

<b>Document title</b>	<b>Wooden packaging - Quality and requirements – Definition of approved pallets, collars and bearers</b>		
<b>Document no</b>	<b>GS 280A0018</b>	<b>Valid from</b>	2010-03-26
<b>Author</b>	GMAFLN	<b>Approver</b>	GMAKBE, GMACTB
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## 1.0 Purpose

To describe the requirements for quality and strength of all wooden packaging materials.

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## 2.0 Scope

This Group Instruction applies to all wooden packaging materials - such as European flat pallets (EUR pallets), collars (= frames), and bearers as well as crates and boxes supplied to Grundfos and circulating between factories and companies in the Grundfos Group.

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## 3.0 Responsibilities

### 3.1 Managers of departments receiving goods, shipping departments, and distribution centres

Shall ensure that wooden packaging material that is received and sent on complies with the requirements of this Group Instruction.

### 3.2 Local purchase departments

Shall ensure that local Grundfos' suppliers know and obey the requirements of this Group Instruction.

The departments must also make agreements with the local suppliers that extra costs in connection with non-compliance with this Group Instruction will be entered to the suppliers' accounts.

### 3.3 The Group Purchase department

Shall ensure that Grundfos' group suppliers know and obey the requirements of this Group Instruction.

The department must also make agreements with the group suppliers that extra costs in connection with non-compliance with this Group Instruction will be entered to the suppliers' accounts.

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Maintains the pool of pallet, collars, and bearers.

Only Group Purchase has permission to search for a possible supplier to the Grundfos Group.

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## 4.0 Instructions

### 4.1 General

It is **not allowed** to pack or transport goods in pallets, collars, bearers, and other wooden packaging which do not comply with the requirements of this Group Instruction.

Returned pallets, collars, and bearers which do not comply with this Group Instruction will not be credited.

### 4.2 Requirements for the construction of pallets, collars, bearers, and other wooden packaging

The wood shall be **unpreserved**.

All wooden packaging materials must be heat-treated and HT marked in accordance with **ISPM 15**.

As a minimum the mark should include the symbol, the IPPC abbreviations **DB HT** for debarking and heat treatment and a two letter country code in accordance with **ISO 3166-1-alpha-2 code elements** followed by a unique number assigned by the NPPO to the pallet manufacturer.

See example of marking in Figure 1.



**Figure 1.**

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## 4.2.1 EUR pallets

### Construction:

Only **EUR pallets** approved according to **UIC Code 435-2** are allowed for use in the Grundfos Group.

The dimensions of the pallets shall be **1200 x 800 x 144 mm** and the pallets consist of three bottom deck boards, nine blocks, and five top deck boards.

### Marking:

EUR pallets shall bear the following marks on the **three blocks on both long sides**:

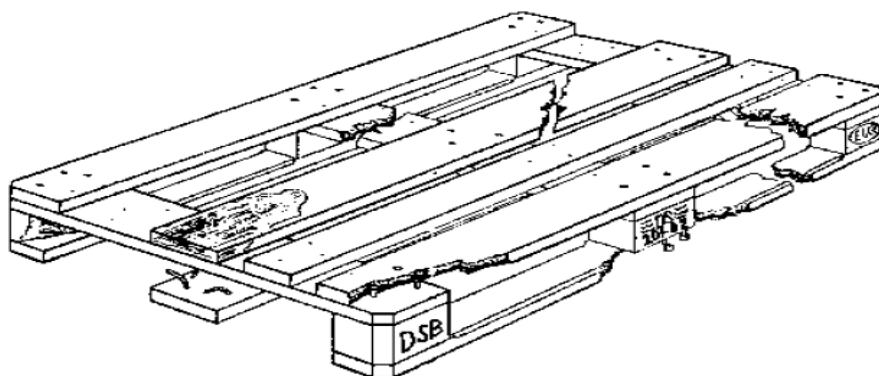
- The left blocks shall be marked with the logo of the approving railway company that has circulated the pallet.
- The central blocks shall be marked with the manufacturer's code, code for year (and maybe month) of production, and the logo of the certifying body in the homeland of the railway company (e.g. in Denmark, the DS mark).
- The right blocks must be stamped with the EUR mark placed in an oval frame **EUR**.
- The pallets **must** be HT marked in accordance with **ISPM 15**, see example in **section 4.2** and **Figure 1**.

### Conditions:

It is **not** allowed to apply pallets for transport and handling of goods when:

- a board is missing or broken.
- more than two bottom or top deck boards are so damaged that more than one nail-shank or one screw-shank is visible.
- a block is missing, splintered, or so damaged that more than one nail-shank or screw-shank is visible.
- the top or bottom deck of the pallet is so soiled by oil, grease, or else that it might affect the goods.
- the pallet has other damages or deviations from the stipulated requirements for dimensions, timber quality, or durability to such an extent that it is unfit for use.
- the marking is not legible.

See **Figure 2**.



**Figure 2.**

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Pallets shall be repaired in accordance with **UIC Code 435-4**.

Pallets shall be scrapped when repair is not presumed to make them suitable for transport and handling of goods.

## 4.2.2 Collars

Only collars complying with the requirements of **EN 13545** are to be applied by the Grundfos Group.

### Construction:

- The outside dimensions of collars exclusive of hinges are **1200 x 800 x 195 mm**.
- The collars consist of **20 mm** planed wood fitted with **four 2 mm steel hinges**.
- The hinges are mounted with 2 x 4 grooved rivets of the dimensions **5 x 27 mm**.
- The hinges shall overlap the next collar by **30 mm**.
- Hinges on all newly purchased collars shall be blue (colour code NCS-S3060-B).

**NB:** The relevance of the requirement for the corner hinges of collars to be **made of 2 mm steel** has been disputed. The requirement has therefore been tested against **EN 13545**.

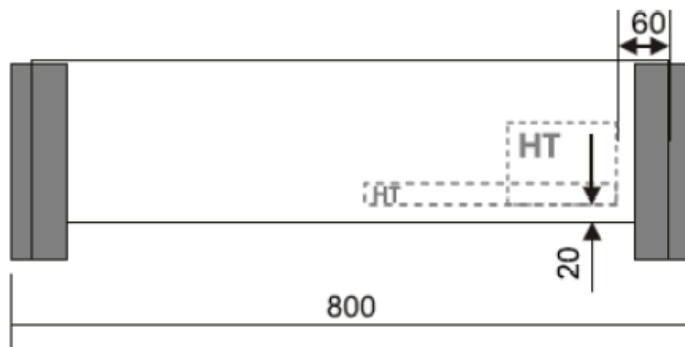
**The test proved that in order to comply with EN 13545, the hinges must be made of 2 mm steel.** So for safety reasons focus must be put on this requirement.

**All collars must be checked** when they are received and sent on, and **all suppliers** must be informed.

### Marking:

Purchased collars must be marked with the GRUNDFOS logo and trademark (Pantone 541).

The short side shall be HT marked in accordance with **ISPM 15**, see **Section 4.2, Figure 1, and Figures 3 and 4**.



**Figure 3 - the short side.**



**Figure 4 - the long side.**

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### Conditions:

Collars are **unsuitable** for transport and handling of goods when:

- boards are broken or splintered.
- hinges bend in or out.
- the thickness of the hinges is under 2 mm or they are made of other materials than steel.
- hinges or boards are too damaged for all rivets in the hinges to hold.
- the marking is not legible.

### 4.2.3 Bearers

**Only** bearers complying with the below requirements are to be applied.

### Construction:

- The dimensions of bearers with fittings are **800 x 150 x 32 mm**.
- The dimensions of the board itself are **800 x 115 x 26 mm**.
- The top side is grooved to allow straps or steel strips to be wound around.
- **Two 2 mm steel fittings** are to be fixed by the aid of rivets on the bottom side with a distance of **560 mm**.
- Cut-outs for collars are made at each end of the bearer.
- The weight of a bearer must be no more than 2 kg.

See **Figure 5**.

### Marking:

Collars must be marked with **GRUNDFOS** (Pantone 541) and HT marked in accordance with **ISPM 15**, see **Section 4.2, Figure 1 and Figure 5**.



**Figure 5.**

### Conditions:

Bearers are **unfit** for transport and handling of goods when:

- boards are broken or splintered.
- fittings are bending up or down.
- fittings or boards are so damaged that the rivets cannot hold.
- the marking is not legible.

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## 4.3 Return of pallets, collars, and bearers

### 4.3.1 Pallets

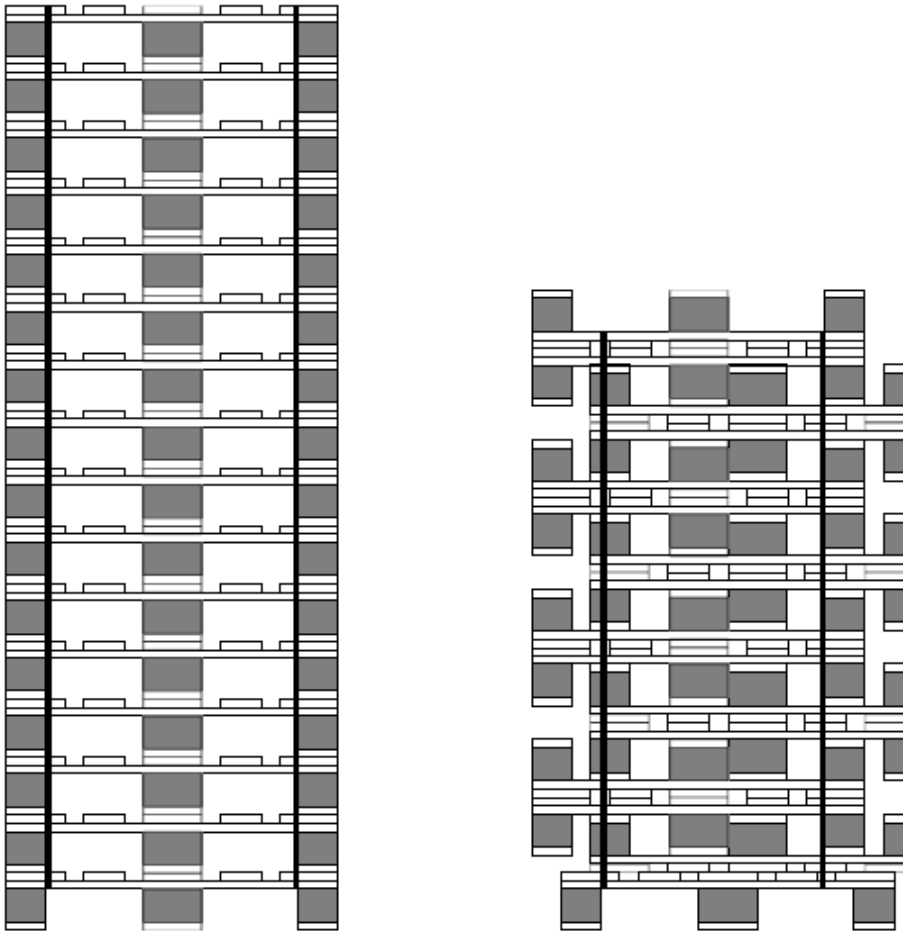
The pallets must be checked in accordance with **section 4.2.1** before being stacked.

Pallets complying with **section 4.2.1** can be sent on.

The stacks are strapped to the pallet with two straps around the long side of the pallet.

Pallets which are to be repaired or scrapped can be put into each other. They must still be strapped, however.

**Maximum 16 pallets are allowed in a stack - see Figure 6.**



**Figure 6.**

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### 4.3.2 Collars

The collars must be inspected in accordance with **section 4.2.2** before being stacked.

Collars complying with **section 4.2.2** can be sent on.

The stacks shall be kept together on the pallet by four plastic straps across the long side of the collars.

Maximum **five rows of twenty collars each are allowed - i.e. a total of 100 collars per pallet.**

Two wooden strips shall be placed across the rows for every five layers to stabilize the rows. See **Figure 7.**



**Figure 7.**

### 4.3.3 Bearers

The bearers must be inspected in accordance with **section 4.2.3** before being stacked.

Bearers complying with **section 4.2.3** can be sent on.

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## 5.0 Definitions

<b>DB</b>	Debarking
<b>EN</b>	European Standard
<b>EUR pallet</b>	European flat pallet complying with European Standard UIC 435-2.
<b>HT</b>	Heat treated
<b>IPPC</b>	International Plant Protection Convention
<b>ISO</b>	International Standards Organisation
<b>ISPM</b>	International Standards for Phytosanitary Measures
<b>TP</b>	Transfer price
<b>UIC</b>	Union Internationale des Chemins de fer

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## 6.0 Records

No specific requirements for records.

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## 7.0 Changes from last revision

### Amendments compared to version 7:

**Section 1.0:** The purpose has been formulated.

**Section 2.0:** The requirement for compliance with ISPM 15 has been moved to section 4.2.

**Section 3.0:** Has been divided in sub-sections and rephrased to emphasise who is responsible for what. The section concerning the Pallet Coordinating Office has been removed.

**Section 3.2:** "local" has been inserted twice.

**Section 3.3:** Two new paragraphs have been inserted.

**Section 4.2:** The attached document "Heat treatment of wooden packaging material" has been removed.

**Section 4.2.2:** "The weight of a collar must be no more than 8 kg." has been deleted.

**Section 4.3:** The text about the pallet Coordinating Office has been deleted.

**Section 4.3.1:** "The remaining pallets must be either repaired, sold, or scrapped in the company." and "Pallets are sorted in two stacks – one stack of HT marked pallets, and another stack of pallets which are not marked with HT." has been deleted and the following sentence has been amended.

**Section 4.3.2:** "The remaining collars must be either repaired, sold, or scrapped in the company." and "The collars shall be folded longitudinally and sorted into two stacks – one stack of HT marked collars, and one stack of collars which are not HT marked – and placed crosswise or lengthwise on EUR pallets." has been deleted.

**Section 4.3.3:** "The remaining bearers must be either repaired, sold, or scrapped in the company." and "The bearers must be sorted HT marked bearers an bearers not marked with HT and stacked on pallets fitted with collars to make it easy to store and unpack them." has been deleted.

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## 8.0 References

<b>UIC Code 435-2</b>	Standard of quality for an European flat pallet, with four entries, and measuring 800 mm x 1200 mm
<b>UIC Code 435-4</b>	Repair of EUR flat pallets and EUR "Y" box pallets
<b>ISPM 15</b>	International Standards for Phytosanitary Measures - Guidelines for regulating wood packaging material in international trade
<b>EN 13545</b>	Pallet superstructures - Pallet collars - Test methods and performance requirements
<b>GS 280A0011</b>	Packaging - Transport levels - Definition of transport levels
<b>ISO 3166-1</b>	Codes for the representation of names of countries and their subdivisions - Part 1: Country codes

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