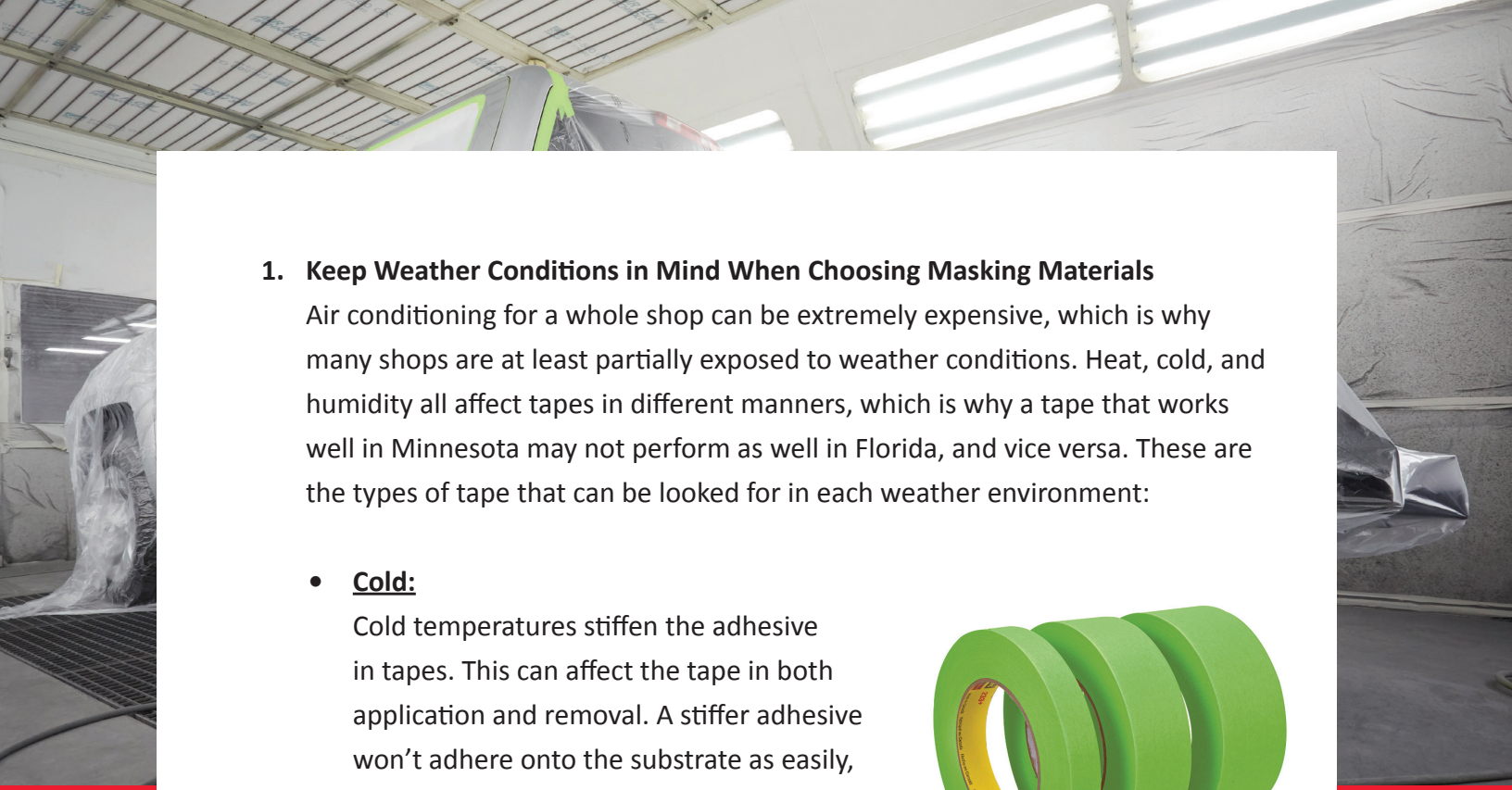
3M Tech Talk:

Make Masking a Priority
for Improved Performance and KPIs

Masking tape has been around for nearly 100 years. In fact, masking tape was invented for the automotive industry in 1925 by 3M inventor Richard Drew when he noticed painters becoming frustrated when the heavy adhesive and butcher paper they were using pulled paint off of their freshly two-toned cars.

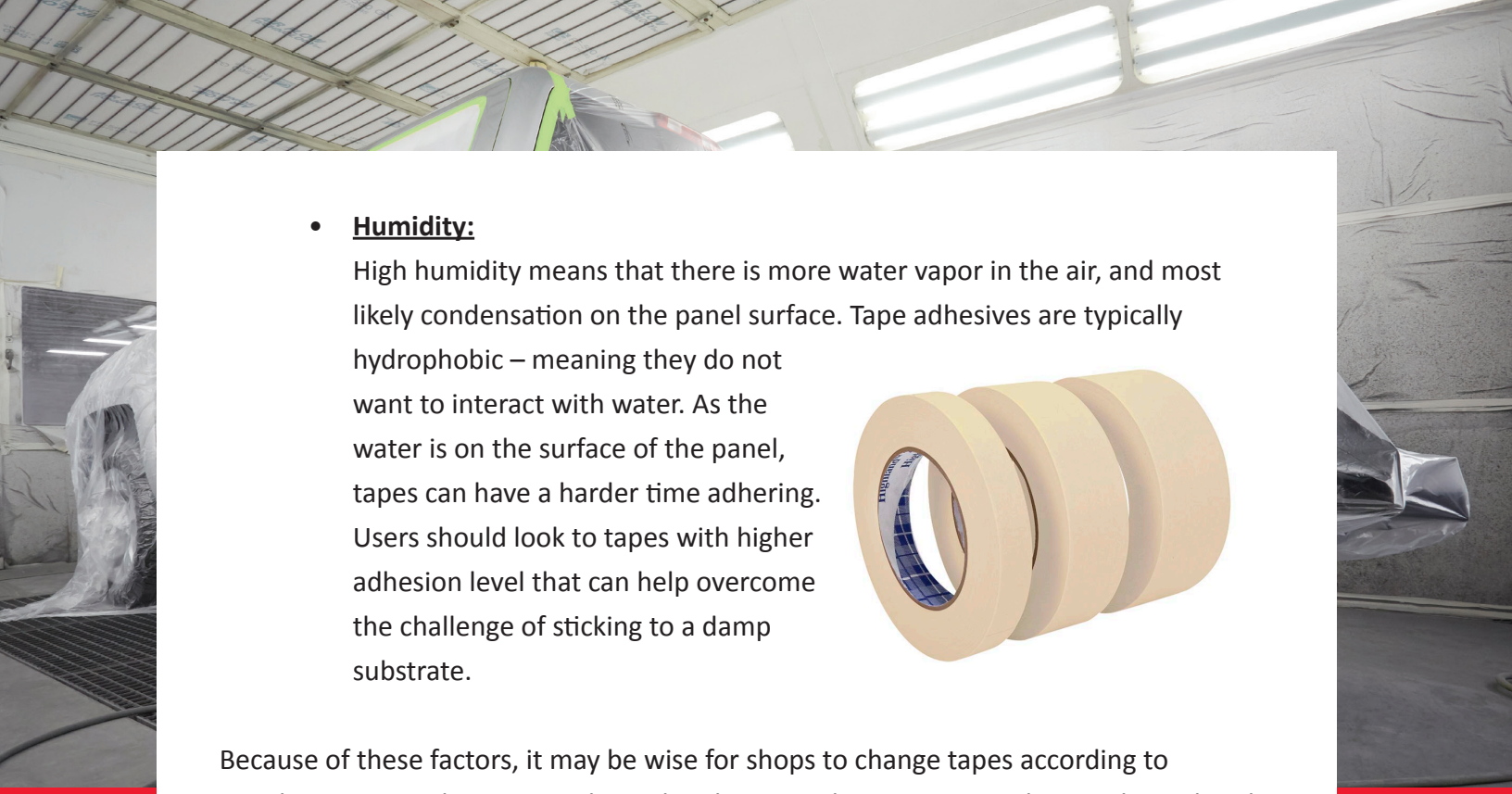
The overall goal of masking is simple: Cover the areas that shouldn't be painted. However, as all technicians know, this is easier said than done. The masking process is one of the most time-consuming and painstaking operations in the repair process. It's also one of the most thankless jobs because when done perfectly, no evidence of masking can be seen and all of the masking products are thrown away. As present body shops are pressed for cost reductions from all areas, some see masking as an area where they can save. This can be a costly mistake. Inadequate masking products can lift from the car, leave adhesive residue, tear multiple times during removal, and more. All of these deficiencies waste time, which is the most valuable asset a body shop has. Quality masking practices can help the masking process go faster and make repairs look better. Here are five recommendations for more efficient masking:



1. **Keep Weather Conditions in Mind When Choosing Masking Materials**
   Air conditioning for a whole shop can be extremely expensive, which is why many shops are at least partially exposed to weather conditions. Heat, cold, and humidity all affect tapes in different manners, which is why a tape that works well in Minnesota may not perform as well in Florida, and vice versa. These are the types of tape that can be looked for in each weather environment:

   - **Cold:**
     Cold temperatures stiffen the adhesive in tapes. This can affect the tape in both application and removal. A stiffer adhesive won't adhere onto the substrate as easily, making it harder to create a bond. Upon removal, a stiffer adhesive will also be more prone to transfer. Shops should use a tape that has a balanced adhesive system here. Tapes with too great of an adhesion can exhibit adhesive transfer.

   - **Heat:**
     Hot temperatures effectively lower adhesion due to a "softening" effect on both backing and adhesive. Cheaper adhesives can be prone to start "creeping" or releasing when pulled around a curve. In addition, the heat makes it easier to stretch the tape backing. When stretching the backing, the user is essentially asking the same amount of adhesive to cover a larger area. When combined, this can cause tape to lift off the substrate. In this environment, shops should look to a tape with a durable backing to prevent unwanted stretch, and an adhesive system with high cohesive strength.

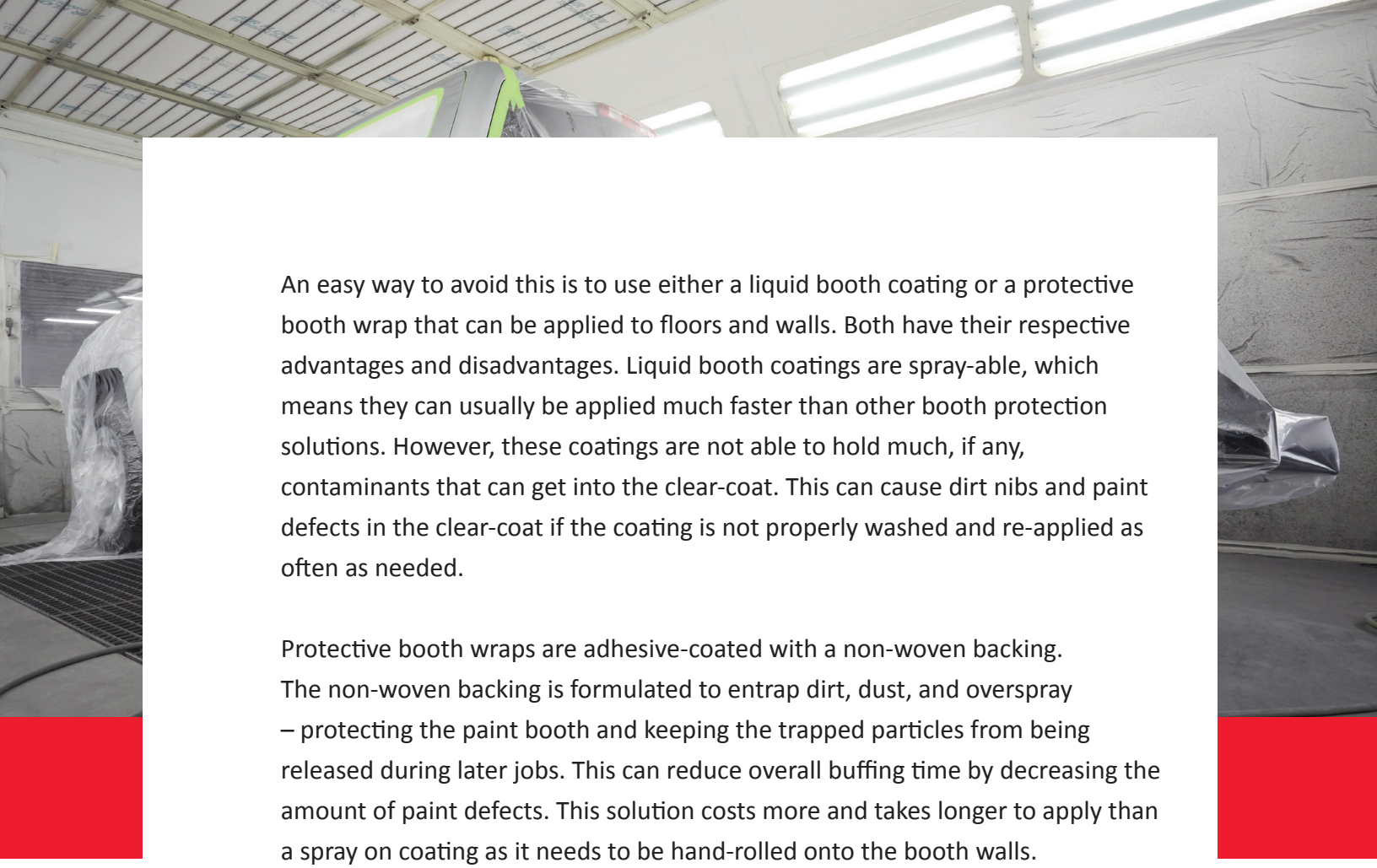


- **Humidity:**
  High humidity means that there is more water vapor in the air, and most likely condensation on the panel surface. Tape adhesives are typically hydrophobic – meaning they do not want to interact with water. As the water is on the surface of the panel, tapes can have a harder time adhering. Users should look to tapes with higher adhesion level that can help overcome the challenge of sticking to a damp substrate.

Because of these factors, it may be wise for shops to change tapes according to weather, just as solvents are adjusted in the paint shop. For example, weather-related tape issues can be adjusted by using one tape for summer and another during the winter.

2. **Clean All Panels With Solvent – and Water-Based Cleaners Prior to Masking**
   Vehicle panels are often littered with contaminants when they come into the shop. Even if a vehicle goes through a prewash before entering the shop, stray dust from sanded body filler or primer, technician fingerprints, and other contaminants can get on the surface again. The only way to remove all contaminants is to clean with both water-based and solvent-based cleaners. Tape will stick to whatever is on the panel surface; so if there are still contaminants, an improper seal will be created. This can lead to overspray or dirt nibs – both of which cause extra time and labor to be corrected.

3. **Keep the Paint Booth Clean – Especially When Force-flashing Basecoats.**
   The dirtier the paint booth, the more likely it is that dust and dirt will get into the base or clear-coats. Force-flashing coats also introduces more convection to the booth, possibly dislodging other contaminants from the booth or vehicle. This causes re-work and costs the shop time and money in the paint finishing department.



An easy way to avoid this is to use either a liquid booth coating or a protective booth wrap that can be applied to floors and walls. Both have their respective advantages and disadvantages. Liquid booth coatings are spray-able, which means they can usually be applied much faster than other booth protection solutions. However, these coatings are not able to hold much, if any, contaminants that can get into the clear-coat. This can cause dirt nibs and paint defects in the clear-coat if the coating is not properly washed and re-applied as often as needed.

Protective booth wraps are adhesive-coated with a non-woven backing. The non-woven backing is formulated to entrap dirt, dust, and overspray – protecting the paint booth and keeping the trapped particles from being released during later jobs. This can reduce overall buffing time by decreasing the amount of paint defects. This solution costs more and takes longer to apply than a spray on coating as it needs to be hand-rolled onto the booth walls.

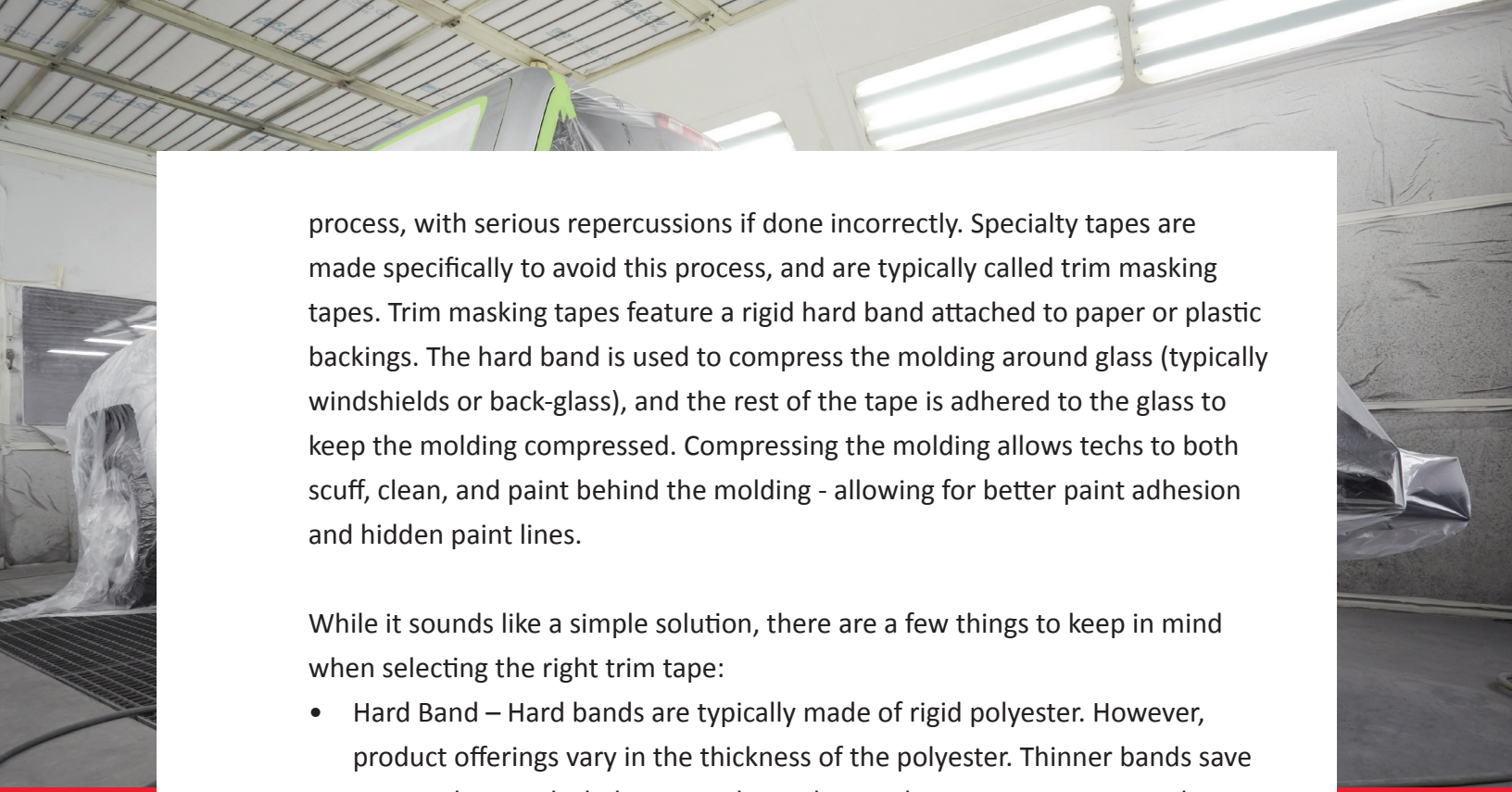
4. **Tape Directly to the Plastic Sheeting**

   For years, materials such as newspaper, tarp, and raw plastic sheeting were used to cover the car. While they all (for the most part) protected unpainted areas from overspray, they also introduced other contaminants to the paint job. Paint would also flake off the untreated sheeting and into the fresh paint job, causing re-work. This failure forced technicians to alter their processes to use 6 or 12 inch masking paper around the job in addition to plastic sheeting.

   However, most premium automotive plastic sheeting offerings do not have this problem. These sheetings go through a chemical process called a corona treatment. The corona treatment changes the surface chemistry of raw plastic, allowing the paint to adhere to the plastic sheeting and not flake. Taping directly to the plastic sheeting can save time and material when compared to using the outdated combination of paper and sheeting.

5. **Use Trim Masking Tape to Save Time and Money**

   Removing and re-installing glass on vehicles can be a messy and time-consuming



process, with serious repercussions if done incorrectly. Specialty tapes are made specifically to avoid this process, and are typically called trim masking tapes. Trim masking tapes feature a rigid hard band attached to paper or plastic backings. The hard band is used to compress the molding around glass (typically windshields or back-glass), and the rest of the tape is adhered to the glass to keep the molding compressed. Compressing the molding allows techs to both scuff, clean, and paint behind the molding - allowing for better paint adhesion and hidden paint lines.

While it sounds like a simple solution, there are a few things to keep in mind when selecting the right trim tape:

- Hard Band – Hard bands are typically made of rigid polyester. However, product offerings vary in the thickness of the polyester. Thinner bands save on cost, but can lack the strength to adequately compress many tough moldings.
- Backing – There are both paper and plastic-backed options. Plastic offerings are typically stronger than paper backings, able to hold back compressed moldings over time without tearing. The downside of plastic backings used to be that had to be cut-to-size, but there are hand-tearable plastic offerings now.
- Adhesive – Lower adhesion tapes do not usually require an adhesive liner, so can be applied quicker than trim tape offerings that feature a liner. However, strong adhesives are needed to hold compressed moldings down, so it may be worth the extra couple seconds it takes to use products with liners.

With all that goes into a proper masking job, it's easy to see why the best practice is to always match the right product with the situation. Rather than just thinking of masking tape and sheeting, think of these options as a "masking toolbox". Doing so will help achieve a great finish, while saving time and money.

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