Science. Applied to Life.

Bond low surface energy materials and move your designs to the next level. 19:02

From sporting goods and rail cars to home appliances, design and build using LSE materials – such as plastics, foams and powdercoats – with 3M adhesives and tapes for LSE bonding.





### Rethink how you design.

Maintain design integrity from the sketch to the consumer, eliminating distracting visible fasteners like screws and bolts. Improve aesthetics and push the limits on shapes, LSE material combinations and textures to create breakthrough designs faster and with more durability.

### Rethink how you build.

Increase the flexibility and efficiency of the manufacturing line. Eliminate pre-drilling and mechanical fasteners like screws and rivets. Replace sonic-welding and skip unnecessary primers. Create a different kind of bond that lasts longer.

Reduce weight

- · Assemble dissimilar materials
- · Improve weathering resistance
- Enhance aesthetics

Save time with a one-step process
Reduce surface preparation steps

### Rely on our support.

3M provides our customers with the testing, technology and training needed to create better products.

- 3M solution specialists and application engineers can help with adhesive selection, process improvement
- · Our Application Engineers can help test your adhesive design solutions
- $\cdot\,$  With R&D centers in 36 countries, the 3M team is here for your support

## Push boundaries. Unlock potential.

Design for the ever-changing world with 3M adhesives and tapes for bonding low surface energy (LSE) materials and move your designs to the next level.









3M<sup>™</sup> Acrylic Adhesive 300MP

### Bond hard-tobond textures.

Bond securely for the world's toughest environments.

3M™ High-Strength Acrylic Adhesive 300LSE

### Secure and reliable performance.

Plastic to metal. Rubber to plastic. Even foam to chrome. 3M™ VHB™ Tape LSE Series

### Fast and easy high performing solutions.

Reduce production time as you design and build for hot and cold cycling environments.

3M™ Scotch-Weld™ Structural Plastic Adhesives DP8010 and DP8010NS

## Achieve structural strength quickly.

Our strongest bond for low surface energy materials.

### 3M<sup>™</sup> Acrylic Adhesive 300MP

# Bond hard-to-bond textures.

Provides high adhesion to a wide variety of materials, including plastics and foams. Delivers versatile performance in harsh outdoor conditions.

### Key advantages:

- Excellent adhesion to open cell foams
- Consistent adhesive performance to many plastics
- Flows easily into textured materials
- Designed for exposure to UV, humidity and more

### Recommended applications:

- $\cdot$  Foam lamination
- · Gasket attachment
- Insulation attachment
- · General attachment
- Automotive headliner bonding

### Bonds these substrates:

- Open and closed cell foams
- · Felt
- · Carpet/textiles/fabric





Attach closed-cell foam to

galvanized steel with 3M<sup>™</sup>

Double Coated Tape 9832HL



Attach seat foam to polyurethane film with 3M™ Adhesive Transfer Tape 6035PC

### Your designs will go the distance.







**Bond plastic to metal.** Gear up durability with 3M<sup>™</sup> Double Coated Tape 93010LE.

**Bond chrome to plastic.** Shift your thinking with 3M<sup>™</sup> Double Coated Tape 9495LE.



Bond metal to plastic. Add high-tech style with 3M™ Double Coated Tape 9495LE.

Bond plastic to metal. Hot designs start with 3M<sup>™</sup> Double Coated Tape 93020LE. 3M<sup>™</sup> High-Strength Acrylic Adhesive 300LSE

# Secure and reliable performance.

Reliably bonds most low surface energy materials, delivering a high initial bond strength. Ideal for both flat and curved surfaces. Provides the freedom to design with a wider range of substrates for more reliable performance and no mechanical fasteners.

### Key advantages:

- · High initial bond strength
- High shear strength
- Good anti-lifting properties on flat and curved surfaces
- Double-coated tape is easy to die-cut, handle and apply

### Recommended applications:

- Plastic to metal
- · Chrome to plastic
- · Metal speaker mesh to plastic
- · Dissimilar materials

### Bonds these substrates:

- Powder coat
- Aluminum with nylon coating
- · Oily metals
- · Painted surfaces
- · Polypropylene
- Polycarbonate with coating

#### **3M<sup>™</sup> VHB<sup>™</sup> Tape LSE Series**

## Fast and easy high performing solutions.

The 3M<sup>™</sup> VHB<sup>™</sup> Tape LSE Series provides a range of double-sided acrylic foam tape developed specifically for LSE substrates. Create long-lasting, high strength bonds without the use of a primer or adhesion promoter, reducing your overall production time. Now you're free to choose the material that's right for your design.



### Key advantages:

- Very high bond strength in a lightweight tape
- Immediate handling strength for faster assembly
- Bonds most LSE substrates without the need for primer or adhesion promoter
- Resists hot, cold and cycling temperature, UV light, moisture and solvents

### Recommended applications:

• **Building components:** signage, lighting, windows, décor

HOTEL

- Transportation: truck, bus, camper, RV
- Appliances: brand placards, internal components, small appliances, kitchen/cleaning tools
- **Outdoor power equipment:** brand placards, instrument panels, decoration
- Signs and displays: illuminated signs, restaurants, hotels, retail

### Bonds these substrates:

- LSE substrates: polypropylene (PP), thermoplastic elastomers (TPE), thermoplastic olefins (TPO)
- MSE substrates: polycarbonate, high-impact polystyrenes (HIPS), acrylic, nylons, ABS
- Composites: glass-reinforced plastics (GRP)/fiberglass, carbon fiber
- · Metals, glass and plastics

3M<sup>™</sup> Scotch-Weld<sup>™</sup> Structural Plastic Adhesives DP8010 / DP8010NS

# Achieve structural strength quickly.

A two-part, acrylic-based adhesives (10:1 ratio by volume) that can bond many low surface energy plastics, including many grades of polypropylene, polyethylene, thermoplastic elastomers (TPE), and thermoplastic olefin (TPO) without special surface preparation. Replace screws, rivets, plastic welding, and two-step processes which include chemical etchants, priming or surface treatments in many applications.



### Key advantages:

- Creates strong bond on low surface energy plastics (LSE), such as polyolefin, with minimal or no surface prep required
- Resists many chemicals, water, humidity and corrosion
- Formulated to bond multimaterial assemblies such as LSE plastics, thermoplastics, composites and metals
- 10-minute work life with 60-minute handling strength

### Recommended applications:

- · Transportation assemblies
- Signage and point-of-purchase
- Joining plastics to metals, such as in the manufacture or repair of appliances
- Bonding low surface energy plastics without priming
- Manufacture or repair of various sporting goods equipment

### Bonds these substrates:

 Low surface energy plastics such as polypropylene, polyethylene and thermoplastic elastomers (TPEs)

Stron

- Composites
- Metals
- High and low density polyethylene (LDPE and HDPE)

## Which adhesive or tape is right for you?

Our wide range of LSE adhesives and tapes makes it possible to find the best solution for your substrates, application and performance requirements.

### Key factors in determining an adhesive or tape:

- What substrates are being bonded?
- What type of join design is used?
- How much stress will be applied to the bond area?
- What environmental conditions will the product endure?

3M Thin Bonding Tapes	3M <sup>™</sup> VHB <sup>™</sup> Tapes	3M™ Scotch-Weld™ Structural Adhesives
Easy convertibility for customization	Immediate handling strength for a fast, easy application process	Strongest dead-load weight performance
Fast and easy peel and stick application	Bonds dissimilar materials	Able to be applied in broad range of joint designs like sealing and potting
Wide variety of durable and reliable tape types and formats	Noise and vibration damping	Easily automated and can be applied to irregular shapes
Bondline thickness: .05 to .20 mm	Bondline thickness: 0.6–1.6 mm	Bondline thickness: 0.12–3 mm

### **3M Adhesives and Tapes for LSE Bonding Comparison**

### For more information and assistance on adhesive or tape selection:

Visit <u>3M.com/lsebonding</u> Contact a 3M expert at 1-800-362-3550

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