Coral Industries

AIT CHEMICAL

Quickbond™ AB2550-PFB and AB2750-EFB: Instant Tack and Bond Water-Based Contact Adhesive for Open and Closed Cell Foams

- **Matching the industry's fastest tacking water-based foam adhesive**
- **Flexibility to -40°C for ultimate reliability at high and low temperatures**
- **Outstanding bond strength to porous and non-porous substrates**

Quickbond™ AB2550-PFB and AB2750-EFB Water-Based Adhesive by Coral Industries of AIT Chemical, Inc.

Coral Industries of AIT Chemical, Inc. is proud to introduce a novel water-based adhesive designed and tested to have the combination of fast tack setting (rapid initial bond strength buildup), forming an ultimate bond strength exceeding that of the intrinsic foam strength.

Quickbond™ AB2550-PFB water-based adhesive is a contact adhesive that achieves **instant handling strength in less than 60 seconds or less**. It has been molecularly engineered to achieve one of the highest bond strengths that exceeds the strength of the typical open-cell foams of most chemistry types, and non-ethylene type closed cell foams. This heat-resistant adhesive is flexible with the capability of a one-surface contact adhesive application for increasing productivity.

Quickbond™ AB2750-EFB is the only known water-based contact adhesive for expanded polyethylene (EPE, crosslinked and non-crosslinked, soft or hard) foam-to-foam and foam to substrates bonding adhesive without the use of primer, pressure or heat. It can be used with one-side surface adhesive application method and provide immediate handling green strength and achieve strong bonding within 30-60 minutes in ambient.

Both AB2550-PFB and AB2750-EFB are proven for used with porous and non-porous substrates exceeding the speed of setting and bond strength the best in the water-based contact cements.

Mastering Water-Based Adhesives for Foam Bonding

Water-based contact adhesives (contact cements) are characteristically different from the more traditional solvent-based contact adhesives for foam bonding. The first obvious difference is the fact that water as carrier or "solvent" in water emulsion or dispersion has much lower vapor pressure or rate of evaporation that most of the solvents used in solvent-borne contact cement.

The second being the compatibility between the contact adhesives to the substrates being bonded together. That is, whether the contact adhesive can form good bonding or will be de-bonded or separated easily with any pull or shear forces. Traditional solvent-borne contact cement is referred to as rubber cement reflecting the fact that they dried or set to a rubbery like adhesive. These rubber cements have been engineered to have high compatibility to most substrates and particularly foams as substrate. Water-borne contact cements are typically acrylic, polyurethane, and neoprene chemistry that have different polarity or compatibility to the different foam substrates.

The third is the mechanical rigidity and other physical and chemical properties. Foams are classified as open-cell and closed-cell foams with closed-cell foam typically used in more rigid format while open-cell foams are typically engineered to be more flexible and compressible or compliance. The water-based cements selected for bonding should not materially changed the over-all mechanical rigidity characteristics. This is more critical when selecting water-based adhesive or contact cement for the multi-layering or bonding of flexible foam to flexible foam. While rigid foam commonly used for packaging can use with flexible or rigid adhesive.

There are three major factors and considerations in selecting the right water-based foam adhesive:

1. Compatibility matching between foam adhesive with foam material chemistry for long-lasting strong bonding:
   - Open-cell foams are predominantly based on polyurethane, EVA, and polyurethane, required specialty foam contact cement or adhesive for fast to instant bonding
   - Closed cell foams depend on material chemistry can be polar such as expanded polystyrene (Styrofoam) or non-polar such as expanded polyethylene (EPE)
2. Matching speed of tack-bonding time with the usage requirement:
   - Specialty foam adhesive can achieve almost instant bonding for most of the open-cell foams, while close cell foam to foam bonding can take quite a bit longer-time to form good handling bond
3. Matching flexibility of the foam adhesive to the compressibility of the foam for low and temperature requirement:
   - Flexible foam-to-foam applications will require the adhesive to be similar flexibility to ensure compressibility. Even for bonding onto rigid substrates such as wood or metals, flexible adhesive also ensures long-term reliability when low temperature excursion is expended.

Coral Industries

AiT CHEMICAL

Quickbond™ AB2550-PFB: Instant open-cell foam bonding

- **Instant bonding of all open-cell foams, ideal for upholstery manufacturing**
- **Instant bonding for open-cell foams to porous and non-porous substrates**
- **Flexibility to -40°C with bonding exceeds the intrinsic foam strength**

AB2550-PFB forms instant tacking and green strength to allow robust handling almost instantly within 5 seconds in bonding open-cell foam to foam, foam to porous and non-porous substrates. This industry unparalleled fast strength build-up allows in-line production immediately after the attachment.

Matching Flexibility of the Foam Adhesive to the Compressibility of the Soft Open-cell Foams:

Foam adhesive used for foam-to-foam bonding with different compressible foams such as those used upholstery and bedding must not change the overall flexibility and compressibility of the original foam. That is the foam adhesive must be more flexible than the foam themselves even at sub-ambient temperature. This is achieved with the molecular structure of the foam adhesive matches that of the most flexible foams made of polyurethane, EVA, latex, etc.

AB2550-PFB is ideal for manufacturing of large area soft open-cell foam to itself and other type of open-cell and closed-cell foams (except that of EPE and PE types).

AB2550-PFB is exceptionally versatile in providing **instant bonding** of all open and closed-cell foams (except EPE type) to wood, paper, plastics, metals, concrete and ceramic.

Matching Speed of Tack-Bonding Time with the Usage Requirement:

Speed or time to achieve handling strength for foam-to-foam can vary substantially for water-based foam contact adhesive. For closed and open-cell foam-to-foam bonding, some can take 10-60 minutes to reach handling strength.

The ideal foam adhesive for high volume or professional usage is "instant tack-bonding" or achieving adequate bond strength instantly upon contact and immediately after brushing, rolling, or spraying of the water-based adhesive. **AB2550-PFB** has been designed and tested to achieve "instant" contact bonding for open-cell foam-to-foam bonding.

AB2550-PFB also provide the same instant contact adhesion when bonding open-cell and closed-cell foam to wood, foam to paper, and other porous substrates. Same instant bonding of open-cell foam to plastics, leathers, metals, concrete, ceramics, and other non-porous substrates.

Based Substrate	PU-EVA-Latex Open-Cell Foams					
Bonding Foam or Substrate	**PU-EVA-Latex Open-Cell Foams**	**Wood/ Paper/ Porous Substrates**	**Natural and Synthetic Leathers and Rubbers**	**Styrofoam and Closed-Cell Foams other than EPE**	**Plastics (Except PTFE, Silicone), Metals, Concrete, Ceramics**	**EPE (Expanded Polyethylene) Foams (Soft and Hard)**
AB2550-PFB (Contact time to reach handling Bond Strength)	**Snap (within 5 Seconds)**	**Snap (within 5 Seconds)**	**Snap (within 5 Seconds)**	**Snap (within 5 Seconds)**	**Instant (within 10 Seconds)**	**Instant (within 10 Seconds)**
AB2550-PFB Shear Bond Strength (Push foam from substrate)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Adhesive Failure** (Adhesive strength is adequate in shear mode but not in peel mode)
AB2550-PFB Peel Bond Strength (Peel foam from Substrate)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Adhesive Failure** (Adhesive strength is adequate in shear mode but not in peel mode)

AB2550-PFB is designed and ideal for **bonding open-cell foam to itself and to other foams (excluding EPE, polyethylene foam). The bonded foam laminates maintain the same flexibility and compressibility as the original foams. The water-based contact adhesive** is not only environmentally. health-friendly, and yet tough, with flexibility for long-term reliability. The instant bonding characteristics of AB2550-PFB to almost all substrates, including plastics (except polyethylene, PTFE, and silicone), rubbers, natural and synthetic leathers, metals, glass, ceramic, wood, and paper.

Quickbond™: Fast Tacking Water-Based Contact Cement

- **Instant bonding of open-cell foams to porous and non-porous substrates**
- **Industry first water-based contact adhesive for EPE foams**
- **Unparalleled productivity and field installation ease without clamping**

Coral Industries

AiT CHEMICAL

Foam Bonding Water-Based Flexible Contact Adhesives

	Quickbond™ AB2550-PFB	Quickbond™ AB2350-PFB	Quickbond™ AB2750-EFB
Special Attributes	"Instant" tacking, high-strength bonding with flexibility, good water and heat resistance	Quick tacking, flexibility with strength, good water and heat resistance	Extra-flexible adhesive, maintains flexibility to -40ºC with good water and heat resistance
Adhesive Applications	Bonding open-cell foams such as polyurethane, EVA, and latex foam, polystyrene foam, to porous and non-porous substrates such as wood, wood veneer, particle board, high-pressure laminate, cardboard, paper, cork, fabric, felt, fiberglass insulation, fiberglass reinforced plastics, fibrous glass, vinyl plastics, plastics, glass, ceramic and metals.		Proven rapid bonding of closed-cell expanded polyethylene (EPE) foams for lamination packaging. Also applicable for bonding all open-cell foams to porous and non-porous substrates.
Industries Served	Upholstery, Aircraft, Train, Automotive, Transportation, Construction, Woodworking, Appliance, Seats and Furniture, Leather Goods, Marine, Metalworking, Military, Electronics, General Industrial		
Adhesive Composition	Single Component, ~50% Polymer in water	Single Component, ~50% Polymer in water	Single Component, ~50% Polymer in water
Color (Wet/Dried)	Milky cream liquid/Transparent	Milky cream liquid/Transparent	Milky cream paste/Transparent
Work Time Before Dry	**Instant bonding with repositioning capability within 5-10 seconds**	**Quick bonding with repositioning capability within 60 seconds**	Quick bonding with repositioning capability within 5 minutes
Flexibility Transition	Flexible to -45ºC	Flexible to -45ºC	**Flexible to -40ºC**
Bonding Applicability	**Open-cell foams to porous and non-porous substrates (Foa**m to Foam, Foam to Plastic, Wood, Metal, Glass, Ceramics)	Open-cell foams to porous and non-porous substrates (Foam to Foam, Foam to Plastic, Wood, Metal, Glass, Ceramics)	**EPE and other closed and open-cell foams to porous and non-porous substrates** (Foam to Foam, Foam to Plastic, Wood, Metal, Glass, Ceramics)
High Temperature Limit	150ºC	150ºC	150ºC
Fire Flamability	None Flammable in Solution;	None Flammable in Solution	None Flammable in Solution
Environmental	Waterborne to meet California Air Resources Board, GREENGUARD® requirements. Low VOC and comply with Ozone Transport Commission and SCAQMD standards for Electronics and General Industrial uses.		
Storage Condition	Non-Freezing and 5ºC to 50ºC	Non-Freezing and 5ºC to 50ºC	Non-Freezing and 5ºC to 50ºC
Shelf Life	12 Months	12 Months	12 Months
Open Time	0.5-5.0 minutes	1-10 minutes	3-30 minutes
Tacking-Repositioning Time (Wood to Wood)	<30-60 seconds	< 5 minutes	<30 minutes
Availability in Bulk Sizes	1, 5, and 55 Gallon and Tote Size	1, 5, and 55 Gallon and Tote Size	1, 5, and 55 Gallon and Tote Size
Consumer DIY Sizes	16 oz Squeeze Bottle	16 oz Squeeze Bottle	16 oz Squeeze Bottle

Compatibility Matching between Foam Adhesive with Foam Material Chemistry for Long-Lasting Strong Bonding:

Whether it is for high volume manufacturing, profession or DIY projects, selecting the right foam adhesive for bonding is crucial for the success. Compatibility matching is critical for the consistent long-lasting bonding and bond strength whether the adhesive is used for bonding foam to itself to form thicker layer or bonding foam to wood, paper, plastics or metals.

Almost all foam types with exception of one: expanded polyethylene or cross-linked expanded polyethylene (EPE) foam can used water-based foam acrylic, polyurethane, or chloroprene types foam adhesive. The choice is the speed to foam tacking and achieving handling bond strength until the water-based adhesive is fully set that is typically achieved within 24 hours in ambient conditions. **AB2550-PFB** provides instant bonding to open-cell foams to itself and porous and non-porous substrates.

EPE foam being non-polar required either solvent-borne contact adhesive or other adhesive that needed surface primers and/or treatment. Almost all commercially available water-based adhesives are not engineered for this type of foam bonding. **AB2750-EFB** is the only known water-based contact adhesive that is engineered and tested to achieve foam-to-foam bonding exceeding the intrinsic EPE strength in multi-layer lamination for product packing applications.

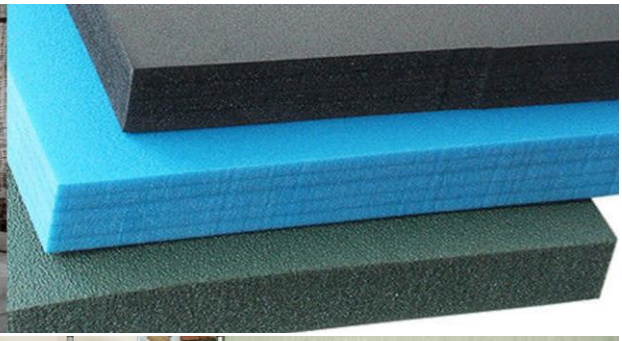
AB2750-EFB: Expanded Polyethylene Foam (EPE) to Foam Bonding

- **Rapid EPE foam to foam multilayer stacking for packaging protection**
- **Rapid bonding for closed foam to foam and foam to substrate bonding**
- **Highest bond strength for EPE foam to foam, and foam to substrates bonding**

Coral Industries

AIT CHEMICAL

EPE foam being non-polar is notoriously hard form good bonding. ***AB2750-EFB is the only known water-based contact cement*** *engineered to provide instant green tack and robust handling strength within a few minutes. When fully set, the bond strength of AB2750-EFB for foam-to-foam bonding exceeds the intrinsic strength of the foam without special preparation of priming. Closed cell foam such as EPE foam is a non-porous and non-polar that takes longer to form bonding than typical open cell polyurethane foams even for solvent-borne contact adhesive.*



About Coral Industries and AIT Chemical, Inc.

AIT Chemical, Inc. is a company of AI Technology, Inc., AI Technology, Inc., founded in 1981 (AIT) is headquartered in Princeton, NJ, with additional facilities in Princeton Junction, NJ. Coral Industries, Inc., founded in 1968, operates in Los Angeles, CA, and was acquired by AIT Chemical Inc. in 2024.

Coral Industries pioneered many water-based adhesives as well as many solvent-borne contact adhesives used in aircraft and transport seat assembly, furniture assembly, etc. Many of their adhesives are used in Rose Parade floats and other interesting applications.

AIT Chemical, Inc. Coral Industries division manufactures Quickbond™ water-based adhesives in its Los Angeles, California, Princeton Junction, NJ, and Shenzhen, China facilities.

Coral Industries and AIT Chemical, Inc. combine their close to 60 years of experience with state-of-the-arts water-based innovative adhesive and coating technologies and solutions with unparalleled productivity and reliability.

Based Substrate	EPE (Crosslinked Poly) Foams					PU-EVA-Latex Open-Cell Foams		
Bonding Foam or Substrate	**EPE (Expanded Polyethylene) Foams (Soft and Hard)**	**Wood/ Paper/ Porous**	**PU-EVA-Latex Open-Cell Foams**	**Styrofoam and Closed-Cell Foams other than EPE**	**Plastics (Except PTFE, Silicone), Metals, Concrete, Ceramics**	**Woods, Paper and Porous**	**Plastics, Metals, and Non-Porous**	**PU-EVA-Latex Open-Cell Foams**
AB2750-EFB (Contact time to reach handling Bond Strength)	**Instant** (within 10 Seconds)	**Instant** (within 10 Seconds)	**Moderate-Fast** (within 5-15 minutes)	**Moderate-Fast** (within 5-15 minutes)	**Moderate-Fast** (within 5-15 minutes)	**Fast** (within 60 Seconds)	**Moderate-Fast** (within 5-15 minutes)	**Moderate-Fast** (within 5-15 minutes)
AB2750-EFB Shear Bond Strength (Push foam from substrate)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)
AB2750-EFB Peel Bond Strength (Peel foam from Substrate)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)	**Cohesive Failure** (Adhesive stronger than foam)

AB2750-EFB is a water-based contact adhesive cement engineered for compatibility and proven for bonding polyethylene-based foam and substrates such as expanded Polyethylene (EPE) foam (soft and hard) to itself and other foams and substrates. The engineered compatibility enables the water-based adhesive to spread evenly and adhere to EPE and other substrates for bonding applications. **AB2750-EFB is proven to have water resistanceater-resiswtance once dried and** cured.

Coral Industries of AIT Chemical, Inc. (© 2025 to present, V2.0) | 18-20 Roszel Rd, Princeton, NJ 08540, USA
Tel: 1-609-799-9388 Fax: 1-609-799-9308 | www.aitchemical.com | ait@aitchemical.com