1 Modularized Pick & Pack assortment

Abstract

This document gives a brief introduction of the modular Pick & Pack concept, its components and how to utilize it. This document also states the general requirements on the Pick & Pack assortment. Detailed requirements are available in the individual 1301-document for each component.

Supplementary documents

1315-CSX 101 93/1 is a graphic overview of the entire Pick & Pack assortment.

1056-CSX 101 58 is the Ericsson requirements for packaging material design and the baseline for packaging requirements. The requirements are labeled [PMD_GEN:A_nnn] and will be referenced in this document.
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2 Pick & Pack concept

Pick & Pack packaging is a one-way transport packaging concept, which consists of mixed products in variable quantities and sizes according to the customer order. The great variance of customer orders require different sized Pick & Pack packages that are modular and fit together on a pallet.

The Pick & Pack component is self-supporting. Pick & Pick components can be added and removed as long as the modularity is maintained.

The Pick & Pack assortment has two interface dimensions, outer size and inner size. The outer size is aligned with the standard distribution measurement for the full and half size pallet and has the interface dimension 1200x800 and 600x800. The inner size is defined to fit inside the outer size and has the interface dimension 1152x752 and 586x786.

The width and depth of the Pick & Pack component is derived from dividing a full size pallet into quarters, eighths, sixteenths etc. The labeling of the component is therefore 1/4, 1/8, 1/16, etc. The height of the component is based on a fraction of 164 mm for outer size components and 148 mm for inner size components.

The boxes/sleeves in the Pick & Pack assortment have two qualities. An export quality that can serve as export package and an non-export quality that needs an export quality cover for transportation. Export and non-export quality is labelled outer and inner quality is labelled in the picture below:
3 General requirements

3.1 Material

Material shall be available on all markets.

3.2 Dimension Tolerances

Tolerances on each individual dimension must be considered as well as the tolerance chains. This is equally important when designing and choosing the final material for the outer size and inner size boxes, as the inner size boxes shall fit inside the outer size boxes.

3.3 Packing fill level

There is a requirement from the Supply organization to achieve a certain fill level, currently 85%, of the package. The fill level is the ratio between the volume that is filled with products, including packaging material, and the total available inner volume. The fill level is marked on the box to support the staff when the box is used in the Pick & Pack operation. The Min 85% Fill level marking is placed on one long and one short side on the sleeve, box for half size pallet, 1/4 and 1/8 boxes. This is a conceptual picture:

![Conceptual picture of a box with fill level marking]

3.4 Marking

If nothing else is stated, the marking of packaging shall comply with the following generic rules:

- 102 01-1003, Marking of Product, Handling and Transport Unit Package
- 10201-3210 Marking on packaging
When designing the marking for the 1/36 and 1/48 boxes, it must be considered that they should be standing upright on its long side.

### 3.4.1 Modular System Marking

The modular system marking indicates that the box belongs to a modular family. The marking is “Modular system 1200x800” for outer size boxes and “Modular system 1152x752” for inner size boxes.
4 Pick & Pack components

The Pick & Pack assortment consist of pallet solution 1200x800, pallet solution 600x800 and edge boards for protection. The pallet solutions can be loaded with modular boxes and matching bags and fitments. An outer size box fits directly on the pallet. An inner size box fits inside a sleeve or an outer size box.

The components in the modularized Pick & Pack assortment are documented in 1301-documents and grouped and organized under CSX 101 93/1. The overview of all active components are visualized in 1315-CSX 101 93/1 and briefly described below.

1/CSX 101 93/1, Pallet solution 1200x800, consist of lid, sleeve, packing profile, bottom sheet and pallet. The sleeves and packing profiles have different modular heights. The pallet and lid can be pre-mounted with edge board frame. The pallet can also be pre-mounted with edge board frame and bottom sheet.

2/CSX 101 93/1, Pallet solution 600x800, consist of lid, box and pallet. The boxes have different modular heights. The lid can be pre-mounted with edge board frame.

3/CSX 101 93/1, Edge board, consist of edge board for corner protection. The edge boards have different modular heights.

4/CSX 101 93/1, Box – Export quality, consist of boxes in export quality with outer and inner size.

5/CSX 101 93/1, Box – non-Export quality, consist of boxes in non-export quality with inner size.

6/CSX 101 93/1, Fitments, ESD, consist of ESD fitments matching the boxes.

7/CSX 101 93/1, Fitments, non-ESD, consist of non-ESD fitments matching the boxes.

8/CSX 101 93/1, Bags, ESD, consist of ESD bags matching the pallet solutions and boxes.

9/CSX 101 93/1, Bags, non ESD, consist of ESD bags matching the pallet solutions and boxes.

CRX 901 268/1, Box Set, consist of a selection of pallet based packing sets with Pick & Pack components.
5 Pick & Pack packing patterns

The packing patterns are many due to the modularity of the Pick & Pack components. The main packing patterns are outer size boxes on full/half size pallet and inner size boxes on full/half size pallet with support from sleeve/box.

5.1 Outer size boxes

5.1.1 Description

The outer size boxes are designed in export quality and for the interface dimensions 1200x800 and 600x800. That means that they fit on a full and a half size pallet. A full size pallet can hold four 1/4 or 8 1/8 outer size boxes per layer. A half size pallet can hold two 1/4 or four 1/8 outer size boxes per layer. 1/4 and 1/8 outer size boxes can be mixed as long as boxes with matching modular heights are selected.

5.1.2 Outer size boxes on full size pallet

5.1.2.1 Description

This solution contains a pallet and a lid that are bound together with plastic straps. Edge board corner protections can be applied to protect the boxes during transportation. Stretch film can be used to secure the corner protections and boxes.
5.1.3 Outer size boxes on half size pallet

5.1.3.1 Description

This solution contains a pallet and a lid that are bound together with plastic straps. Edge board corner protections can be applied to protect the boxes during transportation. Stretch film can be used to secure the boxes during transportation.
5.2 Inner size boxes

5.2.1 Description

The inner size boxes are designed with non-export and/or export quality for the dimensions 1152x752 and 586x786. That means that they fit inside a full size pallet with sleeve and a half size pallet with box. It also means that a 1/4 inner size box fits inside a 1/4 outer size box, two 1/16 inner size boxes fits inside a 1/8 outer size box etc.

A full/half size pallet with sleeve/box can hold a mix of all boxes from 1/4 to 1/48 as long as matching modular heights are selected.

![Diagram of inner size boxes]

5.2.2 Inner size boxes on full sized pallet solution

5.2.2.1 Description

This solution contains pallet, bottom sheet, edge boards, sleeve and lid. The pallet is the same as in the solution for outer size boxes on full size pallet, but with edge board mounted on the deck as a holder for the sleeve.

The corrugated bottom sheet, inside the edge board, protects the boxes from water splashes from underneath. The corrugated board can be pre-mounted.
The sleeves are available in corrugated for all modular heights and plywood in the highest height.

Packing profiles are mandatory to comply with the stacking weight.

The plywood lid is the same lid as for the solution for outer size boxes on full size pallet, with a mounted edge board that fits outside the frame.

5.2.3 Inner size boxes on half size pallet solution

5.2.3.1 Description

This solution contains a pallet, box and lid. The pallet is the same as in the solution for outer box on half size pallet.

The corrugated box is a FEFCO 0200 which is mounted with staples onto the pallet. The box is available in 3 different modular heights.

The plywood lid is the same lid as for the solution for outer size boxes on half size pallet, but with a mounted edge board that fits outside the box.
6 Verification

The Pick & Pack assortment should comply with compression load test ASTM D4169. The pallets should comply with the Test specification for pallets, 8/002 01-5/FEA 101 8233.

Each component and packaging solution must be verified by the supplier to assure compliance with the requirements. The results shall be documented.