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Packaging Guideline

melting&casting **INTECO** *technologies*



Impressum

Hersteller

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1 Purpose of this packaging guideline

This packaging directive advises the Contractor of the general packaging requirements of Inteco melting and casting technologies GmbH. The aim is to ensure a trouble-free flow of material taking into account qualitative, environmental and economic aspects. Appropriate protection of the goods is to be achieved by packaging that is fit for purpose and protects the goods safely and optimally.

1.1 Reference to the packaging guideline of HPE

All items listed in this packaging guideline are in compliance with the HPE packaging guideline. HPE stands for German Federal Association for Wooden packaging, Pallets and Export packaging. If any relevant issues regarding packaging are not listed or included in this Inteco packaging guideline, we refer to the enclosed HPE packaging guideline. This Inteco packaging guideline shall only mention the most relevant issues for export packaging and the state of the art.

2 Consideration for general safety and the environment

The Contractor shall meet the legal requirements currently valid for each type of packaging selected for transport and storage when providing the packaging. In connection with this, consideration shall also be given to all the legal requirements regarding constituents of the packaging and the packaged goods. Likewise, it is also imperative to apply the environmental, electronic and electromagnetic regulations which exist in the country of manufacture and the country of use.

3 Warranty provisions

The Contractor shall guarantee Inteco melting and casting technologies GmbH contract-compliant execution of packaging tailored to the application in line with these guidelines and taking into account the requirements of the accompanying German Federal Association for Wooden packaging - Export packaging (HPE) e.V., said packaging to be guaranteed state of the art together with the perfect quality of the packaging material used. Inteco melting and casting technologies GmbH shall be notified in advance in writing in the event of any necessary deviations from the minimum requirements on the packaging described in this guideline or any separate packaging measures.

The Contractor shall be liable for all damages demonstrably arising from faulty design and execution of the packaging by the Contractor or its subcontractors, as well as that arising due to non-compliance with the provisions of this packaging directive.

4 General packaging regulations

The Contractor shall be responsible for providing an appropriate packaging solution for each particular application. Its packaging shall guarantee the best protection during storage, loading and transportation of the goods as well as against loss, mechanical and climatic conditions. This should be constructed, used and secured such that the static or dynamic loads arising during transportation, handling and storage can be managed efficiently. The Contractor shall provide the packaged goods ready for shipping in packaging appropriate for their composition and/or product-specific properties, depending on the project-specific general conditions based on the packaging data sheet of if applicable.

Project-specific general conditions which the Contractor shall consider when designing packaging:

- Destination country (climatic influences or circumstances)
- Mode of transport used (requirements/stresses for each mode of transport and route)
- Storage conditions (adaptation of packaging to the storage prevailing conditions in the destination country)
- Planned duration of storage (adaptation of packaging to the planned duration of storage for the package, depending on the circumstance referred to the destination country)

The Contractor's packaging shall ensure that damage-free transport, handling and storage procedures can be guaranteed for all packaged goods of Inteco melting and casting technologies GmbH depending on the application.

4.1 Standard requirements for packaging

The standard provisions listed in the following section are minimum requirements for the packaging. It is imperative for the Contractor to comply with these provisions regardless of the application.

- The Contractor shall select the type of packaging according to the component characteristics, its protection requirements as well as the type of transport and storage.
- Only clean and undamaged packaging has to be provided.
- Recyclable packaging materials have to be used.
- Ensure the stackability of packages (If the packages cannot be stacked due to the nature of the package contents, they shall be marked accordingly (see Section 8.5) and Inteco melting and casting technologies GmbH logistics department shall be notified).
- Any packages weighing more than 20 kg shall be provided on appropriate support.
- The weight shall be evenly distributed both in the package as well as on the support used.
- Formation of packaging units in an economic way so that it is possible to achieve efficient handling as well as optimum space utilization of transport means and supports, such as ISO containers or EUR-pallets. The Contractor shall adjust dimensions and weights of the packaging appropriately to the dimensions and the permissible load of the means of transport used.

- The packaging unit shall guarantee efficient handling, loading onto and unloading from various means of transport (shipment by land, air and sea) by means of industrial trucks, cranes and forklifts.
- Packages must have adequate facilities for securing them during transport in accordance with the requirements of the mode of transport used in each case.
- Small parts (screws, nuts, washers, etc.) shall additionally be packaged separately according to type within the package (combined into larger units) to avoid loss of the goods.
- Combination of goods from different orders in one package shall be carried out in accordance with the requirements of Inteco melting and casting technologies GmbH logistics department.
- The packaging shall ensure adequate corrosion protection for extremely corrosion-sensitive packaged goods in accordance with the requirements of transport, handling and storage.

5 Packaging for sea and air freight

There are separate requirements for packaging used in sea and air freight to which the Contractor shall pay specific attention.

5.1 Sea freight packaging

The Contractor shall pay special attention to the packaging design when transporting packages by sea in respect of the specific circumstances and loads, such as the effects of cold, moisture (seawater, cargo or ship's sweat) or heat and extreme stresses during cargo handling in addition to corrosion. In particular, the Contractor shall provide corrosion protection of the packaged goods that is compatible with use (see Section 6) by means of appropriate packaging (inside and outside) to protect the packaged goods temporarily (time between transport – handling – storage) against harmful climatic effects and hence to preserve the quality existing at the time of preservation.

The Contractor should align the dimensions of the packages so that it is possible to guarantee transportation (forwarding/sea freight) by standard trucks and ISO containers. The logistics department of Inteco melting and casting technologies GmbH shall be notified in writing in advance (at least 8 weeks prior to delivery) if it is not possible to comply with these standard dimensions due to the nature of the packaged goods. Furthermore, the package should have a sturdy, space-saving and functional design and be suitable for loading by means of cranes or industrial trucks. Sea packaging for container transport also needs to have special fixtures to allow for attachment within the container thus guaranteeing non-slip, safe transportation. In addition the logistics department of Inteco melting and casting technologies GmbH shall be notified in writing in advance (at least 4 weeks prior to delivery) if packaged goods can be stuffed in ISO containers.

5.2 Air freight packaging

In packaging for air freight, the Contractor shall consider the specific requirements of this type of transport separately (prevailing centrifugal forces and temperature fluctuations). The packaging should have a

standardized usable area with a very low net weight at the same time. The Contractor shall adapt the dimensions of the package according to the dimensions of the available cargo space of standard passenger planes used (**maximum length - 250 cm, width - 200 cm and height - 160 cm**). The logistics department of Inteco melting and casting technologies GmbH shall be notified separately in writing in advance (at least 6 weeks prior to delivery) if it is not possible to comply with these limited dimensions due to the nature of the packaged goods. In addition to easy securing options, the packaging shall have a high level of stability to guarantee safe transportation by air.

When providing packaging for air freight, the Contractor shall also take into account the requirements (climatic and mechanical) applicable during post-airfreight-transportation.

6 Packaging materials

The Contractor shall give appropriate consideration to the requirements below when selecting the packaging materials to be used.

6.1 Permissible materials for packaging

Packaging material	Recommendation	Avoid
Wood	Solid wood, untreated plywood	Coated or painted wood, particleboards, wood wool/shavings
Cardboard packaging	Free from noxious paper production substances	Water-insoluble coatings, adhesives
Plastics	PE, PUR, PR	PVC, PC, polystyrene
Anti-tarnish paper	VCI paper proven to be suitable for recycling	Highly impregnated or soaked paper, such as waxed, oiled or bituminous paper
Composites	Are not recommended	

Table1: permissible packaging materials

6.2 Prohibited materials for packaging

The EU Packaging Directive (94/62/EC) lists the most important maximum values for lead, mercury, chromium and cadmium concentration levels which may be contained in packaging materials, see:

<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31994L0062>

6.3 Packaging materials made of wood - IPPC stamp

If not noted separately in the order from Inteco melting and casting technologies GmbH it is imperative that all packaging materials of solid wood which are used shall comply with the currently valid provisions of the ISPM 15 (IPPC) standard and shall be furnished as evidence with the mandatory stamp/mark.

The ISPM 15 standard applies to solid packaging timber in the form of pallets, cases, crates, frames, carriers, drums, etc. with a wood thickness greater than 6 mm. This standard also applies to what is known as dunnage, such as boards, wooden wedges, beams, etc., which are used for supporting and wedging loads in containers or transport containers, and must be marked accordingly.

The IPPC stamp must show the following information:

- Ear of wheat symbol with the letters IPPC
- ISO code of the country, the region identifier, the company's approval number
- Treatment method (HT for treatment, MB for fumigation with methyl bromide)
- DB (debarked) for debarked wood, if necessary

An IPPC stamp is shown in Fig. 1 as an example.

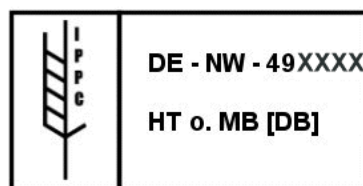


Fig.1: IPPC stamp

6.4 Use of corrosion protection materials (VCI film/desiccant)

The Contractor shall always match the corrosion protection method used to the specific properties and future requirements of the packaged goods (country of destination, mode of transport as well as the circumstances and length of storage). The Contractor shall take into account that only the corrosion inhibitors approved by the competent departments of environmental protection, health and safety and process engineering may be used.

- VCI film

VCI-active substances are corrosion inhibitors that evaporate slowly and are deposited as a film on the surface to be protected and delay or prevent chemical reactions. The use of VCI film is particularly recommended for corrosion-sensitive packaged goods and goods with longer storage times. If the Contractor uses VCI film, they shall bear in mind that the gap between the anticorrosive film and the packaged goods must not exceed 30 cm. It is imperative that packaged products protected by VCI film are located in closed packaging.

- Desiccants

It may be that with components containing different alloys not all parts can be protected against corrosion. In this case, desiccant bags offer better protection, but it must be ensured that an adequate number of desiccant

bags are enclosed together with the packaged goods. Proper positioning of the bags is important. The desiccant must in no event have any direct contact with the packaged product.

7 Special packaging requirements

Certain things have, by their very nature, additional separate packaging requirements which the Contractor shall take into account when providing the packaging.

7.1 Packaging of dangerous goods

Dangerous goods shall be packaged taking into account the currently applicable provisions of the Dangerous Goods Ordinance (for transport by land, air and sea).

- The ADR [European agreement on the international carriage of dangerous goods on road] and GGVS [German regulation for the transportation of dangerous goods on road] regulations are applicable to the carriage of dangerous goods by road.
- The IMDG code [Regulations regarding the transportation of dangerous goods on ocean-going vessels] is applicable to carriage of dangerous goods by ship.
- The ICAO TI or IATA DGR manuals shall be used for the carriage of dangerous goods by air.

When supplying a dangerous material, the Contractor shall notify Inteco melting and casting technologies GmbH immediately on submitting the offer if at least one of the materials inquired is classed as dangerous goods. All the necessary documentation (e.g. material safety data sheets) shall be submitted to Inteco melting and casting technologies GmbH by e-mail for all relevant materials according to the bid. Under no circumstances shall dangerous goods accompany other packaged goods as additional freight, they must be packaged separately. It is imperative that the Contractor complies with the current provisions of the Dangerous Goods Ordinances enumerated above according to the type of transport. Packages containing dangerous goods shall be marked separately with the internationally applicable dangerous goods codes in addition to the general labelling. An excerpt from these codes can be found in Fig. 2.

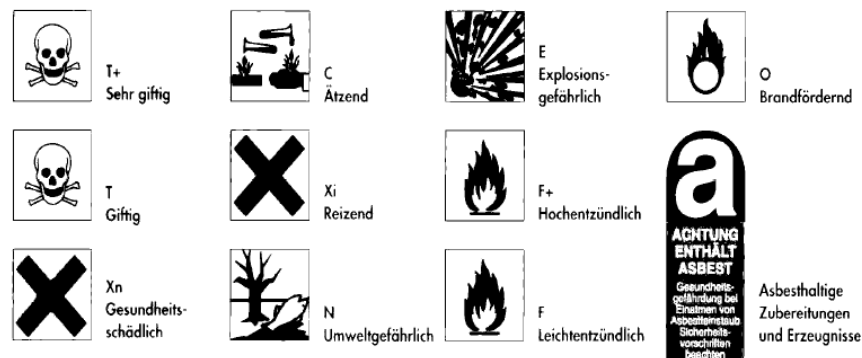


Fig.2: Dangerous goods codes

The Contractor shall attach the dangerous goods symbols permanently to the packages on two adjacent sides by means of color marking or stickers adjusted in size to the dimensions of the package. They shall be uncovered and easily legible.

7.2 Packaging of electronic components

When selecting the correct packaging of electronic components, the Contractor shall minimize the risk of electrostatic discharge (e.g. packaging chips, bubble wrap, stretch film, etc. can cause severe discharges). The Contractor shall specifically use packaging made of antistatic or dissipative materials (e.g. corrugated cardboard). The Contractor shall take the increased risk of moisture inside the packaging into account separately for transport by sea or storage outdoors.

Non-conductive plastic bags (PVC), polystyrene or similar insulating materials are not permitted for electrostatically sensitive devices and assemblies. Conductive foams or normal household aluminum foil shall also be avoided. Use non-chargeable paddings (e.g. cardboard packaging with an outer conductive layer) to prevent transport damage.

If the Contractor attaches shock indicators to the packages when packaging electronic components, it is imperative to notify the logistics department of Inteco melting and casting technologies GmbH of this measurement in writing in advance (at least 6 weeks prior to delivery).

7.3 Packaging of lithium batteries

Since 01.01.2009 new regulations for the packaging, labelling and handling of lithium batteries, lithium rechargeable batteries and lithium button cells are applicable. The contractor shall check the current packaging requirements and comply with them when packaging the relevant parts referred to. Inteco melting and casting technologies GmbH shall be notified in writing in good time on submission of the offer with regard to the delivery of said parts.

8 Marking and labelling

It is imperative that the Contractor shall label and mark the individual packages accurately and completely in order to guarantee clear, fast identification and proper handling of the packages. The Contractor shall not deliver any package without proper marking and labelling.

8.1 Marking of individual parts

All individual parts within the package have to be labelled and marked. If any items are part of the Inteco's bill of material, these components have to be marked with the drawing and/or item number according to the bill of material.

8.2 Marking of packages

Each package shall be marked separately with specific Inteco melting and casting technologies GmbH packing list forms and marking forms.

The procedure in detail will be explained in chapter 10.

The logistics department of Inteco melting and casting technologies GmbH will transmit the necessary forms for this and the regulations governing their proper attachment to the Contractor by e-mail in good time by means of the project-specific shipping instructions.

8.3 Labelling - handling symbols

To ensure proper handling of the packages, the Contractor shall clearly and adequately mark the packaging of packaged goods, which require a special type of handling or have a weight of more than 2 t, with reference to such handling. For this purpose, the internationally accepted symbols according to DIN 55 402 and ISO R780 shall be used.

If the logistics department of Inteco melting and casting technologies GmbH does not communicate any separate requirements regarding the type of handling symbols to be used, the Contractor shall be fully responsible for the decision if and which marking symbols are needed resp. chosen.

When attaching the symbols, they must be permanently, uncovered and clearly legible, on two adjacent sides by means of colour markings adjusted in size to the dimensions of the package. Prior to marking with ink, the part on the packaging used shall either be smoothed or prepared using a primer, and/or degreased in the case of a metal base. The marking ink shall be wipe-proof, weatherproof, light-fast, resistant to seawater and UV radiation and shall stand out clearly against the background. Fig. 3 below shows a summary of the common handling symbols and their meaning.

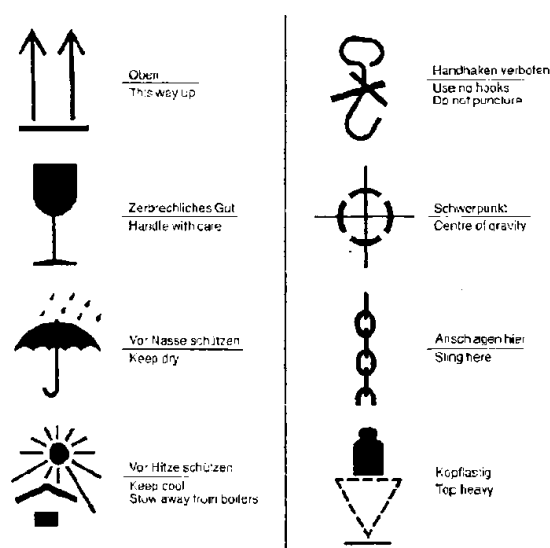


Fig.3: Handling symbols according to DIN 55402 and ISO R780

8.4 Labelling - storage instructions

Each package shall be marked with the necessary storage instructions. The Contractor shall select them carefully, in accordance with the requirements of the packaged goods, as well as taking into consideration the information regarding the prevailing storage facilities, and shall allocate them within the predefined options of the template of Inteco melting and casting technologies GmbH. The options mentioned are shown in Table 2.

Storage instructions	
Abbreviation	Description (German/English)
OO	-Freilager -Outdoor storage area
OC	-Lagern im Freien mit Plane - Outdoor storage area with tarps
IU	-Geschlossene Halle -Warehouse without climate control
IT	-Geheizter/klimatisierter Raum - Warehouse with climate control

Table 2: Storage instructions

The corresponding abbreviation of the selected storage instructions shall be attached permanently, uncovered and easily legible on two adjacent sides of the package by means of color markings. The Contractor shall adjust the letter size of the abbreviation according to the dimensions of the package. Prior to marking with ink, the base shall either be smoothed or prepared using a primer, and/or degreased in the case of a metal base. The marking ink shall be wipe-proof, weatherproof, light-fast, resistant to seawater and UV radiation and stand out clearly against the background.

8.5 Labelling - stackability

The Contractor shall design each package basically such that it guarantees at least easy stackability of the package. If this is not the case due to the nature of the packaged goods, the Contractor shall mark the packages separately. Fig. 4 shows the symbol to be used.



Fig.4: Packaging symbol - Do not stack

The symbols shall be attached permanently, clearly, uncovered and easily legible on two sides by means of color markings adjusted in size to the dimensions of the package. Prior to marking with ink, the base shall

either be smoothed or prepared using a primer, and/or degreased in the case of a metal base. The marking ink shall be wipe-proof, weatherproof, light-fast, resistant to seawater and UV radiation and shall stand out clearly against the background.

The Contractor shall be liable for any damage occurring to packages in the absence of stackability, which are clearly due to a lack of information (no separate information to the logistics department of Inteco melting and casting technologies GmbH) or lack of labelling of the packages by the Contractor using said packaging symbol.

9 Requirements to Inteco Packing Lists

Inteco melting and casting technologies GmbH uses a software system (LMS from Insite IT), which automatically generates the final packing lists. In order to get the data into the software system, the supplier has to fill in the relevant data in an excel-template for each package. The exact procedure will be described in detail in the following points. Fig. 5 shows the explanation to be used.

9.1 Instructions to create the packing list

Template for order require via an empty email to logistic@inteco.at with the subject req ordernumber suppliernumber (req X.XX-XXX-XXX XXXX). Please remove the real Order No. and Supplier No. from the Inteco Order – Pt. Packing List. You will receive an empty Excel-Template within a few minutes.

The screenshot shows an email client interface with the following elements:

- Menu Bar:** DATEI, NACHRICHT, EINFÜGEN, OPTIONEN, TEXT FORMATIEREN, ÜBERPRÜFEN.
- Toolbar:** Includes icons for 'Einfügen' (Paste), 'Ausschneiden' (Cut), 'Kopieren' (Copy), 'Format übertragen' (Format Painter), and text formatting options like font face (Calibri), size (11), bold (F), italic (K), underline (U), color, and background color.
- Address Book:** Icons for 'Adressbuch' and 'Namen' are visible on the right.
- Form Fields:**
 - An...** (To):
 - Cc...** (Cc):
 - Bcc...** (Bcc):
 - Betreff** (Subject):
- Buttons:** A 'Senden' (Send) button is located on the left side of the form.

Fig.5 Empty E-Mail with subject to logistic@inteco.at

If you have received the excel-template, please fill out all mandatory fields* in English language in the template and send them back to logistic@inteco.at. In sheet sample you will find an example for better understanding.

Fill Out Instructions

Step 1 Provide detailed packing details on page "Packing Information", for example see "SAMPLE" sheet

Step 2 Send this document as attachment to our automated emailaddress logistik@inteco.at / logistic@inteco.at

Step 3 Please provide all mandatory fields(*) on page "Packing information". Otherwise your email will be rejected

Package Header Information (required for every Package)

Package No. *	Package Type *	DIMENSIONS cm *			Volume m³	Weight kg *		FRT	Storage Code *	PO Position *	Quantity *	Unit *	Packed Material Description *	Drawing No. / Reference No. / Item No. / Loop No. *	Drawing Pos *
		Length	Width	Height		Gross	Net								
00001					0.000			0.000							
					0.000			0.000							
					0.000			0.000							
					0.000			0.000							

Package Content Information (required for each Material)

Fig. 6 Excel Template – Fill in all mandatory * fiels


In case If you will deliver the goods in partial shipments, you don't have to request a new template, you only have to extend the existing template for this order.

If there is an error message, please refill the mentioned columns and send a mail to logistic@inteco.at again.

In case of full correctness, the final packing list for each Colli, to be attached to either Colli will be sent by email. (appr. 1 Working day)

**DETAIL PACKLISTE
DETAILED PACKING LIST**

Project: 8 tons Inert Gas Electroslag
Project No: 01-474
Date:
Container:

Packlisten Nummer Packing List No.					Applicant: L/C No.: LCX2422201700025 CONTRACT No. 01-474 Port of Loading: Port of Discharge: Description of Goods and/or Services
	1.01-474-0230001				
Abmessungen / cm Dimensions / cm	Länge Length	Breite Width	Höhe Height	Volumen / m³ Volume / m³	Shipping Mark
	120	80	75	0.720 m³	
Totalgewicht / kg Weight (Total) / kg	Brutto Gross	Netto Net	Tara Tara		
	56	31	25		
Verpackungsart Package Type	Pallet				
Lagervorschriften Storage Instructions					

Quantity	Unit	Material Description English	Drawing No	Drawing Pos	Purchase Order	HS-Code	Country of Origin
6,00	PC	XXXX	1-01.01.01.03	12			

Fig. 7 Inteco Packing List

Please put the final packing list on the designated colli. Now the colli is ready for delivery.

If you have any further questions about creating the Inteco Packing Lists, don't hesitate to contact us.

Department Logistics Export / Import

Mr. Daniel Pichler -> daniel.pichler@inteco.at

Ms. Lisa Roßegger -> lisa.rossegger@inteco.at

10 Packaging check

Inteco melting and casting technologies GmbH and/or the end user directly may carry out the examination of the packaging at any time by appointment with the Contractor, whereby the Contractor shall bear all the usual costs in the scope.

10.1 Photographic documentation

Ensuring a packaging check in any case, detailed photographic documentation of all the packages including the specific markings ultimately attached and the necessary labelling shall be sent by e-mail to the logistics department of Inteco melting and casting technologies GmbH in good time prior to collection or delivery of the packaged goods. The photographic documentation shall clearly show the packaging per package together with labelling and marking in detail from all sides. The documentation shall also have photographs of the inner packaging or the arrangement of the packaged goods per package.

11 Transport and Shipping documents

The contractor has to provide all relevant shipping documents which are needed. Those are usually transport documents like Bill of Lading in case of sea transportation, an Airway Bill in case of air transportation, a CMR in case of road transportation, a CIM in case of rail transportation or a FIATA Multimodal Bill of Lading in case of a combined transportation. In addition the contractor has to provide the relevant invoice, certificate of origin, insurance certificate if applicable, certificate of export customs clearance if applicable, certificate of quality and any other certificate if it is necessary. All documents have to be in compliance with the End user of Inteco melting and casting technologies GmbH if necessary.

Every transport has to be in compliance to the Incoterms 2010. In addition, the Inteco Transport and Logistic requirements Datasheet D have to be observed.