

Packaging Guidelines

Truck transports

Air freight

Sea freight



1. General packing guidelines



These freight guidelines are mandatory requirements for packaging, that guarantee optimal protection of the packed goods under logistic, economic and ecologic aspects.

Basis of these guidelines are laws, norms and standards of packaging, whereby the respective current HPE packaging guidelines must be observed as a minimum standard.
(HPE = Bundesverband Holzverpackung, Paletten, Exportverpackungen e.V.)

- Before packaging the goods have to be clean and checked for damages
- The goods are to be packed in such a way that they do not get dirty or damaged
- Each package is to be packaged according to build and method of transport
- Sensitive and expensive goods, which do not have a packaging, are to be put in cardboard boxes or crates, which are filled with recycled padding
- Through different methods of packing, padding, wedging, and lashing it is to be guaranteed that nothing can slide inside of the package.

1. General packing guidelines

- Use space saving methods of packing
- With different goods in one package, the lighter, or more fragile goods have to be at the top of the package
- If goods are sent on a pallet, the pallet has to be bigger than the goods
- Already painted parts have to be packaged in such a way that the paint does not get damaged E.g. in bubble wrap
- All wood used has to be IPPC treated and labelled (IPPC = International Plant Protection Convention.) This guarantees that no untreated wood goes to foreign countries.
- Tall pieces E.g. Control cabinets are to be packed in such a way, that they are protect from strain and falling over. They are also to be secured with additional belts and anti slip methods on the truck.

1. General packing guidelines




- The finished packages have to be able to be moved with all ground conveyors
- If a package has multiple layers, the correct packing materials have to be used
- For ecological reasons, recycled packing materials should be used
- Packing materials have to be silicon free, and paint compliant
- All packaged materials have to have a DÜRR material number. The outside packaging has to have the delivery order attached. (See 1.1)
- For the transport of hazardous materials, the “Gesetz über die Beförderung gefährlicher Güter” has to be followed. The packaged hazardous materials, have to be packed in such a way suitable for the transport, and according to local laws. The packaging also has to be UN certified.

1. General packing guidelines

1.1 Documents and labeling / sent from DÜRR



Material labelling	Outside packaging	Crates / Pallets
<ul style="list-style-type: none">■ DÜRR – Label / Barcode■ Material number■ Project number■ Banf number■ Material label■ Lot size■ Delivery date / final destination■ Position■ Incoming goods date	<ul style="list-style-type: none">■ Delivery slip■ Address sender■ Address receiver■ Order number / delivery date■ Material label / DÜRR – Material number■ Net weight / Lot size■ Gross weight, entire package■ Packing way■ Size	<ul style="list-style-type: none">■ Labels■ Project number / project name■ Package number■ Weight - net / gross / size■ Safety advice <div><p>1 = Top 2 = Fragile 3 = Keep dry 4 = Keep away from heat 5 = Balance point 6 = Area not suitable for fork lifter</p></div>

1. General packing guidelines



1.2 Documents and labeling / sent from supplier

Material labelling	Outside packaging	
<ul style="list-style-type: none">■ Order number■ Banf number■ Order■ Lot size■ Project number■ Project name	<ul style="list-style-type: none">■ Delivery slip / packing list■ Project number■ Project name■ Net / gross weight■ Size■ Safety reference	

1. General packing guidelines



1.3 Documents for hazardous materials / labeling / packing

Road freight	Air freight	Sea freight
<ul style="list-style-type: none">■ Delivery slip / packing list■ Project number■ Project name■ Safety data sheet■ Net / gross weight■ Size■ Safety reference■ UN – number■ Transport documents ADR■ Packaging according to ADR/GGVS■ Storage of packages	<ul style="list-style-type: none">■ Delivery slip / packing list■ Project number■ Project name■ Safety data sheet■ Net / gross weight■ Size■ Safety reference■ UN – number■ IATA – documents■ Packaging according to IATA■ Storage of packages	<ul style="list-style-type: none">■ Delivery slip / packing list■ Project number■ Project name■ Safety data sheet■ Net / gross weight■ Size■ Safety reference■ UN – number■ IMO – documents■ Packaging according to IMDG■ Storage of packages

2. Truck / Train Transports



- Store goods on palettes or other suitable packing methods, so that they are secure from outside influences
- Goods not stored on palettes or other suitable packing methods, are not allowed to exceed 35 Kg
- Appropriate labelling is also needed
- Wood palettes and other wood used for packing has to be IPPC treated and labelled.
- Each package has to have a delivery slip
- The gross weight and size of a package has to be clearly labelled.
Bigger packages have to also have the balance point, and areas for chains and fork lifter labelled on them.



2. Truck / Train Transports

2.1 Loading / Tie Down

- Tie down according to VDI 2700
 - The road traffic laws (STVO) demands, that even during sudden breaking or evasive maneuvers the load has to be tied down in such a way, that it is impossible for it to slide, fall over, roll, fall down, or even make unnecessary noise. To ensure this, laws such as: VDI – Guideline 2700 have to be followed.
 - VDI – Guideline 2700 exists since many years and explains what type of force can act on a load while the truck is driving, and how to best secure the load, so that no accidents happen.
- Use anti – sliding mats and belts
- Load form fit
- Check maximum weight allowance before the journey
- Documentation of the loading process
- Check truck for roadworthiness (by sight)

Wrong loading / tie down



Wrong tie down,
Belt no placed
properly



Wrong tie down,
Not enough belts used



Watch out for correct
height



Damaged through wrong
tie down,
No outer packaging

2. Truck and Train Transports

2.2 Truck sizes

Generally truck transports with 3 meters length and 3 meters height, do not need special permits

To keep costs low and availability of trucks flexible, the standard sizes (mentioned below) should be kept in mind

	Truck (L x W x H)	Trailer (L x W x H)
Truck	13,60 x 2,45 x 2,50 (2,60) m	
Truck-trailer combination	7,00 x 2,45 x 2,40 m	7,00 x 2,45 x 2,95 m
Megatrailer	13,60 x 2,45 x 3,00 m	

Dimensions larger than the ones mentioned above need a special permit!

3. Air Freight



- Maximums size of packages has to be clarified with the airline.
- Goods are not allowed to be bigger than the packaging, E.g. pallet smaller than good
- Packages have to be safe from manipulation (See 3.1)
- Exact size and weight of packages labelled
- Delivery slip and labels are need for all packages
- IPPC – labels needed for packing wood
- Air freight safety regulations have to be followed

3. Air Freight

3.1 Manipulation-safe packaging

- All kinds of goods going with air freight, which are on a pallet, have to have been wrapped in non transparent foil
- Cardboard boxes must be packed manipulation safe, with all open sides taped shut.
- This goes for all cardboard box sized
- Delivery slip
- All packages have to have labels about size and weight.
- IPPC labels on packing wood



4. Sea freight

- The kind and intensity of strain on the goods during oversea transports must be researched during packaging.
- Strain during oversea transports are: rain, sea water, different climate zones, high humidity, and high salt content in the air.
- During the long transports in the containers, the packed goods are under a high strain from shocks, and vibrations
- Goods that are packed have to be dry.
- Packing wood with a maximum of 20% residual moisture.
- Corrosion protection with the dry bag method. For the transport and storage the goods have to have enough dry bags, the amount is relative to the residual moisture inside of the aluminum foil, and has to be good for 12 months (optional 24 months). Calculation according to DIN 55474
- There are two methods of packaging: ground packaging and crate packaging
- Packing wood must be IPPC – treated and labelled, also inside of the package.
- The sea freight packaging should be done by a specialized contractor (Packaging company / Exporter) who work according to the newest HPE guidelines.

4. Sea freight

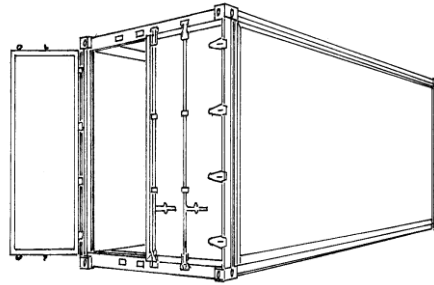
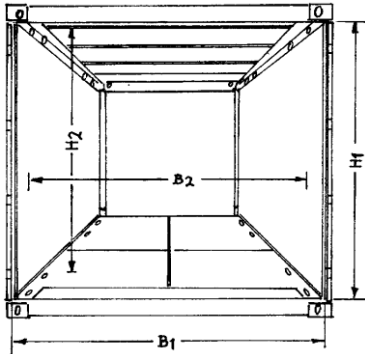
4.1 Container accumulation and loading

- Picture documentation while loading (Photo of empty Container, all packages and storing wood)
- Packages form fitted in container
if necessary use belts and storing wood (IPPC)
- Use entire length and width of container
- Container must be undamaged, clean, and dry
- Final check of wood used to package, no dirt should be on the wood.
(E.g. insects, leaves bark)
- IPPC – labels checked
- Container – register number checked
- Seal container (Seal number entered into paperwork)

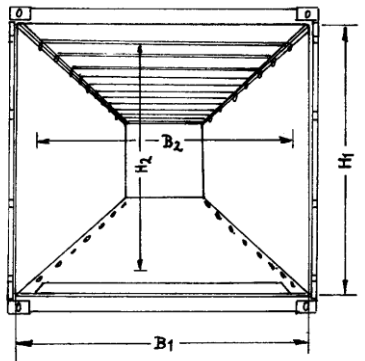


4. Sea freight

4.2 Container size



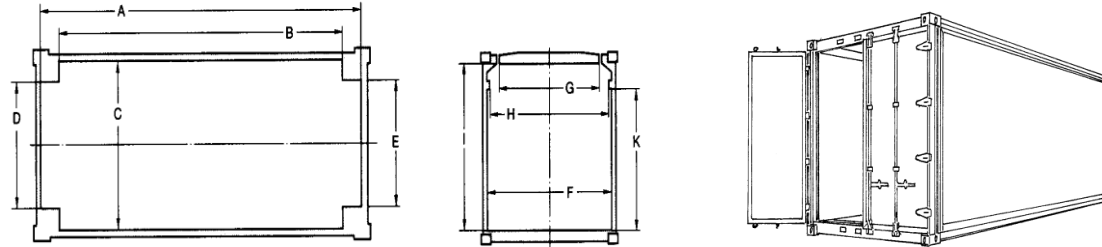
Inside Dimensions			Door Opening		Weights		
Length mm	Width (B2) mm	Height (H2) mm	Width (B1) mm	Height (H1) mm	max. Gross kgs	Tare kgs	max. Payload kgs
5890	2350	2390	2330	2290	24000	2300	21700



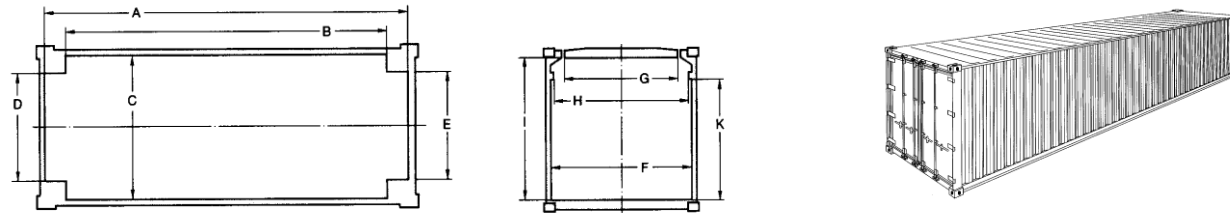
Inside Dimensions			Door Opening		Weights		
Length mm	Width (B2) mm	Height (H2) mm	Width (B1) mm	Height (H1) mm	max. Gross kgs	Tare kgs	max. Payload kgs
11900	2350	2690	2330	2580	30480	4020	26460

4. Sea freight

4.2 Container size



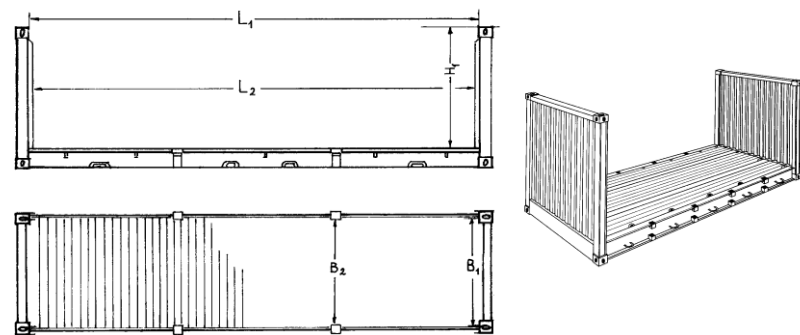
Inside Dimensions				Roof Openings				Door Openings					Weights		
Length	Width	Height Middle	Height Side	Length		Width		Width			Height		max. Gross	Tare	max. Payload
mm	mm	mm	mm	A mm	B mm	C mm	D + E mm	F mm	G mm	H mm	I mm	K mm	kgs	kgs	kgs
5890	2350	2360	2300	5580	5480	2200	1900	2300	1830	2200	2280	1900	24.000	2.200	21.800



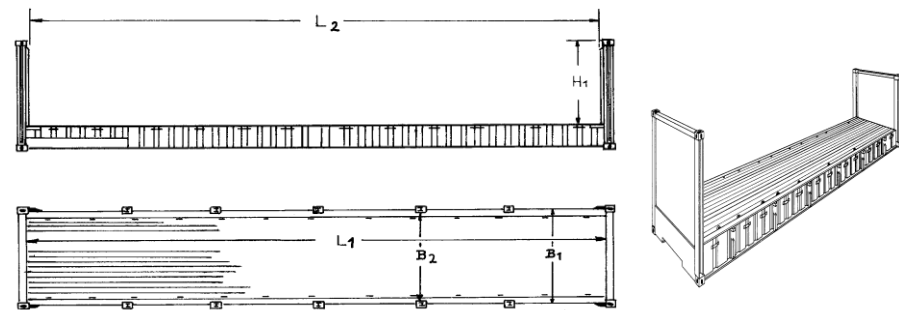
Inside Dimensions				Roof Openings				Door Openings					Weights		
Length	Width	Height Middle	Height Side	Length		Width		Width			Height		max. Gross	Tare	max. Payload
mm	mm	mm	mm	A mm	B mm	C mm	D + E mm	F mm	G mm	H mm	I mm	K mm	kgs	kgs	kgs
11900	2330	2370	2310	11800	11310	2205	1720	2334	1882	2208	2276	1900	30.480	3.800	26.680

4. Sea freight

4.2 Container size



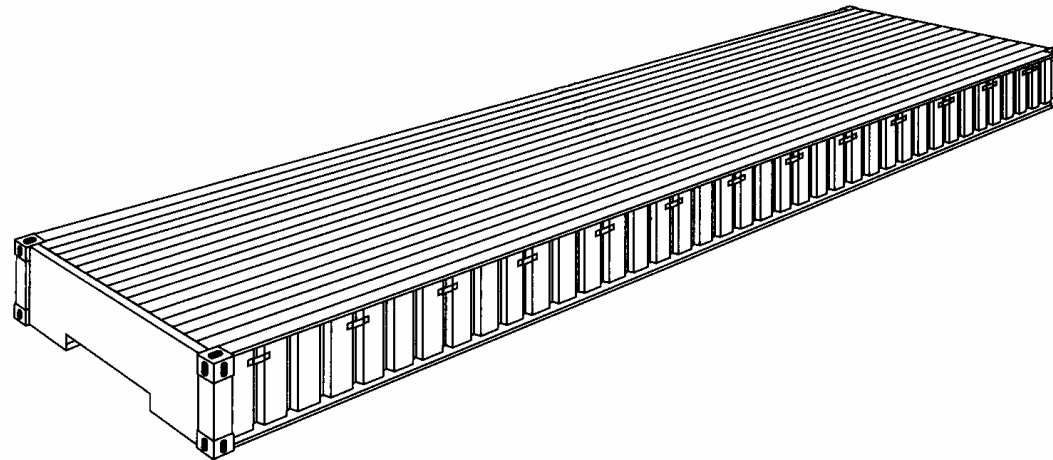
Inside Dimensions					Weights		
Length		Width		Height	max. Gross	Tare	max.
L1	L2	B1	B2	H1	Gross	kgs	Payload
mm	mm	mm	mm	mm	kgs		kgs
5946	5624	2358	2235	2260	24.000	2.500	21.500



Inside Dimensions					Weights		
Length		Width		Height	max. Gross	Tare	max.
L1	L2	B1	B2	H1	Gross	kgs	Payload
mm	mm	mm	mm	mm	kgs		kgs
11835	11712	2318	2232	1978	30.480	4.750	25.730

4. Sea freight

4.2 Container size



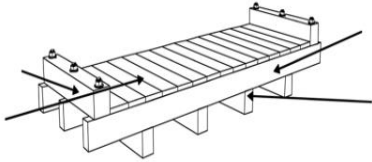
20' Platform

Dimensions			Weights		
Length	Width	Height of Bottom	max. Gross	Tare	max. Payload
mm	mm	mm	kgs	kgs	kgs
6058	2438	335	24.000	2.100	21.900

40' Platform

Dimensions			Weights		
Length	Width	Height of Bottom	max. Gross	Tare	max. Payload
mm	mm	mm	kgs	kgs	kgs
12192	2438	610	45.000	4.200	40.800

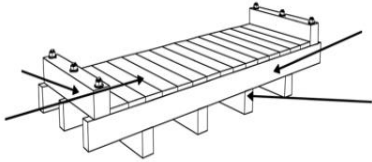
5. Ground packaging of sea freight



- Packaging according to HPE – Guidelines
- The packing on wood pallets is only recommended on a house to house container delivery. If the pallet is stored before or after shipping for a long time, there is a chance of the protective cover being damaged.
- Important for ground packaging is to ask: how long, and where the package will be stored.
- Ground packaging is only suitable for not delicate goods.
- Bottom width max. 230 cm.
- Standard bottoms: 285 x 225 cm, 395 x 225 cm, 485 x 225 cm, 585 x 225 cm
Consider container size
- Wood IPPC processed. Labels on 2 opposite sides of the pallet
- Goods on pallet lashed down with ring bolts and belts



5. Ground packaging of sea freight



- Corrosion protection according to dry method DIN 55473
- Parts have to be packed dry. Packing wood with a maximum of 20% residual moisture.
- Parts are packed air tight in aluminum compound foil according to DIN 55531
- Additional layer of plastic foil over aluminum foil. 100% coverage of freight
- Plastic foil over entire pallet (Avoid water on the pallet to prevent mold) (Picture 4)
- The packaging must have a small gradient, so that when stored outside (to be prevented) the water can flow off. Without a gradient a water pocket could be created, resulting in residue on the package. Picture (1-3)



Abbildung 1



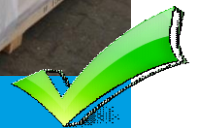
Abbildung 2



Abbildung 3



Abbildung 4



5. Ground packaging of sea freight

5.1 Packaging examples for sea freight ground packaging



Wooden pallet



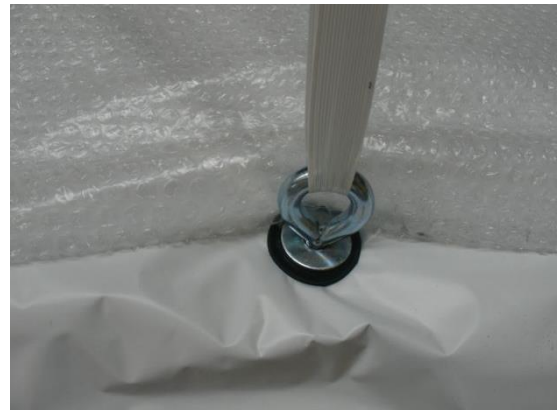
IPPC labelling



Bubble wrap and aluminum foil



Materials on wooden pallet



Fastening



Fastening on wooden pallet

5. Ground packaging of sea freight

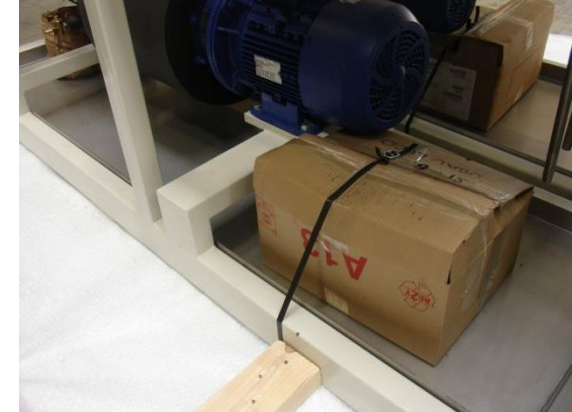
5.1 Packaging examples for sea freight ground packaging



Fastening with wood parts
IPPC - ID



Fastening, lash down



Fastening of additional parts



Protection for additional
parts



Protection of additional parts



Protection of additional parts

5. Ground packaging of sea freight

5.1 Packaging examples for sea freight ground packaging



Padding



Additional foil



Pack dry bags



Welding shut of aluminum compound foil



Welding seam



Extraction of air from foil

5. Ground packaging of sea freight

5.1 Packaging examples for sea freight ground packaging



Extracting the air from the foil



Additional stretch foil



Additional foil over wooden pallet



Identification

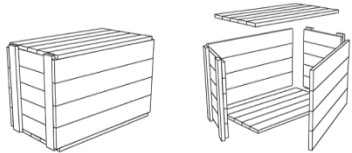


Weighing of finished package



Gross weight

6.Crate packaging sea freight



- Packaging according to HPE guidelines
- Crate packaging, like ground packaging with air tight aluminum compound foil, with addition of dry bags and casing.
- Crate packaging about 73% more expensive than ground packaging.
- Crate packaging for sensitive, high grade or quickly corroding materials.
- Lid with barrier coat
- Inside of the crate the welded shut aluminum foil has to have a gradient, so that intruding water can flow of the foil, to prevent water skin formation.
- Additional foil over lid
- Labelling (balance point, load pickup fork lifter, Chain pickup, IPPC)
- For highly sensitive parts the placement of humidity- and impact indicators are recommended.



6.Crate packaging sea freight

6.1 Packaging examples For sea freight crates



Machine of crate flooring



Alignment of machine



Machine mounting feet taken off



Fastening with wood parts
IPPC -ID



Attachments



Secure machine to the floor

6.Crate packaging sea freight

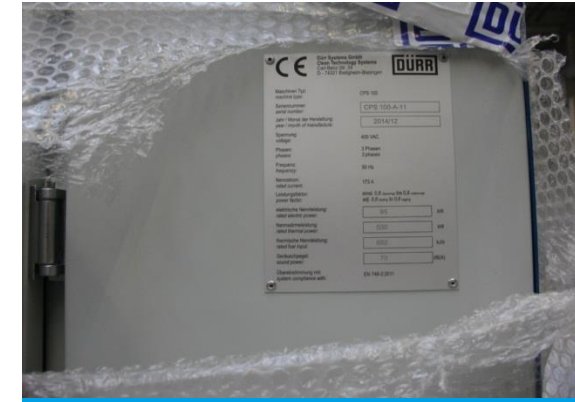
6.1 Packaging examples For sea freight crates



Secure machines on ground



Padding



Identification



Place Impact indicator



Edge protection



Machine on wooden pallet

6.Crate packaging sea freight

6.1 Packaging examples For sea freight crates



Place Impact indicator



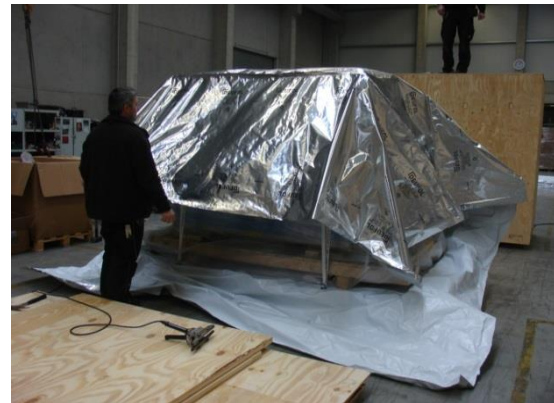
Pack drybags



Pack drybags



Covering in aluminum compound foil



Covering in aluminum compound foil



Welding shut of aluminum foil

6.Crate packaging sea freight

6.1 Packaging examples For sea freight crates



Complete cover



Hole for indicator



Humidity indicator



Extraction of air from inside the aluminum foil



Extraction of air from inside the aluminum foil



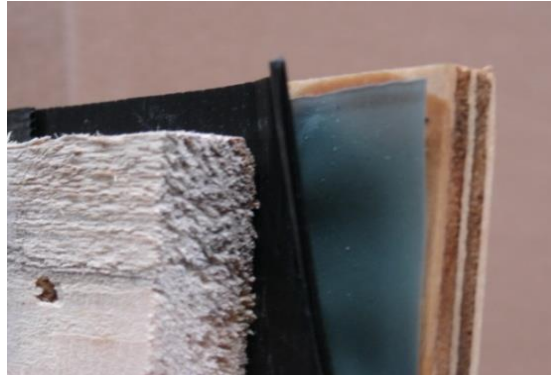
Caseing of the crate

6.Crate packaging sea freight

6.1 Packaging examples For sea freight crates



Reinforcements of crates



Lid with barrier coat



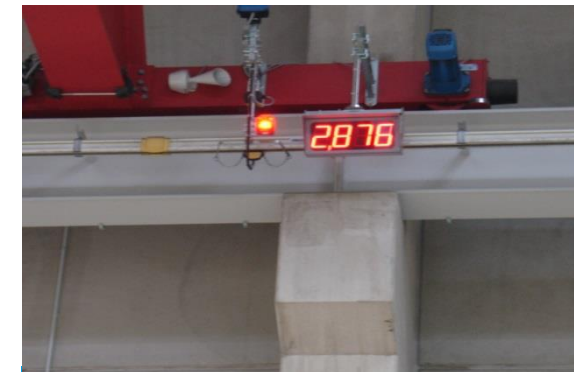
IPPC labeling



Additional foil for lid



Weighing of finished crates



Gross weight

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Bietigheim-Bissingen
www.durr.com

Bernd Panholzer PFS Logistics

Packaging Guidelines

Truck transports, Air freight, Sea freight

“Subject to change. The information in this presentation contains only general descriptions or performance characteristics, which may vary in different cases. The requested performance characteristics are only binding if they are expressly agreed in the contract.”

Dürr Systems AG
Carl-Benz-Straße 34
74321 Bietigheim-Bissingen
Germany

Bernd Panholzer
info@durr.com
www.durr.com

