

Packaging and Shipping Guidelines for Suppliers and Customers

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Target

This guideline aims the properly packaging as well as the avoidance of corrosion of the goods and also to reduce the impact of packaging waste on the environment.

It also aims to serve us and our suppliers as an understandable and practical guide, and inform suppliers about existing policies and regulations in the field of packaging. In addition to that, this Packaging Guideline is intended to serve as a directive for the respective buyers.

The following regulations are supposed to help achieve a trouble-free material flow between the suppliers / customers and Taiyo Europe GmbH and avoid unnecessary repacking or costly waste by using

- **an optimized packaging design**
- **if possible, standardized dimensions for containers, cardboard boxes and carriers**
- **correct and complete marking of packaging**

Area of Application

These packaging guidelines are valid for deliveries to the company

Office address:

Taiyo Europe GmbH
Mühlweg 2
82054 Sauerlach

Warehouse address:

Taiyo Europe GmbH
Mühlweg 3
82054 Sauerlach

as well as for supplies sent directly to our sites.

Definition

Packaged goods:

Parts that are to be packaged

Packaging:

Label for the container in which the packing material is packed.

Packaging aids:

Accessories, which in addition to the locking or securing of packaging, serve as protection for the packed goods (eg, stretch film, anti-corrosion paper, strapping).

The package:

Transport unit

The packaging should protect the goods themselves and other goods from damage.

Disposable packaging:



Packaging, intended for single use and can't be reused. Recyclable after use.

Carriers:



Supporting medium for grouping packages into a single load unit, e.g. pallets, box pallets and wooden crates.

The carrier has the task to protect the goods during transport and ensure safe transport and storage.

State of the Carriers

The carriers must be in good condition, so that the transported goods don't get damaged.

General Packaging Requirements

Permitted and Prohibited packaging materials

So that the logistical expenditure for the varietal separation and collection is kept to a minimum and the process of recycling can be optimally designed, only certain recyclable materials are allowed. All disposable packaging shall be manufactured from environmentally friendly materials. Composites and loose filling material such as packaging chips should be avoided if possible. Principally reusable packaging should be used. The packaging material shouldn't affect the cleanliness of the parts.

Weight Restrictions

If the maximum weight limit cannot be maintained it shall only be due to technological conditions which make exceeding the maximum weight limit necessary. Only in this case may the maximum weight limit be breached.

Carriers:

The maximum weight for carriers is 1.000 kg.

Packages carried by hand:

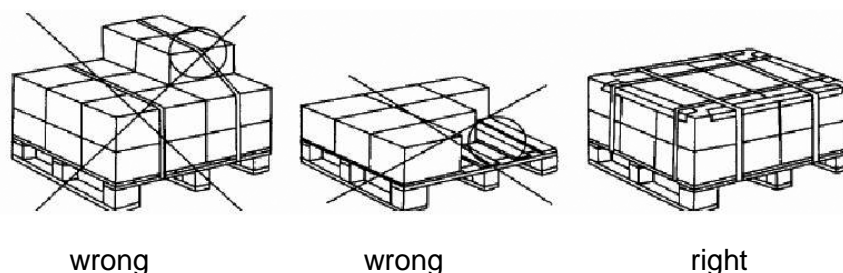


To keep the risk of injury to a minimum, it must be ensured that the maximum weight (gross) of a package does not exceed 20 kg. Packages weighing over 20 kg must always be delivered on a suitable carrier.

Positioning of packing material and package

The packaged goods should be arranged so that the weight is evenly distributed. The size of the packaging should match the packaged goods.

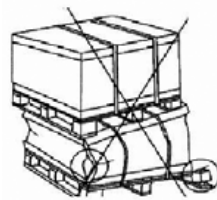
In order to avoid the content inside the package slipping and/or shifting during transport and handling, all voids are to be filled in the packaging. The package is to be mounted on a carrier so that the weight is evenly distributed. The basic size of the carriers is not to be smaller than the packages.



In the case of an incomplete layer, the packages are to be arranged so that the weight is evenly distributed and secured against slipping.

Stacking capability of loading units

If possible one should pay attention to the stack ability of the carriers. This must ensure that pallets with or without stacking aids can be stacked on top of each other without any restrictions.



wrong



right

If the stack ability of the carrying units is not given due to the nature of the packaging material, loading units must be marked accordingly.

Markings

Each individual package containing an article is to be marked clearly and visibly at the top. All outer packages containing several individual packages are to be marked on the outer sides and on the top sides in order to ensure a clear and rapid identification of the individual packages.

In order to avoid the mixing up of parts in the process, only the current labeling should be visible on the package

It must be clearly and visibly attached to the package. All the old markings, including glued labels must be removed. The marking shall contain at least the following information:

- Item number and/or name
- Quantity

The supplier must ensure that any outer or inner packaging, packing aids (including cardboard boxes, tapes, plastic bag, shrink wrapping, signage) and the associated data sheets and other documents of

the parts that are to be shipped are only labeled with the data of the supplier or the original manufacturer, where such labels are required by law to be attached.

Symbols for handling instructions

If the packaged goods require a special kind of handling, it should be marked clearly visible on the outside of the package.



Symbols should never be avoided, because they are self-explanatory and universally understandable.

Shipping papers

Each delivery must at least be accompanied by the following delivery or freight papers:

- delivery note
- Hazardous material data sheets (if necessary)

Each shipment will only be accepted with complete freight papers.

Further shipping papers that Taiyo Europe GmbH requires, for example quality documents, are to be – apart from the delivery note – placed inside of a separate envelope with the shipment.

delivery note:

A delivery note (shipping document) is a document that provides information about the shipped pieces.

Information such as quantity, weight information or a description can be taken from this note.

Preferably the note of delivery should be placed within the package (on top of the content), but it may also be attached on the outside in a self-adhesive delivery note pocket.

The most important contents of a delivery note are listed below:

- Delivery note number
- Sender's name and address
- Recipient's name and address
- Date of the delivery note
- Delivery note positions
- Name of customer (contact person)
- Taiyo Europe order number
- Order date
- Order item
- Delivery quantity (per order item) in units
- Supplier item number (if available)
- Type of the carrier (if necessary)
- Name of perhaps signature of packer (if required)
- Number of pieces of empties
- Batch number (if required)

Membrane

Following points are mandatory to check before packaging:

1. final quality control / Cleaning / folding of the membrane

Lay the membrane only on a suitable clean ground. to avoid contaminations of the material all workers must wear clean clothes and disposable shoe protection.

If necessary the membrane has to be cleaned residue-free with detergents which are released for the material.

Furthermore there is a final quality control with documentation needed. Only after passing the end control the goods are allowed to get packed. For this purpose, the actual folding plan must be followed strictly.

2. Identification Mark

The membrane has to be marked with all relevant details (technical data). E.g. notice of corner designation in every corner or given terms for orientation.

For an immediaty notice of the position while unpacking, a designation for orientation is needed. The identifications marks must be removable or not visible after installation.

3. Packaging

The packaing materials must be chosen so that no transport damages by pushing, scratching or other mechanical damage is possible. It is not allowed to use tape to fix the "air buffer snakes" on the membrane, due they can not be removed without a trace.

The membrane must be packed int the covering box, according the folding plan. The folding plan has to be put viewable on the top, so that it is seen directly by opening the covering box. Further, get sure the covering box is not too fully packed and to heavy with the membrane and packing material, and also not too much empty space in it, so it can edge down. From a weight of more than 1.000 kg suitable lifting straps have to be put under the membrane.

4. Covering box

The covering box has to be adjusted to type, weight and size of the membrane (stable cardboard, wooden boxes etc.). It has to be suitable for forklifts and possibly provided with handling symbols. (see page 5).

Further is to make sure that no pushing or other injury during transport are possible.

5. Material specification

Basically

It is important to ensure that every folding und packing of membrane is corresponding to properties of the material specifications.

PTFE Glas

This material is may not sharp folded under any circumstances. A padding is really needed between every layer is mandatory needed.

PVC

PVC material may not too much compressed. It has to be loose and well padded packed.

ETFE

Also pay attention to the low compression. The foil has to be packed loose, wrinkle-free and well padded.