

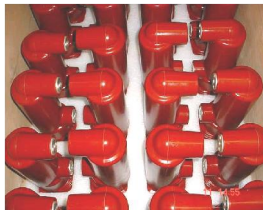
ABB AG – Calor Emag Medium Voltage Products

Guidelines for Packing

Guidelines for Packing



- Gas-insulated switchgear type ZX
- Vacuum circuit-breaker
- Embedded Poles
- Vacuum interrupter
- Components



Guidelines for Packing Content

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1

Introduction

Guidelines for Packing

1 Introduction



This packing guidance shall give you an overview over the various possibilities of packing of our products.



The packing guideline explains ABB general terms which will be considered for the packing. The packing complies with the general packing standard HPE.



Packing appropriate to the type of duty will be chosen according to the latest technologies and the best quality of packaging means.



The packing method considered the various demands depending on the type and the way of transport defines the choice of the packing method.

Guidelines for Packing

1 Introduction



A safe and easy handling with current ground conveyors or kind of loading is given by adequate construction characteristics of the packing.

Weights and dimensions comply with the valid freight standards.

The packages will be marked according to international regulations / instructions and customers request.

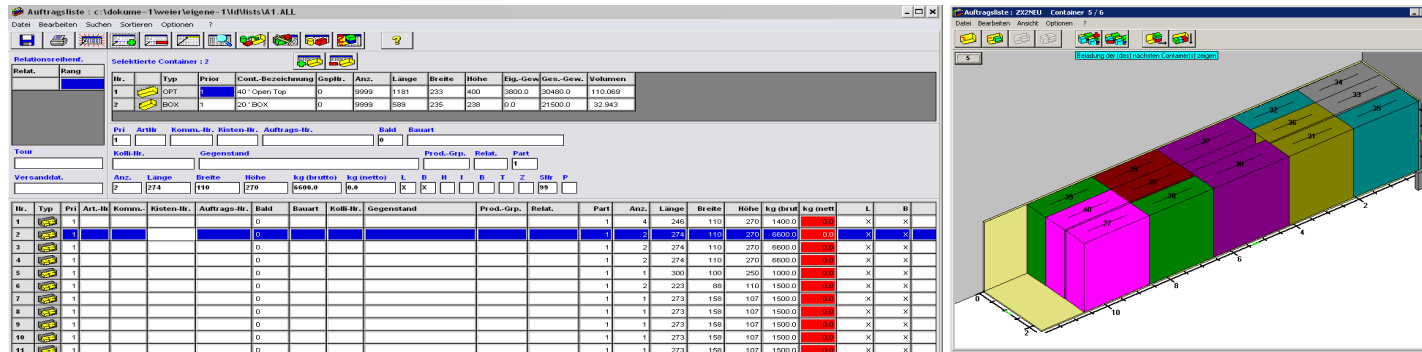
The type of packing is fundamentally determined through

- Dimensions, weight, centre of gravity
- Sensibility
- Base surface area
- Kind of transport and storage period
- Intended transit method and storage requirements



Guidelines for Packing

1 Introduction



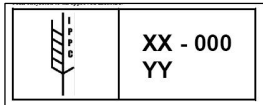
By using modern logistic-software operations will be simplified and need of shipping volume will be calculated automatically and correct:

- Optimized construction of the packages
- Calculation of loading volume
- Optimized positioning of the packages on truck or inside container under consideration of the stacking ability and the direction of loading
- Issuing of detailed packing lists per order

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Standards & regulations

Guidelines for Packing 2 Standards & regulations



The type of packing is defined by the following rules and standards:

- HPE
(Organisation for wood packing, pallets and export packing)
- DIN EN ISO 9002 quality management
- Dangerous goods regulations for
 - Air freight (IATA)
 - Sea freight (IMDG, GGV See)
 - Truck (GGVS/KVO/ADR)
 - Train (GGVE/EVO/RID)
- Regulations for wood packing of the IPPC (ISPM 15)

3

Packing specifications

Guidelines for Packing

3.2 Vacuum circuit-breakers



3.2.1 Euro-pallet for the domestic truck transport

- Dimensions:
 - 120 x 80 cm (Euro dimension) or
 - 120 x 100 cm
 - Height variable depending on type of vacuum circuit-breaker
- Type of packing:
 - Fastening with textile strap and frames against slipping
 - Provided with a poly protection cover to protect against dirt (dust protection)
- Unloading:
 - By forklift
- Storage:
 - Outdoor-storage not possible
 - Not stackable

Guidelines for Packing

3.2 Vacuum circuit-breakers



3.2.2

Carton on Euro-pallet for air and truck transport (Europe)

- Dimensions:
 - 120 x 80 cm (Euro dimension) or
 - 120 x 100 cm
 - Height variable depending on type of vacuum circuit-breaker
- Type of packing:
 - Fastening with textile strap and frames against slipping
- Content:
 - 1 - 4 vacuum circuit-breakers depending on type of breaker
- Unloading:
 - By forklift
- Storage:
 - Outdoor-storage not possible
 - Not stackable



Guidelines for Packing

3.2 Vacuum circuit-breakers



3.2.3

Case on Euro-pallet for air and truck transport (Europe)

- Alternative I:
 - Shrinking in polyethylene foil protecting against short-term humidity on the way of transport (e.g. shipment by ferry)

- Alternative II:
 - To enable the stacking of the packages, the boxes will be strengthened with longitudinal and angle woods.
 - The pallets can be stacked twice one upon the other.



Guidelines for Packing

3.2 Vacuum circuit-breakers



3.2.4

Case for transport in containers, for FCL and LCL deliveries, stackable up to 1,000 kg / top cover surface



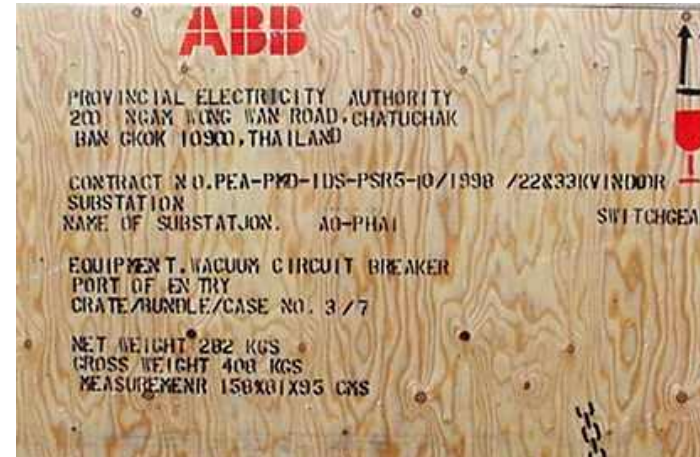
- Dimensions:
 - Variable, optimized for a beneficial container load
- Type of packing:
 - Plywood DW100 water-resistant, longitudinal and cross timbers, cover lumbers
 - Inside of the case the circuit-breaker will be fixed on the bottom. The circuit-breaker will be stuffed against each other. Compression woods prevent from lengthwise movements.
 - Standard preservation in aluminium foil for a transport and storage time of 12 month from date of packing
 - Extension of the preservation time to 18 - 24 month possible
- Content:
 - 1 - 8 circuit-breakers depending on the type of breaker
- Loading and unloading:
 - By forklift or crane
- Storage:
 - Outdoor-storage possible
 - Under-roof storage recommended

4

Marking examples

Guidelines for Packing

4 Marking examples



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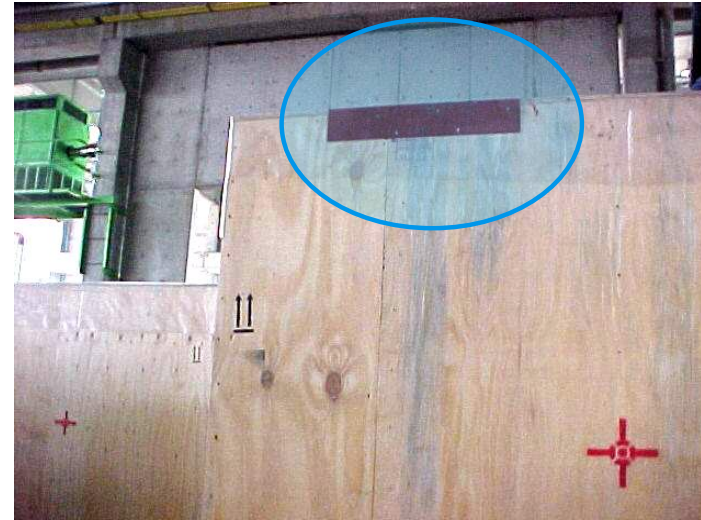
Packaging options

Guidelines for Packing 5 Packaging options



1. U-iron – underneath

- Used for heavy cases



2. Steel angles – above

- Used for high and / or heavy cases

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5 Packaging options



3. Additional coverfoil – outside

- For better protection against moisture



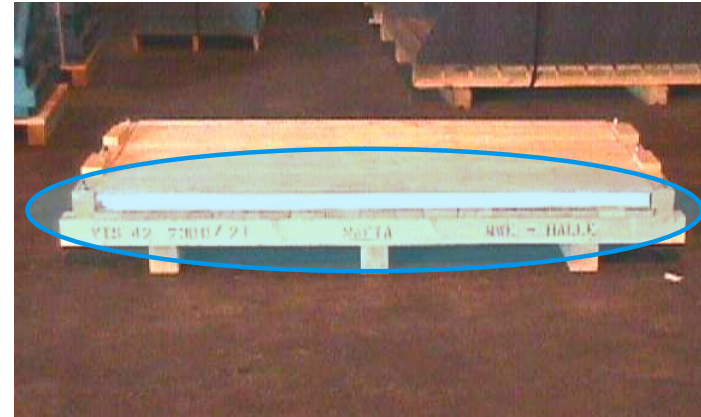
4. IPPC Standard ISPM 15

- Special heat treated wood

Guidelines for Packing 5 Packaging options



5. Tilting indicator



6. Additional ethafoam bottom for shock absorption (high protection)

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Advantages and disadvantages of packing types

Guidelines for Packing

6 Advantages and disadvantages of packing types

Type of packing	Advantages	Disadvantages
Packing on pallets	<ul style="list-style-type: none"> ▪ Less expensive ▪ Reduced packing time 	<ul style="list-style-type: none"> ▪ Low protection against manual and corrosion damages ▪ Transport and loading have to be done carefully, expenditure of time
Packing in cases (non-returnable)	<ul style="list-style-type: none"> ▪ Safe protection ▪ Easy handling for the haulier ▪ Outdoor-storage possible ▪ Optimal capacity utilization for truck and container under consideration of dimensions 	<ul style="list-style-type: none"> ▪ More expensive
Packing in cases (returnable)	<ul style="list-style-type: none"> ▪ Safe protection against mechanical damages ▪ Easy handling for the haulier ▪ Economical and ecological 	<ul style="list-style-type: none"> ▪ Logistical expense through returning of cases
Container packing	<ul style="list-style-type: none"> ▪ Safe protection against mechanical damages ▪ Less expensive 	<ul style="list-style-type: none"> ▪ No outdoor-storage possible with containers of the shipping company, as they have to be returned after unloading immediately.
		<ul style="list-style-type: none"> ▪ Alternatively shipper's own containers (second-hand or new) could be bought, in which the packages could remain according to their preservation, to allow an outdoor-storage for this packaging type.

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