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European Technical Assessment

ETA-26/0467
of 10/07/2026

General Part

Technical Assessment Body issuing the European Technical Assessment:
BRE Global Ireland

**Trade name of the construction
product**

TekTherm™ AK-FR

**Product family to which the
construction product belongs**

Thermal insulation elements of fibre-reinforced
polymer which form a thermal break between
structural elements

PAC 04

Manufacturer

Thermal Breaks Ltd, Unit 11, Thorley Fields
Business Park, Bishops Stortford, Hertfordshire,
CM23 4TR, United Kingdom

Manufacturing plant(s)

As Above.

**This European Technical
Assessment contains**

7 pages including 1 Annex which form an integral
part of this assessment

Annex A contain(s) confidential information and is
not included in the European Technical Assessment
when that assessment is publicly disseminated

**This European Technical
Assessment is issued in accordance
with Article 95(4) of Regulation (EU)
2024/3110, on the basis of**

EAD 041877-00-0301

Thermal insulation elements of fibre-reinforced
polymer which form a thermal break between
structural elements

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

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1. Technical description of the product

1.1. Scope

This ETA covers a high-performance structural thermal break element manufactured from a fire-resistant, fibre-reinforced polymer composite (TekTherm™ AK-FR). These thermal insulation elements (hereafter referred to as “the element”) are designed to provide an effective thermal break between structural components while maintaining the ability to transfer compressive forces within the connection.

TekTherm™ AK-FR is a synthetic, glass-fibre reinforced composite plate, produced using a high-performance polymer resin system with integrated fire-retardant additives. The material is engineered to deliver enhanced thermal insulation, high compressive strength, and long-term dimensional stability.

The element is installed between flanged connections - typically between internal and external steelwork, or between internal concrete structures and external steelwork - and is bolted, through-fixed, or clamped as part of the structural assembly. By introducing a low-conductivity, load-bearing layer between structural components, TekTherm™ AK-FR significantly reduces thermal bridging while retaining the necessary structural performance.

1.2. Working Life

The assumed working life of the product for the intended use is at least 50 years, provided that the thermal break element is subject to appropriate use and maintenance. These provisions are based upon the current state of the art and the available knowledge and experience.

The indications given as to the working life of the products cannot be interpreted as a guarantee given by the ETA-holder or the Technical Approval Body. It should only be regarded as a means for the specifiers to choose the appropriate criteria for the thermal break element in relation to the expected, economically reasonable working life of the works.

1.3. Identification of the product

1.3.1. General

TekTherm™ Structural Thermal Breaks are engineered composite plates designed to reduce thermal bridging in structural connections without compromising load-bearing performance. They are used in steel-to-steel, steel-to-concrete, and baseplate connections to improve building thermal efficiency and minimise heat transfer through structural elements. The TekTherm™ AK-FR structural thermal break is typically available from 2 mm to 25 mm with the possibility of bespoke thicknesses available. This ETA is applicable only to thicknesses ranging from 2 mm to 25mm.

This ETA is issued for a “final assembly”. This ETA only covers the TekTherm™ AK-FR structural thermal break. All components of the “final assembly” are subjected to the assessment but only the TekTherm™ AK-FR can be CE-marked on the basis of it. Only the TekTherm™ AK-FR structural thermal break is subjected to the FPC requirements.

2. Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

The intended use of TekTherm™ load-bearing thermal insulation elements, manufactured from fibre-reinforced polymer, is to minimise thermal bridging between flanged connections in internal

and external steelwork, or between internal concrete structures and external steelwork. TekTherm™ thermal break elements are designed to transfer the compressive forces generated within the structural connection while providing effective thermal insulation.

These elements are intended for static or quasi-static loading conditions only. They are not designed to resist shear or tensile forces. TekTherm™ elements are not intended for direct exposure to weathering, moisture, or humidity without appropriate protection.

TekTherm™ plates are suitable for:

- Steel beams and column connections
- Baseplates and holding-down bolt assemblies
- Balcony and façade support brackets
- Steel-to-concrete bearing interfaces
- Canopy, walkway, mezzanine, and slab penetrations

This ETA covers assemblies installed in accordance with the provisions given in Annex A.

3. Performance of the product and references to the methods used for its assessment

3.1. Basic Requirements for Construction Works (BRCW) and Essential characteristics

3.1.1.BRCW 1: Mechanical resistance and stability

Not applicable as per EAD 041877-00-0301.

3.1.2.BRCW 2: Safety in case of fire

3.1.2.1. Reaction to fire

The TekTherm™ AK-FR structural thermal break has reaction to fire classifications as detailed below according to EN 13501-1.

The product "TekTherm™ AK FR" in relation to its reaction to fire behaviour is classified as: **A2**

The additional classification in relation to smoke production is: **s1**

The additional classification in relation to flaming droplets / particles is: **d0**

The format of the reaction to fire classification for construction applications excluding floorings and linear pipe thermal insulation products is:

Fire Behaviour	Smoke Production	Flaming droplets
A2	s1	d0

The classification is valid for a minimum thickness of 2mm ± 10%, up to a maximum thickness of 25mm ± 10%, with an overall weight per unit of area ranging from 4.54 kg/m² - 60.87 kg/m² and limited to the grey / bronze colours. No other variations are allowed under this classification.

3.1.3.BRCW 4: Safety and accessibility in use

3.1.3.1. Compressive strength and modulus of elasticity

Sample 60x60x25 mm, perpendicular to the 25 mm plate; sample not tempered, tested at 23 °C.

Product Type	Compressive strength perpendicular to the 25 mm plate	
	Characteristic compressive strength (N/mm ²), F_{ck}	Modulus of elasticity (N/mm ²)
TekTherm™ AK FR (25.0 mm)	418.1	2549

3.1.3.2. Compressive creep

No performance assessed.

3.1.4.BRCW 5 Protection against noise

Not applicable as per EAD 041877-00-0301

3.1.5.BRCW 6 Energy, economy and heat retention

3.1.5.1. Thermal conductivity

Product Type	Thermal conductivity, λ (W/mK)
TekTherm™ AK FR (25.0 mm)	0.203

3.1.6.Aspects of Durability, serviceability and identification

3.1.6.1. Flexural strength

No performance assessed.

3.1.6.2. Water absorption

No performance assessed.

3.1.6.3. Identification

This ETA is issued for the system on the basis of agreed data/information, held on file by BRE Global Ireland which identifies the system components that have been assessed and judged. Identification tests according to EAD 041877-00-0301 have been carried out on components, which confirm that the system under assessment conforms to its declared characteristics.

4. Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

According to the decision 98/214/EC of the European Commission the System of assessment and verification of consistency of performance (see Annex V to Regulation (EU) No 305/2011) is **2+**.

5. Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

All the necessary technical details for the implementation of the AVCP system are laid down in the *Control Plan*¹ deposited with BRE Global Ireland and the factory production control shall be in accordance with it. The Control Plan specifies the type and frequency of checks/tests conducted during production and on the final product. This includes the checks conducted during manufacture on properties that cannot be inspected at a later stage and for checks on the final product.

Issued in Dublin, Ireland on 10.07.2026

By



Tony Baker

Certification Engineer

BRE Global Assurance (Ireland) Ltd

¹ The "control plan" is a confidential part of the European Technical Assessment and only handed over to the notified body or bodies involved in the process of assessment and verification of constancy of performance.
BF1669i Rev 0.1

ANNEX A – Product details

Product	Thickness (mm)	Weight per unit area (kg/m ²)	Colour
TekTherm™ AK-FR	2 – 25	4.54 – 60.87	Grey / Bronze

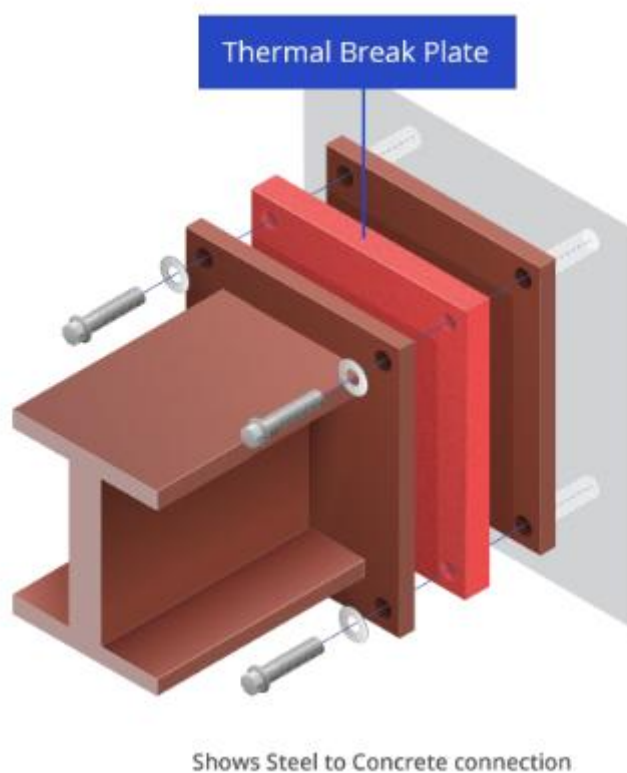


Figure 1 - Thermal Breaks Ltd thermal break plate between steel and concrete