

## Portakabin Ltd

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Building System  
Agrément Certificate  
**00/S025**  
Product Sheet 1

## TITAN BUILDINGS

### PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate replaces Certificate 94/S021 and relates to Titan Buildings, self-contained relocatable, factory-finished buildings for use as single-storey institutional, educational, office and similar non-residential accommodation or two-storey office and similar non-residential accommodation. In all cases the buildings can be in single or multiple units.

#### 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** — full-scale structural tests indicate that the unit has adequate resistance to loads (see section 6).

**Behaviour in relation to fire** — it can be shown by tests and assessment that the buildings will meet building regulations' requirements for fire rating (see section 7).

**Thermal insulation** — Roofs, walls and floors, and their connecting junctions, meet the limit case U value and ACD psi ( $\psi$ ) values specified for a 'notional' building. See section 8.

**Durability** — the steel structure has a minimum life of 60 years. The design life of the external envelope and internal finishes is between 25 and 60 years (see section 15).



The BBA has awarded this Agrément Certificate to the company named above for the product described herein. This product 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



Brian Chamberlain  
Head of Approvals — Engineering



Greg Cooper  
Chief Executive

Date of First issue: 14 November 2008

Originally certificated on 30 November 1994

*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](http://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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In the opinion of the BBA, Titan Buildings, 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)

Requirements:	A1	Loading
	A3	Disproportionate collapse
Comment:	The buildings will have adequate strength and stability. See sections 6.1 to 6.5 of this Certificate.	
Requirements:	B2	Internal fire spread (linings)
	B3	Internal fire spread (structure)
	B4	External fire spread
Comment:	The buildings will meet the relevant requirements within the limitations set out in this Certificate. See sections 7.1 to 7.4 of this Certificate.	
Requirement:	C2(a)(b)(c)	Resistance to weather and ground moisture
Comment:	The buildings are acceptable. See sections 12.1 to 12.5 of this Certificate.	
Requirement:	E4	Acoustic conditions in schools
Comment:	Separating and internal walls and floors incorporating the system can adequately resist airborne and impact sound transmission. See section 11 of this Certificate.	
Requirement:	L1(a)(i)	Conservation of fuel and power
Comment:	The buildings are acceptable. See sections 8.1, 8.2, 8.4 and 8.5 of this Certificate.	
Requirement:	Regulation 7	Materials and workmanship
Comment:	The buildings are acceptable. See section 15.1 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 buildings are acceptable. See sections 14.1 to 14.5 and 15.1 and the <i>Installation</i> part of this Certificate.	
Regulation:	9	Building standards — construction
Standards:	1.1(a)(b)	Structure
	1.2	Disproportionate collapse
Comment:	The buildings will have adequate strength and stability. See sections 6.1 to 6.5 of this Certificate, with reference to clauses 1.1.1 <sup>(1)</sup> and 1.2.1 <sup>(1)</sup> of these Standards.	
Standards:	2.1	Compartmentation
	2.2	Separation
	2.3	Structural protection
	2.4	Cavities
	2.5	Internal linings
	2.6	Spread to neighbouring buildings
	2.7	Spread on external walls
	2.8	Spread from neighbouring buildings
Comment:	The buildings will meet the relevant Standards within the limitations set out in this Certificate. See sections 7.1 to 7.4 of this Certificate, with reference to clauses 2.1.12 <sup>(1)</sup> , 2.1.15 <sup>(1)</sup> , 2.2.1 <sup>(1)</sup> , 2.2.3 <sup>(1)</sup> , 2.2.4 <sup>(1)</sup> , 2.2.7 <sup>(1)</sup> , 2.3.1 <sup>(1)</sup> , 2.3.2 <sup>(1)</sup> , 2.3.4 <sup>(1)</sup> , 2.3.5 <sup>(1)</sup> , 2.4.1 <sup>(1)</sup> to 2.4.9 <sup>(1)</sup> (inclusive), 2.5.1 <sup>(1)</sup> , 2.6.1 <sup>(1)</sup> and 2.8.1 <sup>(1)</sup> of these Standards.	
Standards:	3.4	Moisture from the ground
	3.10	Precipitation
	3.15	Condensation
Comment:	The buildings are acceptable. See sections 9.1 to 9.3 and 12.1 to 12.5 of this Certificate, with reference to clauses 3.4.1 <sup>(1)</sup> , 3.4.5 <sup>(1)</sup> , 3.4.6 <sup>(1)</sup> , 3.10.1 <sup>(1)</sup> , 3.10.5 <sup>(1)</sup> and 3.10.8 <sup>(1)</sup> of these Standards.	
Standards:	6.1	Carbon dioxide emissions
	6.2	Building insulation envelope
Comment:	The buildings are acceptable. See sections 8.1, 8.2, 8.4 and 8.5 of this Certificate, with reference to clauses 6.2.1 <sup>(1)</sup> , 6.2.4 <sup>(1)</sup> and 6.2.5 <sup>(1)</sup> of these Standards.	
	(1) Technical Handbook (Non-Domestic).	



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

Regulation:	B2	Fitness of materials and workmanship
Comment:	The buildings are acceptable. See section 15.1 and the <i>Installation</i> part of this Certificate.	
Regulation:	B3(2)	Suitability of certain materials
Comment:	The buildings are acceptable. See section 14.1 to 14.5 of this Certificate.	
Regulation:	C4	Resistance to ground moisture and weather
Comment:	The buildings are acceptable. See sections 12.1 to 12.5 of this Certificate.	
Regulation:	C5	Condensation
Comment:	The buildings using the system are acceptable. See sections 9.1 to 9.3 of this Certificate.	

Regulations:	D1	Stability
	D2	Disproportionate collapse
Comment:	The buildings will have adequate strength and stability. See sections 6.1 to 6.5 of this Certificate.	
Regulations:	E3	Internal fire spread – Linings
	E4	Internal fire spread – Structure
	E5	External fire spread
Comment:	The buildings will meet the relevant Regulations within the limitations set out in this Certificate. See sections 7.1 to 7.4 of this Certificate.	
Regulation:	F1	Conservation of fuel and power in dwellings
	F2	Conservation of fuel and power in buildings other than dwellings
Comment:	The buildings are acceptable. See sections 8.1, 8.2, 8.4 and 8.5 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: 3 *Delivery and site handling*, 17 *Procedure*.

## Non-regulatory Information

### Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, Titan Buildings, when installed and used in accordance with this Certificate, satisfies the requirements of the *Zurich Building Guarantee Technical Manual*, Section 3 *Superstructure*, Sub-section *Floors*; Section 4 *Superstructure*, Sub-section *External walls – steel frame*; Section 4 *Superstructure*, Sub-section *Flat Roofs*.

## General

The Titan Building is a self-contained, relocatable and factory-finished building for use as single-, and two-storey institutional, educational, office and similar non-residential accommodation

The standard range of building sizes covered by the scope of this Certificate has been assessed for structural stability and does not require additional analysis or approval by a consultant engineer except where a non-standard layout is proposed. In these situations the Certificate holder should be consulted on any design restrictions.

Specifiers shall ensure plan form, internal subdivision, siting of the building, access for the disabled, access for fire services and means of escape in case of fire comply with the relevant Building Regulations' requirements.

This assessment does not cover staircases, windows and doorsets or the adequacy of the plumbing, drainage or electrical services supplied with the buildings, or the ventilation of bathrooms and rooms containing sanitary conveniences, which will vary according to use.

## Technical Specification

### 1 Description

#### General

- 1.1 Titan Buildings are based on a structural steel framework and composite wall panels (see Figure 1).
- 1.2 The buildings are available in the range of sizes given in Table 1. The internal height is 2.5 m and the overall external width is 4.214 m.
- 1.3 The full specification and drawings for the materials and components covered by this Certificate have been examined and are retained by the BBA. This section gives only general details of the system. Typical details are shown in Figures 2 and 3.

#### Structural frame

1.4 The steel frame for each building comprises four steel hollow section columns bolted to cold-formed galvanized steel frameworks at floor and roof level. The floor structure consists of floor joists bolted to side beams; the frame is then bolted to the steel-faced composite walls. The roof structure comprises side beams and end plates, bolted together at their corners, and screwed to the walls and the composite steel-faced roof panel that has integral steel joists. Roof side beams incorporate lifting points with web stiffeners and steel hollow section compression members spanning between them, above each column.

#### Floors

- 1.5 Floors comprise 18 mm thick moisture-resistant structural particle board, Type P5, to BS EN 312 : 2003, bonded and fixed to the galvanized steel joists with adhesive and zinc-coated screws.
- 1.6 The floor is underdrawn and insulated with rigid, HCFC-free, urethane foam board with foil facings.

Figure 1 Typical Titan building

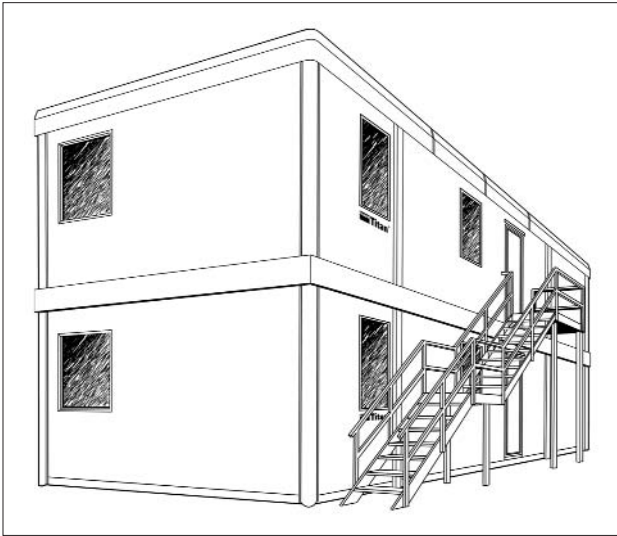


Table 1 Size range

Type	Internal length (m)	Internal width (m)	Floor area (m <sup>2</sup> )
TN 104	9.556	3.746	35.80
TN 124	11.956	3.746	44.79
TN 154	14.356	3.746	53.78
TN 184	17.956	3.746	67.26

Figure 2 Section through end wall

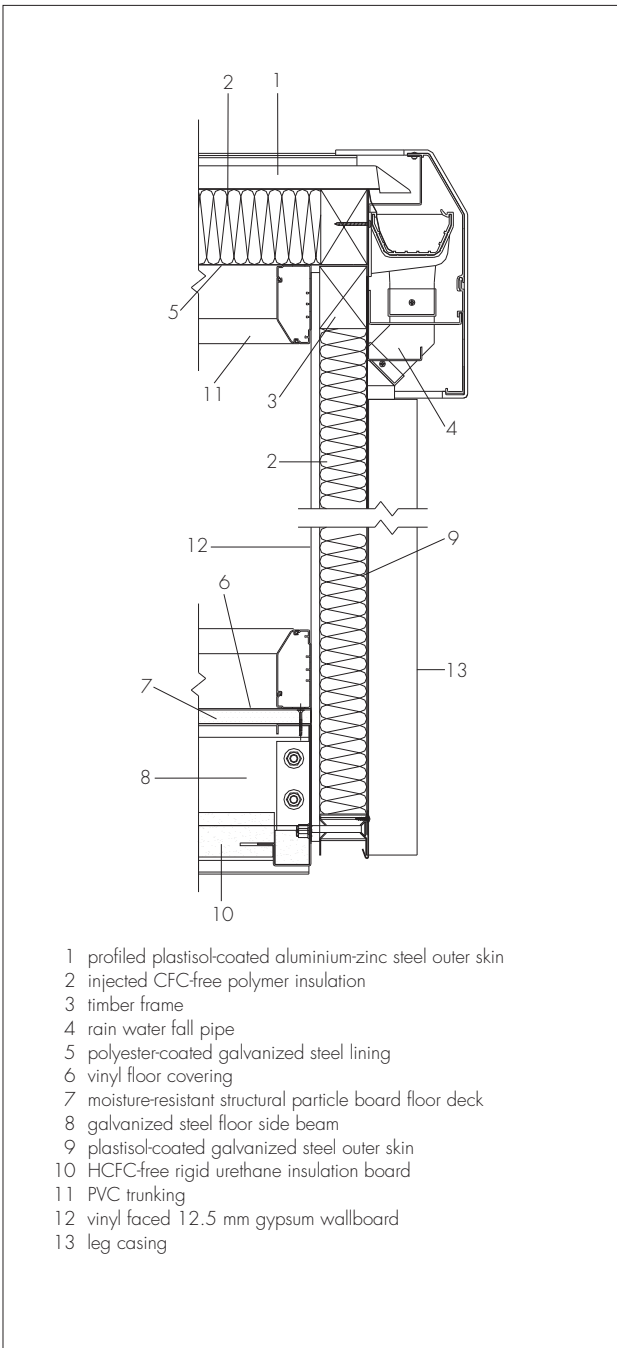
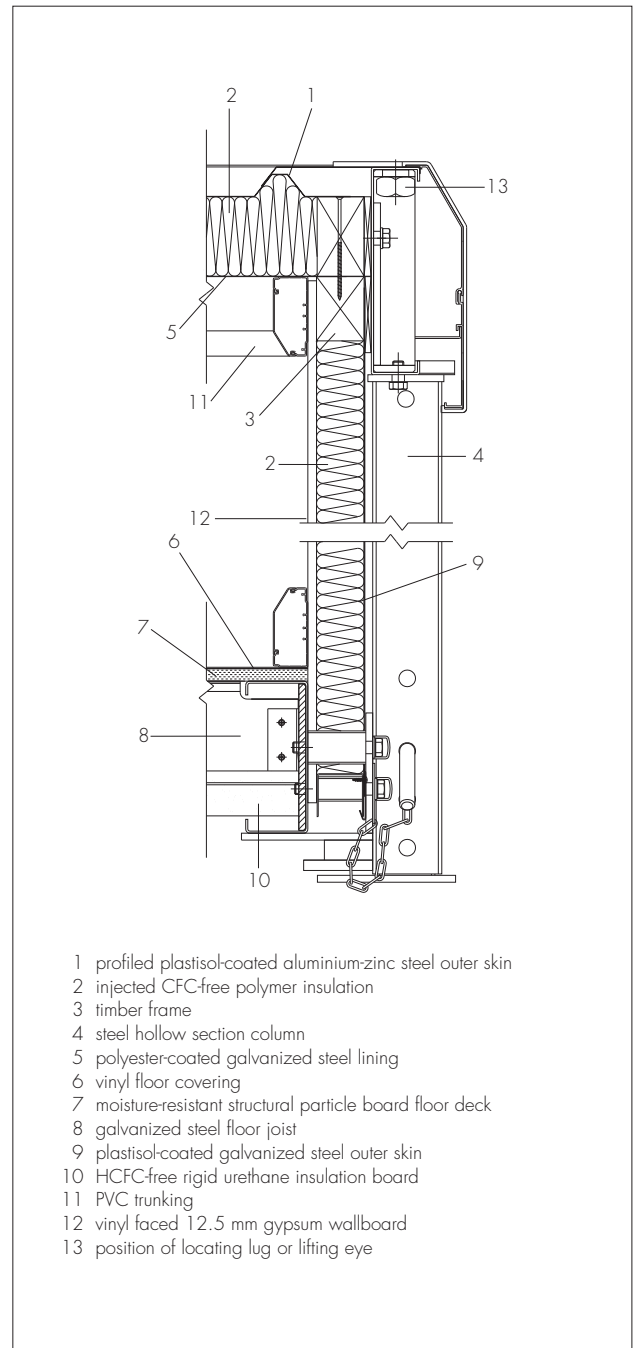


Figure 3 Section through long wall



## External walls

1.7 External walls are of composite construction having an external skin of plastisol-coated galvanized steel sheet (the subject of a BBA Certificate), timber top and end posts and rigid polymer intermediate studs, a galvanized steel bottom rail and an internal lining of 12.5 mm thick vapour check, Type 5 gypsum wallboard. The void between the external skin and internal lining is filled with injected, rigid, CFC-free polymer insulation.

1.8 Walls are fixed to the steel frame at floor level using countersunk bolts screwed into blind rivet nuts set in the floor frame, and at the wall-to-wall corner joint and roof level using zinc-plated steel screws.

## Roof and ceiling

1.9 The roof is of composite construction having an external profiled (trapezoidal) skin of plastisol-coated aluminium-zinc steel sheet, rigid polymer inserts, galvanized coated cold-formed steel joists, softwood peripheral frame and a ceiling of polyester-coated galvanized steel. The void between the external skin and ceiling is filled with injected, rigid, CFC-free polymer insulation.

## Connection between units

1.10 For two-storey applications, a locating pin is screwed into a pair of diagonally opposite lifting eye locations and bolted through the adjacent holes. There is no structural connection between horizontally adjacent units.

## Protection of steelwork against corrosion

1.11 The side beams are produced from galvanized steel sheet to BS EN 10326 : 2004 – S250GD + Z275-N-A-C, and floor joists from BS EN 10326 : 2004 – S350GD + Z275-N-A-C.

1.12 The roof beams are produced from galvanized steel sheet to BS EN 10326 : 2004 – S250GD + Z275-N-A-C.

1.13 The steel columns are shot-blasted, coated with anti-corrosive primer and finished with a goosewing-grey coloured gloss paint.

1.14 The external skin of the building is protected by a 200 µm coating of PVC plastisol applied over a Z275 zinc coating to BS EN 10326 : 2004.

## Finishes

1.15 The external faces of wall panels have a plastisol coating, goosewing grey in colour with a leathergrain finish.

1.16 The external face of the roof panel has a white plastisol coating, with a Scintilla micro-textured finish.

1.17 Internal walls have a textured white vinyl finish.

1.18 The ceiling has a white polyester finish.

1.19 An architectural, grey, polyester-powder-coated, extruded aluminium roof fascia is fitted around the perimeter of the building. Roof flashings are of aluminium/zinc alloy coated steel to BS EN 10327 : 2004. Cylindrical-shaped architectural, polyester-powder-coated, extruded aluminium casings are positioned at each corner of the building and optionally around the Lodastrut legs.

1.20 When two buildings are sited next to each other, linking panels with fascia can be used to improve the architectural appearance of the buildings as an option.

1.21 In applications where water will be present, vinyl flooring is provided with welded joints and sealed upstands at floor/wall interfaces. The vinyl floor covering is specified to BS EN 649 : 1997 and is classified 23, 24 and 35 in accordance with BS EN 685 : 2005 and G5ws in accordance with MOAT No 36 : 1987.

## 2 Manufacture

2.1 Building components are bought-in to agreed specifications or in accordance with British Standards or Agrément Certificates.

2.2 Steel framed components of the building are constructed using conventional metalworking techniques.

2.3 Quality checks are made on the sub-assemblies, such as wall and roof panels and the steel frame, and on the final assembly of the building. Quality control carried out during manufacture includes checks on dimensions, squareness and welding.

## 3 Delivery and site handling

3.1 The buildings are transported to site on a flat-bed lorry or trailer.

3.2 The buildings can be unloaded using either the telescopic legs or by crane. Handling must be in accordance with the manufacturer's handbook.

3.3 The buildings are normally positioned on the day of delivery, thus site storage is not required.

# Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Titan Buildings.

## Design Considerations

### 4 Use

Titan Buildings are for use as single-storey institutional, educational, office and similar non-residential accommodation or two-storey office and similar non-residential accommodation. In all cases the buildings can be in single or multiple units.

### 5 Practicability of installation

The Certificate holder is responsible for delivery and installation.

### 6 Strength and stability



6.1 With certain exceptions described in this section, the design of the Titan Buildings is in accordance with:

- BS 5268-2 : 2002
- BS 5268-6.1 : 1996
- BS 5950-1 : 2000
- BS 5950-5 : 1998.

6.2 The system is designed to support loads in accordance with:

- BS 6399-1 : 1996
- BS 6399-2 : 1997
- BS 6399-3 : 1988.

6.3 Where required, structural testing has been used to verify the relevant aspects of the design outside the scope of the codes, including resistance of panels to racking, fastening characteristics, interaction of components and effects of thermal cycling.

6.4 One- and two-storey units have adequate resistance to<sup>(1)(2)</sup>:

- wind loads within the 25 ms<sup>-1</sup> basic wind contour, in accordance with BS 6399-2 : 1997
- uniformly imposed roof loads up to 0.75 kNm<sup>-2</sup> or a concentrated load up to 0.9 kN in accordance with BS 6399-3 : 1988 and, therefore, is acceptable where access is not provided, other than that necessary for cleaning or repair
- floor loads up to 3.0 kNm<sup>-2</sup> or a concentrated load up to 2.7 kN, in accordance with BS 6399-1 : 1996 and, therefore, is acceptable for use in classrooms and offices for general use.

(1) Under such load conditions, sway will be restricted to height/300.

(2) Full-scale structural tests indicate that the unit has adequate resistance to ultimate loads [design imposed load of (3.0 kNm<sup>-2</sup> x 1.6) + (dead load x 1.4)] and confirmed that under serviceability loads deflections will be less than span/360 for midspan sections and span/180 for cantilever sections.

6.5 Foundations must be designed in accordance with BS 8004 : 1986.

### 7 Behaviour in relation to fire



7.1 Buildings subject to Building Regulations in England and Wales, Scotland or Northern Ireland must not be erected within one metre of a boundary. Due regard must be taken of all 'unprotected areas'.

7.2 It can be shown by tests and assessment that the buildings will meet Building Regulations' requirements for fire rating:

external wall	half hour <sup>(1)</sup> (from inside)
combined roof and floor assembly	half hour <sup>(1)</sup> (from underside).

(1) 'short duration' in Scotland.

7.3 The various exposed surfaces of the buildings are assessed as having the following ratings as defined in the national Building Regulations:

- plastisol-coated steel external wall, roof and trim surfaces — Class 0<sup>(1)</sup>
- internal wall surfaces — Class 0<sup>(1)</sup>
- polyester-coated steel ceiling surface — Class 0<sup>(1)</sup>
- ground-floor underdrawing/insulation — Class 1<sup>(2)</sup>.

(1) 'low risk' in Scotland.

(2) 'medium risk' in Scotland.

**England and Wales** — Approved Document B, Appendix A, paragraph 1.3

**Scotland** — Technical Handbook (Non-Domestic), Annex 2.E.

**Northern Ireland** — Technical Booklet E, paragraph 4.3 (see also Diagram 4.1).

7.4 The roof is designated AA in accordance with the national Building Regulations:

**England and Wales** — Approved Document B, Section 10.4

**Scotland** — Technical Handbook (Non-Domestic), Annex 2.F

**Northern Ireland** — Technical Booklet E, Section 4.19.

7.5 Adequate provision must be made for warning and escape in case of fire.

7.6 Where it is necessary for fittings, services or ducts to penetrate part of the fire-resisting construction, the detailing must ensure that the relevant fire resistance is not impaired.

7.7 The behaviour in relation to fire of any intermediate walls or cavity barriers between modules in the roof and floor voids (other than where these occur at the perimeter of a module), or windows and doors, have not been assessed and, therefore, are outside the scope of this Certificate.

## 8 Thermal insulation



8.1 For the purpose of calculations, the element U values and their connecting junction psi ( $\psi$ ) values, may be taken from Table 2.

Table 2 Element U values ( $Wm^{-2}K^{-1}$ )

Element	U value
Ground floor	0.25 <sup>(1)</sup>
External wall	0.34
Flat roof	0.25

(1) For a typical floor p/a of approximately 0.7.

8.2 The building fabric's 'conductive' heat losses (see Table 2) do not exceed those specified for a 'notional' building (with metal cladding) in the Simplified Building Energy Model (SBEM) or the fabric performance limits specified in the relevant documents supporting the national Building Regulations.

8.3 Designers must select services, envelope airtightness and window/door specifications that will achieve a carbon emissions reduction of 23.5% to 28% for the complete proposed building when compared to the 'notional' building.



8.4 Tests to CIBSE TM 23 : 2000 *Testing buildings for air leakage*, on a single-storey Titan building resulted in an air leakage of less than  $10 m^3h^{-1}m^{-2}$  at an applied pressure difference of 50 Pa.

### Special considerations



8.5 Temporary buildings with a planned use of less than two years (less than and including two years in England and Wales) are exempt from the national Building Regulation requirements for energy efficiency.

8.6 Where more than 70% of the external envelope is created from sub-assemblies (or disassembly of existing buildings) manufactured before the following dates, compliance with the guidance in *Energy Performance Standards for Modular and Portable Buildings* (MPBA) 2006, would demonstrate reasonable provision for energy efficiency:

England and Wales 6 April 2006

Scotland 1 May 2007

Northern Ireland 30 November 2006.

## 9 Condensation



9.1 The buildings are not suitable for use where the internal relative humidity is expected to exceed 70% for any significant length of time, as condensation may occur. Assuming normal internal conditions of temperature and humidity, and appropriate ventilation (see section 10), it is considered that the amount and duration of condensation will be insufficient to significantly affect the structural or thermal properties of the building.

9.2 If the floor is penetrated by services, eg soil pipes, the joints between the services and the floor deck and floor insulation must be adequately sealed to prevent the ingress of water and water vapour.

9.3 Equipment producing large quantities of water vapour, for example flueless heaters, must not be used.

## 10 Ventilation

The design of the windows should allow adequate ventilation and is an important factor in reducing the incidence of surface condensation. The windows should be designed so that the amount of openable window ventilation is a

minimum of 5% of the floor area, or provision of mechanical ventilation should be considered. The Certificate holder should be consulted with regard to the requirements for background ventilation.

## 11 Sound insulation



When the modules are used as school buildings, the designer must address the requirements of Building Bulletin 93.

## 12 Weathertightness and damp-proofing



12.1 The steel supporting columns raise the building clear of the ground, giving it an inherent resistance to ground moisture.

12.2 The ground beneath the building as a minimum, should be effectively cleared of turf and other vegetable matter and be treated with a chemical weedkiller.

12.3 The roof and external wall surfaces will provide adequate weather resistance.

12.4 The buildings are provided with suitable rainwater gutters and downpipes.

12.5 The performance of windows and doors is not covered by this Certificate. However, the perimeter joints between windows and doors and the wall panels have been assessed and are adequate to ensure that water penetration will not occur at these positions.

## 13 Services

Electrical and plumbing services are outside the scope of this Certificate. However, in designing and installing these services, precautions must be taken to avoid the possible risk of long-term damage to the structure or the services by, for example, the ingress of water, water vapour or condensate from cold water service pipes.

## 14 Maintenance



14.1 External cladding requires an occasional washing down with water containing a mild detergent. Where a high aesthetic standard is required, maintenance painting may be required after a period from 10 to 30 years, depending on colour and environmental conditions, using a paint recommended by the Certificate holder.

14.2 The ceiling and internal wall surfaces can be cleaned using water containing a mild detergent. These surfaces can be decorated using a paint recommended by the Certificate holder.

14.3 The vinyl covering to the internal surfaces of the walls can be replaced using conventional techniques and materials.

14.4 Should it be necessary to replace or repair the vinyl floor covering, all joints must be welded. Any replacement vinyl floor covering must be to an equivalent specification as the original.

14.5 In the event of impact or other damage to an external wall, a replacement plastisol-coated steel panel can be fitted over the original panel by the Certificate holder. If necessary, damage to the foam core of the wall can be made good before fitting the replacement panel. This will restore the appearance and ensure that the weathertightness and insulation are unaffected.

## 15 Durability



15.1 The main structural framework is assessed as capable of achieving a design life of 60 years. Other elements can achieve a design life of between 25 and 60 years depending on the use, environment and degree of maintenance. Reference may be made to BS 7543 : 1992, or relevant Agrément Certificate in this respect.

15.2 Foot traffic over the roof should be restricted to the purpose of maintenance and suitable precautions taken to avoid the risk of damaging the plastisol coating.

15.3 The ceiling surface will remain effective for this period.

15.4 The vinyl covering to the internal surfaces of walls may require replacement within the life of the buildings.

15.5 The vinyl floor covering may require replacement during this period, depending on the use.

## Installation

### 16 Preparation

Clients/users are normally responsible for provision of suitable foundations and services and, therefore, the following aspects should be subject to adequate supervision and should be checked before the buildings are delivered to site:

- setting out and level of foundations
- setting out of service connections.

## 17 Procedure — siting

17.1 The arrangements for siting on prepared foundations have been assessed and found to be satisfactory.

17.2 Where specified, the buildings must be bolted to the foundations.

17.3 Buildings having the same leg centres can be multi-stacked. The telescopic legs must be fully retracted with the leg pin fitted through the outer leg. The lower building must be fixed to suitable foundations through the two holes in each leg base plate. The buildings are to be bolted together at the four leg points.

## Technical Investigations

### 18 Investigations

An analysis was made of data to determine:

- roof and wall U values to BS EN ISO 6946 : 2007
- floor U values to BS EN ISO 13370 : 1998 and BS EN ISO 10211-1 : 2001
- floor joist section structural adequacy.

### 19 Other investigations

19.1 An examination was made of existing data to assess:

- structural strength and stability
- behaviour in fire
- impact resistance of floor and wall panels and physical characteristics of injected, rigid, CFC-free polymer insulation
- weathertightness
- durability
- maintenance requirements.

19.2 Calculations were undertaken and examined in conjunction with the test data to establish the structural strength and stability of the buildings.

19.3 Calculations were made and computer simulations carried out to determine the effectiveness of the thermal insulation arrangements and the risk of condensation.

19.4 The manufacturing process was examined, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

## Additional Information

The management systems of Portakabin Ltd have been assessed and registered as meeting the requirements of BS EN ISO 9001 : 1994 by SGS Yarsley International Certification Services Ltd (Certificate No Q/444).

The Certificate holder's environmental management system for the offices and manufacturing plant has been assessed and registered as meeting the requirements of BS EN ISO 14001 : 2004 by the BSI (Certificate No EMS 515280).

Portakabin Ltd holds LABC<sup>(1)</sup> approval for the Titan Building (Certificate No 192-3-84).

(1) Local Authority Building Control (national type approval).

## Bibliography

- BS 5268-2 : 2002 *Structural use of timber — Code of practice for permissible stress design, materials and workmanship*
- BS 5950-1 : 2000 *Structural use of steelwork in building — Code of practice for design — Rolled and welded sections*
- BS 5950-5 : 1998 *Structural use of steelwork in building — Code of practice for design of cold formed thin gauge sections*
- BS 6399-1 : 1996 *Loading for buildings — Code of practice for dead and imposed loads*
- BS 6399-2 : 1997 *Loading for buildings — Code of practice for wind loads*
- BS 6399-3 : 1988 *Loading for buildings — Code of practice for imposed roof loads*
- BS 7543 : 1992 *Guide to durability of buildings and building elements, products and components*
- BS 8004 : 1986 *Code of practice for foundations*
- BS EN 312-1 : 1997 *Particleboards — Specifications — General requirement for all board types*
- BS EN 312-5 : 1997 *Particleboards — Specifications — Requirements for load-bearing boards for use in humid conditions*
- BS EN 649 : 1997 *Resilient floor coverings — Homogeneous and heterogeneous polyvinyl chloride floor coverings — Specification*
- BS EN 685 : 2005 *Resilient, textile and laminate floor coverings — Classification*
- BS EN 10142 : 2000 *Continuously hot-dip zinc coated low carbon steels strip and sheet for cold forming — Technical delivery conditions*
- BS EN 10147 : 2000 *Continuously hot-dip zinc coated structural steels strip and sheet — Technical delivery conditions*
- BS EN 10326 : 2004 *Continuously hot-dip coated strip and sheet of structural steels — Technical delivery conditions*
- BS EN 10327 : 2004 *Continuously hot-dip coated strip and sheet of low carbon steels for cold forming — Technical delivery conditions*
- BS EN ISO 9001 : 1994 *Quality systems — Model for quality assurance in design, development, production, installation and servicing*
- BS EN ISO 6946 : 2007 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*
- BS EN ISO 10211-1 : 2001 *Thermal bridges in building construction — Calculation of heat flows and surface temperatures — Linear thermal bridges*
- BS EN ISO 13370 : 1998 *Thermal performance of buildings — Heat transfer via the ground — Calculation methods*
- MOAT No 36 : 1987 *UEAtc Directives for the Assessment of Manufactured Plastic Floorings*

## 20 Conditions

20.1 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.

20.2 References in this Certificate to any Act of Parliament, Statutory Instrument, Directive or Regulation of the European Union, British, European or International Standard, Code of Practice, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

20.3 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.

20.4 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.

20.5 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.

