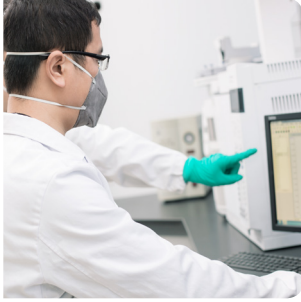




Engineered Interlayer Film

SWM™ International — Your Material Partner



SWM™ is a global leader in Thermoplastic Polyurethane (TPU) and Ethylene Vinyl Acetate (EVA) interlayer film solutions. Our diverse Argotec™ interlayer film product line is custom engineered to offer precision extrusions for a variety of glass lamination applications. SWM films are unmatched in optical clarity, hot and cold characteristics and offer the best overall quality in the glass lamination industry.

Experience

SWM has the cleanest, most modern interlayer film extrusion operation in North America, Europe and Asia and extrudes over 50% of the world's total usage of TPU interlayers. Our Argotec film products, available in aliphatic TPU and EVA resins, are the highest quality in the industry and built upon the Argotec brand dating back to 1988 and acquired by SWM in 2015.

Quality

To ensure quality, we use digital camera inspection on all interlayer film production. Computerized systems can detect and document pin holes, voids, gels, wrinkles, streaks and dark or light contaminants as small as 0.3 mm. All of our interlayer extruders are housed in an atmospherically controlled hard walled white room. Each extrusion line is in its own ISO Class 7, soft walled clean room.

Product Superiority

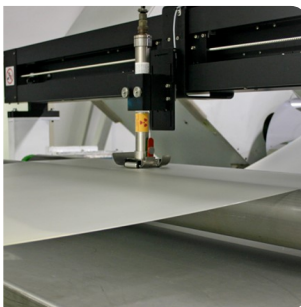
Engineers know that the highest quality standards are found in the aerospace industry. This is why the vast majority of all TPU bonded aircraft canopies and windows are laminated using Argotec interlayer film. Our products do not require refrigerated storage and do not contain plasticizers that can migrate and degrade a composite structure.



Our unparalleled quality and performance is recognized in the industry. You can find Argotec on the Safety Glazing Certification Council's (SGCC) Approved Interlayers List.

TPU Interlayer Film

Argotec™



Argotec Interlayer Film, custom engineered from high-performance resin, provides strength and optical clarity when sandwiched between multiple layers of glass and/or plastic sheets.

Features:

- Optically clear with no yellowing
- High tensile strength
- Lays flat and smooth
- No plasticizers to migrate or cause embrittlement
- Ultraviolet (UV) protection

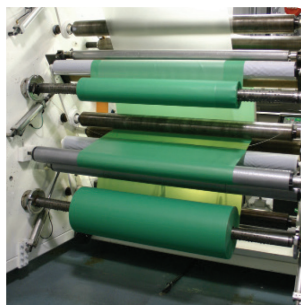
- Excellent elongation properties at a wide range of temperatures
- Adhesion to polycarbonate and glass is 150 PLI

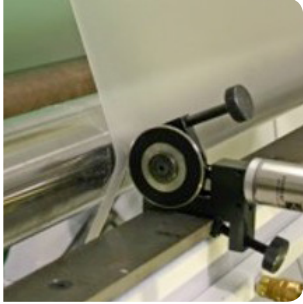
Applications:

- Armored civilian and military vehicles
- Aircraft canopies and side windows
- Rail windscreens
- Dynamic glazing for security glass and glazing composites
- Architectural glazing
 - Security for embassies, government buildings, correctional facilities, financial institutions, schools
 - Weather resistant construction (i.e. hurricane, tornado) resistant glass

Benefits:

- Bonds dissimilar optical layers for impact resistant applications
- Exceptionally strong composite bonding
- No refrigeration needed, which prevents blocking
- Thermal expansion and contraction properties are ideal for bonding dissimilar materials
- Ideal for high impact resistant, ballistic resistant or bullet resistant glass





Argotec EVA Interlayer Film is custom engineered from copolymer resin and is used as an interlayer sandwiched between two pieces of glass or plastic sheet.

Features:

- Available in clear, white or various colors
- No plasticizers to migrate or cause embrittlement
- UV protection
- Sound barrier

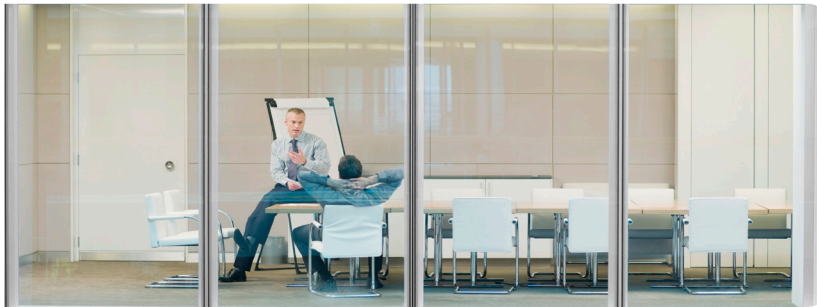
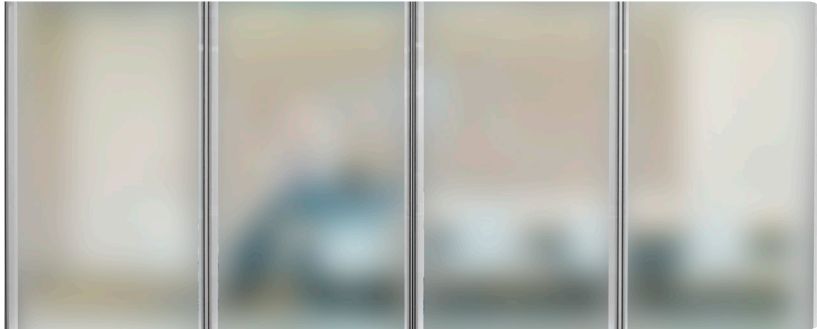
- Packed in roll form
- Smooth, non-sticky surface

Benefits

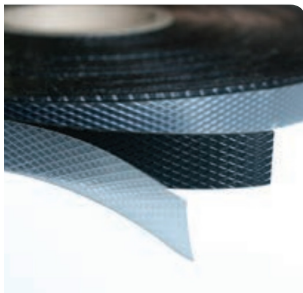
- High tensile strength
- Excellent transparency
- Outstanding adhesion
- Good temperature performance
- Humidity durable

Applications:

- Transportation glazing
- Architectural glazing:
 - Decorative glass for low temperature processing in glass to glass bonding
 - Switchable glass laminates for privacy at the click of a switch
 - "SMART" glass installations for adaptable and multi-functional space design



Argotec EVA interlayer film is ideal for use in smart glass applications like privacy for conference rooms (switched on shown above and switched off shown below).



Argotec Edge Seal Film is designed to protect security and architectural laminated glass composites, regardless of the interlayer type (TPU, EVA, Ionomer or Polyvinyl Butyral (PVB)).

Features:

- Design keeps moisture and harmful chemicals out of laminated glass composites
- Thin layer of black polyurethane cushions the edge of the glass composite and accepts the embossed pattern of the carrier through the autoclaving process, this layer can be removed following lamination
- Clear, diamond pattern embossed carrier, may also be removed following lamination
- A thick adhesive layer of clear TPU bonds Edge Seal to the glass laminate
- Also available with a proprietary foil layer between two sheets of tough, chemical-resistant polyurethane

Benefits:

- Protects glass laminates
- Dramatically enhanced moisture and solvent resistance
- Aesthetically pleasing appearance
- Reduced interlayer degradation
- Reduced edge fogging and edge chipping during handling and installation

Applications:

- Architectural glazing
- Transportation glazing

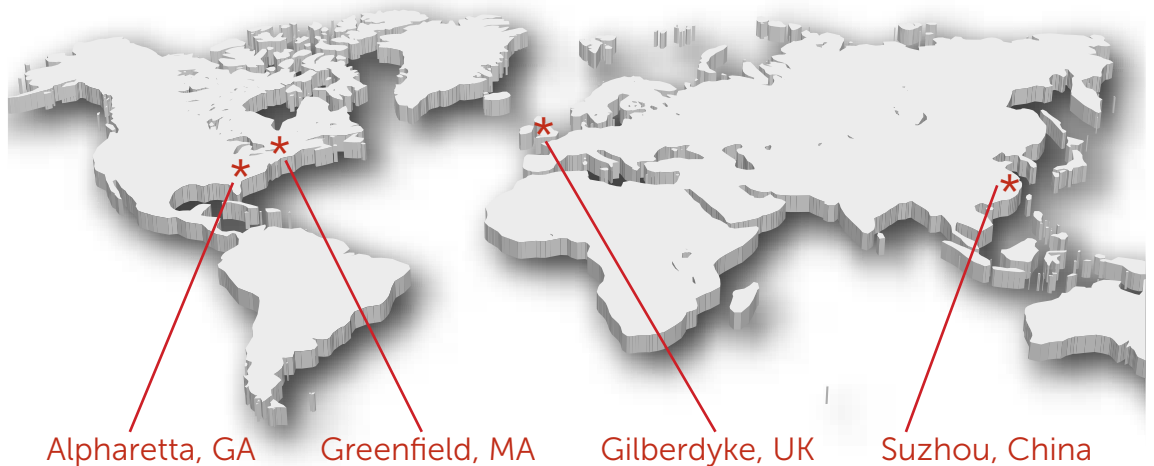


Our Facilities



SWM has the industry's first of its kind, innovation center devoted solely to advancing the state of interlayer film and sheet. Located in Greenfield, MA, USA with hard walled white rooms, flat die and blown film lab lines, production level extrusion lines, and a fully dedicated research staff,

our innovation center allows SWM to set the standard for interlayer film with unparalleled quality and technical service. Additional film and sheet plants are located in Gilberdyke, United Kingdom and Suzhou, China.



Alpharetta, GA

Greenfield, MA

Gilberdyke, UK

Suzhou, China

SWM locations shown (from top to bottom)
Suzhou, China; Gilberdyke, United Kingdom and
Greenfield, MA, USA

About SWM

SWM INTL
100 North Point Center East
Suite 600
Alpharetta, GA 30022
USA

swmintl.com
ams@swmintl.com

AMSILF091219A

SWM is a leading global performance materials company. We use natural fibers, resins, and polymers to provide essential solutions that enhance product performance and help our customers win in a variety of industries and applications. For further information, please visit our website at www.swmintl.com.

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