

3M Industrial Adhesives and Tapes Division

# From design to delivery

Keeping pace with the rapid changes taking place in rail technology is more difficult than ever. This easy-to-use interactive tool can help you stay one step ahead of the changes, with the latest 3M innovations for expanding design flexibility, improving product performance and optimizing manufacturing efficiencies.

## PASSENGER RAIL



## Innovative Solutions for Rail Transport

As communities strive for more efficient and sustainable mass transit solutions, rail transportation is experiencing a renaissance in cities all over the world. Today's railway designs are lighter, faster, more aerodynamic and energy efficient than ever, with lighter weight materials and sleek designs. 3M technologies can help maximize manufacturing and operational efficiencies, while lowering costs and improving long-term performance.



Click on a **red dot** below to learn more about 3M Passenger Rail Solutions.

A red circle containing the word "EXTERIOR" in white capital letters. A thin red line extends from the bottom of the circle to a red dot on the side of the train in the adjacent image.

EXTERIOR

A red circle containing the word "INTERIOR" in white capital letters. A thin red line extends from the bottom of the circle to a red dot on the interior of the train in the adjacent image.

INTERIOR



## Passenger Rail Exterior

3M Solutions help protect rail car exteriors from the environmental affects of rain, sun and abrasion, keeping the car looking good, mitigating moisture ingress and more. By helping extend the life of the railcar, 3M Solutions can mitigate maintenance over the long haul.



## Passenger Rail Interior

Rail coaches transport masses of people quickly, safely and comfortably. 3M technologies are there—sealing the windows, attaching interior panels and carpets, helping construct next-generation composites, and keeping passengers comfortable and secure while they ride to their destinations.

Insulation Attachment

Fire Protection

Interior Sealing

Floor System Installation

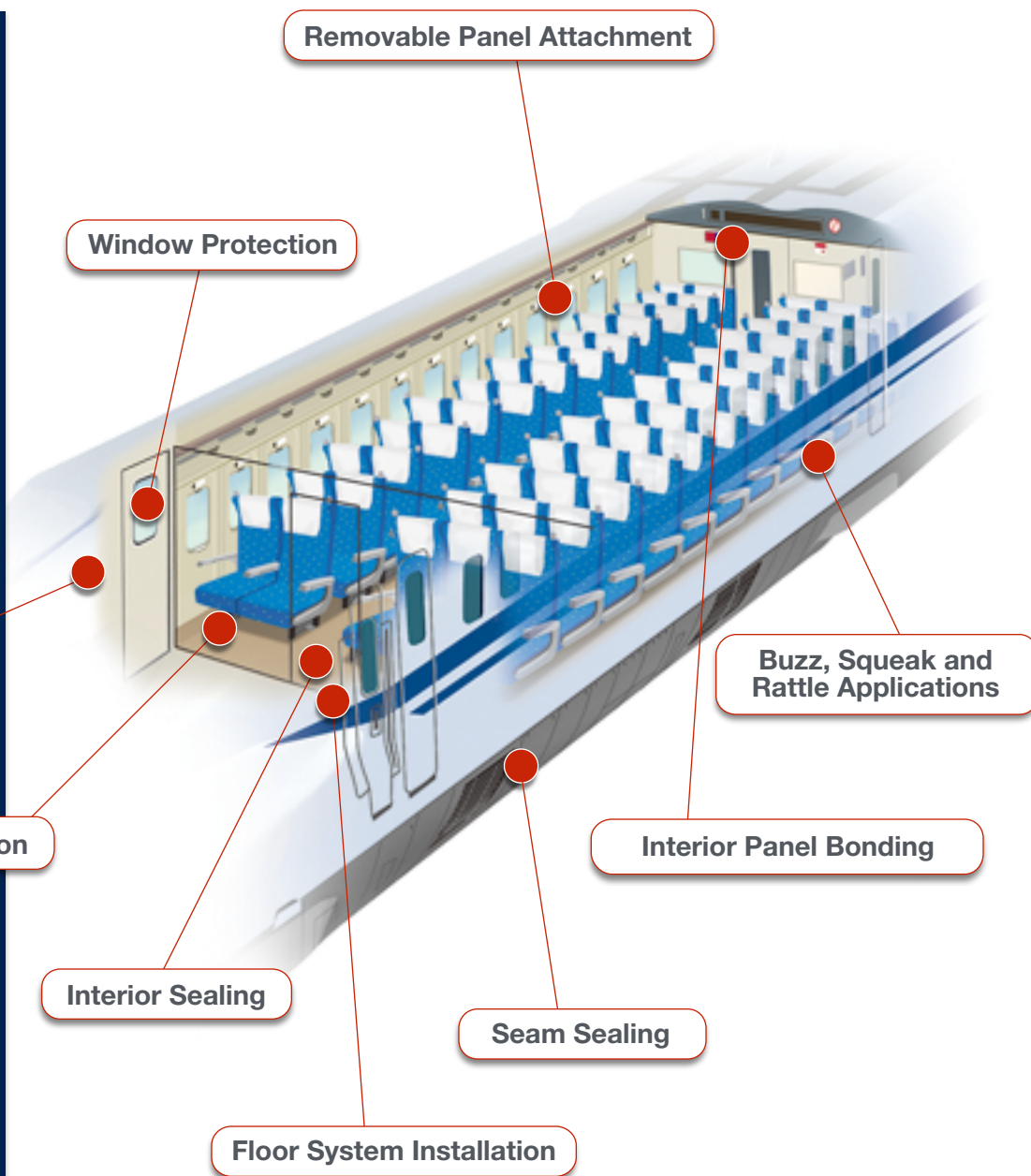
Window Protection

Removable Panel Attachment

Buzz, Squeak and Rattle Applications

Interior Panel Bonding

Seam Sealing



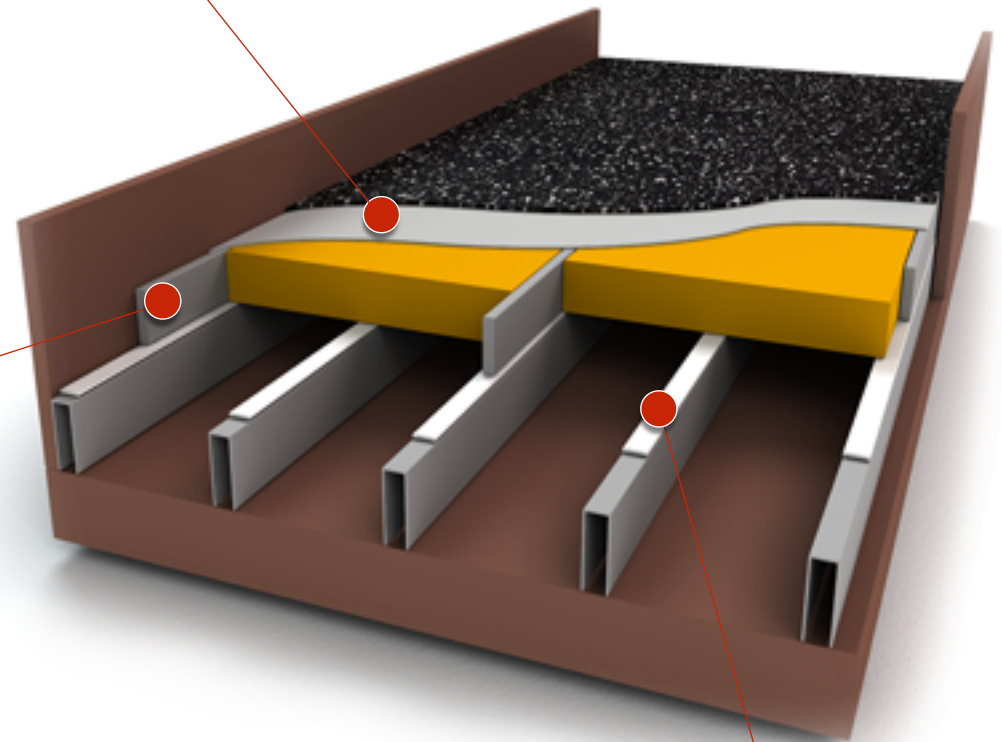
## Floor System Installation

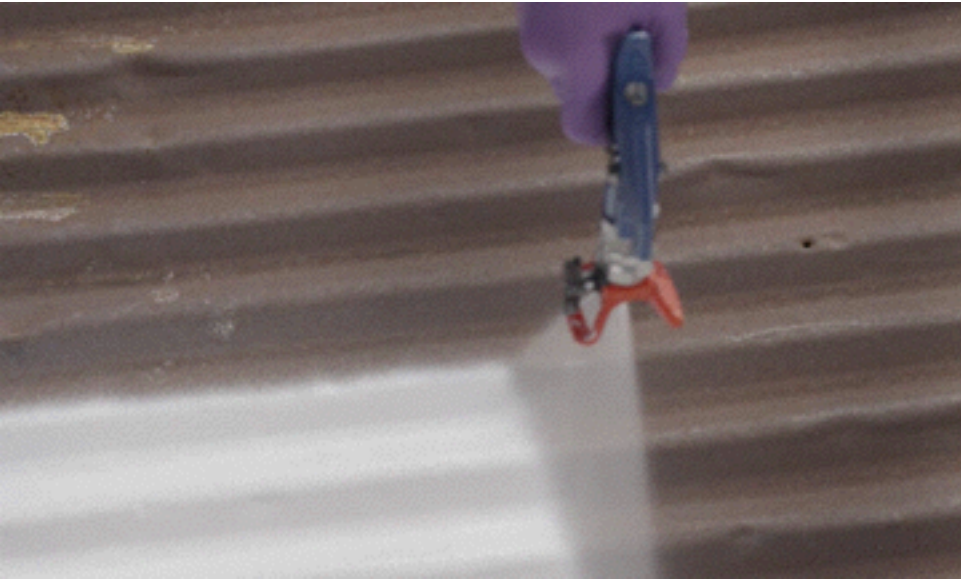
Assaulted by constant vibration, twisting and bouncing, train subfloors must “roll with the punches” to maintain their long-term viability. 3M’s advanced seam sealing and bonding technologies are designed to maintain their effectiveness and elasticity even after years of hard use.

Floor Seam Sealing

Floor Cover Bonding

Floor Panel Bonding





## Roof Sealing and Protection

### 3M™ Water-Based Sprayable Protective Sealant 320

3M™ Water Based Sprayable Protective Sealant 320 is ideal for sealing and protecting transportation vehicles from leaks due to wear and corrosion. Often applied to the entire roof or other surfaces to ensure maximum protection, this durable, quick-curing sealant can be applied by airless spray or rollers.

- Fast application and turnaround cure times
- Unique formula resists corrosion and seals gaps, holes and cracks
- 20+ year track record protecting steel bridges

### 3M™ Hybrid Adhesive Sealant 760

3M™ Hybrid Adhesive Sealant 760 is a single-component, high strength elastomeric sealant. This hybrid technology is paintable when wet and will not degrade when exposed to UV. Used for bonding and sealing different materials such as wood, aluminum, most lacquered metals, polyester, glass, etc.



## Window Installation/Glazing

### **3M™ OEM Polyurethane Glass Adhesive Sealant 590**

3M™ Polyurethane Glass Adhesive Sealant 590 is a fast-curing, one-component, high viscosity polyurethane sealant for bonding windshields and other substrates requiring high strength.

### **3M™ All Purpose Sealant Primer P591**

3M™ All Purpose Sealant Primer P591 is a black primer that increases adhesion with polyurethane and hybrid adhesive sealants.

- All purpose black primer
- Increases adhesion with polyurethane and hybrid adhesive sealants
- Versatile black primer which promotes adhesion to different substrates (metal, glass, plastics, wood and concrete)
- Seals off porosity and prevents plasticizer migration
- Sealing, bonding, windows, windshields, windcreens, glass



## Signage Attachment

### **3M™ VHB™ Tape 5952\***

3M™ VHB™ Tape 5952 is a very conformable, double-sided, pressure-sensitive, closed-cell acrylic foam tape.

- High strength
- Durable
- Clean appearance

\*Product available outside U.S. only

### **3M™ VHB™ CV62F Tape\***

Restricted to Commercial Vehicle Accounts. 3M™ VHB™ CV62F Tape is a conformable foam, multi-purpose acrylic adhesive, gray, thickness 0.062 in. (1.6 mm), red PE film liner.

\*Product available for U.S. use

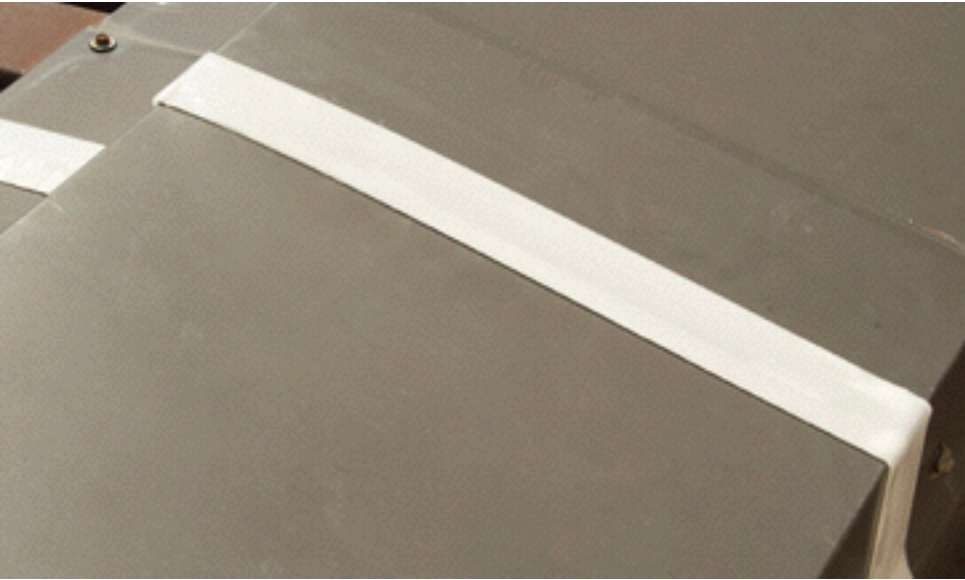
### **3M™ Scotch-Weld™ Epoxy Adhesive DP100NS**

3M™ Scotch-Weld™ Epoxy Adhesive DP100NS is a non-sag, two-part epoxy adhesive. 1:1 mix ratio, 3-5 minute work life and handling strength in approximately 20 minutes. 3M™ Scotch-Weld™ EPX™ Plus II applicator and mix nozzles are required (not included).

- 5-minute work life
- Non-sag
- Translucent
- Bonding, joining, gluing, attaching, assembling, encapsulating, potting and sealing.

### **3M™ Hybrid Adhesive Sealant 760**

3M™ Hybrid Adhesive Sealant 760 is a single-component, high strength elastomeric sealant. This hybrid technology is paintable when wet and will not degrade when exposed to UV. Used for bonding and sealing different materials such as wood, aluminum, most lacquered metals, polyester, glass, etc.



## Exterior Sealing

### **3M™ Extreme Sealing Tape 4411N**

3M™ Extreme Sealing Tape 4411N is a highly conformable, single-side acrylic tape with a high performance ionomer backing that is 1.0 mm thick. This tape creates water-tight seals over numerous substrates. It conforms over contours, rivets and screw heads, and it is paintable providing good durability both indoors and outdoors.

### **3M™ Hybrid Adhesive Sealant 760**

3M™ Hybrid Adhesive Sealant 760 is a single-component, high strength elastomeric sealant. This hybrid technology is paintable when wet and will not degrade when exposed to UV. Used for bonding and sealing different materials such as wood, aluminum, most lacquered metals, polyester, glass, etc.



## Door Assembly

### **3M™ Scotch-Weld™ Toughened Epoxy Adhesive LSB60NS**

3M™ Scotch-Weld™ Toughened Epoxy Adhesive LSB60 is a high performance adhesive that offers outstanding shear and peel adhesion with very high levels of durability. It has a 60-minute work life, a non-sag formula and a 1:1 mix ratio product. Ideal for bulk application through meter mix dispensing equipment.

### **3M™ Fastbond™ Contact Adhesive 30NF**

3M™ Fastbond™ Contact Adhesive 30NF is a water-dispersed, high strength adhesive that has high coverage, immediate bond strength, a long bonding range and good heat resistance. Our adhesive bonds most foamed plastics, plastic laminate, wood, plywood, wood veneer and various other panel substrates.

- Creates a very high strength, high-temperature-resistant bond with up to a 4-hour bonding range
- Adhesive can be applied by spray, brush or roller
- Non-flammable in the wet state
- Color changes from white to clear when dry



## Temporary Surface Protection

### **3M™ Polypropylene Protective Tape 24S56W**

3M™ Polypropylene Protective Tape 24S56W is a white, 2.5 mil polypropylene multi-polymer tape with a medium-tack adhesive system for temporary surface protection. Made in USA. Up to 6-months UV protection with improved fresh paint compatibility. Abrasion-resistant backing to help reduce damage from rail dust and stone chips, and iron filings to help reduce rework.

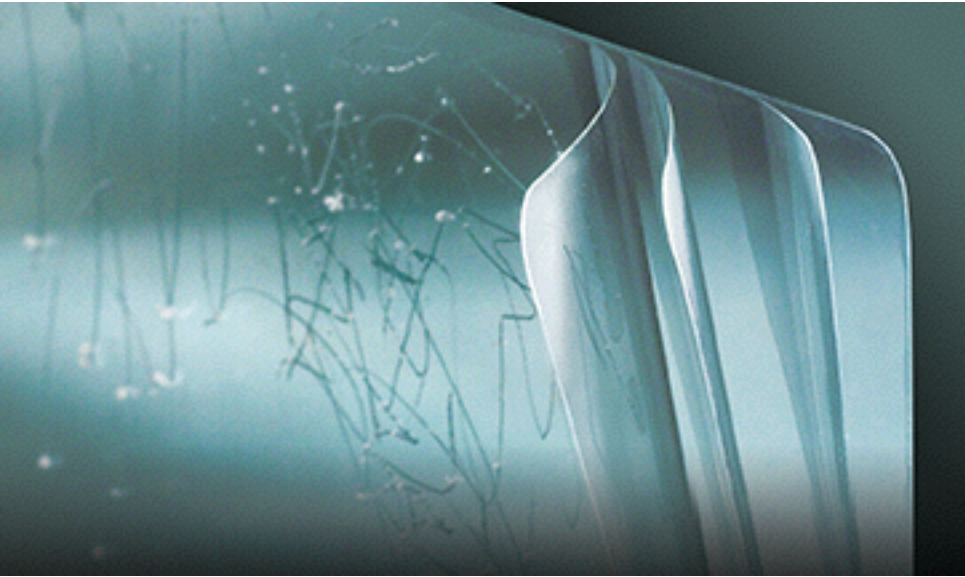


## Removable Panel Attachment

### 3M™ Dual Lock™ Reclosable Fastener SJ3550

3M™ Dual Lock™ Reclosable Fastener SJ3550 is a general purpose acrylic adhesive on the back of a black, polypropylene reclosable fastener. 3M™ Dual Lock™ Reclosable Fastener SJ3550 has 250 stems per square inch with an 0.23 inch engaged thickness. Offers a closure life of 1,000.

- A black fastener with mushroom-shaped stems backed with a white, general purpose acrylic pressure-sensitive adhesive
- Type 250 stem density polyolefin fastener which mates to Type 170, 250 or 400
- Designed to bond to metals, glass and medium to high surface energy plastics and paint
- Attach Doors, Access Panels, Signs, Cushions, Headliners and Display Components

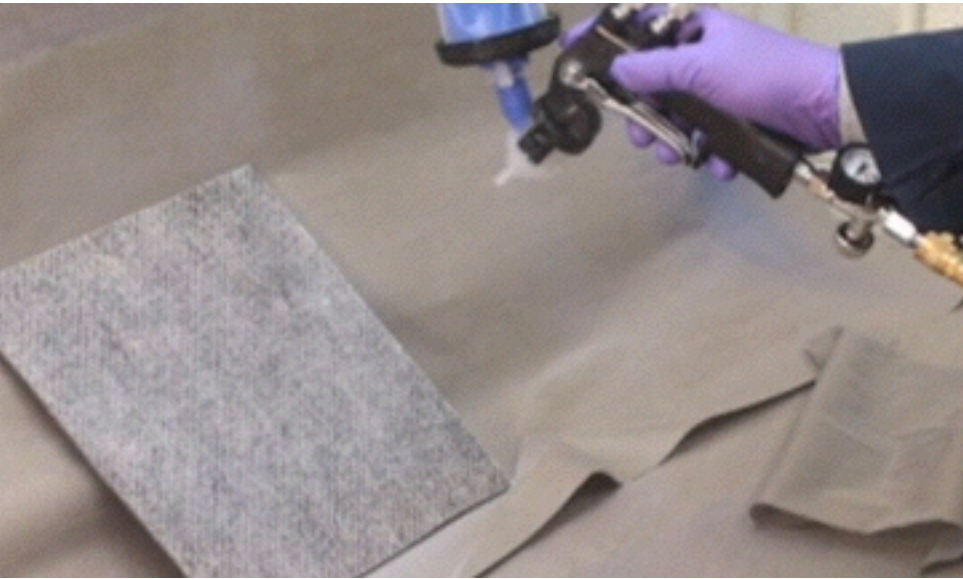


## Window Protection

### **3M™ Scotchgard™ Multi-layer Protective Tape Film 1004**

3M™ Scotchgard™ Multi-layer Protective Tape Film 1004 has four separate layers of optically transparent, pressure-sensitive polyester film tape laminated together to protect surfaces from intentional and unintentional damage caused by scratching, etching, abrasion and graffiti.

- Adhesive system designed to remove cleanly from glass surfaces
- Thick polyester film construction prevents typical scratches from affecting layers below
- Blocks up to 98% of UV light



## Insulation Attachment

### **3M™ Fast Tack Water Based Adhesive 1000NF**

3M™ Fast Tack Water Based Adhesive 1000NF is a one-part, water-based acrylic adhesive. Bonds many porous substrates to porous or nonporous substrates with minimal dry time. Adheres to many types of flexible polyurethane foam, latex foam, fabric, polyester fiberfill, wood, plywood, particleboard, and plastic and metal surfaces. Holds seams and curves while still wet and builds foam-tearing strength when fully dry.

### **3M™ Holdfast 70 Spray Adhesive**

3M™ Holdfast 70 Spray Adhesive is our extremely versatile, fast-tacking, industrial-grade spray adhesive with a unique wide-web spray pattern well suited for bonding a variety of substrates, including polystyrene.

- Creates quick permanent bonds on many substrates, including polystyrene, insulation, foams and fabrics
- Very fast-tacking adhesive bonds almost immediately and has a long bonding range
- Produces a unique heavy-body spray pattern with low soak-in that is ideal for irregular or porous substrates
- Versatile holding power to replace pins and other fasteners

### **3M™ Sprayable Hot Melt Adhesive 6111/6111HT**

3M™ Sprayable Hot Melt Adhesive 6111/6111HT is a sprayable, high-temperature-resistant adhesive.

- Sprayable thermoplastic adhesive with extended open time and very fast set time; bonds large surfaces
- 100% solids; no VOCs; no overspray; environmentally friendly; no spray booth or personal protective equipment required
- Robust formulation offers a high performance bond to a wide variety of substrates; utilize adhesive for many demanding applications, including LSE materials and those that require higher heat resistance.



## Fire Protection

### 3M™ Fire Barrier Sealant CP-25WB+

3M™ Fire Barrier Sealant CP-25WB+ is a high performance, ready-to-use, gun-grade, latex-based, intumescent sealant that dries to form a monolithic firestop seal that also acts as a barrier to airborne sound transmission. Helps control the spread of fire, smoke and noxious gasses before, during and after exposure to a fire when installed in accordance with a listed through-penetration or fire-resistive joint assembly system.



## Interior Sealing

### **3M™ Polyurethane Sealant 540**

3M™ Polyurethane Sealant 540 is a high performance, single-component, moisture-curing polyurethane sealant ideally suited for a number of rail construction applications.

### **3M™ Extreme Sealing Tape 4411N**

3M™ Extreme Sealing Tape 4411N is a highly conformable, single-side acrylic tape with a high performance ionomer backing that is 1.0 mm thick. This tape creates water-tight seals over numerous substrates. It conforms over contours, rivets and screw heads, and it is paintable providing good durability both indoors and outdoors.



## Seam Sealing

### **3M™ Extreme Sealing Tape 4411N**

3M™ Extreme Sealing Tape 4411N is a highly conformable, single-side acrylic tape with a high performance ionomer backing that is 1.0 mm thick. This tape creates water-tight seals over numerous substrates. It conforms over contours, rivets and screw heads, and it is paintable providing good durability both indoors and outdoors.

### **3M™ Polyurethane Sealant 540**

3M™ Polyurethane Sealant 540 is a high performance, single-component, moisture-curing polyurethane sealant ideally suited for a number of construction applications.

**3M™ Scotch-Weld™ Acrylic Adhesive DP8425NS**

3M™ Scotch-Weld™ Acrylic Adhesive DP8425NS is a green, two-part non-sag, toughened MMA-based adhesive. 10:1 mix ratio, 25-minute work life and handling strength in approximately 25 minutes.

- 25-minute work life
- Low odor
- Fast rate of strength build up

**Interior Panel Bonding****3M™ VHB™ Tape 5952\***

3M™ VHB™ Tape 5952 is a very conformable, double-sided, pressure-sensitive, closed-cell acrylic foam tape.

- High strength
- Durable
- Clean appearance

\*Product available outside U.S. only

**3M™ VHB™ CV62F Tape\***

Restricted to Commercial Vehicle Accounts. 3M™ VHB™ CV62F Tape is a conformable foam, multi-purpose acrylic adhesive, gray, thickness 0.062 in. (1.6 mm), red PE film liner.

\*Product available for U.S. use

**3M™ Polyurethane Adhesive Sealant 550 Fast Cure**

3M™ Polyurethane Adhesive Sealant 550 FC is a fast-curing polyurethane designed to seal and bond many substrates in a wide variety of applications. Formulated for use with AC61 45 mL Sausage Packs to obtain handling strength in under one hour.

**3M™ Scotch-Weld™ Toughened Epoxy Adhesive LSB60NS**

3M™ Scotch-Weld™ Toughened Epoxy Adhesive LSB60 is a toughened, two-part epoxy adhesive with a 60-minute work life, 1:1 mix ratio.

- Sixty-minute work life
- Toughened epoxy structural adhesive
- 1:1 mix ratio for easy automated large volume dispensing
- Panel Bonding, Honeycomb Panel Bonding, Transportation Flooring in bus and rail markets, Fire Doors, Elevators, Composite wall panels and floors
- Bonding, joining, sealing, attaching.



## Buzz, Squeak and Rattle Applications

### **3M™ High Tack Acrylic Adhesive 300MP**

3M™ High Tack Acrylic Adhesive 300MP is ideal for applications requiring high adhesion to a wide variety of materials, including many plastics and foams.

- Up to 250°F short-term heat resistance
- Solvent free
- Good cold weather performance

### **3M™ Conformable Sound Management Film Tape 9343**

3M™ Conformable Sound Management Film Tape 9343 contains a unique, non-woven, micro-fiber backing that provides an unusual combination of performance attributes, including conformability, elasticity, compressibility and durability. Excellent for noise reduction in automotive interior areas, such as instrument panels and trim pieces, by isolating offending substrates.

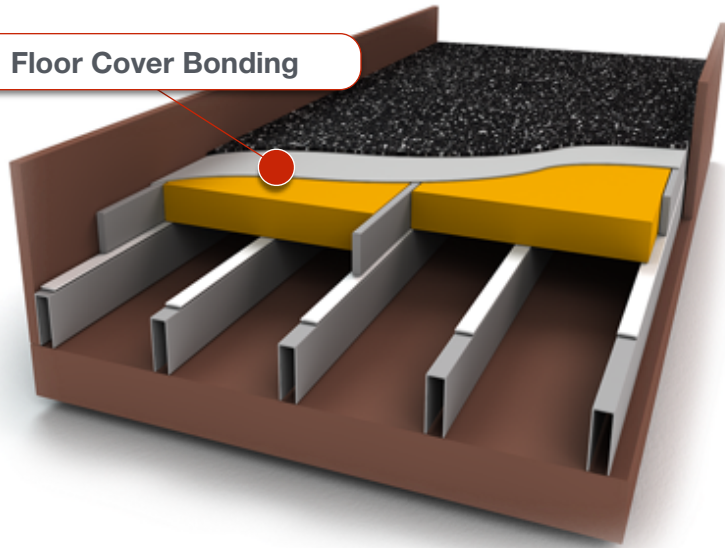
### **3M™ Squeak Reduction Tapes 9324, 9325**

3M™ Squeak Reduction Tapes 9324 and 9325 are used in the automotive industry to help control squeaks and rattles due to vibration or wear of metal and plastic materials. Provides excellent abrasion resistance.

EXTERIOR

INTERIOR

FLOOR SYSTEM INSTALLATION

**3M™ Nitrile Industrial Adhesive 4491**

3M™ Nitrile Adhesive 4491 is a sprayable, fast-drying adhesive with good resistance to plasticizer migration.

- Securely bonds vinyl with resistance to plasticizer migration
- Versatile plastic adhesive
- Excellent environmental resistance

**Floor Cover Bonding****3M™ Scotch-Weld™ Structural Flooring Adhesive 7231 B/A (HV)\***

3M™ Scotch-Weld™ Structural Flooring Adhesive 7231 B/A (HV) is a grey, non-solvent, two-part, room-temperature curing adhesive. Available either in a low or high viscosity for easy application, this structural adhesive also features good green strength.

\*Product available outside U.S. only

**3M™ Scotch-Weld™ Toughened Epoxy Adhesive LSB60**

3M™ Scotch-Weld™ Toughened Epoxy Adhesive LSB60 is a toughened, two-part epoxy adhesive with a 60-minute work life, 1:1 mix ratio.

**3M™ Scotch-Weld™ Toughened Epoxy Adhesive LSB90**

3M™ Scotch-Weld™ Flexible Epoxy Adhesive LSB90 is a flexible, two-part epoxy adhesive with a 90-minute work life, 1:1 mix ratio. 3M™ Scotch-Weld™ EPX™ 400 mL applicator and mix nozzles are required for dispensing (not included).

**3M™ Fastbond™ Contact Adhesive 30NF**

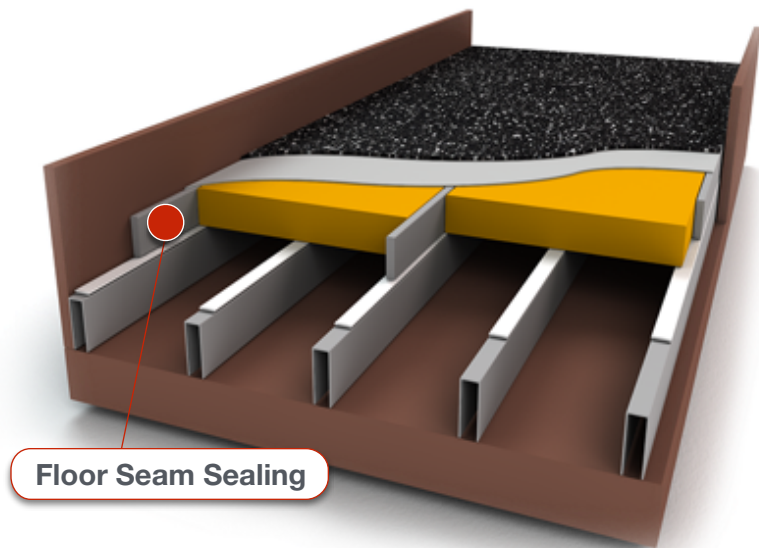
3M™ Fastbond™ Contact Adhesive 30NF is a water-dispersed, high strength adhesive that has high coverage, immediate bond strength, a long bonding range and good heat resistance. Our adhesive bonds most foamed plastics, plastic laminate, wood, plywood, wood veneer and various other panel substrates.

- Creates a very high strength, high-temperature-resistant bond with up to a 4-hour bonding range
- Adhesive can be applied by spray, brush or roller
- Non-flammable in the wet state
- Color changes from white to clear when dry

EXTERIOR

INTERIOR

FLOOR SYSTEM INSTALLATION



## Floor Seam Sealing

### 3M™ Scotch-Weld™ 7240 FR B/A\*

3M™ Scotch-Weld™ 7240 FR B/A epoxy adhesive is a high performance, two-part toughened adhesive. Offers high shear and peel adhesion and outstanding levels of durability. Contains 300 mm glass beads for accurate glue line control. Tested to FAR25 (vertical burn) and meets the 15-second self-extinguishing requirement.

\*Product available outside U.S. only

### 3M™ Polyurethane Adhesive Sealant 550 Fast Cure

3M™ Polyurethane Adhesive Sealant 550 FC is a fast-curing polyurethane designed to seal and bond many substrates in a wide variety of applications. Formulated for use with AC61 45 mL Sausage Packs to obtain handling strength in under one hour.

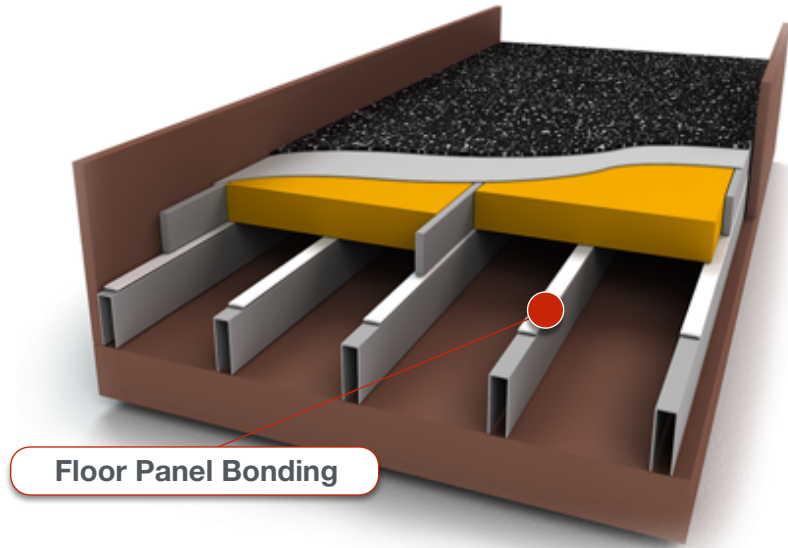
### 3M™ Scotch-Weld™ Urethane Adhesive DP608

3M™ Scotch-Weld™ Urethane Adhesive DP608 is a black, non-sag, two-component polyurethane. This product has a medium cure with a 10-minute work life and low temperature flexibility making it great for bonding and sealing.

EXTERIOR

INTERIOR

FLOOR SYSTEM INSTALLATION



## Floor Panel Bonding

### **3M™ Polyurethane Adhesive Sealant 550 Fast Cure**

3M™ Polyurethane Adhesive Sealant 550 FC is a fast-curing polyurethane designed to seal and bond many substrates in a wide variety of applications. Formulated for use with AC61 45 mL Sausage Packs to obtain handling strength in under one hour.

### **3M™ Polyurethane Adhesive Sealant 560**

3M™ Polyurethane Adhesive Sealant 560 is a very strong one-component, moisture-curing product which forms permanent elastic bonds.

### **3M™ Hybrid Adhesive Sealant 760**

3M™ Hybrid Adhesive Sealant 760 is a single-component, high strength elastomeric sealant. This hybrid technology is paintable when wet and will not degrade when exposed to UV.

### **3M™ Scotch-Weld™ Toughened Epoxy Adhesive LSB60NS**

3M™ Scotch-Weld™ Toughened Epoxy Adhesive LSB60NS is a high performance adhesive that offers outstanding shear and peel adhesion with very high levels of durability. It has a 60-minute work life, a non-sag formula and a 1:1 mix ratio product. Ideal for bulk application through meter mix dispensing equipment.

### **3M™ Scotch-Weld™ Epoxy Adhesive DP490**

3M™ Scotch-Weld™ Epoxy Adhesive DP490 is a black, thixotropic, gap-filling, two-component epoxy adhesive with particularly good application characteristics. It is designed for use where toughness and high strength are required.

# LET'S DESIGN THE FUTURE.

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## 3M Industrial Adhesives and Tapes Division

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