

# Adhesive & Tape Solutions for Your Assembly Challenges

## What are Panel to Frame Assemblies? What are Stiffener to Panel Assemblies?



Panels are used in multiple markets, such as transportation, metalworking and construction

**Panel to Frame:** Decorative or load bearing panel that is applied to rigid frame or support. **Examples include trailer panels, elevator walls and sign boxes.**

**Stiffener to Panel:** Stiffeners are applied to panels to give extra support and rigidity. **Examples include trailer wall panels, traffic signs and large metal enclosures.**

### Possible Adhesive or Tape Requirements:

- Dead load holding strength
- Flexibility for dynamic loads and thermal expansion mismatch
- Fill a gap or variation in fit from end to end
- Provide a water seal

### Best 3M Solutions for Panel to Frame/Stiffener to Panel Assemblies



#### ■ 3M™ VHB™ Tapes

High-strength bonding tapes are a proven alternative to screws, rivets, welds and other mechanical fasteners. 3M™ VHB™ Tape offers instant strength, a high ultimate bond and seals simultaneously. 3M™ VHB™ Tape's viscoelasticity allows relative movement of parts for thermal expansion/contraction. Best for flat to flat applications with a consistent bondline thickness.



#### ■ 3M™ Scotch-Weld™ Structural Adhesives

Acrylic, epoxy and urethane structural adhesives hold over 1,000 psi in overlap shear strength. Best suited for thinner bondlines, irregular shapes and textured surfaces where load-bearing strength is needed. Provides the highest load-bearing strength and environmental resistance.



#### ■ 3M™ Adhesive Sealants

Acrylic, polyurethane, nitrile and hybrid are one component adhesive technologies with outstanding sealing properties. These products are capable of filling larger and irregular gaps including rough substrates. Highly flexible formulations allow for relative movement for thermal expansion/contraction.



#### ■ 3M™ Reclosable Fasteners

3M™ Dual Lock™ and Hook and Loop Reclosable Fasteners for strong yet easily removable fastening solutions. These products are ideal to allow access for servicing or replacement of a panel. Generally backed with 3M™ VHB™ Tape or other 3M adhesive technologies.

### Performance Factors for Panel to Frame/Stiffener to Panel Assemblies

All 3M technologies in the table below are commonly used in panel applications.

Use the table below as a relative comparison of product performance.

Good = + Better = ++ Best = +++

Attribute	VHB Tapes	Structural Adhesive	Adhesive Sealant	Reclosable Fasteners
Surface Preparation and Ease of Application	+	+++	++	+
Rate of Strength Build	+++	++	+	+++
Flexibility and Joint Expansion	+++	+	+++	+++
Holding Power	+	+++	++	+
Repair/Removal After Cure	+++	+	++	+++

## Panel to Frame/Stiffener to Panel Assembly Solutions

	Metals (Aluminum, Steel, Stainless, Galvanized)	Paints (Powder Coat, Painted Metal, Composite Panel)	Glass	Plastics: HSE, MSE (ABS, Acrylic, Polycarbonate, Nylon)	Plastics: LSE (Polypropylene, Polyethylene)
Metals	<ul style="list-style-type: none"> <li>■ *4941, *RP45</li> <li>■ LSB60NS</li> <li>■ *550FC + AC61</li> <li>■ SJ3550/51/52, SJ3571/72</li> </ul>	<ul style="list-style-type: none"> <li>■ *4941, *RP45</li> <li>■ LSB60NS</li> <li>■ *550FC + AC61</li> <li>■ SJ3540/41/42, SJ3526N/27N</li> </ul>	<ul style="list-style-type: none"> <li>■ *4941, *RP45</li> <li>■ LSB60NS</li> <li>■ *590, *560, *760</li> <li>■ SJ3560/61/62, SJ3571/72</li> </ul>	<ul style="list-style-type: none"> <li>■ *4941, *RP45</li> <li>■ LSB60NS</li> <li>■ *560, *760</li> <li>■ SJ3550/51/52, SJ3571/72</li> </ul>	<ul style="list-style-type: none"> <li>■ *4941, *RP45</li> <li>■ DP8010 Blue</li> <li>■ *560, *760</li> <li>■ SJ3540/41/42, SJ3526N/27N</li> </ul>
		<ul style="list-style-type: none"> <li>■ *4941, *RP45</li> <li>■ DP8810NS</li> <li>■ *550, *560, *760</li> </ul>	<ul style="list-style-type: none"> <li>■ *4941, *RP45</li> <li>■ LSB60NS</li> <li>■ *590, *560, *760</li> </ul>	<ul style="list-style-type: none"> <li>■ *4941, *RP45</li> <li>■ DP8810NS</li> <li>■ *560, *760</li> </ul>	<ul style="list-style-type: none"> <li>■ *4941, *RP45</li> <li>■ DP8010 Blue</li> <li>■ *560, *760</li> </ul>
			<ul style="list-style-type: none"> <li>■ *4941, *RP45</li> <li>■ DP460</li> <li>■ *590</li> </ul>	<ul style="list-style-type: none"> <li>■ *4941, *RP45</li> <li>■ DP100 Plus Clear</li> <li>■ *560, *760</li> </ul>	<ul style="list-style-type: none"> <li>■ *4941, *RP45</li> <li>■ DP8010 Blue</li> <li>■ *560, *760</li> </ul>
				<ul style="list-style-type: none"> <li>■ *4941, *RP45</li> <li>■ DP8405NS</li> <li>■ *560, *760</li> </ul>	<ul style="list-style-type: none"> <li>■ *4941, *RP45</li> <li>■ DP8010 Blue</li> <li>■ *560, *760</li> </ul>
					<ul style="list-style-type: none"> <li>■ *4941, *RP45</li> <li>■ DP8010 Blue</li> <li>■ *560, *760</li> </ul>

**Key**

- 3M™ VHB™ Tapes
- 3M™ Scotch-Weld™ Structural Adhesives
- 3M™ Adhesive Sealants
- 3M™ Reclosable Fasteners

\*Primers may also be required in some cases.



This guide lists products that are commonly used for this specific application. It is important that the customer evaluates these suggested products in their specific application.