



The New Standard For Collaborative Development

Accelerating Solutions for Better Packaging



Dedicated to driving new product development and commercialization to help our friends across the value chain succeed, Pack Studios is founded on three pillars:

Collaborate

Pack Studios provides effective interaction with Dow through new collaboration tools and regional innovation centers.



Built Upon a Strong Foundation

Over the last several years, Dow Performance Packaging has helped customers drive innovation in packaging through collaborative engagements with key value chain members, including converters, equipment manufacturers, brand owners and retailers.

Similarly, process capabilities such as sensory analytics, prototyping, and application testing at Dow’s existing regional technical centers have enabled a focused approach to the development of new or improved materials for primary, secondary, and tertiary packaging.

Building upon the desire for even greater collaboration, and leveraging Dow’s industry-leading positions, an all-new manifestation of the collaborative development paradigm has emerged.

Setting a New Standard

Pack Studios represents a new model for collaboration. It offers Dow customers

a distinctive and advantageous position to leverage Dow’s expertise, broad product portfolio, and application testing capabilities as well as the ability to access a global network of additional industry experts and resources to help accelerate the development of packaging solutions.

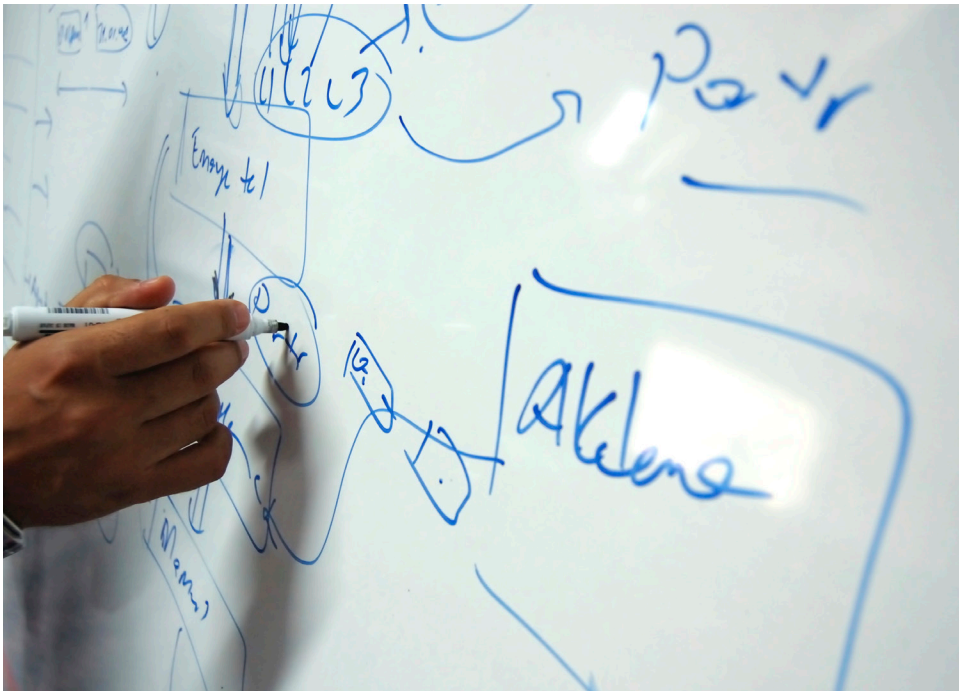
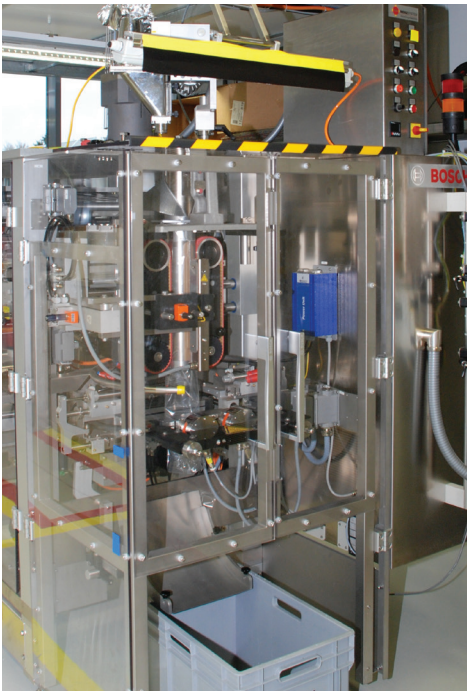
Pack Studios builds on the strong foundation of existing global opportunities and expertise with new capabilities and collaboration tools. The result of this powerful combination of collaboration and capabilities promises the potential for considerably faster go-to-market timelines and a consistent pipeline of high performance products that enables growth for Dow customers across the value chain.

Innovate

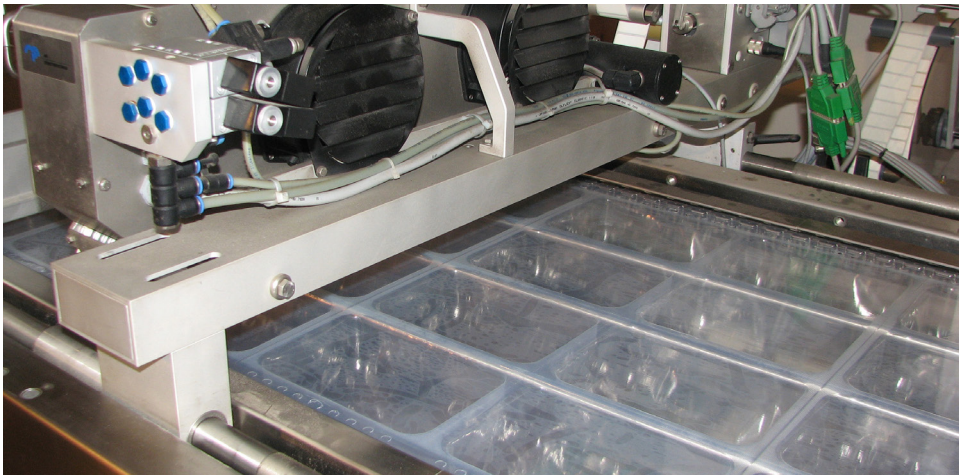
Pack Studios enables packaging innovation through new capabilities that allow you to conceptualize, develop, and test on site.

Accelerate

Pack Studios adapts our global technical and market expertise to quickly meet local needs. Solutions for Better Packaging... Faster.



VERTICAL FORM FILL SEAL LINE AT PACK STUDIOS-HORGEN AND THE HORIZONTAL FORM FILL SEAL/ THERMOFORMER LINE IN FREEPORT FRAME EXAMPLES OF THE COLLABORATIVE SPIRIT FOUND THROUGHOUT THE PACK STUDIOS GLOBAL NETWORK AND EVERY INDIVIDUAL FACILITY.



Increase Your Competitive Advantage

Others in the industry offer collaborative services, but Dow is the only materials supplier that has the breadth of products, technical expertise, and quantity of application capabilities to truly bridge a total packaging solution.

Pack Studios is a multifaceted network composed of internal Dow expertise, partners’ capabilities, and the ability to work together seamlessly to offer uncommon resources to the plastic packaging value chain. The Pack Studios network offers customers the opportunity

to collaborate with Dow’s experienced and dedicated technical professionals, conceptualizing, fabricating, testing, and validating their flexible and rigid packaging ideas – all on site.

Across our global markets, Pack Studios is poised to provide greater access to Dow’s technical expertise, innovative culture, and broad product portfolio. Elevating and promoting these capabilities will strengthen our relationships with existing customers and cultivate new ones across the value chain – a win-win-win for everyone involved.

Global Breadth. Local Agility.

Pack Studios brings together existing and new packaging fabrication and testing capabilities into the four regional technology centers Dow currently operates in Freeport, Texas, U.S.A.; Horgen, Switzerland; São Paulo, Brazil; and Shanghai, China.

For our partners across the value chain, Pack Studios can accelerate both existing and new opportunities, improving the speed and efficiency of application development and implementation:

Accelerate Your Current Projects – through more effective collaboration across internal networks and external partnerships to find answers faster by leveraging experience and expertise via new collaboration rooms, tools, and best practices.

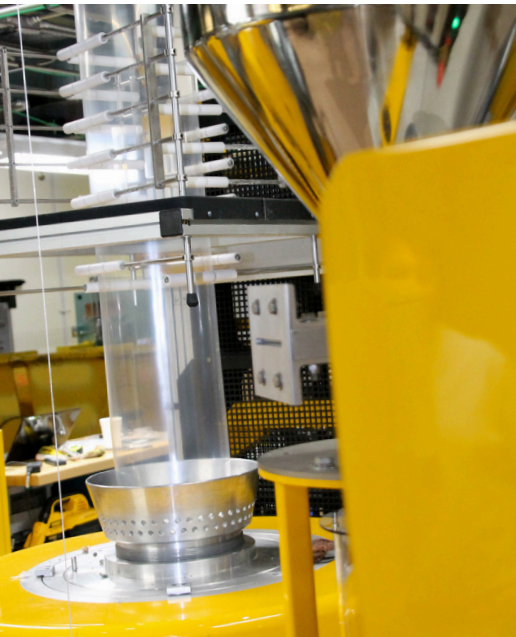
Grow in Focus Areas – using Dow’s new on-site packaging application capabilities and via external partners for faster project cycle times.

Gather Packaging Innovation Insights – when you leverage Dow’s global technology base to adapt global capabilities for meeting local needs.

You could even achieve higher success rates across all projects, especially in target applications where we have added capabilities by taking advantage of all that Pack Studios offers.



Each center features collaboration rooms to inspire innovative thinking and new virtual collaboration tools to enable connectivity between all of the regional centers and global networks to identify and accelerate localized packaging solutions. From these sites – and remotely when needed – development teams are able to tap into a growing global network of industry and packaging experts to leverage materials and market expertise on functionality, design, shelf appeal, sustainable properties, and emerging science.



ONE OF THE 5-LAYER BLOWN FILM LINES AVAILABLE FOR CUSTOMER USE; A FILM SAMPLE IS TESTED FOR AUDITORY PROPERTIES IN A PACK STUDIOS SENSORY SCIENCE LAB; A COLLABORATION ROOM AWAITS NEW IDEAS AND CHALLENGES.



Liberating Technologies & Resources

Pack Studios features a robust assortment of state-of-the-art blown and cast film lines, blow molding and injection molding lines, extrusion coating equipment, and state-of-the-art packaging lines, allowing converters and brand owners to work with real-world commercial scale equipment at their preferred Pack Studio location. This alleviates the need to shut down production lines to test new products. Such capabilities positively impact cost efficiencies at both ends of the production spectrum and help accelerate the commercialization process.

Equipment

Dow's dedication to providing the tools necessary to bring new packaging innovations to the industry is evident throughout Pack Studios. Industry-scale fabrication lines create commercial-quality products for evaluation. Full-scale Vertical Form Fill Seal (VFSS) and Horizontal Form Fill Seal (HFFS) packaging lines allow testing of packaging structures in real-

world situations. Shrink tunnels and stretch hooder lines test the newest applications. World-class sensory science labs offer ASTM-certified evaluation of package components' taste, odor, touch, and sound qualities. Additionally, an incredible battery of physical and analytical testing options, including excellent microscopy capabilities, offers unparalleled developmental support.

Expertise

On-site or via the online network of Dow professionals and industry experts from all disciplines, your association with Pack Studios virtually guarantees that you'll find the people who have the answers you need or know how to get them.

From in-depth knowledge of polymer science to packaging engineering to manufacturing troubleshooting, the global network engaged with Pack Studios offers an incredible wealth of expertise at your fingertips.

Pack Studios External Network

Pack Studios would not be what it is without an unparalleled global network of packaging industry professionals. From equipment manufacturers to package designers and prototyping studios, academics to technicians, artists to

scientists, distributors to brand owners, Pack Studios brings them together and puts their knowledge to your use. Contact your local Dow representative to discuss potential experts for your specific need.

Let's Make It Happen!

The Pack Studios vision is a reality, and each center is ready right now to collaborate, innovate, and accelerate your next packaging project.

Contact your Dow sales professional or your Technical Service & Development

representative, visit the Pack Studios web site at www.packstudios.com, or use the contact information on the back cover of this document to begin using this phenomenal resource.

Pack Studios - Global Capabilities at a Glance

Supported by a technical center in Collegeville, PA, and Pilot Coater facility in Ringwood, IL

- Collaboration Room
- Sensory Science Lab
- Extrusion Coating Line
- Two Cast Film Lines
- Three Lamination Lines (plus slitting capabilities)
- Two Cast Film Lines
- Extrusion Coating Line
- Four Blown Film Lines including a state-of-the art 7-Layer Line
- Stretch Hooder Line
- Stretch Wrap Line
- Shrink Tunnel Packaging Line
- Vertical Form Fill Seal Packaging Line
- Horizontal Form Film Seal / Thermoformer
- Blow Molder

NORTH AMERICA
Freeport, Texas, U.S.A.

Supported by the Auxiliary Packaging Development Center in Singapore

- Collaboration Room
- Three Blown Film Lines
- Pilot Coating Line
- 5-Layer Cast Film Line with Machine Direction Orientation (MDO)
- Extrusion Coating Line
- Multilayer Laminator
- High Speed Sachet Packaging Line
- Full packaging application testing capabilities for polyethylene, adhesives, and functional polymers

ASIA-PACIFIC
Shanghai, China



EUROPE
Horgen, Switzerland

- Collaboration Room
- Thermoforming Tray Lidding Packaging Line
- Vertical Form Fill Seal Packaging Line
- Horizontal Stand Up Pouch FFS Line (in 2014)
- Pack Drop Test Station
- 5- and 7-Layer Coextrusion barrier line
- Extrusion Coating Line
- Coextrusion blown film line for foamed films
- Cast Film Lines
- Two Lamination Lines (+ Slitting Station)
- Cup Thermoformer

Supported by technical centers in Tarragona, Spain; Mozzate, Italy; and Valbonne, France

LATIN AMERICA
São Paulo, Brazil

- Collaboration Room
- Blown Film Line
- Cast Film Line
- Slitter / Rewinder Equipment
- Lamination System (Solventless)
- Vacuum Thermoforming Packaging Line

Supported by a technical center in Bahía Blanca

| | | | | |
|----------------------|-------------------|---------------------------|-------------------|-------------------------|
| North America | | Europe/Middle East | 00 800 3694 6367 | dowpackaging.com |
| U.S. & Canada | 1 800 441 4369 | | 00 31 115 672626 | |
| | 1 989 832 1426 | Italy | 800 783 825 | |
| Mexico | + 1 800 441 4369 | South Africa | 00 800 99 5078 | |
| Latin America | | Asia Pacific | + 800 7776 7776 | |
| Argentina | + 54 11 4319 0100 | | + 603 7965 5392 | |
| Brazil | + 55 11 5188 9000 | | + 86 21 3851 4988 | |
| Colombia | + 57 1 219 6000 | China | + 400 889 0789 | |
| Mexico | + 52 55 5201 4700 | | | |

The principles of Responsible Care® and Sustainable Development influence the production of printed literature for The Dow Chemical Company ("Dow"). As a contribution towards the protection of our environment, Dow's printed literature is produced in small quantities and on paper containing recovered/post-consumer fiber and using 100 percent soy-based ink whenever possible.

NOTICE: Any photographs of end-use applications in this document represent potential end-use applications but do not necessarily represent current commercial applications, nor do they represent an endorsement by Dow of the actual products. Further, these photographs are for illustration purposes only and do not reflect either an endorsement or sponsorship of any other manufacturer for a specific potential end-use product or application, or for Dow, or for specific products manufactured by Dow.

NOTICE: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, the Customer is responsible for determining whether products and the information in this document are appropriate for the Customer's use and for ensuring that the Customer's workplace and disposal practices are in compliance with applicable laws and other governmental enactments. Dow assumes no obligation or liability for the information in this document. **NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.**

NOTICE: If products are described as "experimental" or "developmental": (1) product specifications may not be fully determined; (2) analysis of hazards and caution in handling and use are required; (3) there is greater potential for Dow to change specifications and/or discontinue production; and (4) although Dow may from time to time provide samples of such products, Dow is not obligated to supply or otherwise commercialize such products for any use or application whatsoever.

NOTICE REGARDING MEDICAL APPLICATION RESTRICTIONS: Dow will not knowingly sell or sample any product or service ("Product") into any commercial or developmental application that is intended for:

- long-term or permanent contact with internal bodily fluids or tissues. "Long-term" is contact which exceeds 72 continuous hours;
- use in cardiac prosthetic devices regardless of the length of time involved ("cardiac prosthetic devices" include, but are not limited to, pacemaker leads and devices, artificial hearts, heart valves, intra-aortic balloons and control systems, and ventricular bypass-assisted devices);
- use as a critical component in medical devices that support or sustain human life; or
- use specifically by pregnant women or in applications designed specifically to promote or interfere with human reproduction.

Dow requests that customers considering use of Dow products in medical applications notify Dow so that appropriate assessments may be conducted.

Dow does not endorse or claim suitability of its products for specific medical applications. It is the responsibility of the medical device or pharmaceutical manufacturer to determine that the Dow product is safe, lawful, and technically suitable for the intended use. **DOW MAKES NO WARRANTIES, EXPRESS OR IMPLIED, CONCERNING THE SUITABILITY OF ANY DOW PRODUCT FOR USE IN MEDICAL APPLICATIONS.**

This document is intended for global use.

Published April, 2014.

© 2014 The Dow Chemical Company

®™Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

®Responsible Care is a service mark of the American Chemistry Council. Dow is a partner in the American Chemistry Council Responsible Care initiative.

Form No. 500-16901-0414 SMG
SMG 12707