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Autorisé et notifié conformément à l'article 10 de la directive 89/106/EEC du Conseil, du 21 décembre 1988, relative au rapprochement des dispositions législatives, réglementaires et administratives des Etats membres concernant les produits de construction.

CSTB le futur en construction

EOTA Member
Membre de l'EOTA

European Technical Approval ETA-11/0505

(English translation prepared by the CSTB - Original version in french language)

Trade name: Nom commercial :	**StoTherm Classic 7**
Holder of approval: Titulaire :	**Sto AG** **Ehrenbachstrasse 1** **DE-79780 Stühlingen Weizen**
Generic type and use of construction product: Type générique et utilisation prévue du produit de construction :	**External Thermal Insulation Composite Systems with rendering on polystyrene for the use as external insulation to the walls of timber frame buildings** Système d'isolation thermique extérieure par enduit sur polystyrène expansé destiné à l'isolation thermique extérieure des murs de bâtiments à ossature en bois
Validity from / to: Validité du : au :	**22/12/2011** **21/12/2016**
Manufacturing plant: Usine de fabrication :	**Sto AG** **Ehrenbachstrasse 1** **DE-79780 Stühlingen Weizen**
This European Technical Approval contains: Le présent Agrément Technique Européen contient :	**28 pages including 4 annexes.** 28 pages incluant 4 annexes.

I - LEGAL BASES AND GENERAL CONDITIONS

1 - This European Technical Approval is issued by the Centre Scientifique et Technique du Bâtiment (CSTB) in accordance with:

- Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products[1], modified by the Council Directive 93/68/EEC[2] and Regulation (EC) no. 1882/2003 of the European Parliament and of the Council[3];

- Décret n° 92-647 du 8 juillet 1992[4] concernant l'aptitude à l'usage des produits de construction;

- Common Procedural Rules for Requesting, Preparing and the Granting of European Technical Approvals set out in the Annex to Commission Decision 94/23/EC[5];

- Guideline for European Technical Approval of "External Thermal Insulation Composite Systems with rendering" ETAG no. 004, edition 2000.

- Common Understanding of Assessment Procedure for "ETICS with rendering for the use on timber frame buildings" no. 04.04/26, edition October 2007 (called CUAP 04.04/26 in this ETA).

2 - The Centre Scientifique et Technique du Bâtiment is authorised to check whether the provisions of this European Technical Approval are met. Checking may take place in the manufacturing plant. Nevertheless, the responsibility for the conformity of the products to the European Technical Approval and for their fitness for the intended use remains with the holder of the European Technical Approval.

3 - This European Technical Approval is not to be transferred to manufacturers or agents of manufacturer other than those indicated on page 1; or manufacturing plants other than those laid down in the context of this European Technical Approval.

4 - This European Technical Approval may be withdrawn by the CSTB in particular pursuant to information by the Commission according to Article 5(1) of the Council Directive 89/106/EEC.

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6 - The European Technical Approval is issued by the approval body in its official language. This version corresponds fully to the version circulated within EOTA. Translations into other languages have to be designated as such.

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1 Official Journal of the European Communities no. L 40, 11.2.1989, p. 12
2 Official Journal of the European Communities no. L 220, 30.8.1993, p. 1
3 Official Journal of the European Union no. L 284, 31.10.2003, p. 1.
4 Journal officiel de la République française du 14 juillet 1992
5 Official Journal of the European Communities no. L 17, 20.1.1994, p. 34.

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 - Definition of products and intended use

The External Thermal Insulation Composite System "**StoTherm Classic 7**" called ETICS in the following text, is designed and installed in accordance with the ETA-holder's design and installation instructions, deposited with the Centre Scientifique et Technique du Bâtiment (CSTB). The ETICS comprises the following components which are factory produced by the ETA-holder or a supplier. It's made up on site from these. The holder is ultimately responsible for the ETICS.

Depending on the European market, different trade names are used for same component. To simplify, only the "German" trade names appear in the following text. The annex 1 gives the corresponding "French" and "English" trade names.

1.1 Definition of the construction product (kit)

	Components (see § 2.3 for further description, characteristics and performances of the components)	**Coverage (kg/m²)**	**Thickness (mm)**
Insulation materials with associated method of fixing	**Bonded ETICS**		
	• Insulation product: - "Standard" expanded polystyrene panels - "Special" expanded polystyrene panels with groove on the face to be covered by the base coat: Sto-Bossenplatte	/ /	10 to 300 50 to 300
	• Adhesives: - Sto-Dispersionskleber (ready-to-use paste – acrylic binder) - StoPrefa Coll (ready-to-use paste – acrylic binder)	1.0 to 1.5 (paste) 0.8 to 1.5 (paste)	/ /
Base coat	StoPrefa Armat : Ready to use paste (without cement) consisting of an acrylic binder in aqueous dispersion, calcium carbonate and silica particles, and specific additives.	About 3.5	Mean (dry): 2.0 Minimal (dry): 1.8
Glass fibres meshes	• Standard meshes: - Sto-Glasfasergewebe - Sto-Fibre de Verre Ra 60 - Sto-Glasfasergewebe F	/ / /	/ / /
	• Reinforced mesh (implemented in addition of the standard mesh to improve the impact resistance): - Sto-Panzergewebe	/	/
	• Special meshes: - Sto-Bossengewebe (strip implemented in the groove of the Sto-Bossenplatte) - Sto-Abschirmgewebe AES (including a thin stainless yarn to reduce radiation of electric fields)	/ /	/ /
Key coat	No key coat		

	Components (see § 2.3 for further description, characteristics and performances of the components)	**Coverage (kg/m²)**	**Thickness (mm)**
Finishing coats	• Ready to use pastes - acrylic binder: - Stolit K (particles size 1.0 to 6.0 mm) - Stolit R (particles size 1.5 to 6.0 mm) - Stolit Effect - Stolit MP (fine/middle or thick structure)	 2.0 to 6.5* 2.2 to 6.1* 4.5 to 5.5* 2.2 to 4.7*	Regulated by particles size 1.5 to 3.5
	• Ready to use pastes – acrylic siloxane binder: - StoSilco K (particles size 1,0 to 3.0 mm) - StoSilco R (particles 1.5 to 3.5 mm) - StoSilco MP (fine/middle or thick structure)	 2.0 to 5.0* 2.9 to 4.5* 2.2 to 4.7*	 Regulated by particles size 1.5 to 3.5
	• Ready to use paste - acrylic siloxane binder. - StoLotusan K (particles size 1.0 to 3.0 mm) - StoLotusan MP (fine/middle or thick structure)	 2.0 to 5.0* 2.2 to 4.7*	Regulated by particles size 1.0 to 3.5
	• Ready to use paste-acrylic binder with marble particules: - Sto-Superlit (particles size 1.5 and 2.0 mm)	 4.5 to 6.0*	 Regulated by particles size
	• Ready to use paste associated with a paint: - StoNivellit (acrylic binder) + StoSilco Color (acrylic siloxane binder)	 3.0 to 3.5 + 0.2 to 0.4 L/m²	 1.0 to 1.5
	• Ready to use paste associated with synthetic bricks: - Sto-Klebe und Fugenmörtel (acrylic binder) + Sto-Flachverblender (synthetic binder)	 3.0 to 4.0 + 48 to 76 pieces	 5.0 to 6.5
	* All particles size grading or structure (Stolit MP and Stolit Effect, StoSilco MP and StoLotusan MP) comprised.		
Paint	Paint to cover the base coat in the groove of the Sto-Bossenplatte : StoColor Maxicryl (acrylic binder)	0.20 to 0.35 L/m²	/
Ancillary materials	Descriptions in accordance with § 3.2.2.5 of the ETAG 004 Remain under the ETA-holder responsibilities		

1.2 Intended use

This ETICS is intended for use as external insulation of timber frame buildings' walls (solid wood walls).

The surface for the application of ETICS can be a board substrate (wood based panels, solid wood panels, plasterboards, gypsum bonded boards, cement bonded boards, etc.). The board substrate must be suitable for humid conditions as specified in EN 13986.

The ETICS is designed to give the wall to which is applied satisfactory thermal insulation.

The ETICS is made of non load-bearing construction elements. It does not contribute directly to the stability of the timber frame building wall on which it is installed, but it can contribute to durability by providing enhanced protection from the effect of weathering.

The verification of the structural capacities of the wall and their suitability for the application of ETICS shall be in accordance with ETAG 007, clause 5.1 "Mechanical resistance and stability of timber frame building kits" using calculation methods (NF EN 1995-1-1 Eurocode 5 Part 1-1, etc.) as well as verifications by testing (NF EN 380, EN 594, EN 595, EN 596, etc.) where the load bearing capacity is unable to be calculated.

The ETICS can be used on new or existing (retrofit) vertical walls. It can also be used on horizontal or inclined surfaces which are not exposed to precipitation.

The ETICS is not intended to ensure the airtightness of the building structure. The timber frame building wall as such has therefore to be airtight to reduce the thermal transmittance of the wall and to avoid interstitial condensation due to convection.

The choice of the method of fixing depends on the characteristics of the substrate, which could need preparation (see § 7.2.1 of the ETA Guidance no. 004 concerning "External Thermal Insulation Composite Systems with rendering", edition March 2000, called ETAG no. 004 in this ETA) and shall be done in accordance with the national instructions.

The provisions made in this European Technical Approval (ETA) are based on an assumed intended working life of at least 25 years, provided that the conditions laid down in sections 4.2, 5.1 and 5.2 for the packaging, transport, storage and installation as well as appropriate use, maintenance and repair are met. The indications given as to the working life cannot be interpreted as a guarantee given by the manufacturer or the Approval Body, but should only be regarded as a means for choosing the appropriate products in relation to the expected economically reasonable working life of the works.

2 - Characteristics of products and methods of verification

2.1 General

The identification tests and the assessment of the fitness for use of this ETICS according to the Essential Requirements were carried out in compliance with the ETAG no. 004 and the CUAP 04.04/26.

2.2 ETICS characteristics

2.2.1 Reaction to fire

Configurations	Maximum declared organic content of the rendering system	Minimum declared flame retardant content content of the rendering system	Euroclass according to EN 13501-1
• Adhesives: - Sto-Dispersionkleber - Sto Prefa Coll • Insulation product: - EPS Panels, Euroclasse E • Base coat: Sto Prefa Armat • Finishing coats: - Stolit K / R / MP / Effect - StoSilco K / R / MP - StoLotusan K / MP - Sto-Superlit - StoNivellit + StoSilco Color	Base coat: 8.63 %* Finishing coats: 9.89 %* for all the finishing coats except for Sto-Superlit (11.71 %*)	Base coat: 10.0 %** Finishing coats: 10.0 %**	C-s2,d0
All other configurations with Sto-Klebe und Fugenmörtel + Sto-Flachverblender	/	/	F (no performance determined)
* Calculation of the organic content of the product depending on the recipe ** Percentage relative to the initial weight after drying			

Note: An European reference fire scenario has not been laid down for facades. In some Member States, the classification of ETICS according to EN 13501-1 might not be sufficient for the use in facades. An additional assessment of ETICS according to national provisions (e.g. on the basis of a large scale test) might be necessary to comply with Member State regulations, until the existing European classification system has been completed.

2.2.2 Water absorption (capillarity test)

- Base coat:
  - Water absorption after 1 hour < 1 kg/m²
  - Water absorption after 24 hours < 0.5 kg/m².

- Rendering systems:

		Water absorption after 24 hours	
		< 0.5 kg/m²	**≥ 0.5 kg/m²**
Rendering systems: Base coat + finishing coats indicated hereafter:	- Stolit K - Stolit R - Stolit MP - Stolit Effect	X	
	- StoSilco K - StoSilco R - StoSilco MP		X
	- StoLotusan K - StoLotusan MP		X
	Sto-Superlit		X
	StoNivellit + StoSilco Color	X	
	Sto-Klebe und Fugenmörtel + Sto-Flachverblender	X	

2.2.3 Hygrothermal behaviour

Hygrothermal cycles have been performed on a rig.

None of the following defects occur during the testing:
- blistering or peeling of any finishing,
- failure or cracking associated with joints between insulation product boards or profiles fitted with system,
- detachment of render,
- cracking allowing water penetration to the insulation layer.

The ETICS is **so assessed resistant to hygrothermal cycles**.

2.2.4 Freeze / thaw behaviour

- Rendering systems with the finishing coats StoSilco, StoLotusan and Sto-Superlit: the freeze/thaw cycles have not been performed.

- Rendering systems with the other finishing coats: the water absorptions of both base coat and the rendering systems are less than 0.5 kg/m² after 24 hours and the corresponding configurations of the ETICS **are therefore assessed as freeze/thaw resistant**.

2.2.5 Small scale test method to determine the moisture content and the moisture gradient of the wooden substructure for ETICS using MW, WW or WF

Due to the fact that the insulation product influences strongly the diffusion of water vapour, the following test is not necessary for EPS.

2.2.6 Water penetration

No performance determined.

2.2.7 Impact resistance

The resistances to hard body impacts (3 Joules and 10 Joules) and to perforation lead to the following categories:

<table>
<tr><th colspan="3"></th><th>Single standard mesh</th><th>Double standard mesh</th><th>Reinforced mesh + standard mesh</th></tr>
<tr><td rowspan="8">Rendering systems:
Base coat
+
finishing coats indicated opposite:</td><td colspan="2">- Stolit K
- Stolit R
- Stolit MP
- Stolit Effect</td><td>Category III</td><td colspan="2">Category II</td></tr>
<tr><td colspan="2">- StoSilco K
- StoSilco R
- StoSilco MP</td><td>Category III</td><td>Category II</td><td>Category I</td></tr>
<tr><td colspan="2">- StoLotusan K
- StoLotusan MP</td><td>Category III</td><td>Category II</td><td>Category I</td></tr>
<tr><td colspan="2">Sto-Superlit</td><td colspan="2" rowspan="2">Category II</td><td rowspan="2">Category I</td></tr>
<tr><td colspan="2">StoNivellit + StoSilco Color</td></tr>
<tr><td rowspan="2">Sto-Klebe und Fugenmörtel
+ Sto-Flachver-blender</td><td>on the Sto-Flachverblender</td><td colspan="3">Category I</td></tr>
<tr><td>between Sto-Flachverblender</td><td>Category III</td><td>Category II</td><td>Category I</td></tr>
</table>

2.2.8 Water vapour permeability

		Equivalent air thickness (m)
Rendering systems: Base coat + finishing coats indicated opposite:	- Stolit K - Stolit R - Stolit MP - Stolit Effect	≤ 1.0 (Test result obtained with Stolit K, particles size 6.0 mm: 0.5)
	- StoSilco K - StoSilco R - StoSilco MP	≤ 1.0 (Test result obtained with StoSilco K, particles size 3.0 mm: 0.5)
	- StoLotusan K - StoLotusan MP	≤ 1.0 (Test result obtained with StoLotusan K, particles size 3.0 mm: 0.4)
	Sto-Superlit	≤ 1.0 (Test result obtained with particles size 2.0 mm: 0.5)
	StoNivellit + StoSilco Color	≤ 1.0 (Test result obtained: 0.4)
	Sto-Klebe und Fugenmörtel + Sto-Flachverblender	≤ 1.0 (Test result obtained: 0.8)

2.2.9 Dangerous substances

A written declaration was submitted by the ETA-holder.

In addition to the specific clauses relating to dangerous substances contained in this ETA, there may be other requirements applicable to the ETICS falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Product Directive, these requirements need also to be complied with, when and where they apply.

2.2.10 Safety in use

2.2.10.1 Bond strength

- Base coat onto expanded polystyrene

Conditionings		
Initial state	**After the hygrothermal cycles (on the rig)**	**After the freeze/thaw cycles (on samples)**
≥ 0.08 MPa	≥ 0.08 MPa	Test not performed

- Adhesives **Sto-Dispersionskleber** and **Sto Prefa Coll** onto substrate (external board) (safety in use of the bonded system)

  The substrate has to be strong, dry and free of loose material. It may be necessary to protect the substrate against wetting and weathering before the application of the ETICS.

  The suitability of the substrate needs to be established as follows:

  - New timber frame building board substrates according to
    - EN 312 : particleboards,
    - EN 622-2 : fibreboards hard,
    - EN 622-3 : fibreboards medium,
    - EN 622-5: fibreboards MDF,
    - EN 300 : OSB,
    - EN 636 : plywood,
    - EN 13353+A1 : solid wood panels (SWP),
    - EN 634-2 : cement bonded particleboards,
    - EN 520+A1 : plasterboards type E or H,

    and boards according to the CUAPs 05.04/06 “Gypsum bonded particleboard” and 05.04/04 “Large size fibre gypsum panels used for walls of prefabricated houses” may be suitable provided they are not contaminated e.g. by dust, mould or other pollutants.

  - Since the removal from old substrates of existing coatings can not be guaranteed the use of bonded systems(ETICS) on these old substrates is prohibited.

    The thickness of the panels has to be superior or equal to 10 mm.

			Failure resistance (MPa) after 28 days at 23°C/50 % RH +		
			No complementary conditioning (Initial state)	**7 days at 23°C / 95% RH (humid conditions)**	**7 days at 23°C / 95% RH + 7 days 23°C / 50% RH**
Sto-Dispersionskleber / Sto Prefa Coll	EN 636	Tested panel: Plywood Sperrholzplatte	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa
	EN 634-2	Tested panels: Cement Particle board			
		Zement gebundene Spanplatte geschliffen			
		Zementgebundene Spanplatte ungeschliffen			
	EN 300	Tested panels: OSB/3			
		OSB geschliffen			
		OSB ungeschliffen			
	EN 13353+A1	Tested panels: Massivholzplatte			
	EN 312	Tested panel: Spanplatte			
		Spanplatte ungeschliffen			
		Spanplatte geschliffen			
	EN 520+A1	Tested panel: imprägniert Gipskarton – Gipsplatten			

- Adhesives onto substrate and expanded polystyrene

		Conditionings		
		Initial state	**48 h immersion in water + 2 h 23°C/50% RH**	**48 h immersion in water + 7 days 23°C/50% RH**
- Sto-Dispersionskleber - StoPrefa Coll	Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
	Insulation product	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa
	Brick	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa

The ETICS can so be installed on the substrate with application of the adhesive on the following minimal surface areas:

	Tensile strength perpendicular to the faces of the expanded polystyrene	
	≥ 100 kPa	≥ 150 kPa
Sto-Dispersionskleber	30%	20%
Sto Prefa Coll	30%	20%

2.2.10.2 Fixing strength (displacement test)

Test not required because the ETICS fulfils the following criteria:
E.d < 50 000 N/mm
(E: modulus of elasticity of the base coat without mesh
d: mean dried thickness of the base coat).

2.2.10.3 Wind load resistance

2.2.10.3.1 Dynamic wind uplift test for other insulation products than cellular plastics or mineral wool

The insulation product used for this ETICS is EPS, that's why this test is not necessary.

2.2.10.3.2 Resistance to soft body impact for ETICS directly mounted to the timber frame

No performance determined.

2.2.11 Thermal resistance

The additional thermal resistance provided by the ETICS to the substrate is calculated from the thermal resistance of the insulation product and from the tabulated value of the thermal resistance of the render system, as described in EN ISO 6946 and EN 12524:

$$R_{\mathrm{ETICS}} = R_{\mathrm{D}} + R_{\mathrm{render}}$$

R_{ETICS} thermal resistance of the ETICS (m^2.K/W)
R_{D} thermal resistance of the insulation product (m^2.K/W)
R_{render} thermal resistance of the render system, equal to ca. 0.02 m^2.K/W

If the thermal resistance cannot be calculated, it can be measured on the complete ETICS as described in EN 1934.

The thermal bridges caused by mechanical fixing devices influence the thermal transmittance of the entire wall and shall be taken into account using the following equation:

$$U_{\mathrm{c}} = U \text{ (no anchors in this ETICS)}$$

U_{c} corrected thermal transmittance of the entire wall, including thermal bridges (W/m^2.K)
U thermal transmittance of the entire wall, including ETICS, without thermal bridges (W/m^2.K)

U is defined by the following equation:

$$U = \frac{1}{R_{\mathrm{ETICS}} + R_{\mathrm{substrate}} + R_{\mathrm{se}} + R_{\mathrm{si}}}$$

$R_{\mathrm{substrate}}$ thermal resistance of the substrate wall (m^2.K/W)
R_{se} external surface thermal resistance (m^2.K/W)
R_{si} internal surface thermal resistance (m^2.K/W)

2.2.12 Aspect of durability and serviceability : Bond strength after ageing

		After hygrothermal cycles (on rig) or after 7 days immersion in water + 7 days 23°C / 50% RH (on samples)	After freeze/thaw cycles (on samples)
Rendering system: Base coat + finishing coats indicated opposite:	- Stolit K - Stolit R - Stolit MP - Stolit Effect	≥ 0.08 MPa	Test not required because freeze/thaw cycles not necessary
	- StoSilco K - StoSilco R - StoSilco MP		Tests not performed
	- StoLotusan K - StoLotusan MP		
	Sto-Superlit		
	StoNivellit + StoSilco Color		Test not required because freeze/thaw cycles not necessary
	Sto-Klebe und Fugenmörtel + Sto-Flachverblender		

2.3 Components' characteristics

2.3.1 Insulation product

Factory-prefabricated, uncoated boards made of expanded polystyrene (EPS) according to EN 13163 having the description, characteristics and performances defined in the table below.

Bonded ETICS:

- Even EPS panels
  - Panels with right, tongued-and-grooved or rabbetted edges
  - Panels with right edges and groove on the surface to be covered by the rendering system (Sto-Bossenplatte):
    * Type I: trapezoidal groove [see annex 2 (1/3)]
    * Type II: trapezoidal groove [see annex 2 (2/3)]
    * Type III: triangular groove [see annex 2 (3/3)]

- Curved EPS panels
  Panels, cut case by case with a suitable radius of curvature to adjust them to curved surfaces. The cutting of these panels is executed in the manufacture in the same large blocks of EPS as the even panels.

Description and characteristics:		- **Sto-Polystyrol-Hartschaumplatte and Sto - Bossenplatte** - **EPS panels certified ACERMI***
Reaction to fire / EN 13501-1		Euroclass E (thicknesses 10 to 300 mm – density 15 to 20 kg/m^3)
Thermal resistance ((m².K)/W)		Defined in the CE marking in reference to EN 13163 “Thermal insulation products for buildings” – Factory made products of expanded polystyrene
Thickness (mm) / EN 823		EPS-EN 13163 T2
Length (mm) / EN 822		EPS-EN 13163 L1
Width (mm) / EN 822		EPS-EN 13163 W2
Squareness (mm) / EN 824		EPS-EN 13163 S2
Flatness (mm) / EN 825		EPS-EN 13163 P4
Surface condition		Cut surface (homogeneous and without « skin »)
Dimen-sional stability under:	specified temperature and humidity / EN 1604	EPS-EN 13163 DS (70,-)2
	laboratory condition / EN 1603	EPS-EN 13163 DS (N) 2
Water absorption (partial immersion) / EN 1609 - EN 12087		EPS-EN 13163 WL (T) 1
Water vapour diffusion resistance factor (μ) / EN 12086 – EN 13163		< 60
Tensile strength perpendicular to the faces in dry conditions (kPa) / EN 1607		≥ 100 (EPS EN 13163 TR100, TR150 and TR200)
Shear strength (N/mm²) / EN 12090		≥ 0.02
Shear modulus (N/mm²) / EN 12090		≥ 1.0

* The panels certified ACERMI with the following minimal classification satisfy the above requirements:
I ≥ 2 - S ≥ 4 - O = 3 - L = 4 - E ≥ 2

2.3.2 Render

Width of crack (Render Strip Tensile Test): Test not performed.

2.3.3 Glass fibres meshes

- Standard meshes:

	Alkalis resistance			
	Residual resistance after ageing (N/mm)		**Relative residual resistance: % (after ageing) of the strength in the as delivered state**	
	Warp	**Weft**	**Warp**	**Weft**
Sto-Glasfasergewebe F: White and yellow (two 10 cm wide slips on each sides) glass fibres meshes with mesh size between 3 to 5 mm and some black “Sto” printings	≥ 20	≥ 20	≥ 50	≥ 50
Sto-Glasfasergewebe: White and yellow (two 10 cm wide slips on each sides) glass fibres meshes with mesh size of about 6 mm and some black “Sto” printings	≥ 20	≥ 25	≥ 55	≥ 50
Sto-Fibre de Verre Ra 60: glass fibres meshes with mesh size between 3.5 to 5 mm	≥ 25	≥ 25	≥ 60	≥ 60

- Special meshes:

	Residual resistance after ageing (N/mm)		**Relative residual resistance: % (after ageing) of the strength in the as delivered state**	
	Warp	**Weft**	**Warp**	**Weft**
Sto-Abschirmgewebe AES: Black glass fibres meshes with mesh size about 4 mm comprising a thin stainless yarn to reduce the radiation of electric fields	≥ 20	≥ 25	≥ 50	≥ 55
Sto-Bossengewebe: Preformed glass fibres meshes cut into Sto-Glasfasergewebe F (see above), 2.0 m long (Annex 3).				

3 - Evaluation and attestation of Conformity and CE marking

3.1 System of attestation of conformity

According to the decision 97/556/EC of the European Commission, the system 2+ of attestation of conformity applies.

In addition, according to the decision 2001/596/EC of the European Commission, the system 1 and 2+ of attestation of conformity apply with regard to reaction to fire.

Considering the Euroclass C for the reaction to fire, together with the existence in the production process of a step that clearly improves the reaction to fire behaviour, the system of attestation of conformity is system 1 for the following configurations described in the Annex 4.

This system 1 is described in the Council Directive 89/106/EEC Annex III, 2 (i), as follows:

Certification of the conformity of the ETICS by a Notified certification Body on the basis of:

a) Tasks for the manufacturer:
1 - Factory Production Control
2 - Further testing of samples taken at the factory by the manufacturer in accordance with a prescribed test plan.

b) Tasks for the Notified Body:
3 - Initial type-testing of the ETICS and the components,
4 - Initial inspection of factory and of factory production control,
5 - Continuous surveillance, assessment and approval of factory production control.

For the other configurations, as well as for the characteristics other than reaction to fire of the configurations above, the system of attestation of conformity is system 2+. This system is described in the Council Directive 89/106/EEC Annex III, 2 (ii), First possibility as follows:

Declaration of conformity of the ETICS by the manufacturer on the basis of:

a) Tasks for the manufacturer:
1 - Initial type-testing of the ETICS and the components
2 - Factory Production Control
3 - Testing of samples taken at the factory in accordance with a prescribed test plan.

b) Tasks for the Notified Body:
4 - Certification of factory production control on the basis of:
- Initial inspection of factory and of factory production control;
- Continuous surveillance, assessment and approval of factory production control.

3.2 Responsibilities

3.2.1 Tasks for the manufacturer

3.2.1.1 Factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall insure that the product is in conformity with this ETA.

The manufacturer may only use components stated in the technical documentation of this ETA.

For the components of the ETICS which the ETA-holder does not manufacture by himself, he shall make sure that factory production control carried out by the other manufacturers gives the guaranty of the components compliance with the ETA.

The factory production control and the provisions taken by the ETA-holder for components not produced by himself shall be in accordance with the control plan[1)] relating to this European Technical Approval which is part of the technical documentation of this European Technical Approval. The Control plan is laid down in the context of the factory production control system operated by the manufacturer and deposited at the CSTB.

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

3.2.1.2 Other tasks for the manufacturer

The manufacturer shall, on the basis of a contract, involve a body which is notified for the tasks referred to in section 3.1 in the field of ETICS in order to undertake the actions laid down in section 3.3. For this purpose, the control plan referred to in sections 3.2.1.1 and 3.2.2 shall be handed over by the manufacturer to the Notified Body involved.

For initial type testing (in case of system 2+), the results of the tests performed as part of the assessment for the ETA can be used unless there are changes in the production line or plant. In such cases, the necessary initial type testing has to be agreed between the CSTB and the Notified Body involved.

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1) The control plan is a confidential part of the European Technical Approval and only handed over to the Notified Body involved in the procedure of attestation of conformity. See section 3.2.2.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of this ETA. The initial type-testing mentioned above could be taken over by the manufacturer for this declaration.

3.2.2 Tasks of Notified Body

The Notified Body shall perform the:

- initial type-testing of the product.
  The results of the tests performed as part of the assessment for the ETA can be used unless there are changes in the production line or plant. In such cases, the necessary initial type testing has to be agreed between the CSTB and the Notified Body involved,

- initial inspection of factory and of factory production control
  The Notified Body shall ascertain that the factory (in particular the employees and the equipment) and the factory production control are suitable to ensure continuous and orderly manufacturing of the components according to the specifications mentioned in clause 2 of this ETA.

- continuous surveillance, assessment and approval of factory production control.
  The Notified Body (Bodies) shall visit the factory:
  at least twice a year for surveillance. Further to agreement between the CSTB and the Notified Body involved, this frequency can be reduced to one a year after a probative period,

  or

  at least one a year for surveillance of this manufacturer having a FPC system complying with EN ISO 9001 covering the manufacturing of the ETICS components.
  It has to be verified that the system of factory production control and the specified automated manufacturing process are maintained.

These tasks shall be performed in accordance with the provisions laid down in the control plan relating to this ETA.

The Notified Body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in (a) written report (reports).

In the case of attestation of conformity system 1, the Notified Body involved by the manufacturer shall issue an EC certificate of conformity of the product stating the conformity with the provisions of this ETA.

In the case of attestation of conformity system 2+, the Notified Body involved by the manufacturer shall issue an EC certificate of conformity of the factory production control stating the conformity with the provisions of this ETA.

If the provisions of the ETA and its control plan are no longer fulfilled, the Notified Body shall withdraw the certificate of conformity and inform the CSTB without delay.

3.3 CE marking

The CE marking shall be affixed either on the product itself, on a label attached to it, on its packaging or on the commercial documents accompanying the components of the ETICS.

The letters “CE” shall be followed by the identification number of the Notified Body involved and be accompanied by the following additional information:
- the name or identifying mark and address of the ETA-holder;
- the last two digits of the year in which the CE marking was affixed;
- the number of the EC certificate of conformity for the ETICS (system 1);
- the number of the EC certificate of conformity of Factory Production Control (system 2+);
- the number of the ETA;
- the ETICS trade name;
the number of the ETAG.

4 - Assumptions under which the fitness of the product for the intended use was favourably assessed

4.1 Manufacturing

The European Technical Approval is issued for the ETICS on the basis of agreed data/information, deposited with the Centre Scientifique et Technique du Bâtiment, which identifies the ETICS that has been assessed and judged. Changes to the ETICS or production process, which could result in this deposited data/information being incorrect, should be notified to the Centre Scientifique et Technique du Bâtiment before the changes are introduced. The Centre Scientifique et Technique du Bâtiment will decide whether or not such changes affect the ETA and consequently the validity of the CE marking on the basis of the ETA and if so whether further assessment or alterations to the ETA, shall be necessary.

4.2 Installation

4.2.1 General

It is the responsibility of the ETA-holder to guarantee that the information about design and installation of this ETICS are easily accessible to the concerned people. These information can be given using reproductions of the respective parts of the European Technical Approval. Besides, all the data concerning the execution shall be clearly indicated on the packaging and/or the enclosed instruction sheets using one or several illustrations.

In any case, the user shall comply with the national regulations and particularly concerning fires and wind load resistance.

Only the components described in clause 1.1 with characteristics according to clause 2 of this ETA can be used for the ETICS.

The requirements given in ETAG 004, chapter 7 as well as the information of paragraphs 4.2.2 and 4.2.3, have to be considered.

4.2.2 Design

To bond the ETICS, the minimal surface area and the method of bonding shall comply with characteristics of the ETICS (see § 2.2.10.1 of this ETA) as well as the national regulations. In any case, the minimal surface shall be at least 20%.

4.2.3 Execution

The recognition and preparation of the substrate as well as the generalities about the execution of the ETICS shall be carried out in compliance with:

- chapter 7 of the ETAG no. 004 **with imperative removal of any existing paint finishes and any organic renders for bonded application**,
- national regulations in effect.

The particularities in execution linked to the different methods of fixing and the application of the rendering system shall be handled in accordance with ETA-holder prescriptions. In particular it is suitable to comply with the quantities of rendering applied, the thickness regularity and the drying periods between 2 layers.

5 - Indications to the manufacturers

5.1 Packaging, transport and storage

Packaging of the components has to be such that the products are protected from moisture during transport and storage, unless other measures are foreseen by the manufacturer for this purpose.

The components have to be protected against damage.

It is the responsibility of the manufacturers to ensure that these provisions are easily accessible to the concerned people.

5.2 Use, maintenance and repair

The finishing coat shall normally be maintained in order to fully preserve the ETICS's performances.

Maintenance includes at least:

- the repairing of localised damaged areas due to accidents,
- the aspect maintenance with products adapted and compatible with the ETICS (possibly after washing or ad hoc preparation).

Necessary repairs should be done rapidly.

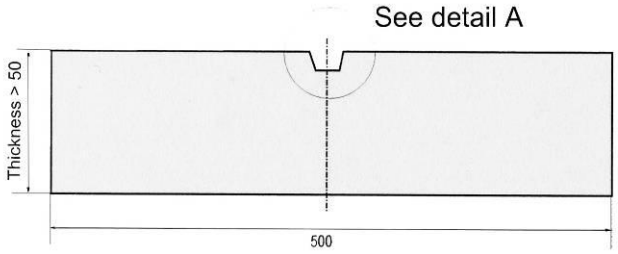
It is important to be able to carry out maintenance as far as possible using readily available products and equipment, without spoiling appearance.

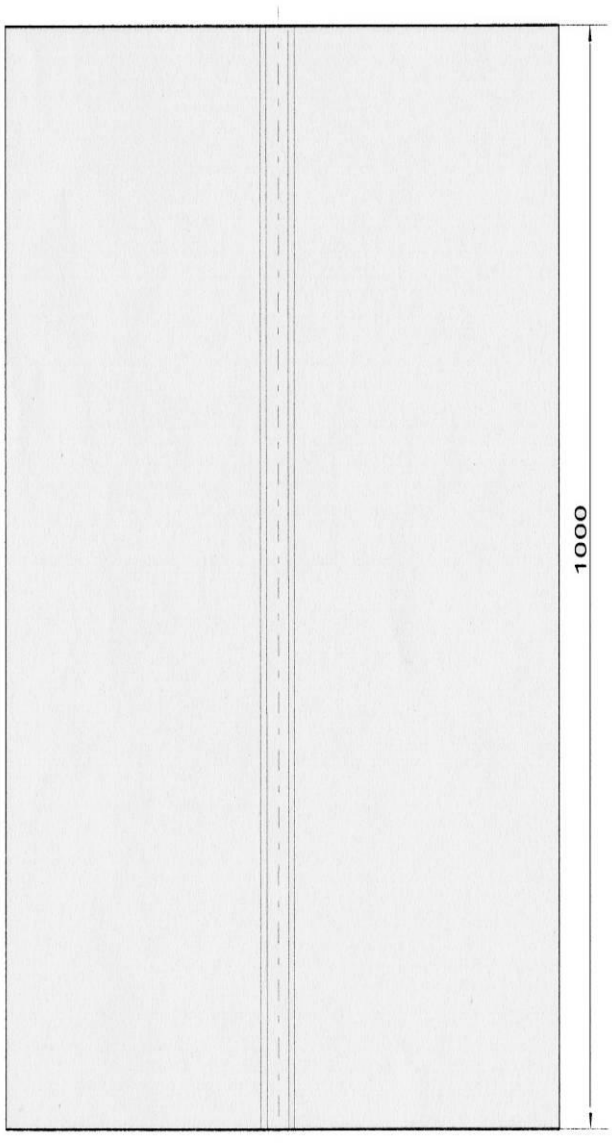
It is the responsibility of the manufacturers to ensure that these provisions are easily accessible to the concerned people.

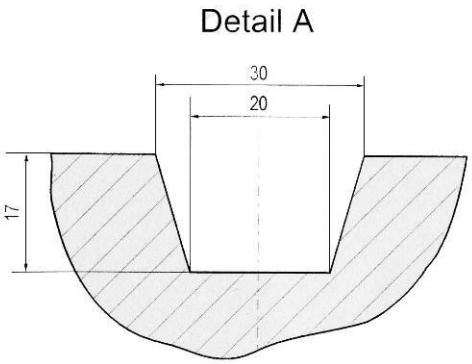
The original French version is signed by
the Technical Director
C. BALOCHE

Components	"German" trade name	"French" trade name	"English" trade name
Adhesives	Sto-Dispersionskleber	Sto-Colle Dispersion	Sto-Dispersion Adhesive
	Sto Prefa Coll		
EPS Panels	Sto-Polystyrol Hartschaumplatte	Sto-Panneaux Polystyrène	Sto EPS Board
	Sto-Polystyrol HartschaumplatteType M	Sto-Panneaux Polystyrène Type M	Sto EPS Board M
	EPS panels certified ACERMI and with a minimal classification (cf § 2.3.1)		
	Sto-Bossenplatte	Sto-Panneaux pour Bossage	Sto-Rustication Board
Base coat	StoPrefa Armat		
Meshes	Sto-Glasfasergewebe	Sto-Fibre de verre Standard	Sto-Glass Fibre Mesh
	Sto-Glasfasergewebe F	Sto-Fibre de verre F	"Not available"
	"Not available"	Sto-Fibre de verre Ra60	"Not available"
	Sto-Panzergewebe	Sto-Fibre de verre de Blindage	Sto-Amour Mesh
	Sto-Abschirmgewebe AES	Sto-Fibre AES	Sto-Shield Mesh AES
	Sto-Bossengewebe	Sto-Fibre de verre pour polystyrène à bossage	Sto-Rustication Mesh
Finishing coats	Stolit K, R, MP and Effect StoSilco K, R and MP StoLotusan K and MP Sto-Superlit StoNivellit + StoSilco Color Sto-Color Maxicryl		
	Sto-Klebe und Fugenmörtel + Sto-Flachverblender	Sto-Colle pour Briquette + Sto-Briquettes de parement	Sto-Adhesive and Joint Mortar + Sto-Brick Slips

Dimensions in millimetres

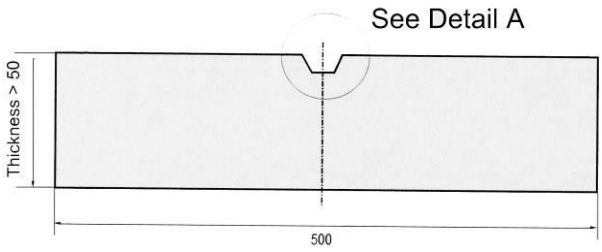


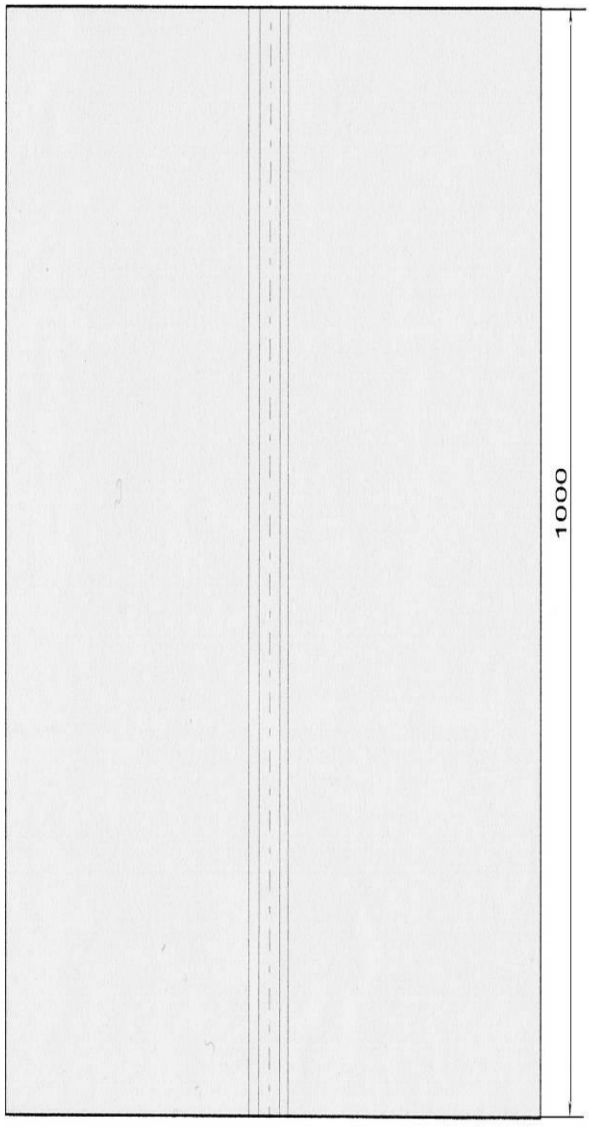


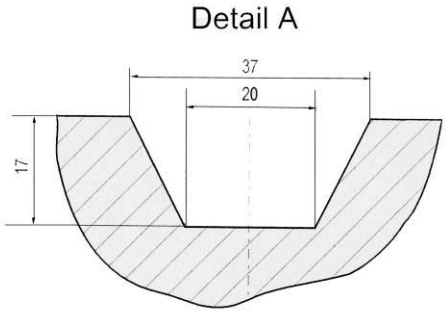


ETICS StoTherm Classic 7	**Annex 2 (1/3)**
Bonded ETICS - Description of the EPS panels Sto-Bossenplatte Type I	of European Technical Approval **ETA-11/0505**

Dimensions in millimetres

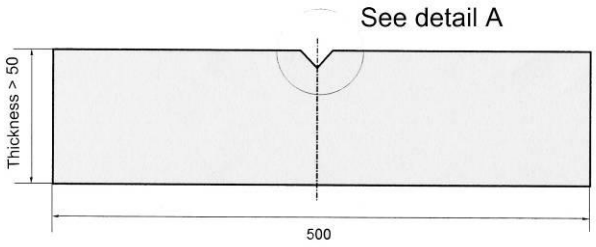


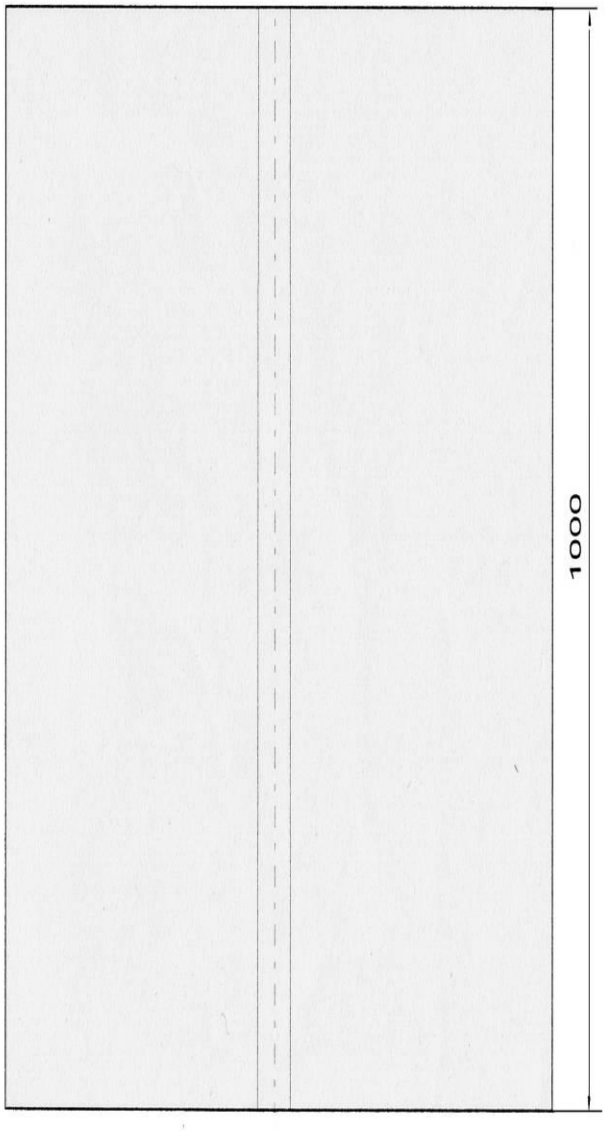


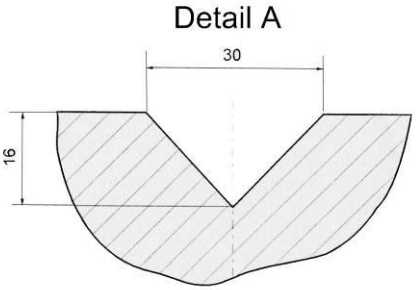


ETICS StoTherm Classic 7	**Annex 2 (2/3)**
Bonded ETICS - Description of the EPS panels Sto-Bossenplatte Type II	of European Technical Approval **ETA-11/0505**

Dimensions in millimetres

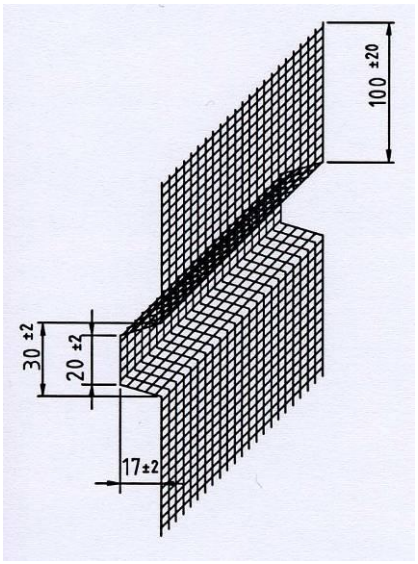




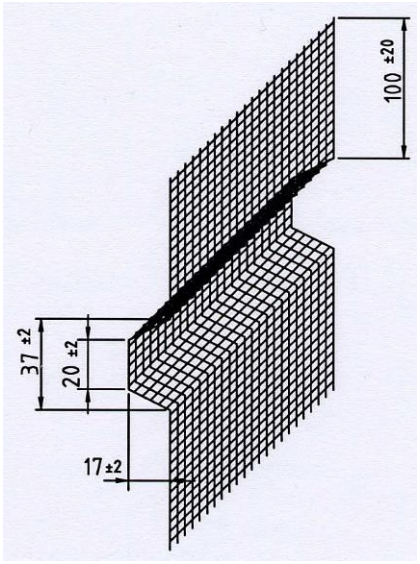


ETICS StoTherm Classic 7	**Annex 2 (3/3)**
Bonded ETICS - Description of the EPS panels Sto-Bossenplatte Type III	of European Technical Approval **ETA-11/0505**

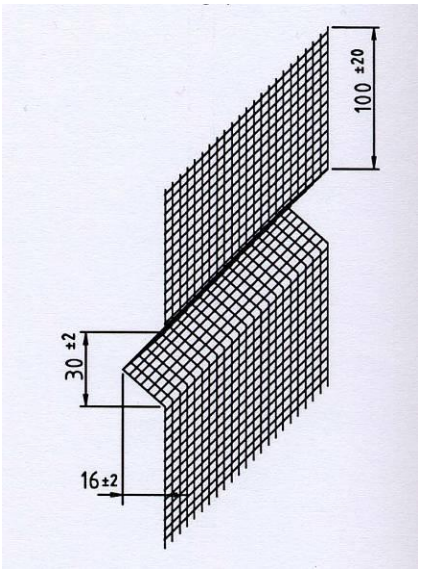
Dimensions in millimetres



TYPE I



TYPE II



TYPE III

Length: 2.0 m

ETICS StoTherm Classic 7	**Annex 3** of European Technical Approval **ETA-11/0505**
Description of the Sto-Bossengewebe	

		Adhesives	
		Sto-Dispersionkleber	**StoPrefa Coll**
Base coat + finishing coats indicated opposite:	Stolit K / R / MP / Effect	X_1	X_1
	StoSilco K / R / MP	X_1	X_1
	Sto Lotusan K / MP	X_1	X_1
	Sto Superlit	X_1	X_1
	Sto Nivellit + StoSilco Color	X_1	X_1
	Sto-Klebe und Fügenmörtel + Sto-Flachverblender	X_2	X_2

X_1 : Configurations concerned by the system 1 of attestation of conformity for the reaction to fire
X_2 : Configurations concerned by the system 2+ of attestation of conformity for the reaction to fire