



3M Tech Talk:

Get the Most from Your Abrasives

As the inventor of 3M™ Wetordry™ sandpaper and masking tape for the automotive industry nearly a century ago, 3M today is recognized in the collision repair industry as a leading manufacturer that brings innovative solutions to our customers around the globe. Leveraging proprietary technology platforms and knowledge of customer applications, 3M is able to develop differentiated solutions to customers' needs. The 3M Application Engineers in 3M's Automotive Aftermarket Division (AAD) visit collision repair shops all around the world, demonstrating new products and working with people in the collision repair industry with a wide range of processes and skill sets. Following are 3M's key learnings on how to get the most from abrasives in the body repair process.

It all starts with the tool. Given that 6" discs are the most prevalent abrasive in the U.S. collision repair market, let's focus on the use of random orbital sanders (ROS). There are many things to consider: tool orbit, backup pad, tool speed, down pressure, and approach angle that all lead to success in the hands of a technician. We start with two basic principles for selecting the correct ROS orbit in body shops: 5/16" (8 mm) with a firm backup

Quick Tips for Abrasive Performance

1. It starts with the right random orbital sander, orbit and pad.
2. Correct sanding speed and angle are critical.
3. Review best practices for dent repair finishing and blend panel prep.
4. Focus on hand-sanding first before machine sanding.
5. Choose the best abrasive for the job – 3M offers a wide range of solutions for every application.

pad for the body department and 3/16" (5 mm) with a soft backup pad/interface pad combo for the paint department will maximize value realization of 3M abrasives while reducing risk of burn-through in the paint shop with 3/16" tools. The use of 3/32" orbits is no longer advised due to the negative impacts it can have on your abrasive performance, as low tool orbit contributes to low cutting power.

Secondly, 3M recommends technicians use a controllable medium tool speed with reasonable down force and low approach angle to the substrate. Sanding with a high angle can lead to difficulties creating flat surfaces while also contributing to the premature wear of an abrasive which translates to high consumption rates. To ensure technicians are using proper settings and techniques, we use a visual training aid seen in Figure 1. Draw 2-3 lines on the backup pad with a permanent marker: if the operator is using too high a speed or not enough down force, the lines will be difficult to see and will track around the tool quickly like old-fashioned sanders locked into a grinding mode. This will lead to abrasives wearing prematurely and burn-through along the panel edge. When tool speed and down force are set appropriately, it allows the ROS to engage in its sanding pattern and you'll see the lines tracking slowly around the pad. The tool will be doing more orbiting than rotating. This will lead to more effective sanding, longevity in abrasive life, enhanced control, and improved surface finish.



Figure 1

Now that proper sander selection and use are addressed, let's review the best practices for dent repair finishing and blend panel prep. Technicians in the paint shop often say their two concerns are inline scratches from incomplete featheredge and burn-through on blend panels from novice preppers. For the body man, it is of paramount importance to the final quality of the repair that they properly featheredge any damage repairs in an appropriate grade to remove all inline scratches before sending the vehicle to the paint department. Inline scratches are the #1 cause of what is called "repair

mapping”, which is the ability to see the repaired area post-delivery of vehicle. See Figures 1 and 2 below. Proper feather-edging would remove these inline scratches and produce a repair of significantly higher quality, leading to improved CSI, body shop reputation and customer satisfaction.

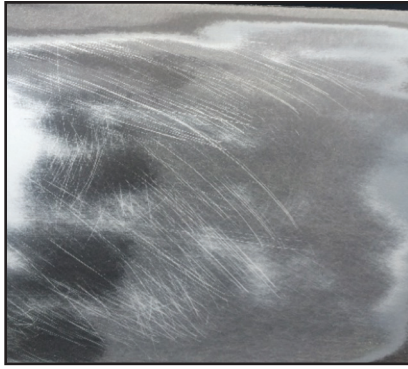


Figure 1



Figure 2

Now, for the prepper, the last thing they want to do is extend the size of the repair area as a result of being a little too aggressive with the sander and burning through the panel edge. So, 3M's recommendation is to start with prepper's hand-sanding techniques. Frequently, technicians sand the panel with a ROS first, then come back by hand to sand the “picture frame” around panel edges and hard-to-reach areas. Instead, 3M recommends taking a Scotch-Brite™ pad, flexible abrasive sheet, or whatever product is preferred for use on blends and start with this on the next job. Anticipate and sand the hard-to-reach areas and panel edges completely to remove the sheen prior to sanding the larger areas by machine. This will allow the prepper to get a proper preparation of the edges and hard-to-reach areas without burning through, and it will also allow them to remove adjacent inline scratches from the larger panel surface by finishing with the ROS.

Hopefully these tips are something shops can employ to drive improved quality of repair and CSI for their facility. Please contact the local 3M Collision Repair Specialist, visit www.3Mcollision.com or use the **3M Collision mobile app** for iPhone and Android to find additional information regarding 3M abrasives, power tools, best practices, or Standard Operating Procedures.

*Written by: Branden Loesch, Application Engineering Specialist
3M Automotive Aftermarket Division*

