

Boxed up and ready to go

by Michael B Halley FAIP



The continuation of the **Introduction to Packaging** series conducted by Australian Industry Group (AI) in conjunction with Australian Institute of Packaging (AIP) was **INTRODUCTION TO CORRUGATED BOXES**.

Compiled and presented by **Ron Mines**, MAIP who is also the National Secretary of AIP and a qualified educator the session was so informative that participants would need a very large corrugated box to carry home the information gleaned. (That is if information can be solidified and boxed)

Part of a Victorian State Government initiative, **Industry Skills Adviser (ISA) Project**, to increase training in the packaging industry Corrugated Boxes was another packaging

medium or technology addressed by an expert from within AIP ranks.

The preamble stated “at the end of this module, the trainees will have a substantial understanding of the basics of corrugated boxes”. Reference material was provided, to give participants the tools to make basic decisions about the materials, styles and other aspects of applications of corrugated boxes.

The humble yet diverse corrugated box completes the process of developing / designing a product, then growing or manufacturing that product, processing it and packaging it in a form (primary pack) that presents the product to the market place. The box is a vital component of the total process, providing for safe handling, transport and storage of the product, to get it to the market place in excellent condition.

Everything must have a beginning and Mr Mines explained the history of corrugated paper and the advances of technology beyond the original concept: -

In Victorian England, gentlemen wore tall, top hats. Cylinders of paper were used to help maintain their shape. When they got wet, the paper could be replaced. In 1856 two Englishmen, Healey and Allen obtained a patent for the first known use of corrugated paper. Made on a hand-cranked adaptation of a collar press, it was used as the lining in hats. It was stronger than the cylinder of plain paper, and its flutes provided cushioning in the sweatband (Some debate later)

The prime raw material is paper and its cost is reflected in the finished product. By combining paper grades with flute types, and applying style types that best suit the need, designers and other technical box practitioners can manipulate the materials and styles to provide the best-fit outer package, in terms of cost effectiveness, and suitability for the product packing method and compatibility with the product.

The manufacture of corrugated boxes is becoming more and more client/product specific for the traditional function of a corrugated box ‘to protect the goods from the environment and the environment from the goods’ has given way to the outer package (commonly called the shipper) being part of the silent salesperson needs. This is coming more to the forefront with new trends such as Shelf Ready or Retail Ready (SRP/RRP) packaging where the actual shipper is on display on the supermarket shelves.

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Ron Mines with a series of visual aids showed that the humble corrugated box is required to perform many tasks: -

- Collating and containing the product.
- Adding various levels of resistance to external forces that may be harmful to the product.
- Insulating the product from heat, cold, the environment.
- Protecting bystanders and handlers of the product.
- Providing logistical data for handling, shipping and storing the product.
- Providing marketing and other end-use information.
- Being totally recyclable.
- Being made from sustainable materials.

Without being a technocrat Ron was able to explain in terms that all could understand some of the nomenclature of paper and corrugated paperboard often referred to as cardboard. (There is some lingering debate about the origins. France traces the history of cardboard box making and notes that cardboard boxes have been used there since 1840 for transporting the Bombyx mori moth and its eggs from Japan to Europe by silk manufacturers. This predates the first commercial cardboard box produced in England in 1817 by Sir Malcolm Thornhill.)

Cardboard is typically the single sheet of stiff paperboard use in cereal and the like packaging whilst corrugated fibreboard is the material used in more robust containers and commences with a basic processing of paper formed into a corrugated sheet to which sheets of paper are glued on either side. For special uses this basic fibreboard can be beefed up by adding another sheet of corrugated and another outer sheet.

The strength of a fibreboard sheet and the subsequent boxes made from it revolves around the corrugated sheet's make up. The corrugations or flutes can be elongated or compressed to give specific characteristics such as cushioning, compression strength or thin walls for the container.

Participants also left knowing about the different materials used to manufacture fibreboard which is always from a wood stock but may not be virgin but recycled previously manufactured paper or board. There is a severe competition in the fibreboard box market and whereas a decade or so ago common terms for board grades were used today each manufacturer has a glossary of terms to identify materials and protect market share.

Many more technical and issues about the ubiquitous corrugated box were discussed by the interactive group who attended the session and each should now be able to deliver more to their employer and customers.



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