

General packaging guideline

Process owner: Technical Operational Planning



Table of contents

1. Objective
2. Explanation of terms used
3. Packing unit
4. Packaging
 - 4.1. Types of packaging
 - 4.1.1. Multiple-use packaging
 - 4.1.2. Standard multiple-use packaging
 - 4.1.3. Single-use packaging
 - 4.2. Packaging aids
 - 4.3. Special containers
 - 4.4. Special case: palletising and delivery requirements for table tops
5. Packaging planning
6. Securing loads

List of abbreviations

ABS Acrylonitrile butadiene styrene

de German

DIN Deutsches Institut für Normung (German Institute for Standardisation)

DIN EN ISO Deutsches Institut für Normung / Europe Norm / International Standards

en English

Organization

RDT Remote data transfer

LLC Large load carrier

IPPC International Plant Protection Convention

ISPM International Standards for Phytosanitary Measures

SLC Small load carrier

PC Polycarbonate

PE Polyethylene

PE HD Polyethylene High Density

PE LD Polyethylene Low Density

PP Polypropylene

PS Polystyrene

PUR Polyurethane

PVC Polyvinyl chloride

THS Transport, handling, storage

1. Objective

This guideline contains requirements and definitions for regulating the packaging of deliveries between the Vitra Group (hereinafter referred to as "Vitra") and its suppliers for direct material (hereinafter referred to as "suppliers").

The aim is to **regulate the packaging of deliveries** between Vitra and the suppliers involved. Through coordinated packaging processes, optimum container and packaging design, standardised dimensions and coordinated volumes of load units, we aim to ensure an efficient and smooth flow of material from qualitative and economic standpoints. Use of standardised multiple-use load carriers taking economic and ecological aspects into consideration.

In principle, the supplier is responsible for the protection and delivery of products in compliance with agreements. The supplier must use sound and appropriate packaging / outer packaging and/or sound and appropriate means of transport.

2. Explanation of terms used

• Delivery locations for Vitra: The following locations should be viewed as delivery locations for Vitra in this packaging guideline:

- Vitra Weil
- Neuenburg
- Hungary

3. Packing unit:

- Packing unit: smallest logistical handling unit produced by the shipper for directly holding goods, which is not broken up during transport (e.g.: box, SLC, but also pallet cage or LLC, etc.).
- Loading/packaging aids: Loading/packaging aids are materials which carry, stabilise or secure packing units during transport (e.g.: pallets, covers, intermediate layers, films, etc.).
- Load unit: Several packing units can be combined into larger logistical units, known as load units, using suitable loading/packaging aids (e.g: package, composite pallet, etc.).
- Single-use packaging: Single-use packaging is only intended for one individual transport journey and is not returned.
- Multiple-use packaging: Unlike single-use packaging, multiple-use packaging is intended for several journeys. After use, it can be returned to the packaging cycle.

4. Packaging

Unless agreed otherwise, the transport packaging selected for deliveries to Vitra must satisfy the following criteria:

- deliveries of parts free of damage (no adverse effect on quality)
- no contamination of parts
- production of efficient load units
- optimum utilisation of containers
- goods being transported are secured
- can be stacked (under consideration of the weight of parts in relation to the box quality/thickness)
- transport vehicles can be unloaded with ease using industrial trucks
- goods are always unloaded via a ramp so accessibility to the goods should be provided
- designed to aid handling
- compliance with specified standard dimensions
- compatibility with the logistical requirements of various Vitra plants (e.g. general delivery criteria for Contura GmbH)
- parts can be taken out with ease
- materials can be recycled
- in the case of hazardous goods: compliance with any hazardous goods specifications and safety measures

Any individual packaged item must not exceed a gross weight of 15 kg. Exceptions to this rule are large load carriers and large boxes.

Packaging should always be planned taking economic and ecological aspects into consideration. The waste management objectives of environmental legislation include, in accordance with ecological priorities:

- **Avoidance**
i.e.: restrict the amount of packaging used to that which is absolutely necessary.
- **Reduction**
Reuse through the use of multiple-use packaging:
preference should be given to multiple-use load carriers over single-use packaging. The proportion of single-use packaging should be minimised.
- **Recycling** of packaging materials
Environmentally-sound recycling of materials must be ensured for both multiple-use and single-use packaging.

Requirements of the packaging

The VITRA plant's specific requirements of the packaging and the delivery concept should be defined between suppliers and the VITRA packaging management department using the **packaging data sheet**.

The supplier should request the packaging data sheet from purchasing/packaging management department.

Before the first delivery, the packaging data sheet sent to the supplier by VITRA should be completed (language:de/en) and returned to VITRA for approval of the proposed delivery packaging by the packaging management department.

If necessary, a packaging trial should be undertaken in coordination with the receiving plant. In addition to the standard packaging, alternative packaging should also always be agreed with the receiving plant.

Changes to the packaging should be agreed on in advance with the appropriate VITRA plant.

Packaging agreement between supplier and VITRA

If no packaging has been defined, the supplier should use single-use packaging. The package must not exceed dimensions of 1200 x 800 x 1000 mm and it should be possible for at least two packages to be stacked on top of one another.

4.1 Types of packaging

The Vitra Group uses single-use packaging, multiple-use packaging and packaging aids.

The packaging guidelines should be viewed as minimum requirements. Damage which can be traced back to defective packaging during transport is charged to the supplier. Should the supplier know from experience that additional measures are needed to protect the materials, these should be taken in agreement with Vitra.

- The packaging should be designed such that the packaged materials and packaging can be transported, handled and stored without any damage.
- Climatic influences during transport should be taken into account with regard to corrosion protection and choice of packaging.

4.1.1 Multiple-use packaging

Unlike single-use packaging, multiple-use packaging is intended for several cycles in the THS processes. After use, it can be returned to the packaging cycle.

4.1.2 Standard multiple-use packaging:

When installing high-bay facilities, Vitra laid down the following standards:

Euro / DB pallet: DIN 15146

Size of floor space: 1200 x 800 mm

Pallet cage pallet: DIN 15155

Size of floor space: 1200 x 800 mm

The following plastic requirements must be observed for multiple-use packaging:

ABS; PE; PP; PS.

Approval should be obtained for other plastics.

4.1.3 Single-use packaging

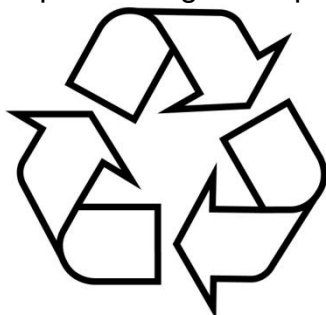
Single-use packaging is only intended for one individual transport journey and its function is complete once the THS processes are over. After use, it is not returned via a primary cycle.

The packaging material used must always be totally recyclable.

Single-use packaging may comprise the following materials:

Plastics

Only PP or PE should be used for plastic single-use packaging.



Approval should be obtained for other plastics.

For efficient recycling of plastics, only a small number of different materials should be used.

Wood (only solid wood)

Generally, only wood packaging complying with the "Regulation of wood packaging material in international trade" IPPC standard ISPM no. 15 should be used for deliveries. The pallets must also be heat-treated accordingly.

(See e.g. <https://www.ippc.int/IPP/En/default.jsp>)

The following minimum load-bearing capacity requirements apply to single-use pallets:

- Size 600 x 800mm

Minimum load-bearing capacity: 250 kg

- Size 1200 x 800mm

Minimum load-bearing capacity: 500 kg

For smooth handling with lifting gear, the slide-in area (the space between the floor and the pallet's top boards) must be 95 mm high.

Paper, cardboard

Packaging made from paper or cardboard must be free from substances which may impair production. Newspaper or other printed papers must not be used.

Single-use boxes of modular sizes should be used so that mixed pallets are flush.

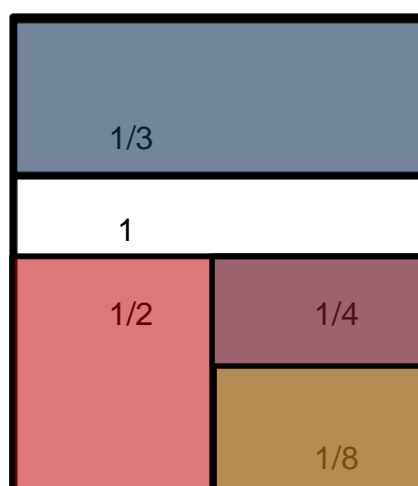
The following dimensions are prescribed for boxes:

Length [mm] Width [mm] Height [mm]

Box dimensions:

Pallet box

	L	W	H
1	1200	800	300-900
1/2	600	800	300-900
1/3	400	800	300-900
1/4	600	400	200-450
1/8	300	400	200-450



4.2 Packaging aids

Packaging aids are materials which stabilise the packing unit and/or improve the stability of the means of packing, such as intermediate layers or film.

The following packaging aids can be used when producing packaging units:

- Plastic straps

At least 2 plastic straps should be used to secure the load of a pallet.

- **Bags and sacks** made from PE films of the corresponding sizes
(Vitra is happy to help select suitable manufacturers)

- **Dots of adhesive for labels** (can be removed without leaving residue)

- **Styrofoam** is only permitted by prior agreement.

- **Stretch film** is only permitted in exceptional cases and is only used if requested by Vitra.

4.3 Special containers

If the properties (size, geometry) of certain materials mean that they can only be transported in special containers, the supplier agrees on a special container in good time with the Vitra packaging management department. The supplier is responsible for planning and design. Vitra specifications should be taken into account. Approval from

the Vitra packaging management department must be sought if special containers are used.

4.4 Special case: palletising and delivery requirements for table tops

Packaging specification V0000046

must be observed for the delivery packaging of table tops.

If necessary, the packaging instructions ***should be requested from purchasing/packaging management department.***

5. Packaging planning

In good time before the series start, the supplier and Vitra jointly define the packaging of the new item.

Once an order has been placed by Vitra, the supplier is obliged to make contact with the packaging management department at the receiving Vitra plant.

The supplier sends a packaging proposal to the Vitra packaging management department for approval.

Verpackungsmanagement@vitra.com (contact).

The supplier should check that the proposal is feasible and protects parts and takes optimum fill volumes into consideration.

6. Securing loads

Neither the supplied goods nor the means of securing loads may protrude beyond the outsides of the load carriers.

If a loading unit is made up of smaller containers (special or universal containers or single-use packaging), these should be adjusted to the standard dimensions and secured sufficiently to prevent slipping. The loading unit must be designed such that the load remains intact throughout the THS processes.

Edge protection and plastic straps should be used to protect the goods on a pallet.

Plastic and textile straps should always be used to lash down the goods. Steel straps can only be used with particularly heavy goods or those with sharp edges where the tear resistance and material characteristics of plastic and textile straps aren't suitable. Wrapping with stretched film is tolerated provided that the load carriers (e.g. boxes) aren't compressed.

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