



European Technical Approval ETA-12/0367

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung
Trade name

Systemcontainer "ProEco"
Container System "ProEco"

Zulassungsinhaber
Holder of approval

ALHO Systembau GmbH
Hammer 1
51597 Morsbach
DEUTSCHLAND

Zulassungsgegenstand
und Verwendungszweck
*Generic type and use
of construction product*

Vorgefertigte Raumzellen für Gebäude
Prefabricated Building Units

Geltungsdauer:
Validity: vom
from
bis
to

11 October 2012
11 October 2017

Herstellwerk
Manufacturing plant

Werk 1, Werk 2, Werk 3, Werk 4, Werk 5
Factory 1, Factory 2, Factory 3, Factory 4, Factory 5

Diese Zulassung umfasst
This Approval contains

14 Seiten einschließlich 6 Anhänge
14 pages including 6 annexes

I LEGAL BASES AND GENERAL CONDITIONS

- 1 This European technical approval is issued by Deutsches Institut für Bautechnik 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 products¹, modified by Council Directive 93/68/EEC² and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council³;
 - *Gesetz über das In-Verkehr-Bringen von und den freien Warenverkehr mit Bauprodukten zur Umsetzung der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Bauprodukte und anderer Rechtsakte der Europäischen Gemeinschaften (Bauproduktengesetz - BauPG) vom 28. April 1998⁴, as amended by law of 31 October 2006⁵;*
 - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶;
 - Guideline for European technical approval of "Prefabricated Building Units", ETAG 023.
- 2 Deutsches Institut für Bautechnik is authorized 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 manufacturers other than those indicated on page 1, or manufacturing plants other than those indicated on page 1 of this European technical approval.
- 4 This European technical approval may be withdrawn by Deutsches Institut für Bautechnik, in particular pursuant to information by the Commission according to Article 5(1) of Council Directive 89/106/EEC.
- 5 Reproduction of this European technical approval including transmission by electronic means shall be in full. However, partial reproduction can be made with the written consent of Deutsches Institut für Bautechnik. In this case partial reproduction has to be designated as such. Texts and drawings of advertising brochures shall not contradict or misuse the European technical approval.
- 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.

¹ Official Journal of the European Communities L 40, 11 February 1989, p. 12
² Official Journal of the European Communities L 220, 30 August 1993, p. 1
³ Official Journal of the European Union L 284, 31 October 2003, p. 25
⁴ *Bundesgesetzblatt Teil I 1998*, p. 812
⁵ *Bundesgesetzblatt Teil I 2006*, p. 2407, 2416
⁶ Official Journal of the European Communities L 17, 20 January 1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of the product and intended use

1.1 Definition of the construction product

The container systems "ProEco" are industrially prefabricated, three-dimensional, transportable and relocatable building units consisting of welded frames from steel profiles. Single or in combination with other building units they can form a building.

The dimensions of a building unit are 6.00 m x 3.00 m x 2.80 m or 6.00 m x 2.438 m x 2.80 m (length x width x height).

The load-bearing structure of a building unit is shown in Annex 1. The individual components of the building unit are listed in Annexes 2 and 3.

All building elements not specified in this European technical approval (e. g. floor, walls, ceilings, substructure, foundation, external and internal wall cladding, the roof covering, windows, doors, stairs, surface coverings, service installations, etc.) which are required for a finished construction works are not part of this European technical approval.

1.2 Intended use

The container systems "ProEco" are used for temporary or permanent, one- to maximum three-storey buildings (e. g. building site containers, office and administration buildings or buildings with comparable indoor climate and comparable use). The intended use shall be assessed in the individual case depending on the climatic boundary conditions.

The provisions made in this European technical approval are based on an assumed working life of the container systems "ProEco" of 50 years for the load-bearing structure; provided that the conditions laid down in sections 4 and 5 for transport, storage, installation, maintenance and repair are met. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

2 Characteristics of the product and methods of verification

2.1 Characteristics of the product

2.1.1 Dimensions, tolerances and material properties

The components of the container systems "ProEco" are listed in Annexes 2 and 3. For the production of the components of the container systems steel of grades S235, S275 or S355 according to EN 1993-1-1:2005, Table 3.1 and the series of standards of EN 10025 is used. For the roof trapezoidal sheet profile a hot-dip galvanized steel sheet of grade S320GD+Z according to EN 10346:2009 is used.

The components, dimensions, tolerances and material properties of the building elements which are not stated in the Annexes, shall be in accordance with the indication given in the technical documentation⁷ to this European technical approval.

⁷ The technical documentation of this ETA is deposited with DIBt and, as far as this is important for the tasks of the body involved in the procedure of attestation of conformity, shall be handed over to the approved bodies.

2.1.2 Safety in case of fire

The components according to section 2.1.1 satisfy the requirements of Class A1 of the reaction—to-fire performance according to EN 13501-1:2007.

2.1.3 Corrosion protection

The provisions given in EN ISO 12944:1998⁸ and EN 1090-2:2008⁸ and EN 10346:2009, respectively, shall apply.

2.2 Methods of verification

2.2.1 General

The assessment of the fitness for the intended use of the container systems "ProEco" relating to the Essential Requirements has been made in accordance with ETAG 023 (edition August 2006).

2.2.2 Essential Requirement N° 1: Mechanical resistance and stability

According to section 2.1.1 the geometric data and the mechanical material properties of the components of the container systems "ProEco" are given in the technical documentation to this European technical approval.

No performance determined for seismic loads.

2.2.3 Essential Requirement N° 2: Safety in case of fire

Reaction to fire

The building components made of steel according to section 2.1.1 satisfy the requirements of Class A1 of the reaction-to-fire performance in accordance with Commission Decision 96/603/EC (as amended) without the need for testing on the basis of its listing in that Decision.

Resistance to fire, external fire performance of the roof covering, fire compartmentation

No performance determined.

2.2.4 Essential Requirement N° 3: Hygiene, health and the environment

Vapour permeability and moisture resistance, watertightness

No performance determined.

Release of dangerous substances

The manufacturer has presented a confirmation that substances classified as dangerous according to Council Directive 67/548/EEC, the CLP Regulation (EC) No 1272/2008 as well as the "Indicative list of dangerous substances" of the EGDS are not contained in the container systems "ProEco". Also other substances that could be dangerous to users and to the environment taking into account the installation conditions are not contained in the construction product.

Note: In addition to the specific clauses relating to dangerous substances contained in this European technical approval, there may be other requirements applicable to the products 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 Products Directive, these requirements need also to be complied with, when and where they apply.

2.2.5 Essential Requirement N° 4: Safety in use

No performance determined.

2.2.6 Essential Requirement N° 5: Protection against noise

No performance determined.

2.2.7 Essential Requirement N° 6: Energy economy and heat retention

No performance determined.

⁸ In addition the applicable national requirements and provisions of the Member State shall be taken into account at the installation location, if necessary.

2.3 Durability, serviceability and identification

2.3.1 Durability

The durability of the container systems "ProEco" relating to the intended use and the performance regarding the Essential Requirements ER1, ER2 and ER3 can be assumed as sufficient.

For the corrosion protection of the steel components EN ISO 12944:1998⁸ and EN 1090-2:2008⁸ or EN 10346:2009 shall apply.

2.3.2 Serviceability

The serviceability shall be verified for each building project ensuring that suspended floors are sufficiently stiff to avoid unacceptable vibrations during normal use.

2.3.3 Identification

The container systems "ProEco" are identified with the CE marking according to chapter 3.3. All individual components are described and identified in section 2.

3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

According to the Decision 2003/728/EC of the European Commission⁹ system 1 of the attestation of conformity applies.

This system of attestation of conformity is defined as follows:

System 1: Certification of the conformity of the product by an approved 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 approved body:
 - (3) initial type-testing of the product;
 - (4) initial inspection of factory and of factory production control;
 - (5) continuous surveillance, assessment and approval of factory production control.

Note: Approved bodies are also referred to as "notified bodies".

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 European technical approval.

The manufacturer may only use initial materials stated in the technical documentation of this European technical approval⁷.

⁹ Official Journal of the European Union L 262/34 of 14/10/2003

The factory production control shall be in accordance with the control plan 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 with Deutsches Institut für Bautechnik.¹⁰

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 approved for the tasks referred to in section 3.1 in the field of prefabricated building units in order to undertake the actions laid down in section 3.2.2. 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 approved body involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of this European technical approval.

3.2.2 Tasks for the approved bodies

The approved body shall perform the

- initial type-testing of the product,
- initial inspection of factory and of factory production control,
- continuous surveillance, assessment and approval of factory production control

in accordance with the provisions laid down in the control plan.

The approved body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in a written report.

The approved certification body involved by the manufacturer shall issue an EC certificate of conformity of the product stating the conformity with the provisions of this European technical approval.

In cases where the provisions of the European technical approval and its control plan are no longer fulfilled the certification body shall withdraw the certificate of conformity and inform Deutsches Institut für Bautechnik without delay.

3.3 CE marking

The CE marking shall be affixed on the product itself or the label attached to it, packaging, accompanying commercial document, e.g. the EC declaration of conformity. The letters "CE" shall be followed by the identification number of the approved certification body, where relevant, and be accompanied by the following additional information:

- identification number of approved certification body,
- the name and address of the producer (legal entity responsible for the manufacture),
- the last two digits of the year in which the CE marking was affixed,
- the number of the EC certificate of conformity for the product,
- the number of the European technical approval,
- trade name of container system,
- indications for the intended use,
- indication of dangerous substances.

¹⁰

The control plan is a confidential part of the European technical approval and only handed over to the approved body involved in the procedure of attestation of conformity. See section 3.2.2.

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 product on the basis of agreed data/information, deposited with Deutsches Institut für Bautechnik, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to Deutsches Institut für Bautechnik before the changes are introduced. Deutsches Institut für Bautechnik will decide whether or not such changes affect the approval and consequently the validity of the CE marking on the basis of the approval and if so whether further assessment or alterations to the approval shall be necessary.

4.2 Design of the building

4.2.1 Local building regulations

A specification of relevant requirements concerning structural design, fire resistance and reaction to fire, sound insulation performance, thermal insulation performance and ventilation provisions shall be elaborated for each delivery as a basis for the production and dimensioning of the container systems "ProEco".

The verifications shall comply with the procedures and requirements including the verification of stability foreseen in the Member States in which the building is to be built. A European technical approval for a metal frame building kit does not amend this process in any way.

4.2.2 Design

Each container system is designed in accordance with the requirements of this European technical approval and the requirements and provisions applicable in the Member States where the building is to be erected. A European technical approval for prefabricated building units does not amend this process in any way.

For each container system or building project, the mechanical resistance and stability for each individual load-bearing building component and their connections among each other are determined in accordance with EN 1990 and the relevant applicable parts of EN 1993 taking account of EN 1991 as well as the provisions of the European technical approval and the requirements and provisions applicable in each Member State.

Annexes 4 and 5 show selected details. Examples for installation are shown in Annex 6.

The stresses are predominantly static.

The dimensions and material properties which are declared in this European technical approval are observed.

The verification of the ultimate limit state is carried out by a structural engineer experienced in the field of steel structures.

4.2.3 Substructure

This European technical approval does not include the substructure and/or the foundation of a building or the connection of the building units.

With regard to the admissible tolerances the requirements and provisions applicable in the Member States where the building shall be executed as well as the manufacturer's information shall be taken into account.

4.3 Execution of works

The execution of the construction works shall be performed according to the manufacturer's information. The manufacturer hands over the assembling instruction which includes all necessary aspects regarding the works on site to the executing company.

Where relevant, the requirements of EN 1090-2:2008⁸ shall be taken into account.

It is indicated in the assembling instruction that all building elements of the system "ProEco" have to be checked before installation for perfect quality and that damaged building elements may not be used.

The compatibility of the completed building with the provisions of the European technical approval is confirmed by the executing company.

The completed building (the construction works) shall comply with the building regulations (provisions on the construction works) applicable in the Member States where the building shall be constructed.

The procedures which are foreseen in the Member State to verify the conformity with the building regulations shall be taken into account. A European technical approval for prefabricated building units does not amend this process in any way.

4.4 Transport and storage

The manufacturer's specifications concerning transport and storage shall be taken into account.

The instructions should specify special measures for protection against the effects of weather, which can cause damage to components and/or the complete building unit.

4.5 Use, maintenance and repair

With regard to the assumed working life a regular maintenance is required. The manufacturer shall attach documents in written form to the container systems which include information concerning type and frequency of the maintenance. The manufacturer's instructions shall be taken into account.

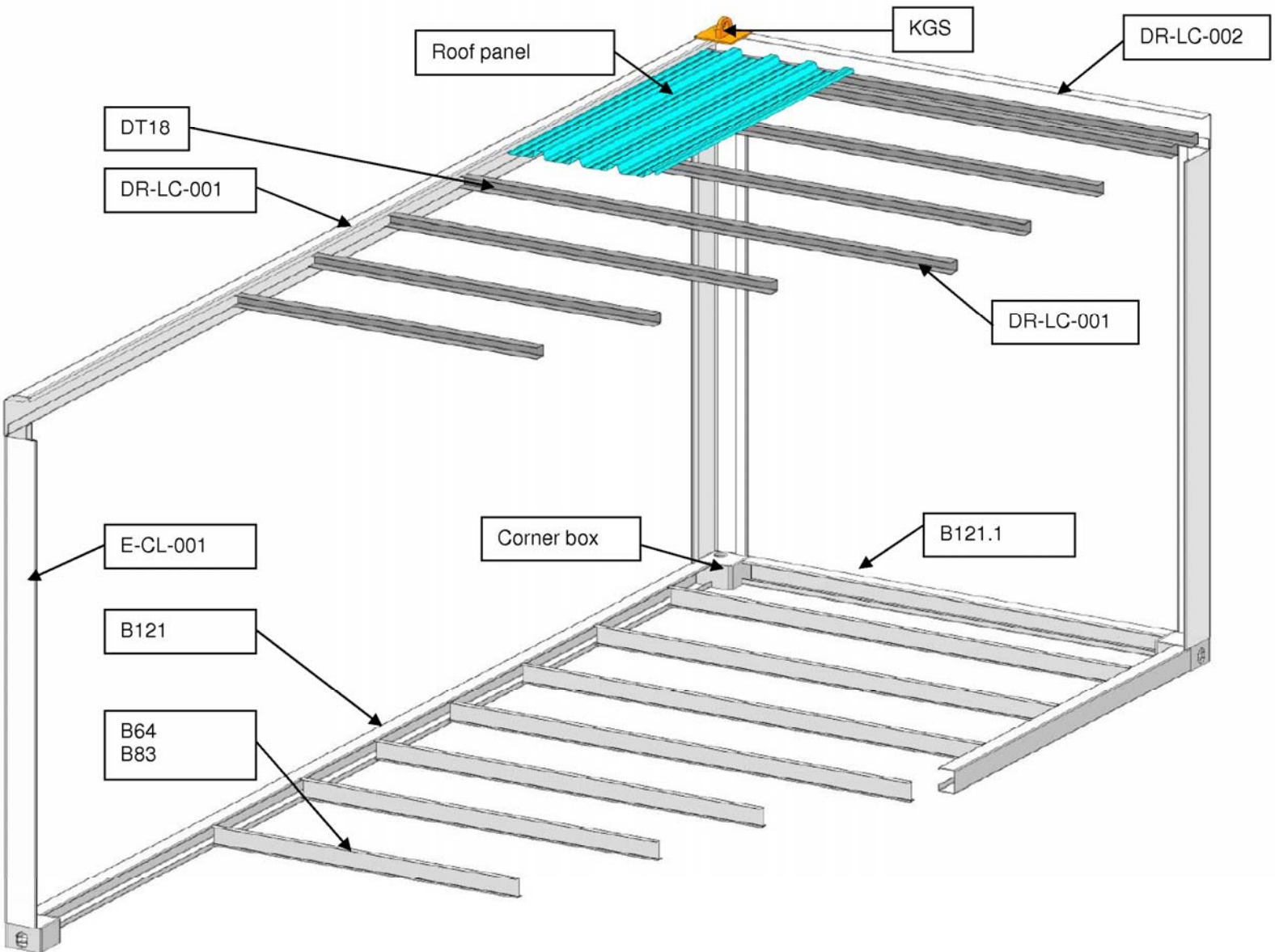
5 Indications to the manufacturer

The manufacturer shall ensure that the requirements in accordance with sections 1, 2 and 4 (including the Annexes referred to) are given to those who are concerned. This can be done, for example, by handing over copies of the European technical approval.

In addition, all the information relevant for the installation shall be indicated clearly on the packaging or on an enclosed description. Illustrations should preferably be used for that.

Georg Feistel
Head of Department

beglaubigt:
Spohn




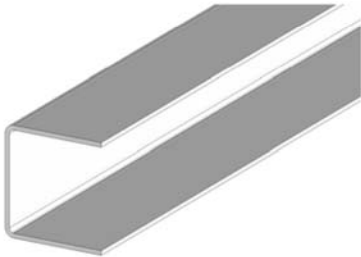


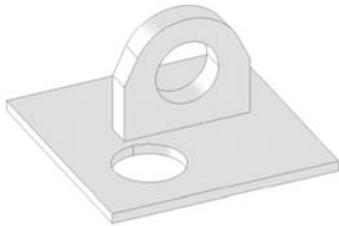
Container System "ProEco"

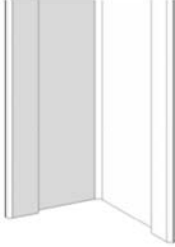
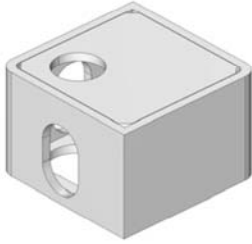
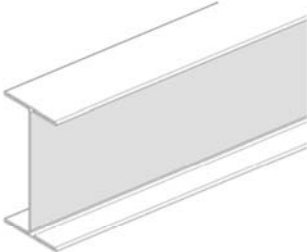
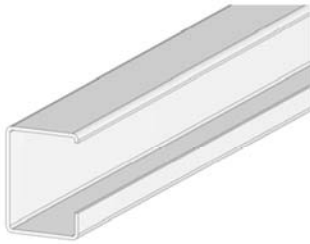
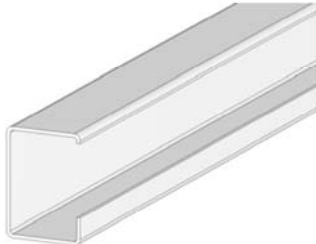
System

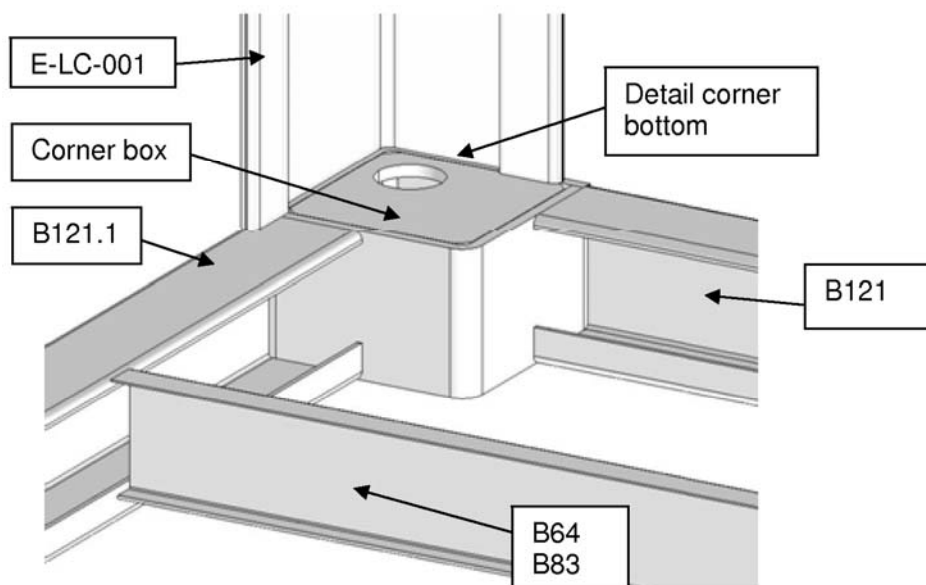
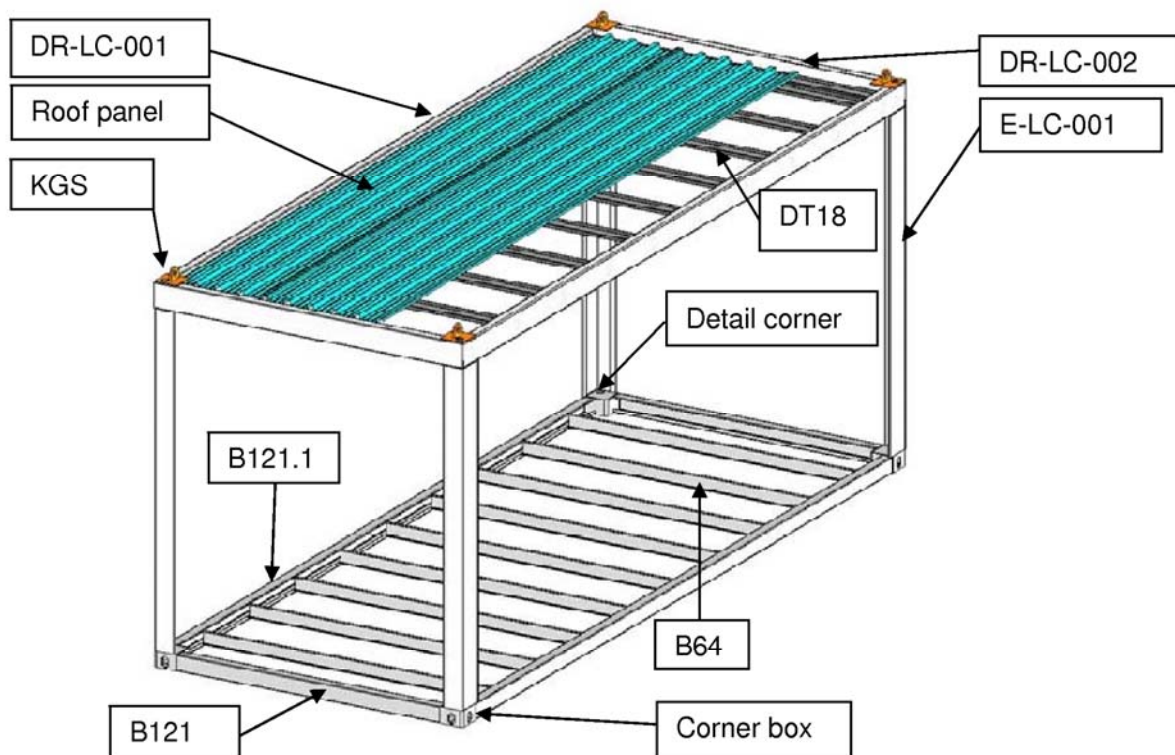
Annex 1

Z44528.12

8.02.02-5/12

	Reference	Name	Quantity	Image
1	Roof panel 40/183	Trapeziodal roof sheet	3	
2	DT18	Roof girder	every 500mm	
3	DR-LC-001	Roof ledger board	2	
4	DR-LC-002	Roof head ledger board	2	
5	KGS	Crane eye bolt	4	
Container System "ProEco"				Annex 2
Components				

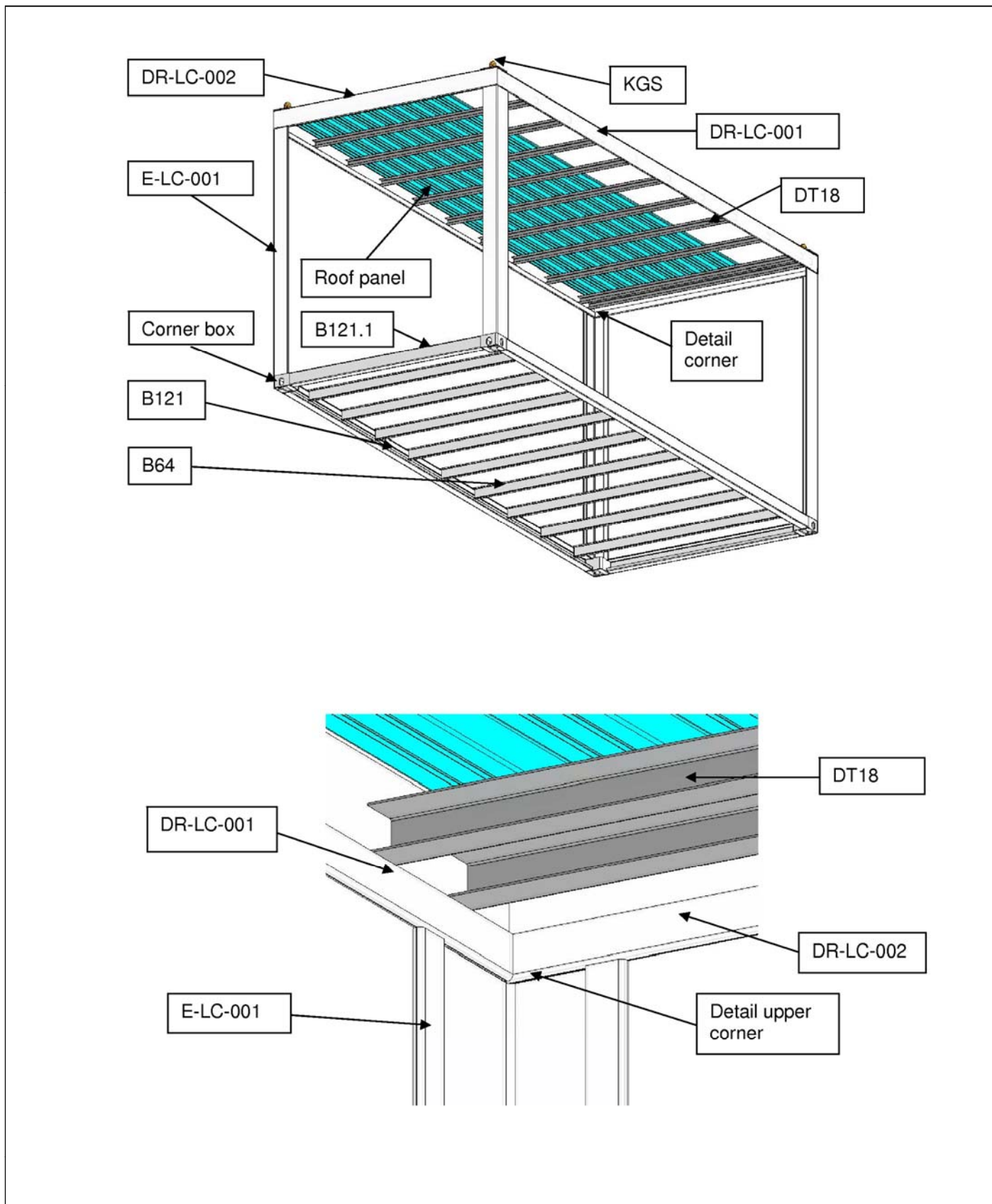
	Reference	Name	Quantity	Image
6	E-LC-001	Corner column	4	
7	Corner bolt	Corner box	4	
8	B64 B83	Floor support	every 625mm	
9	B121	Floor ledger board	2	
10	B121.1	Floor head ledger board	2	
Container System "ProEco"				Annex 3
Components				



Container System "ProEco"

Detail corner bottom


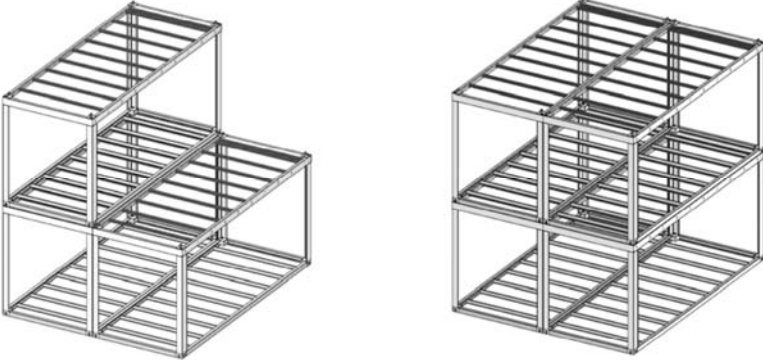
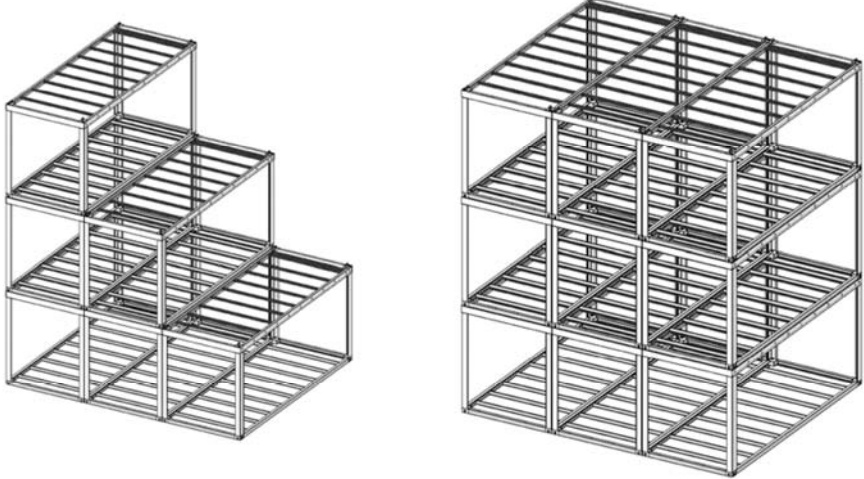
Annex 4



Container System "ProEco"

Detail upper corner

Annex 5

Modultype	Image
6m Modul	
6m Modul two-storey	
6m Modul three-storey	
Container System "ProEco"	
Examples for installation	Annex 6