



Hedwin Core Competencies: Bringing Concept to Reality

If you have chosen Hedwin to be your Design Partner in a development project, you've selected a leader in its field with at least seven distinct plastic processing methods which can be used independently, or in combination to create breakthrough packaging concepts.

Plastic processing methods at Hedwin include:

- Cube® Process
- Extrusion Blow Molding
- Vacuum Thermoforming
- Thermoforming
- Injection Molding
- Film Extrusion
- Sheet Extrusion

A review of Hedwin processing methods brings us first to the Cube® Process: The process used to make Hedwin's largest and most prominent product group – Cubitainer® Combination Package. The standard Cubitainer® is produced in the industry's largest range of sizes and continues to be a sought-after alternative to blow molded bottles and/or open/tight-head pails for reasons of packaging source reduction and cost savings. Further, the ability to explore new packaging concepts utilizing the Cube® Process – along with the lower development costs inherent to the Cube® Process continue to be major benefits to clients interested in creating a dynamic package that also saves in more ways than one.

The history of service the Hedwin Cube® has provided Industry is long and varied. Markets which have successfully utilized a Cube® Design include: Photochemical; sanitary chemicals; lubricants; reagent chemicals; medical; food and food-related; veterinary; and hazardous chemicals are just a sampling of the many industries where a Cube® Design has served manufacturers and end-users alike.

In addition to Hedwin's state-of-the-art cad/cam mold making technology and our ability to rapid prototype, Hedwin makes and maintains its own Cube® molds saving the client significant initial costs as well as throughout the product's life cycle: The cost to produce a two-cavity 2-1/2 gallon Cube® mold, or a one cavity 5 gallon Cube® mold is just one-quarter of the cost for producing a blow molded container mold of corresponding volume. That's an

immediate savings of 75% as you begin the design process!

The standard Cube® design features an insert constructed of a linear low-density polyethylene blend (LLDPE) manufactured as a cube shape with a seam along the diagonal periphery. This design, or one similar, will allow the client to receive the inserts in a "nested" configuration offering significant savings in shipping and storage.



Typically, but not always, a Cube® design will feature a reversible well molded into the unit accommodating a mechanically bonded 38mm closure designed to accept a 38-400 screw cap. Alternatively, the Cube® Insert can be matched with Hedwin's "gland-in-mold" process wherein a low-density closure is attached to the unit. The closure can then be mated with a valved fitment to facilitate automated dispensing applications. Other closure options for the Cube® include: 63mm screw cap opening, heat-seal spout, and flexspout.

Certain product packaging requirements may necessitate the use of alternative resin compositions and/or treatment(s) to contain product satisfactorily. In accordance with the specialized needs of clients from an array of industries, the Cube® can be supplied with treatments that include:

- PVDC Coating for oxygen permeation protection.
- Fluorine treatment where a barrier to certain aliphatic and aromatic hydrocarbons is necessary.
- For true sterilization purposes, the Cube® Insert can be sterilized via gamma irradiation or ethylene oxide gas sterilization procedures.



To meet the ever increasing cleanliness demands of its clientele, Hedwin has added clean rooms to its roster of Cube[®] production capabilities.

The Cube[®] Insert is designed to collapse as product is dispensed. The non-glug design assures product flows from the Cube[®] in a continuous, uninterrupted stream. The insert works equally well in either "ready-to-use" or "dilution from concentrate" product dispensing systems. Systems available from Flojet Corporation (Irvine, CA), Hydro Systems (Cincinnati, OH) or Dema Engineering (St. Louis, MO) have been tested for use with Cube[®] by Hedwin's experienced Technical Services staff.

Hedwin's own product line features the Colder Quick Connect System, which offers the operator fast, no-spill, container changeover with quick one-hand connection. The system features a 38-400 screw cap closure with puncture seal tip and quick coupling body which comes in two sizes: 1/4" or 3/8" ID tubing fitting. A snap-fit closure is also available for use with the Colder dispensing system, to discourage container reuse or tampering.

Simpler, more economical Cube[®] dispensing options include the Quick Serve Tap and Tube Dispensing Kit, available with either rubber or latex tubing with "pinch-off" clamp. Of course, the above items are just a brief sampling of the many dispensing options available from Hedwin. As the exclusive United States Distributor for David S. Smith Worldwide Dispensers (www.dsswd.com), Hedwin markets a broad range of standard and customized taps and faucets for containers that range from hand-held to tote tanks.

In comparison to other forms of container design, the Cube[®] Insert offers amazing versatility and options, including but not limited to:

- Integral molded handles
- Special color options
- Embossed messages
- Relocated closures
- Graduation marks
- Filling/dispensing spouts

The ruggedly designed Cube[®] Insert has displayed proficiency as both a stand-alone container option, and as part of a combination package when

typically it is combined with a corrugated overpack. The Hedwin Design Team in partnership with your own, can create an overpack offering amazing versatility in appearance and performance. Cartons can vary in construction (i.e. – thickness, perfed openings), recycled fiber content (up to 100% if desired!), and aesthetic choices such as color and an array of printing options. Placing a Cube[®] Design in a moist or humid environment? With various coatings options such as wax and resin impregnated – or curtain coated options – your Cube[®] Design can stand up to the harshest challenges presented by such conditions.

While a Cube[®] design offers an array of advantages versus rigid blown or injection molded container options, it also offers important advantages versus other flexible package options such as "bag-in-box" These include:

- Ability to easily dispense entire contents from the package. No "folds" to restrict evacuation.
- Ability to easily triple rinse for recycling or disposal. (The Cubitainer[®] meets EPA's 99.9999% content removal standard.)
- Hedwin half-century plus of hazardous chemical packaging expertise.
- All plastic design aids recycling efforts versus dual or tri layer design for BIBs.
- Cube[®] seam formed during molding process for maximum packaging integrity. BIB uses secondary seam assembly process.
- Cube[®] Design can be purchased pre-assembled, in large or small quantities and is filling equipment "friendly". No large capital outlay commitments as with BIB.

However, the best testimony to the Cube[®] Insert's versatility and savings capability lies with Hedwin's ability to design and produce at great savings a uniquely configured Cube[®] mold capable of producing a container that works in harmony within a pre-configured space in your equipment or machine design. Of course, we also like to point out the advantages of including Hedwin in at the onset of a equipment design process: Our involvement from the beginning ensures the client has the greatest opportunity to create a Cube[®] Insert that will give that client an optimum level of savings in shipping and storage.

“Total cost of ownership” for your new package concept is where Hedwin and the Cube® Design shine: Total cost of ownership moves beyond just the initial unit cost. It factors in the huge savings potential inherent to producing a Cube® mold versus a blow or injection mold; it also takes into account the quality costs throughout the project’s life span, as well as the accumulated savings enjoyed in the shipping and storage of the Cube®.

Our partnering commitment with Cube® Design doesn’t end there: The Cube® Packaging System comes complete with the technical expertise provided by a Hedwin Filling Applications Engineer. Established by Hedwin to assist both new clients and those currently using a Cube® Design wishing to upgrade existing filling operations, the free Filling Applications service ensures that our years of accumulated knowledge and real world experience in the science of package filling is provided to each of our clients.

Further, Hedwin has global capabilities for your packaging requirements by maintaining licensing agreements with Cube® Process manufacturers; Polimoon in Germany and Fujimori Kogyo in Japan (For contact information, please visit www.cubitainer.net)

The Cube® Process is just one of seven distinct plastic processing methods Hedwin counts amongst its core competencies. At Hedwin, we count versatility and design flexibility as key advantages to our clients. Whereas other package designers might offer just one or two areas of expertise, Hedwin offers a wide ranging lineup of plastic processing skills which can be used alternatively if the project’s parameters change over time, or jointly, if the project calls for it.

While we believe the Cube® Process can offer the client packaging versatility, cost savings in shipping and storage, and a lower entry cost in terms of initial mold costs, we also offer a design and engineering staff with proven expertise in the design and production of rigid packaging.

Custom blow molding is a long time Hedwin strength and one which has served the needs of Hedwin clients from a wide array of industries including chemicals; agricultural; sanitary; photochemical; and food to name just a few. As with Cube® Designs, specialty Hedwin-made blow molded packages have found their way into popular use as part of machinery/equipment; as part of a product application systems or rack dispensing systems.

The spectrum of custom features produced on a Hedwin blow molded container is wide ranging but has included custom colors, resin construction, closure styles and sizes. Other variations include PCR content per client requirement and aesthetic choices such as silk-screening, labels, decorated sleeves, or even embossed wording on the container itself. Those are just a few examples of Hedwin design variety.



Hedwin blow molded container designs have also ranged from heavyweight/thick-walled to lightweight/thin-walled design; shapes and sizes ranging from round, square or rectangular up to 30 liters in volume and beyond along with molded handles, swing handles, internally threaded necks, multiple openings and internal chambers.

Like the Cube®, Hedwin blow molded containers can be produced in a clean room environment to ensure applicable package cleanliness requirements are met. 100% leak testing capability is another Hedwin manufacturing advantage. Finally, the Hedwin blow molded container can be outfitted with PVDC coating for oxygen permeation protection, fluorine treatment or sterilization where necessary.

Your goal is to create a customized package solution that may need to achieve several objectives: space/size parameters; performance; cost; or a market-driven need to create a custom package that sets you apart from the competition. Our goal is to get you there with one or more of Hedwin’s plastic processing methods.



As part of our commitment to providing the client with a complete ready-to-market solution, Hedwin can also produce closure/dispensing solutions using our custom injection molded expertise. As with Cube® and Blow Molding, Hedwin maintains a skilled staff of experts that can help you create cost-effective solutions that meet your needs and those of your customers. With Hedwin on your design team, there's no need to interface with more than one packaging supplier throughout the design process: Hedwin is your single source solution for packaging, and dispensing!

The Hedwin Liner Group – containing products constructed using a variety of plastic processing methods – contains a wide variety of standard products. Custom packaging objectives have also been met utilizing these same processing methods, benefiting clients throughout a variety of industries.

Earlier, we briefly touched on Hedwin's ability to "blend" one plastic processing method with another to create a packaging concept that benefited the client with high performance and versatility at an economical price. Hedwin's thermoforming capabilities have been utilized in producing inner packaging "shells" to protect and support Cube® Inserts while allowing the client to utilize an overpack that can focus on aesthetic functionality rather than protection of interior packaging.

Your design project and the path to your company's success is critical to us and demands our commitment: You will have that and more as we apply our core competencies in plastic processing to helping you meet package design and performance objectives and other criteria built into your design plan. Our commitment to you brings with it our own unique brand of creativity, forward-thinking design expertise, and the flexibility to change if the parameters of your project change. A Hedwin design project also comes with Hedwin's personal commitment to quality and ongoing product support. Call us or visit our web site, and see how fast we can apply our expertise to your project and bring concept to reality.

The Hedwin Development Project: Providing the client with a total-cost solution and improved profitability. For more information on Hedwin as a Design Partner, or to learn more about our capabilities, please contact us at the following:

Hedwin Corporation
1600 Roland Heights Avenue
Baltimore, MD 21211
800-638-1012
410-467-8209 (MD)
www.hedwin.com/dc
customsolutions@hedwin.com