

Packaging Guideline to Transport and Packing Regulation of Würth Industrie Service GmbH & Co. KG ("WIS") for suppliers located in America and Asia

I. Scope of application

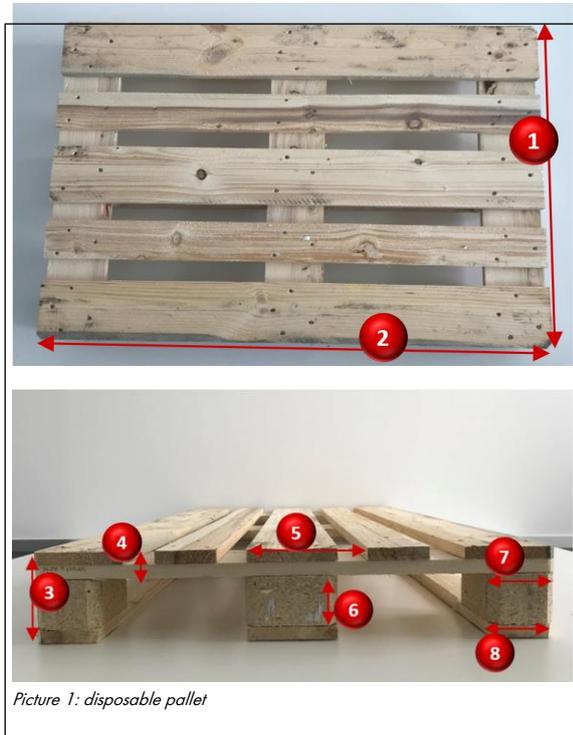
The packaging guideline applies in addition to Transport and Packing Regulations (TPR) of Würth Industrie Service GmbH & Co. KG (WIS) for suppliers located in America and Asia. It is intended to prevent and avoid damage to the goods and the conveyor system while transporting pallets.

II. Transport safety / Load safety / Pallet packaging

Packaging of pallets has to be carried out in the following order (see notice):

- A disposable pallet with IPPC stamp and dimensions prescribed below is mandatory (picture 1 and 2)
- Goods have to be stacked safely and stable on the pallets and between each layer an anti-slip mat has to be used (picture 3)
- Stretch bands have to be stretched correctly around each full goods layer (picture 4)
- Edge and side protection has to be fixed (picture 5)
- Wooden lid must be added (picture 6 and 7)
- Goods have to be strapped tightly lengthways and transversely with a strapping machine (picture 8)
- Pallet info sheet with supplier name has to be visible on each pallet (picture 9)
- All items have to be foiled - pallet feet has to be film free (picture 10)

a. pallet dimension: Pallets with following dimensions have to be used for delivery. Data is based on Euro pallet dimensions (DIN EN 13698-1)



Number	Description	Dimension
1	Pallet width	780 mm - 800 mm
2	Pallet length	1180 mm - 1200 mm
3	Pallet height	Insgesamt max. 144 mm
4	Thickness of boards	15 mm - 20 mm
5	Width of deck-board	n/a, max. distance between boards = 45 mm
6	Pallet block height	55 mm - 75 mm
7	Pallet block width	80 mm - 100 mm
8	Pallet bottom board width	Same as blocks (max. 100 mm)
9	Wood treatment	IPPC stamp

Table 1: disposable pallet dimensions

Total foot space height of pallet: bottom board height (4) and block height (6), has to be minimum 70 mm and maximum 95 mm.



All wooden parts have to be stamped IPPC!

b. Anti-slip mat: A non-slip mat must be placed on the pallet and the first layer of goods.



c. Stretch bands: Stretch bands measuring 1200 x 100 mm should be stretched around each full layer generously.



d. Edge and side protection: Edge protection has to be fixed at all four corners of the pallet. Central supports shall be attached as single board or as T-profile in the middle of the pallet. All supports of the pallet must have the same height.



Picture 5: edge protection

e. Pallet wood lid: A pallet lid is used to stabilize the transport unit. The lids should:

1. be made of wood (incl. IPPC stamp)
2. have a board thickness of 10 - 20 mm
3. cover the pallets surface and not exceed the dimensions of 1200 mm x 800 mm.



Picture 6: Pallet wood lid

Wooden lids: The wooden lids have to be fixed as shown in the picture.



Picture 7: fixing wooden lids

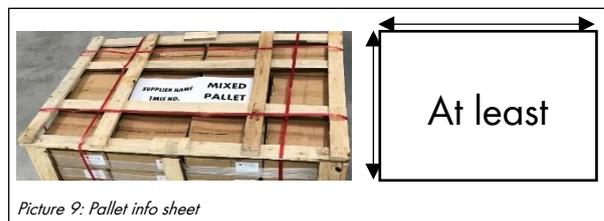
f. Strapping of pallets: The goods have to be secured directly under the pallet deck with plastic straps and not be strapped under the blocks or footboards (length or width wise). At least two straps along length and two bands along width have to be fixed tightly.



Picture 8: Strapping of pallets

g.: Supplier name and pallet info: on pallet info sheet has to be indicated whether the pallet is one item only or mixed, supplier name in Latin (European) characters has to be written.

If possible container number has to be specified. Pallet info sheet should be located on top of the pallet with dimensions of at least 160 mm wide and 250 mm long.



Picture 9: Pallet info sheet

h. Plastic filming of pallets: All goods on the pallet must be filmed only the foot space of the pallet has to be completely free. Plastic film ends have to be neatly separated and fixed so that the ends do not hang loosely on the pallet.



Picture 10: pallet plastic filming

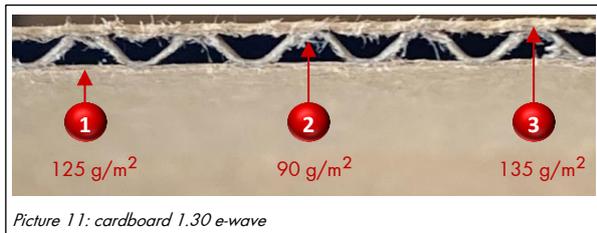
III. Cardboard quality

Utilized cardboard has to be:

1. Up to a volume of 750cm³ / 0.75 liters:

Paper quality: 1.30 e-wave single-wave

1. Outer ceiling 125 g/m² Kraftliner brown
2. Wave track 90 g/ m² wave material
3. Inner ceiling 135 g/ m² Testliner brown

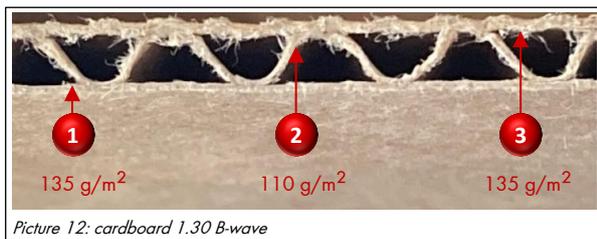


Picture 11: cardboard 1.30 e-wave

2. From a volume of 750cm³ / 0.75 liters:

Paper quality: 1.30 B-wave single-wave (B flute, Single Wall)

1. Outer ceiling 135 g/m² Kraftliner brown
2. Wave track 110 g/m² wave material
3. Inner ceiling 135 g/m² Testliner brown



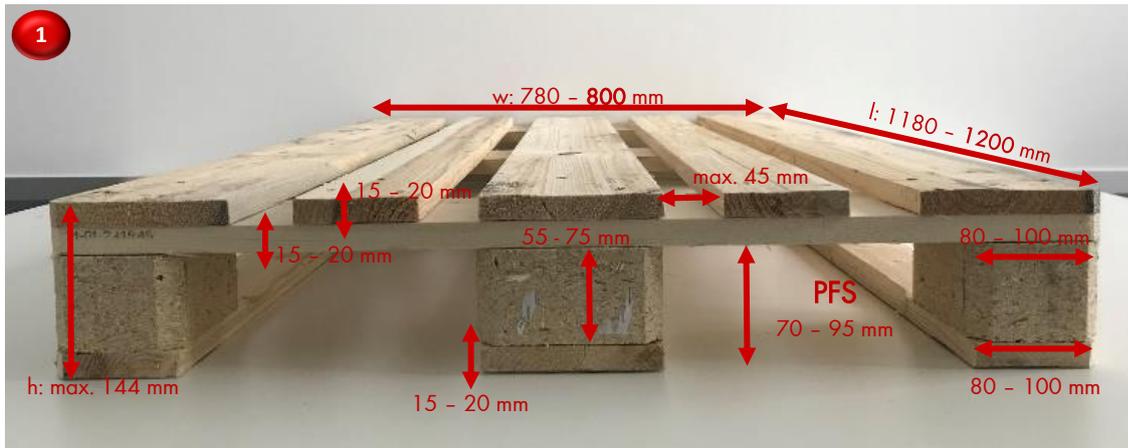
Picture 12: cardboard 1.30 B-wave

IV. Taping of carton boxes

Circulating adhesive stripes of the cartons must be placed crosswise until insert tab.



Picture 13: Taping cartons



Step 1: consider pallet dimensions



Step 2: put anti slip mat



Step 3: first layer of goods



Step 4: stretch band generously around each layer



Step 5: edge and side protection



Step 6: wooden lid



Step 7: pallet strapping



Step 8: pallet info sheet



Step 9: plastic filming



Step 10: check foot space make sure no plastic film or strap on pallet foot!