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Types of Packaging – Corrugated Boxes

July 27, 2016 by Sara Greasley



Corrugated boxes have been in wide use for over a century. In fact they are the most used form of transport packaging (95% of North American consumer goods are transported around the globe in corrugated boxes). They are not only used to transport products domestically and internationally, but also used to display and promote retail products (Point of Purchase or POP displays).

Corrugated boxes are also increasingly being used as primary packaging in lieu of traditional **folding cartons**.

Corrugated is used in almost every facet and genre of consumer goods:

- food and beverage
- office supplies
- books
- electronics
- clothing
- building materials/tools
- etc.

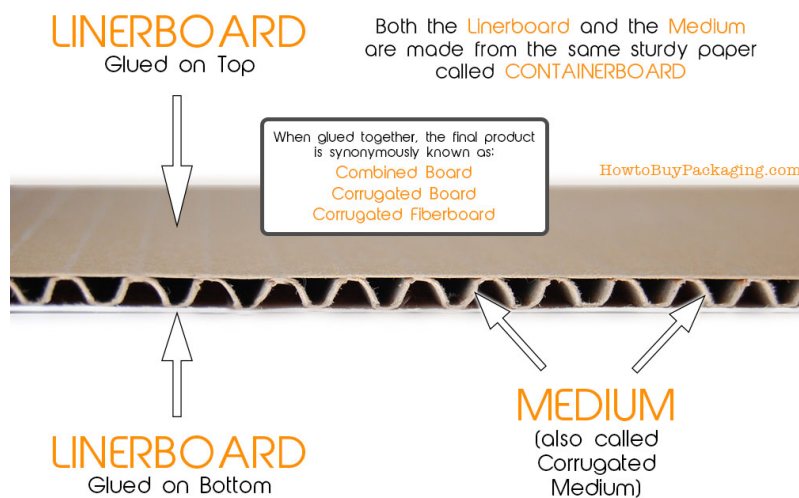
ABOUT

Corrugated boxes (known also as “**combined board**”, “**corrugated fiberboard**”, or “**corrugated board**”) are composed of two main elements:

Both of these elements are made from the same type of robust paper called **containerboard**.

1. **Medium** – the center fluted (corrugated) material, sometimes called “**corrugated medium**”
2. **Linerboard** – the flat outside sheets of paper that are glued to the medium

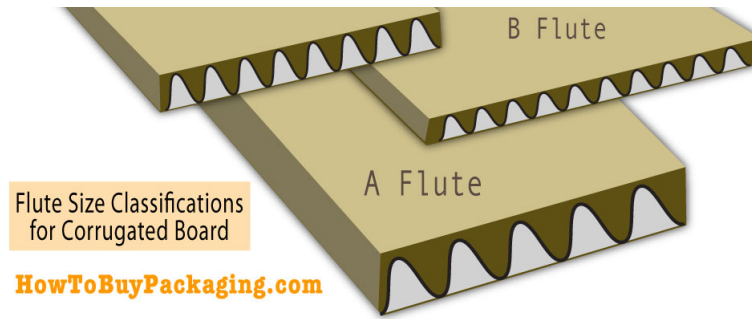
Single Wall (Double Face)



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So, take a **flat sheet of containerboard** and put waves in it (commonly called “flutes”). Then glue this fluted paper (now referred to as the “**medium**”) to one or more pieces of **another flat sheet of containerboard** referred to as “**linerboard**”. What you get is called “**combined board**”. Combined board is very strong relative to its cost and is very recyclable (in fact, it is recycled more than all other packaging materials).

The medium of Corrugated Boxes have **5 basic “flute classifications”** also called “**flute profiles**”:

[ABOUT](#)

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A Flute: is the original flute size with approximately 33 flutes (waves) per foot.

B Flute: has smaller flutes than A Flute and has more of them, around 47 flutes per foot. It was created to box canned goods that were self-supporting and thus didn't require as much load support.

C Flute: was invented next to serve as an all-purpose size and has about 38 flutes per foot.

E Flute: is thinner with 90 flutes per foot

F Flute: was created to be used as a folding carton would be – to hold light to medium-weight retail goods and be printed on either directly or using a litho laminated label.

* It's important to note that flute profiles are more like guidelines and can vary among manufacturers in regards to size of actual flutes and amount of flutes per foot. Also to note, there exist many more flute profiles than the 5 basic ones I listed above.

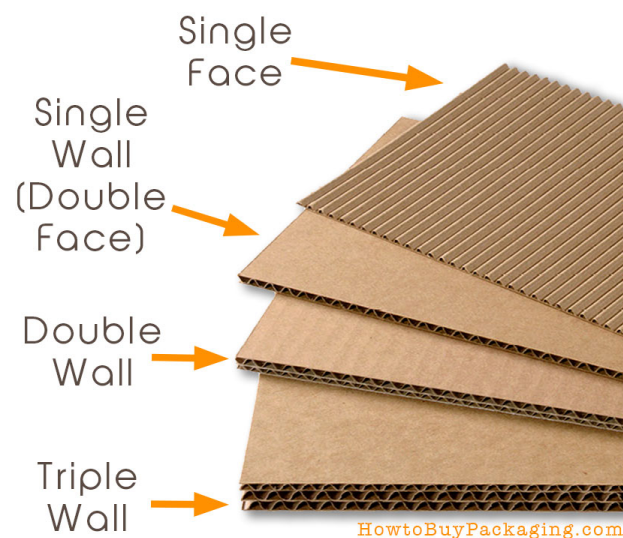
So typically, the larger the flute size, the more cushioning and compression resistance it offers. Smaller flutes offer better graphics printing capabilities. The smallest flute sizes like E and F can be used instead of standard **folding carton boxes** (primary retail boxes) and can offer greater strength and structural integrity as well.

Here is an image of a corrugated box used as primary retail packaging. The graphics look great.



There are Four Basic Kinds of Combined Board:

1. **Single Face** – a corrugated medium and a single sheet of linerboard are glued together
2. **Single Wall (Double Face)** – a corrugated medium and two sheets of liner board (one on each side) are glued together
3. **Double Wall** – three sheets of linerboard are glued to two mediums
4. **Triple Wall** – four sheets of linerboard are glued to three mediums



FOUR BASIC KINDS OF COMBINED BOARD

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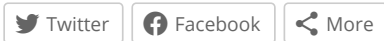
It's not uncommon for different flute profiles to be used in the same piece of combined board. For example, a triple wall board may have a layer of A flute medium combined with a layer of C flute and E flute. Having

ABOUT

When buying corrugated packaging, it is important to let your supplier know the purpose and weight of the product going inside, the marketing needs of the packaging's exterior, when you need the packaging completed, and how it will ultimately be transported. The supplier will then be able to take this information and make custom corrugated packaging for you in a timely manner that should cost you the least amount of money, and at the same time, keep your product safe from damage.

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Filed Under: **Types of Packaging**

Tagged With: **Corrugated Box, Point of Purchase Display (POP Display)**

Comments



Taran says

October 2, 2018 at 5:59 am

Hi Sara,

How does one go by choosing the correct packaging for a knock down furniture product? How do i decide on the thickness of the board? How do i know the weight restriction? What wall should i use?

Look forward to hearing from you.



Sara Greasley says

October 2, 2018 at 8:42 am

Hi Taran, I suggest hiring a structural engineer (with a company or independently) to have your questions answered. When you receive the dielines and material selections, quote with companies only that have testing capabilities. During the prototyping phase, they will test and adjust materials accordingly. Companies with testing capabilities also know the freight requirements and can also suggest pallet configurations. I only suggest hiring a structural engineer when typically its free, is because then you are not locked into one specific company and can shop it around.