



Packaging Guidelines

for suppliers of Howden Turbo GmbH Frankenthal

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1 Purpose

These packaging guidelines, including the referenced document in the Appendix, describe the basic requirements for all suppliers and their packers, hereinafter referred to as contractor, of Howden Turbo GmbH, hereinafter referred to as customer, regarding the packaging and delivery of goods.

They serve as binding specifications regarding the packaging design in order to ensure optimum protection of the goods, while taking logistic, economic and ecological aspects into account.

These guidelines are based on legal regulations and standards relating to packaging, whereby, as a minimum, compliance with the currently applicable HPE packaging guidelines must be ensured.

2 Addenda to scope of applicability

These guidelines do not cover the handling of baseframes, baseplates, complete oil supply systems, volute casings, generators and other large components (weight > 5 tons).

If required, these shall be prepared and agreed separately.

Any deviations from these guidelines shall be agreed in writing.

3 Roles and responsibilities

Upon receipt of this document from the customer, the contractor is responsible for implementing the specified measures and for ensuring compliance with the specified regulations.

The responsible contact persons of the plants involved are also stored on the above-mentioned website.

The customer shall agree to the proposal made by the contractor or shall otherwise create binding packaging regulations for the contractor. The customer shall not unreasonably withhold its consent.

Alternatively, the customer is entitled to specify packaging regulations equivalent to a "rough specification/packaging proposal" for the contractor regarding individual A components defined by the customer or selected B components.

These regulations shall be agreed between the parties, and thereafter the contractor shall submit an offer in accordance with the mutually agreed rough specification.

Based on the mutually agreed rough specification, the contractor shall receive a "detailed packaging specification" from the customer, which forms a contract component of the order. The customer reserves the right to provide packaging to the contractor at no cost.

4 Packaging requirements

As a rule, Euro-pallets or mesh pallets shall be used as packaging/load carriers. If this is not possible or suitable in an individual case, other reusable packaging shall be used in agreement with the customer.

Whether the packaging is to be provided by the contractor or the customer shall be mutually agreed between the parties.

If the use of reusable packaging is not possible for economic, ecological or quality-related reasons, disposable packaging may be used in agreement with the customer.

The packaging shall be constructed and designed so as to ensure compliance with the requirements regarding transport stresses, handling and storage, while also taking economic efficiency into account.

4.1 General requirements

4.1.1 Environmental protection

To ensure that the environment is not unnecessarily harmed, the following points must be observed:

- Make sure to use recyclable, environmentally friendly packaging, i.e. no Styrofoam chips (polystyrene). Poly bags, stretch foil and shrink wrapping may only be made of polyethylene. Packaging containing CFC or PVC or similar materials and packaging that does not comply with our specifications shall be disposed of at the cost of the contractor.
- With the exception of reusable packaging, the use of mixed and composite packaging is not permitted.
- No adhesive padding material shall be used.
- The use of hygroscopic filler and padding materials (e.g., wood wool, hay, straw, paper) to fill in gaps or for padding purposes is not permitted.

4.1.2 Customs clearance on behalf of customer

The customer generally prohibits the contractor to perform any kind of customs clearance activities on behalf of the customer.

Any customs clearance activities on behalf of the customer that may be necessary require a power of attorney of the responsible department of the customer (Howden Turbo GmbH, Dept. HTO-DE ECC).

The contractor shall undertake to comply with the specifications by the Authorized Economic Operator (AEO) and the air security program of the EU when packaging goods in its own name or when using external packers.

4.1.3 Packaging and shipping hazardous goods

- The packaging of hazardous goods shall comply with the "Law on the Carriage of Dangerous Goods" and the currently applicable provisions and regulations for the corresponding means of transport.
- Where applicable, additional national regulations must also be complied with.
- In accordance with the corresponding type of shipment, UN-certified packaging approved for hazardous goods shall be used for shipment.
- Compliance with the relevant regulations and standards is the sole responsibility of the contractor. The contractor shall be held liable for the consequences of non-compliance. The contractor shall reimburse the customer for all damages and expenses resulting from non-compliance, including internal administrative and handling costs.

4.2 Technical requirements

4.2.1 Functional requirements

- Each ordered item shall be packed individually and identified accordingly;
The Howden Material Number shall always be used for this purpose.
- The goods may not protrude from the packaging;
If goods are supplied on pallets, pallet collars shall be used, where appropriate.
- The weight of non-palletized cardboard packaging and containers may not exceed 30 kg;
- Ensure the highest possible volume utilization / packing density;
- All goods shall be easily and individually removable in the order of assembly without requiring special aids and time-consuming unpacking activities. Particularly large and heavy materials shall additionally be supplied in the correct installation position;
- The goods shall be packed in such a way that they are adequately protected against damage, soiling and moisture and, where appropriate, UV (ultraviolet) light;
- Materials with a decorative surface or sealing surfaces shall be provided with extra protection so as to ensure that they are still effectively protected during and after assembly;
- The packaging shall meet the requirements with regard to safe transportation and storage using all conventional transport and storage devices;
- It shall be possible to pick up the packaging from four directions with all conventional industrial trucks;
- It should be possible to handle the goods without any special lifting gear. When shipping packages/goods that require special lifting gear, the contractor shall deliver this lifting gear with the corresponding package/goods;
- Packages such as boxes, crates or skids shall be designed such that they stackable at least three times for transport, handling and storage purposes. Exceptions are subject to mutual agreement;
- The same packaging shall be used for all delivery lots;
- **The packaging must be resealable, wooden packaging must therefore be screwed and not nailed;**
- The packaging shall be designed such that no repacking is required on receipt, storage or assembly of the goods on the premises of the customer;
- If goods supplied by the contractor require unloading with the aid of a crane, only rigging approved for use at Howden Turbo GmbH may be used and/or attached (e.g., RUD eye bolts);
- Goods with machined / sensitive surfaces shall be packed in such a way that damage to these surfaces resulting from transportation or manipulation of the goods (e.g., unloading the load carrier) can be ruled out.

4.2.2 Container / Seaworthy packaging

- The actual intended use of containers is that of a "transport aid". Therefore, they are suitable as packaging only to a limited extent.
- The delivery of goods in containers is not permitted for the Frankenthal location.
- For fabrication and design of seaworthy packaging, the currently applicable "HPE packaging guideline" applies exclusively.
- Regarding the treatment of the timber and identification of the packaging, the currently applicable "Import regulations for packaging containers made from solid wood - IPPC standard" applies. Contrary to the IPPC standards, the use of methyl bromide (MB) is prohibited unless the customer explicitly agrees to its use. The customer's preferred method is the heat treatment (HT) method.

4.2.3 Preservation and corrosion protection

If the preservation and corrosion protection requirements are not already covered by the relevant standards, the contractor must ensure compliance with the following points:

- Materials that are sensitive to corrosion as due to their design and material properties must be shrink-wrapped in foil. The minimum thickness of the foil is 0.2 mm. Regarding the selection of the foil (polyethylene or aluminum compound foil), its water-vapor tightness and durability over the entire transport and storage period are factors that shall be taken into account.
- A sufficient amount of desiccant shall be provided for the transport and storage period to ensure that the relative humidity inside the barrier film is maintained for at least 12 months during the entire transport and storage period (calculation in accordance with DIN 55474).
- For packing the goods, only packaging materials considered harmless with respect to corrosion shall be used. This applies to their chemical properties as well as their water absorption capacity.
- If materials are dispatched unpacked, they shall be adequately protected against corrosion by the contractor in accordance with the relevant technical specification and the expected type of shipment. In cases of doubt, the corresponding engineering department of the customer shall be consulted.
- The corrosion protection shall be removable and disposable in an economically feasible and environmentally friendly manner.
- All blind holes, bushings, open pipes and hoses as well as all connections shall be properly closed off by means of covers or plugs. Covers and plugs must be firmly in place to ensure that they cannot become detached during transport, handling and storage.

4.3 Logistic optimization

4.3.1 Reusable packaging

Euro-pallets and mesh pallets that are reused on an exchange basis as well as special load carriers, such as boxes, steel and plastic pallets and transport skids are considered as reusable packaging. Reusable packaging shall be of foldable design so as to ensure economically feasible transportation.

Reusable packaging shall generally be used in clean and fault-free condition.

Reusable packaging owned by the customer shall be made available to the contractor in the quantities required. The contractor shall use this packaging exclusively for the transportation of materials in terms of fulfilling its delivery obligations *via-à-vis* the customer. An imminent shortage of such packaging shall be immediately reported to the customer in writing.

If the reusable packaging provided by the customer exhibits defects which could jeopardize the safe transport and (un)loading of goods, the customer shall be informed thereof without delay. Such reusable packaging shall no longer be used until it is released again for use by the customer. The customer is responsible for repairing and/or replacing the defective load carrier.

Reusable packaging owned by the contractor shall be retained by the contractor in the quantities required so as to ensure that transport, storage, in-house transport and return transport can be performed without any bottlenecks.

The responsibility for returning empty reusable packaging and the related costs is subject to the Incoterm agreed for this particular delivery transaction.

If FCA has been agreed, the responsibility lies with the customer, while in the case of DDU, the contractor is responsible. If DDU has been agreed, the customer shall ensure that the reusable packaging is prepared and ready for collection after the materials have been removed.

The collection location may deviate from the delivery location. Specific agreements shall be made for reusable packaging from third countries.

4.3.1.1 Identification of reusable packaging

- Reusable packaging owned by the contractor shall be clearly identified with the words “Returnable packaging”, the “company name” and the complete “return delivery address” of the owner.
- Each item of reusable packaging shall be marked with dead weight, load-carrying capacity, superimposed load and other safety and handling instructions.
- As a rule, the data specified in this section shall be provided on the reusable packaging by means of an identification method (e.g., barcode) that has been agreed with the customer.
- ID markings such as barcode labels or transponders (radio communication devices) must not be removed or damaged/made illegible. This applies to both contractor and customer.

Incompletely identified reusable packaging is considered and treated as disposable packaging!

4.3.2 Logistic modules (Log Mod) / Assemblies

- A Log Mod is a combination of different materials into one material group which is processed through a combined SAP order of the customer. This may include individual parts as well as pre-assembled units. The Log Mod content shall be defined by the customer and must be identifiable with the aid of a packing list, indicating all material numbers and quantities.
- Log Mods must **always** be delivered **completely**. Containers and/or assembly materials, if part of the Log Mod, must be enclosed with the delivery in the quantities required.
- The individual materials must be ergonomically accessible in accordance with customer’s specifications and able to be removed from the packaging / load carrier in the order of assembly.
- Every Log Mod must be delivered in a separate package. If the Log Mod does not fit into one package, it may be distributed over several packages. These packages must be identified in such a way that their correlation is clearly visible/noticeable.
- Packages containing different Log Mods or materials are not permitted (unmixed delivery).

5 Documents and identification

5.1 Delivery documents

The delivery documents shall be attached on the outside of the packaging in an easily accessible, clearly visible and weather-proof manner and in such a way that it cannot become detached.

The following delivery documents must be enclosed with each delivery, either in German or English, including the information as set out below (certificate 3.1 or other required technical certificates only if demanded by a specification):

Information / Type of document	Dispatch notification	Delivery note	Packing list or BoM	Bill of lading	Technical certificates, such as cert. 3.1
Name of contractor	X	X	X	X	X
Address of contractor	X	X	X	X	X
Order no.	X	X	X		X
Project name	X	X			X
Date of issue	X	X		X	X
Delivery note no.		X	X	X	X
Packing list no.		X	X		
Quantity, unit	X	X	X		X
Weight, unit	X	X	X		X
Number of items + designation		X		X	
Customer material no.	X	X	X		X
Designation of goods	X	X	X		X
Statistical goods no.		X			
Configuration in acc. with order		X	X		X
Incoterm		X			
Customs and export reg. no.	X	X	X	X	
Time of delivery (date and time)	X				
Order item	X	X	X		
Serial number		X			X
Customer contact person	X	X			
Batch number		X			X
Use-by date		X			
Temperature requirements (e.g., for chemicals)		X			

Unloading area on site		X	X	X	
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5.2 Identification

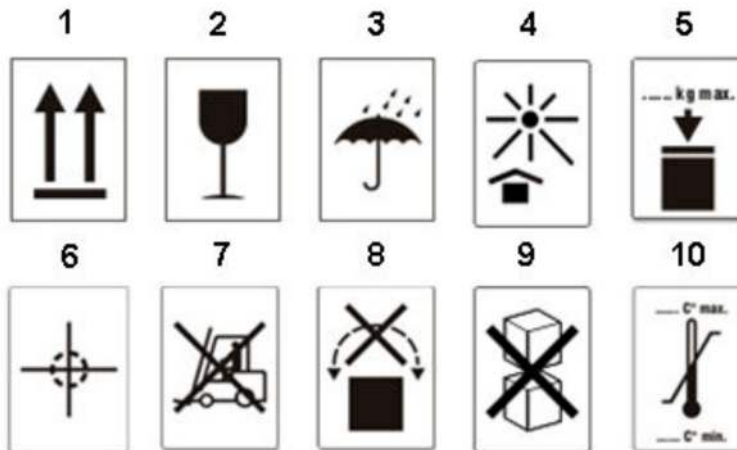
- The ID markings must be clearly visible, legible and durable, and provided in such a manner that they cannot come off or become detached.

5.2.1 Identification of goods

- Goods must be identified individually / with easily removable labels only
- Material ID no. of customer
- Designation of goods

5.2.2 Identification of packaging

- Packaging must be identified individually
- Material ID no. of customer
- Designation of goods
- Safety and handling instructions (see examples in Fig. 1-10)
- Examples for safety and handling instructions:



- 1 = Top
- 2 = Fragile
- 3 = Keep dry
- 4 = Protect against heat
- 5 = Stacking load mass limit
- 6 = Center of gravity
- 7 = Do not use forklift truck here
- 8 = Do not roll package
- 9 = Stacking prohibited
- 10 = Permitted temperature range

6 Non-performance of supplier

- Any deliveries in breach of contractor's obligations resulting under these terms and conditions may be rejected at the contractor's expense.
- Any breach of these terms and conditions must be notified either by the customer or by its carrier service providers in its name and on its behalf. The customer declares, until further notice, to have authorized its carrier service providers to do so. The same applies for the assertion of rights of the customer resulting from such notified breaches.

7 Abbreviations and definitions

EAD	Export Accompanying Document
AEO S / AEO F	Authorized Economic Operator - Safety / Facilitation
Customer	Howden Turbo GmbH
ECL No.	Export Control List No.
Contractor	Supplier
ECCE	Export Control and Customs Expert
ECCN	Export Control Classification Number
Euro-pallet	Also known as EUR-pallet, EPAL-pallet (European Pallet Association) in acc. with UIC standard 435-2
CFC	Chlorofluorocarbons
Mesh pallet	Also mesh box pallet, steel pallet with superstructure in acc. with EPAL acc. to UIC standard 435-3
HPE	Bundesverband Holzverpackung, Paletten, Exportverpackungen e.V.
Incoterms 2000	International Commercial Terms
IPPC	International Plant Protection Convention
Cardboard boxes	Packaging made of strong types of paper (cardboard or paperboard), mostly foldable
Load carrier	Load-carrying means for goods or compositions of goods made of wood, metal or plastic
PVC	Polyvinylchloride
Transport chain	Sequence of technically and organizationally linked processes according to which goods are transported from one place to another
Packaging	For storage and transport, protection and information purposes (see this agreement) OR: Products made of any material designed for carrying, protecting, handling and delivering goods
Goods	Entirety of (material) goods, products or parts

8 Referenced documents

The currently applicable version of the following documents shall be used as a reference:

Ref. No.	Title	Document ID/Source/Link
1.	HPE packaging guidelines	http://www.hpe.de/verpackungsrichtlinien.html

9 Revision history

Revision	Description	Status
0.9	Draft document based on other locations	Not released
1.0	Draft revised	Released