

The European Packaging Module of 400 x 600mm

This is a special plan size for packages to neatly fit the decks of standard pallets in Europe, it was originally developed for Europe although it was eventually published as an ISO; it is used by some retailers and also the manufacturing sector. It is not a mandatory size for Europeans.

This module became an international standard with ISO 3394: 1984 *Dimensions of rigid rectangular packages - Transport packages - Plan dimensions of rigid rectangular transport packages with a modular relationship to 1200 mm x 1000 mm and 1200 mm x 800 mm pallets and unit loads*

Many pallet payloads are not constrained by volume but by load and efforts go into loading to a safe load level. For lighter goods it was the dominance of the 800 x 1200mm Europallet that eventually generated the European packaging module of 400 x 600mm that has now permeated through consumer and industrial packaging including packing in plastic, glass and paper. The theoretical *best fit* is based on the Europallet plan size of 800 x 1200mm and the 400 x 600mm which was introduced in European Standard EN 13117-1: 2000 *"Transport packaging - Reusable, rigid plastics distribution boxes: Part 1: General purpose application based on 400 x 600mm"*

This 400 x 600 mm module fits 4 with no waste on a 800 x 1200 Europallet or 5 with no waste on a 1000 x 1200. However many users consider this a poor standard as it makes no allowance for inevitable gaps between packs and compression bulge slightly exceeding the pallet size. It took many years to achieve consensus voting that finally permitted publication of ISO 3394: 1984. The flexibility for the user is only in the height, so the number of layers on a 1200 x 1000 pallet could be 1, 2, 3, 4 or 5. So the total number of packages per 1200 x 1000 pallet might be 5, 10, 15, 20 or 25.

There is no legal obligation to meet the 400 x 600 mm module so many producers ignore it but sometimes with some countries or companies there are commercial pressures to comply with ISO 3394: 1984

Useful references -

World pallet sizes are given in ISO 6780: 2003 *"Flat Pallets for inter-continental materials handling - principal dimensions and tolerances"*

European pallet sizes are given in EN 13382: 2002 *"Flat Pallets for Materials Handling - Principal dimensions"*

Germany were trailblazers with this concept in DIN 30783: Part 1: 1996: *Modular order in the transportation chain: Part 1: Horizontal dimensional coordination; Concepts, principles*

BS 2629-2 although withdrawn is still available and has useful pallet placement diagrams showing optimum pallet size and placing in freight containers eg. pin wheel positioning for 1200 x 1000 pallets.

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