

RSC TYPE

Corrugated v. Cardboard

The term "cardboard box" is commonly misused when referring to a corrugated box. The correct technical term is "corrugated fiberboard carton."

Cardboard boxes are really chipboard boxes, and used primarily for packaging lightweight products, such as cereal or board games.

Corrugated fiberboard boxes are widely utilized in retail packaging, shipping cartons, product displays and many other applications requiring lightweight, but sturdy materials.

Corrugated Composition

Corrugated fiberboard is comprised of linerboard and heavy paper medium. Linerboard is the flat, outer surface that adheres to the medium. The medium is the wavy, fluted paper between the liners. Both are made of a special kind of heavy paper called containerboard. Board strength will vary depending on the various linerboard and medium combinations.

Single Face: Medium glued to 1 linerboard; flutes exposed

Single Wall: Medium between 2 linerboards

Double Wall: Varying mediums layered between 3 linerboards

Triple Wall: Varying mediums layered between 4 linerboards



Flute Facts

Corrugated board can be created with several different flute profiles. The five most common flute profiles are:

- A-Flute: Original corrugated flute design. Contains about 33 flutes per foot.
- B-Flute: Developed primarily for packaging canned goods. Contains about 47 flutes per foot and measures 1/8" thick
- C-Flute: Commonly used for shipping cartons. Contains about 39 flutes per foot and measures 5/32" thick
- E-Flute: Contains about 90 flutes per foot and measures 1/16" thick
- F-Flute: Developed for small retail packaging. Contains about 125 flutes per foot and measures 1/32" thick

Generally, larger flute profiles deliver greater vertical compression strength and cushioning. Smaller flute profiles provide enhanced structural and graphics capabilities for use in retail packaging.

Different flute profiles can be combined in one piece of combined board. For example, a triplewall board may contain one layer of A-flute medium with two layers of C-flute medium. Mixing flute profiles allows designers to adjust compression strength, cushioning strength and total thickness of the combined board.

How to Measure a Box

Boxes are generally measured from the inside, with the dimensions referring to the opening of an assembled box.

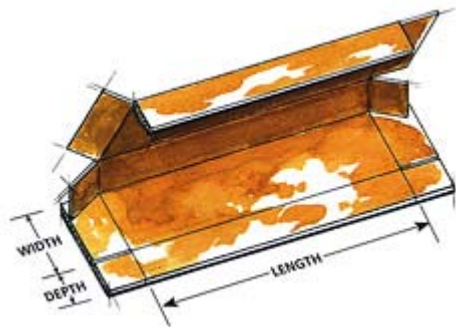
Inside dimensions are used for measuring because the corrugated board thickness may vary. A box constructed of B flute will not have the same outer dimensions as a box made from E flute.

When measuring the inside of an existing box, make sure to measure from the center of the score (the crushed fold line).

Dimensions should always be stated in the sequence of Length, Width and Depth (exceptions include bookfolds, bin boxes and dividers, where the sequence is Width, Length and Depth).

The length is always the longer dimension, and the width is always the shortest dimension, measured along the opening of the box. The depth is the distance between the opening and the opposite panel.

Outer dimensions may need to be communicated for shipping and pallet configuration purposes. When listing outer dimensions, always include "OD" with the size (e.g., 10"x22"x12" OD).



Box Style Definitions and Abbreviations

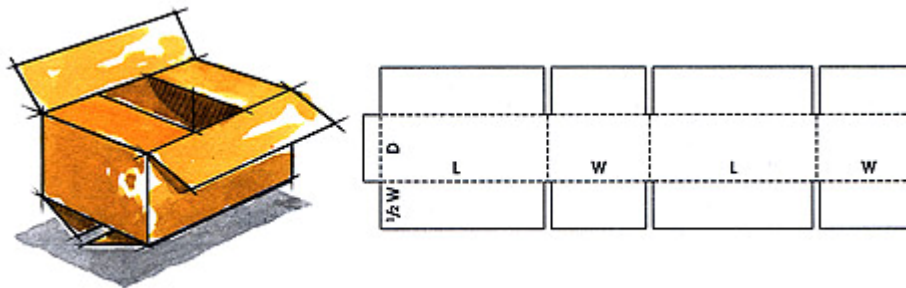
The majority of box styles fall into one of the following general categories:

Slotted Boxes, Telescope Boxes, Folders, Rigid (or Bliss) Boxes, Self-Erecting Boxes and Interior Forms. In addition, corrugated boxes can be custom designed to meet the specific needs of the customer.

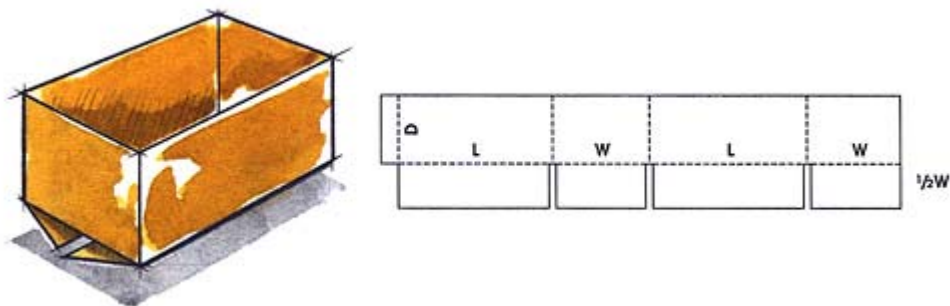
Slotted Boxes are generally made from a single piece of corrugated fiberboard. The blank is scored and slotted to permit folding.

Boxes are shipped and stored flat and assembled as needed by the user. Some of the most common types include:

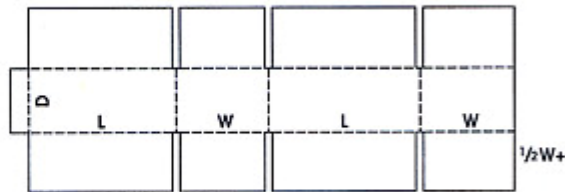
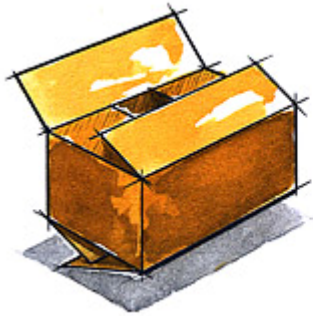
- Regular Slotted Container (RSC) — All flaps have the same length, and the two out flaps are one-half the container's width, so that they meet at the center of the box when folded. The RSC is the most common box style.



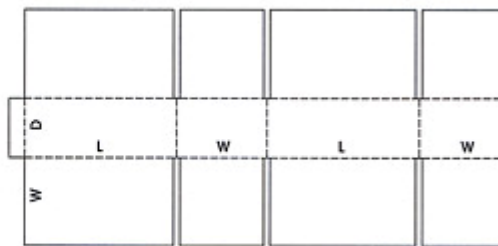
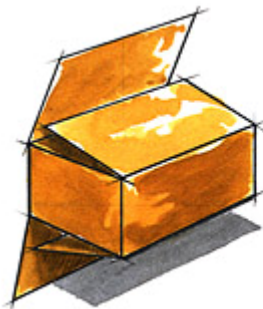
- Half Slotted Container (HSC) — Same as a Regular Slotted Container (RSC), but without one set of flaps.



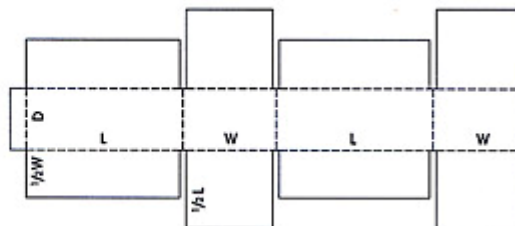
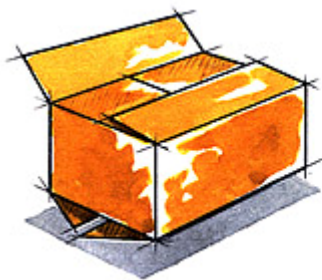
- Overlap Slotted Container (OSC) — All flaps have the same length; the outer flaps overlap by one inch or more. The box is usually closed with staples driven through the overlap area. This style of box is used when the length of the box is considerably greater than the width, resulting in a long gap between the inner flaps. The sealed overlap helps to keep the outer flaps from pulling apart.



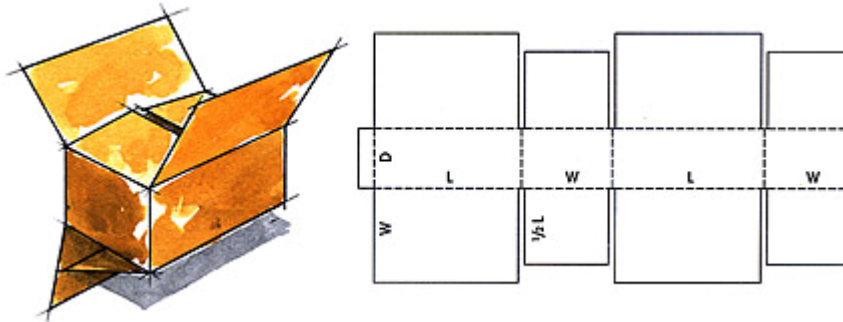
- Full overlap Slotted Container (FOL) — All flaps have the same length (the width of the box). When closed, the outer flaps come within one inch of complete overlap. This style is especially resistant to rough handling and provides extra product cushioning and stacking strength.



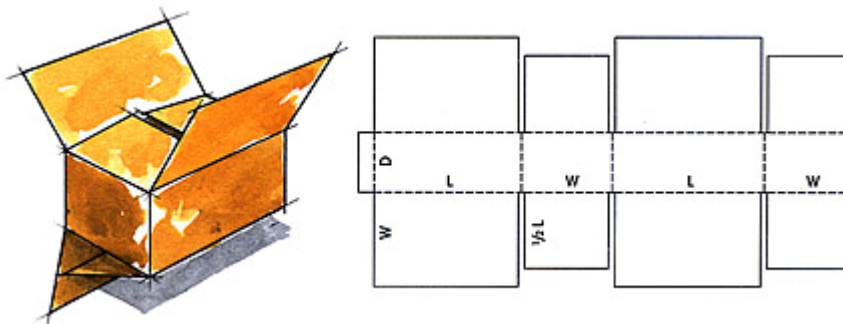
- Center Special Slotted Container (CSSC) — Inner and outer flaps are cut to different lengths. Both sets of flaps meet at the center of the box. This style is especially strong because both the top and bottom have double the thickness of corrugated board. The inner flaps, with no gap, provide a level base for products.



- Center Special Overlap Slotted Container (CSO) — All flaps have the same length (one-half the length of the box). The length of the box can be no more than twice its width. The inner flaps meet at the center of the box, providing a level base and full top protection.



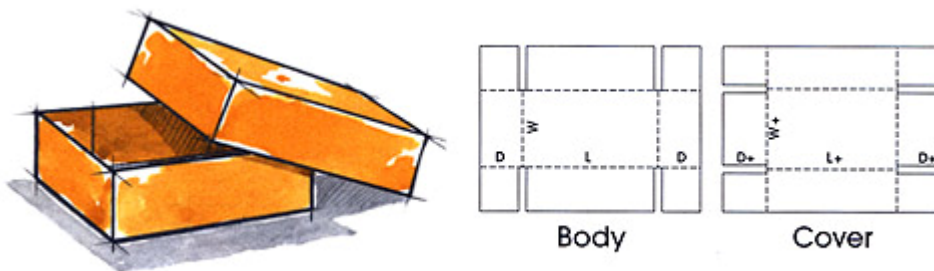
- Center Special Full Overlap Slotted Container (SFF) — Inner and outer flaps are cut to different lengths. When closed, the inner flaps meet at the center of the box, and out flaps fully overlap. With three full layers of combined board over the entire top and bottom, this style provides



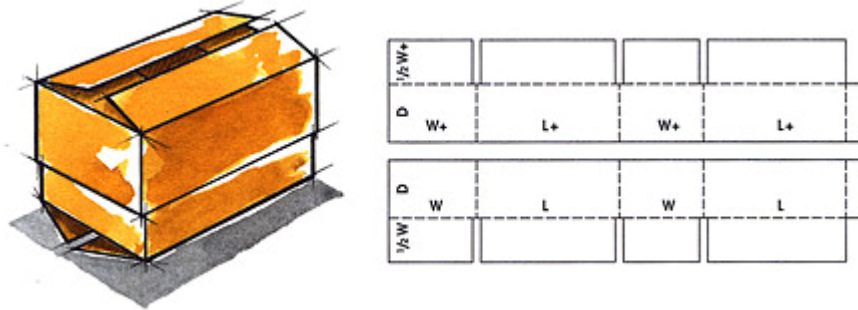
extra cushioning and stacking strength.

Telescope Boxes usually consist of top and bottom pieces that fit over each other. "Telescope Style" generally describes a box where the cover extends over at least two-thirds of the depth of the bottom piece, where a Box with Cover indicates a box where the cover extends less than two-thirds of the depth. Common types include:

- Full Telescope Design Style Container (FTD) and Design Style Container with Cover (DSC) — Two-piece boxes made from two scored and slotted blanks (trays).

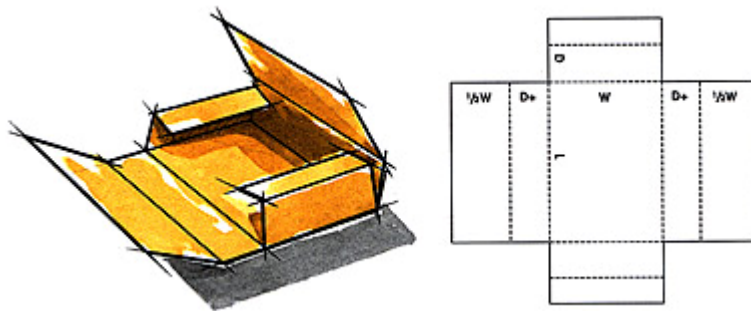


- Full Telescope Half Slotted Container (FTHS) — The two-piece body is made from two half-slotted containers.

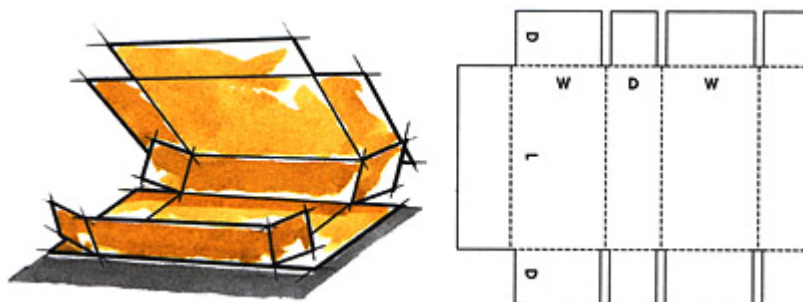


Folders consist of one or more pieces of combined board, with an unbroken bottom surface and scored to fold around the product. Popular styles include:

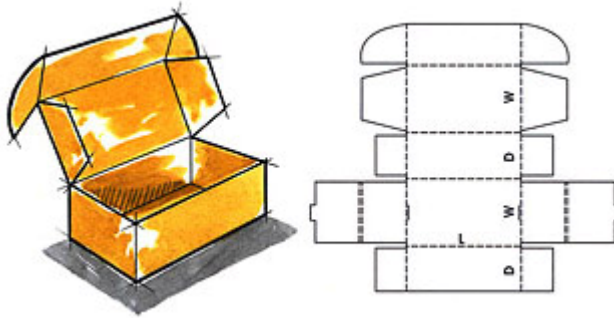
- One Piece Folder (OPF) — One piece of board is cut so that it provides a flat bottom, with flaps forming the sides and ends, and extensions of the side flaps meeting to form the top.



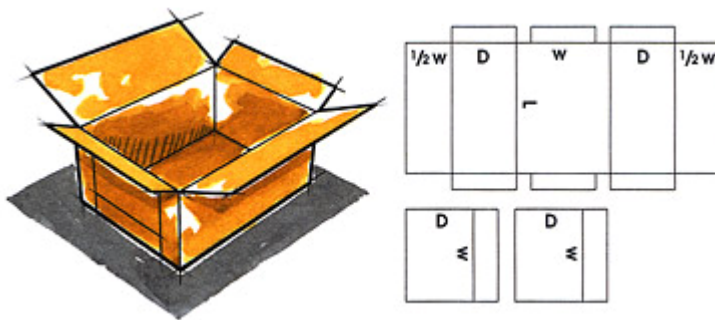
- Five Panel Folder (FPF) — A single cut and scored piece features a fifth panel used as the closing flap, completely covering a side panel.



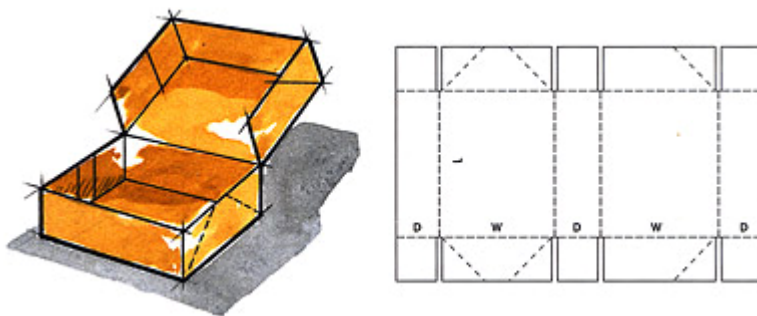
- Trays are formed from a single piece of combined board, with the design featuring an unbroken bottom and several layers of corrugated in the end panels. They are frequently used as inner containers for parts, delicate produce or mail pieces.



- Rigid (Bliss) Boxes include two identical end panels and a body that folds to form the two side panels, an unbroken bottom and the top. Flaps are used to form the joints. Once the joints are sealed, the box is considered rigid.



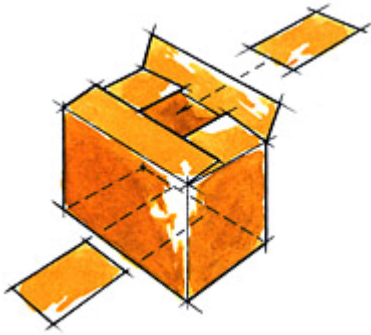
- Self-Erecting Boxes typically feature regular slotted container or telescope-style tops.



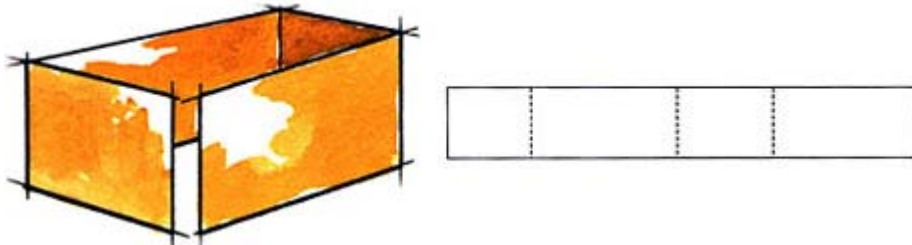
Interior Forms include a wide variety of build-ups, dividers, partitions and other inner packing pieces. They can be used to separate or cushion products, to strengthen the box or to fill voids. They may be simple rectangle, scored, slotted or die-cut shapes.

Common formats include:

- Pads are plain shapes of corrugated or solid fiberboard, used to fill spaces or separate layers or sections of products.



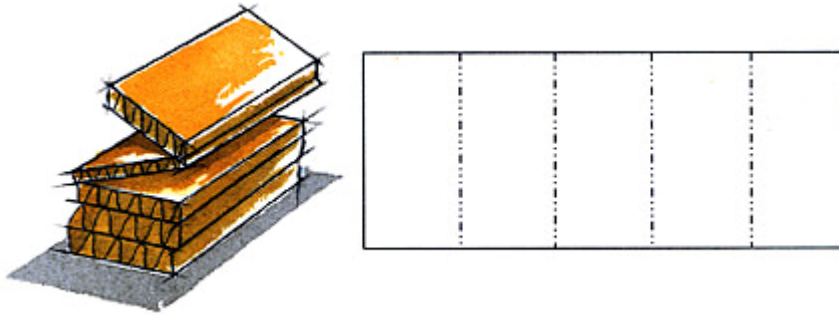
- Tubes are scored rectangles, folded to form a multi-sided structure.



- Partitions (or Dividers) provide a separate cell for each item in a box. Primarily used for packaging glassware or other fragile items.



- Inner Packing Pieces are scored and/or folded pieces of fiberboard used for cushioning, suspension and separation, and to fill voids.



- Inner Pack Forms are usually die cut fiberboard pieces designed to position and support products away from the walls of the box for added protection.

