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Agrément Certificate
99/3629
Product Sheet 2

TRESPA WALL CLADDING SYSTEMS

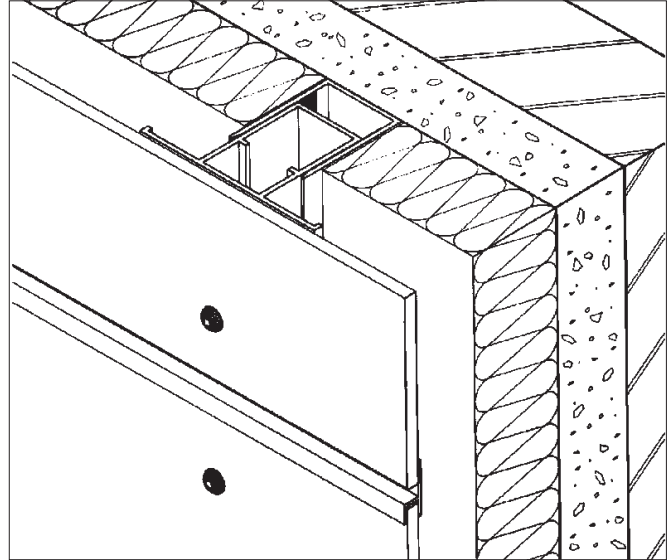
SYSTEM 700 ALUMINIUM SUB-FRAME SYSTEM

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to the System 700 Aluminium Sub-frame System to which Trespa Meteon cladding panels may be fixed.

AGRÉMENT CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.



KEY FACTORS ASSESSED

Strength and stability — the system is a suitable sub-frame support system for Trespa Meteon panels (see section 5).

The BBA has awarded this Agrément Certificate to the company named above for the system described herein. This system has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 4 August 2010

Brian Chamberlain
Head of Approvals — Engineering

Greg Cooper
Chief Executive

The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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Regulations

In the opinion of the BBA, the System 700 Aluminium Sub-frame System, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:



The Building Regulations 2000 (as amended) (England and Wales)

Requirement:	A1	Loading
Comment:		When designed in accordance with this Certificate, the system has sufficient strength and stability. See sections 3.3, 3.4 and 5 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The system is acceptable. See section 7 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Fitness and durability of materials and workmanship
Comment:		The use of the system satisfies the requirements of this Regulation. See sections 6 and 7 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building Standards – construction
Standard:	1.1(a)(b)	Structure
Comment:		When designed in accordance with this Certificate, the system has sufficient strength and stability, with reference to clause 1.1.1 ⁽¹⁾⁽²⁾ . See sections 3.3, 3.4 and 5 of this Certificate. (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



The Building Regulations (Northern Ireland) 2000 (as amended)

Regulation:	B2	Fitness of materials and workmanship
Comment:		The system is acceptable. See section 7 and the <i>Installation</i> part of this Certificate.
Regulation:	D1	Stability
Comment:		When designed in accordance with this Certificate, the system has sufficient strength and stability. See sections 3.3, 3.4 and 5 of this Certificate.

Construction (Design and Management) Regulations 2007

Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See sections: 2 *Delivery and site handling* 4 *Practicability of installation* and 8 *Installation – General* of this Certificate.

Non-regulatory Information

NHBC Standards 2010

NHBC accepts the use of the System 700 Aluminium Sub-frame System, when installed and used in accordance with this Certificate, in relation to *NHBC Standards, Part 6 Superstructure (excluding roofs) Chapter 6.9 Curtain walling and cladding*.

General

This Certificate relates to the System 700 Aluminium Sub-frame System to which Trespa Meteor cladding panels may be fixed.

The system is marketed in the UK by:

Trespa UK Ltd, Grosvenor House, Hollinswood Road, Central Park, Telford, Shropshire TF2 9TW
Tel: 01952 290707, Fax: 01952 290101

It is essential that the system is installed in accordance with the manufacturer's instructions and the requirements of this Certificate.

1 Description

1.1 The System 700 Aluminium Sub-frame System is for supporting Trespa Meteon panels. It is primarily intended for use in high-rise overcladding applications.

1.2 The components of the system are detailed in Table 1 and shown in Figure 1. The fixings are listed in Table 2.

Table 1 System 700 Components

Component	Dimensions (mm)			
	length	width	depth	thickness
Wall bracket ⁽¹⁾	100	53	72 122	3.5
Vertical T-rail ⁽¹⁾	variable	125 (at flange) 46.3 (at box section)	75	3
Vertical box rail (a T-rail without flange) ⁽¹⁾	variable	46.3	75	3
Spigot box end ⁽¹⁾	200	40	40	2.5
Trimmer (typical) ⁽¹⁾	variable	50.8	76.2	3.18
End plates ⁽²⁾	150	80	—	3
PVC-U self-adhesive tape	variable	45, 125	—	3

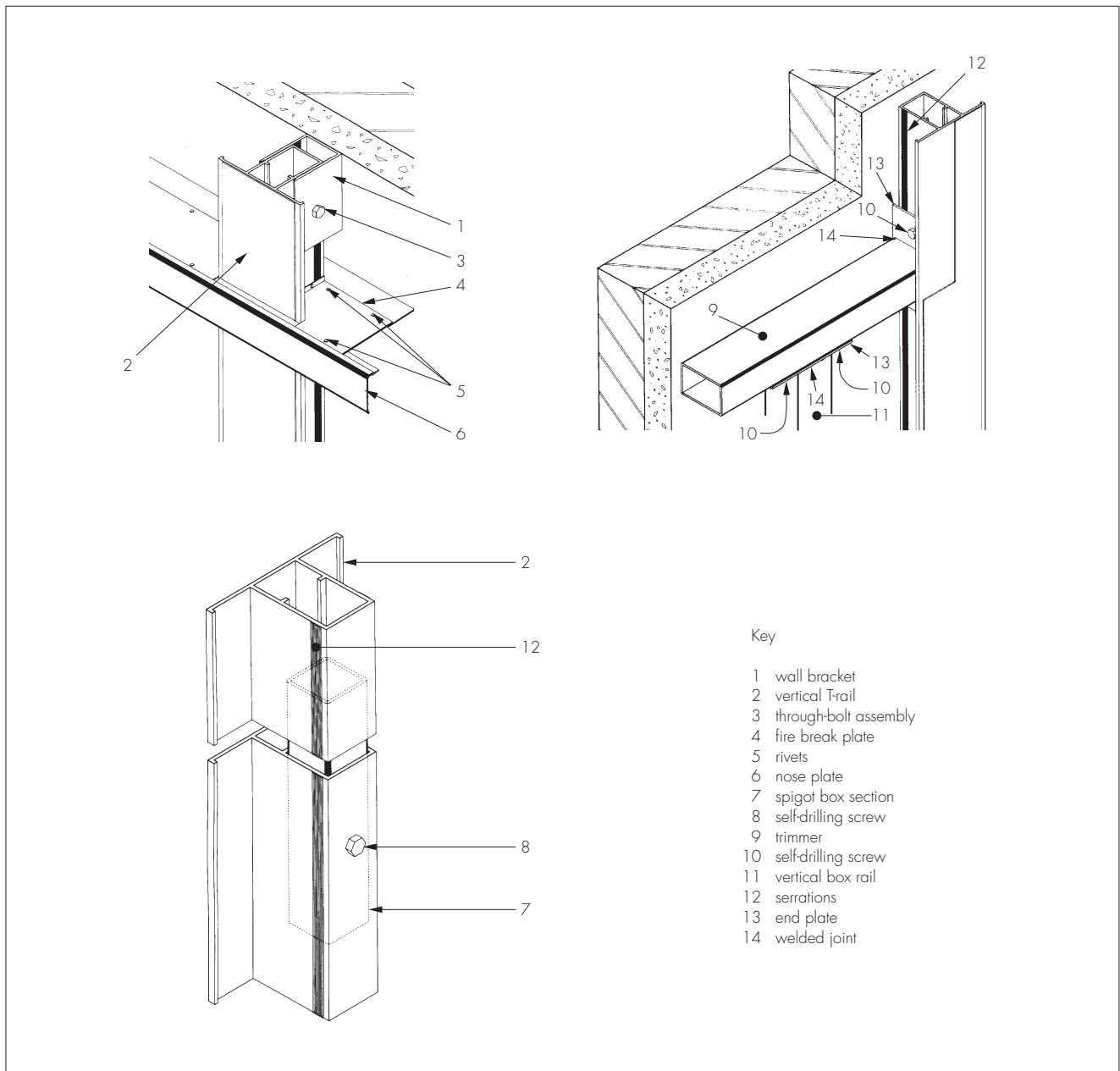
(1) Aluminium alloy AW-6063A T6 to BS EN 755-2 : 2008.

(2) Aluminium alloy AW-1200 H14 to BS EN 485-2 : 2008.

Table 2 Fixings

Fixing between	Description
Vertical T-rail — wall bracket	stainless steel M8 x 70 mm bolt, stainless steel full nut, stainless steel washer, nylon washer.
Vertical T-rail — spigot box end	self-drilling screw with EPDM washer
Vertical T-rail — trimmer	self-drilling screw with EPDM washer
Vertical box rail — trimmer rail	self-drilling screw with EPDM washer

Figure 1 System 700 Components



1.3 Wall brackets are available in two depths to accommodate varying thicknesses of insulation behind the cladding whilst maintaining the required ventilation pathway. The brackets incorporate an 8 mm diameter round hole for tight fixing and an 8 mm by 28 mm elongated hole for expansion fixing.

1.4 The internal faces of the wall brackets and the external faces of the vertical rails are serrated to allow correct positioning of the rails prior to fixing.

1.5 T-rails are supplied pre-fixed to a spigot box at one end.

1.6 A frame section comprising horizontal trimmers and vertical box rails is pre-fabricated at the factory for use between window openings. End plates are welded to the ends of both trimmers and box rails before the box rails are screwed to the trimmers through their end plates.

1.7 A range of trims (eg base plate, corner trims, window pods, and H-profile for closing the horizontal joints between panels) is available for use with the system but is outside the scope of this Certificate.

1.8 Fire-break plates for use with a nose plate at the horizontal joint between panels at each floor level are also available, but are outside the scope of this Certificate.

1.9 Aluminium sections are manufactured to specification by conventional extrusion techniques. Critical dimensions are monitored regularly.

2 Delivery and site handling

2.1 System 700 aluminium rails are delivered to site banded on pallets.

2.2 Packs of rails should be stacked horizontally on sufficient bearers to prevent distortion. Pallets should be stored on a dry flat level surface and be suitably protected from the weather.

2.3 Each System 700 rail ('T' profile or box section) is individually marked according to project specific installation sequence and carries a BBA label.

2.4 Brackets are delivered to site in cartons of a size suitable for manual handling.

2.5 Care should be taken when handling long rail lengths, especially at height. Damaged items should not be used.

Assessment and Technical Investigations


The following is a summary of the assessment and technical investigations carried out on the System 700 Aluminum Sub-frame System.

Design Considerations

3 General

3.1 The System 700 Aluminum Sub-frame System should be designed by appropriately qualified and experienced persons. They will need to specify the method of fixing wall brackets to the substrate, which is outside the scope of this Certificate.

3.2 The coefficient of linear expansion of aluminium is 23×10^{-6} . A minimum 15 mm gap between vertical rails is recommended to accommodate thermal movement.

 3.3 Masonry or concrete to which the support work and cladding are fixed should be structurally sound and have been constructed in the conventional manner in accordance with one or more of the following technical specifications:


- BS 5628-1 : 2005 and BS 5628-3 : 2005
- BS 8110-1 : 1997 and BS 8110-2 : 1985 or BS EN 1992-1-1 : 2004 and BS EN 1992-1-2 : 2004
- Section 1, Part C of Approved Document A1/2 to The Building Regulations (England and Wales)
- *The Small Buildings Guide*, for compliance with Part C of the Technical Booklet for compliance with The Building (Scotland) Regulations
- Technical Booklet D *Structure*, to The Building Regulations (Northern Ireland).

3.4 Timber stud walls should be structurally sound and have been constructed in accordance with BS 5268-2 : 2005 and preservative treated in accordance with BS 5268-5 : 1989. Studding should be adequately supported by noggings to ensure rigidity. Where timber stud walls are treated with aqueous, copper-based preservatives, care must be taken to ensure that sufficient time is allowed for complete fixation of the preservative (approximately seven days) before the sub-frame system is secured.


4 Practicability of installation

The system is designed to be installed by competent trained operatives experienced with this type of system.


5 Strength and stability

 The system is a suitable sub-frame support system for Trespa Meteon panels. For each application a bespoke sub-frame system must be designed in accordance with BS 8118-1 : 1991.

6 Maintenance

 As the sub-frame system is confined behind the cladding panels and has suitable durability (see section 7), maintenance is not required.

7 Durability

 The sub-frame system will have a service life equivalent to that of the Trespa Meteon Panels, as described in Product Sheet 1, section 9.2.

Installation

8 General

8.1 Installation of the system must be carried out in accordance with the manufacturer's instructions.

8.2 Installation details are shown in Figure 1.

8.3 When a fire-break system is incorporated into the sub-frame, care must be taken to ensure that the ventilation run behind the cladding is not obstructed. The fire-break plate must slope slightly towards the outer face to allow water penetrating behind the cladding to drain away from the insulation or substrate wall.

9 Procedure

- 9.1 Alternate tight and elongated hole wall brackets are fixed to the substrate at each floor level.
- 9.2 Vertical rails (with a spigot box section fixed into an end) are slotted into the serrations in the wall bracket and fixed with a through bolt. The vertical rails normally cover two floors (5.3 m) with a tight fixing to the central bracket and expansion fixings at the two ends. The open end of the next rail is fitted over the spigot box end of the previous rail, leaving an expansion gap of 15 mm (minimum) between rails.
- 9.3 A strip of the PVC-U self-adhesive compressible tape is run down the face of all vertical rails to prevent panel 'drumming'.
- 9.4 In between window openings in the wall, a pre-fabricated frame (see section 1.6) is fixed to vertical T-rails by screwing through the trimmer end plates.
- 9.5 Panels are riveted to the face of the vertical rail sections by the standard procedure described in Product Sheet 1 of this Certificate.

Technical Investigations

10 Investigations

- 10.1 A site visit was undertaken to assess the practicability of installation.
- 10.2 Calculations were made to check the strength of the system.
- 10.3 Assessments were made of factory production control and durability.

Bibliography

- BS 5628-1 : 2005 *Code of practice for the use of masonry — Structural use of unreinforced masonry*
BS 5628-3 : 2005 *Code of practice for the use of masonry — Materials and components, design*
- BS 8110-1 : 1997 *Structural use of concrete — Code of practice for design and construction*
BS 8110-2 : 1985 *Structural use of concrete — Code of practice for special circumstances*
- BS 8118-1 : 1991 *Structural use of aluminium — Code of practice for design*
- BS EN 485-2 : 2008 *Aluminium and aluminium alloys — Sheet, strip and plate — Mechanical properties*
BS EN 755-2 : 2008 *Aluminium and aluminium alloys — Extruded rod/bar, tube and profiles — Mechanical properties*
- BS EN 1992-1-1 : 2004 *Eurocode 2 : Design of concrete structures — General rules and rules for buildings*
BS EN 1992-1-2 : 2004 *Eurocode 2 : Design of concrete structures — General rules — Structural fire design*

11 Conditions

11.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is granted only to the company, firm or person named on the front page — no other company, firm or person may hold or claim any entitlement to this Certificate
- is valid only within the UK
- has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English law.

11.2 Publications and documents referred to in this Certificate are those that the BBA deems to be relevant at the date of issue or re-issue of this Certificate and include any: Act of Parliament; Statutory Instrument; Directive; Regulation; British, European or International Standard; Code of Practice; manufacturers' instructions; or any other publication or document similar or related to the aforementioned.

11.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

11.4 In granting this Certificate, the BBA is not responsible for:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- individual installations of the product/system, including the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

11.5 Any information relating to the manufacture, supply, installation, use and maintenance of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used and maintained. It does not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the manufacture, supply, installation, use and maintenance of this product/system.

