed that the production process meets the conditions for certification and that a certification agreement was signed by the Technical Approval holder.

Date of issue: 2 October 2020.

This ATG supersedes the ATG H730, valid from 19/10/2018 to 18/10/2023. The modifications compared to the previous versions are listed below:

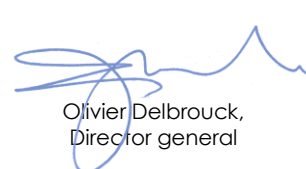
Adjustments with respect to the previous versions	
with respect to validity period	Adjustments
From 16/01/2015 to 15/01/2018	- removal of thermal break profiles in TECATHERM PP GF
From 03/05/2018 to 02/05/2023	- addition of thermal break profiles in TECATHERM 66+PPE GF 20
From 19/10/2018 to 18/10/2023	- adaptation name stripping - addition of thermal break profiles insulbar® - removal of thermal break profiles TECATHERM 66 LX

For the UBAtc, responsible for the validity of the approval process

For the approval and certification operator


Eric Winnepenninckx,
Secretary general


Benny de Blaere,
Director


Olivier Delbrouck,
Director general

This Technical Approval shall remain valid, provided the product, its manufacture and all processes that are appropriate for this purpose:

- are maintained, in order to achieve, as a minimum, the inspection results defined in the approval document;
- 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 approval document shall be deleted from the UBAtc website. The technical approvals are regularly updated. It is recommended that you always use the version published on the UBAtc website (www.ubatc.be).

The most recent version of the technical approval can be consulted using this QR code.



UBAtc asbl is notified by the FPS Economy within the framework of Regulation (EU) 305/2011. Certification Operators designated by UBAtc asbl operate in compliance with a system that is set to be accredited by BELAC (www.belac.be).

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