

# TECHNICALLY SPEAKING

Issue 42



## Proper Repair of Self Sealing Passenger Tires



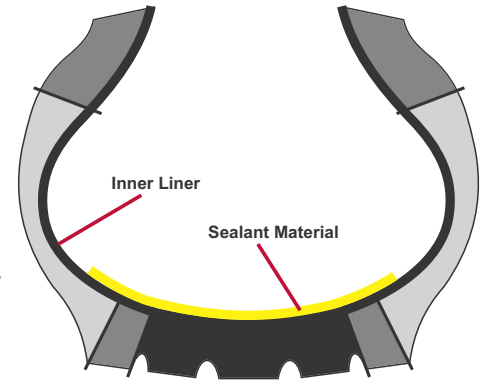
# Self-Sealing Tire Construction

Self-Sealing passenger tires are becoming more popular, and like any other tire, these tires can become damaged and require a repair.

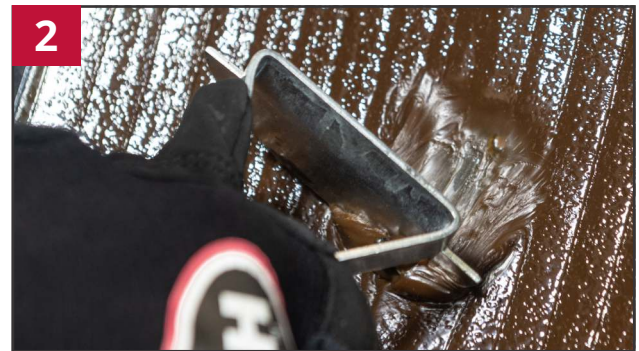
Self-Sealing tires contain a layer of tire sealant built on top of the inner liner, which is advertised as being able to fill injuries up to ¼" (6mm) in order to keep the vehicle in motion. However, this sealant is not a permanent, tire industry compliant tire repair solution, therefore they must be properly repaired when an injury is discovered.

There are multiple ways that the sealant may be applied to the inner liner, depending on the manufacturer of the tire. With some brands of self sealing tires, the repair can be placed directly on top of the sealant, if tacky. With these brands of tires, the sealant can typically be scraped away if it has lost its tack with the repair placed onto the inner liner. Other brands will have a film on them that will need to be removed to expose the tacky sealant underneath. The repair will then be placed on the sealant with these tires.

The following is a guide for proper repair of Self-Sealing passenger tires.



Locate and mark the injury on the outside of the tire. Insert a probe into the injury from the outside of the tire to determine the location of the injury on the inside of the tire.



If possible, use a scraper to move the sealant material away from the injury. This will prevent contamination of the carbide cutter.



Determine the size and angle of the injury using the TRT105 injury measuring tool. If the injury exceeds 35° or ¼" (6mm) in size, **DO NOT** repair the tire.

- Green band** = 1/8" (3mm) injury – Use a 249W Uni-Seal Ultra repair
- Yellow band** = ¼" (6mm) injury – Use a 250UL Uni-Seal Ultra repair
- IF THE TOOL MOVES INTO THE INJURY BEYOND THE YELLOW BAND OF THE TECH TRT105, THE TIRE MUST NOT BE REPAIRED.**



Damaged rubber and steel should be removed from the injury using a proper size carbide cutter on a low speed air/electric drill, maximum 1,200 rpm. Drill the injury from the inside of the tire 3 to 5 times, followed by 3 to 5 times from the outside.

**NOTE:** The carbide cutter must be cleaned with a wire brush after use on a Self-Sealing tire. This will prevent contamination of future tire repairs.





If the sealant layer is tacky, the repair can be placed directly onto the sealant, and proceed to step 8. If the Sealant has lost its tack, then scrape the sealant away from the injury, creating an area on the inner liner slightly larger than the Uni-Seal repair.

If the Sealant has a protective layer on top of it, as does the Pirelli Seal Inside, then this protective film must be removed to expose the tacky sealant underneath. Use a hand held, soft wire brush to remove this film and expose an area of the sealant slightly larger than the repair Uni-Seal Repair.



Apply TECH Chemical Vulcanizing Fluid #760 into the injury 3-5 times using a Tech #910 or #915 Cement Tool.



If the sealant was removed from the inner liner, apply a very thin, even coat of TECH Chemical Vulcanizing Fluid to the exposed inner liner and allow to dry for 3-5 minutes. Allow additional drying time in cold and/or humid weather conditions.



Remove the blue poly from the stem and the cap of the Uni-Seal without touching the gray cushion gum. Reposition the poly onto the cap to prevent contamination of the gray gum.



Apply a small amount of vulcanizing fluid to the black tapered portion of the repair. Push the lead wire through the prepared hole in the tire.



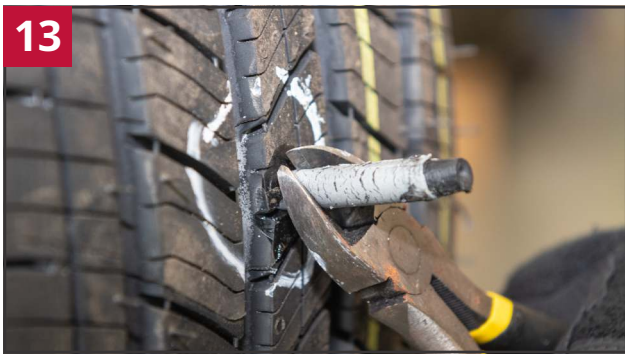
Grasp the lead wire on the outside of the tire and pull the repair with even pressure through the tire until the cap forms a slight indentation. Do not over pull.



Stitch the repair from the center out. Remove the blue poly and stitch in the opposite direction.



If the Sealant was scraped away from the injury, use a scraper to spread the material back over the repair unit.



Cut the stem off on the outside of the tire approximately 1/8" (3mm) above the tread surface. If the injury is in the tread groove, the stem can be cut off flush to the tread surface. The tire is now ready to return to service.



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