

Tire plug repair: a lawyer's wet dream

Update: Lawyers have recently been extremely successful in suing shops that have installed tire plugs, manufacturers of tire plugs, and even individual mechanics that have repaired tires that later failed. It's my understanding that in one case it wasn't even been entirely clear that the tire was the cause of the accident. Simply finding a plug in a flat tire on a crumpled car was enough to win. The joking lawsuit fantasy I wrote mid-article has now become a reality (although the lawyers have probably upgraded their plasma TVs).

We have stopped plugging tires as a result, and only offer a plug/patch combination now.

*To plug, or not to plug: that is the question:
Whether it 'tis nobler in the mind to suffer
The slings and arrows of outraged industry peers,
Or to leave unplug'd the tires I see troubled.
And by opposing them? To save PSI: To end seep.*

Yeah. You're probably right. I should stick to my day job and leave butchering Shakespeare to the pros. The point of this bad bit of poetry was to illustrate that installing tire plugs is a controversial procedure. Ask 10 mechanics whether it's OK to use a tire plug to repair a nail hole in the tread of your tire and you are likely to 10 different answers, some of them will be shouted at you as if you were the stupidest person in the world.

"Yes, I do it all the time"

"No, plugs should never be used"

"Yes, if the nail isn't near the sidewall"

"No, plugs are only for temporary emergency repairs"

"Yes, if you remove the tire from the rim to inspect for damage"

"No, you can only use a plug in conjunction with a patch"

"Yes, if the nail hole is near perpendicular to the tread"

"No, only integral plug patches can be used"

"Yes, as long you can pay cash and don't need a receipt"

"No, we only use a patch/plug combo"

Let me start this article by saying, I'm going to give you the "wrong" answer. How could it not be since mechanic "A" doesn't agree with mechanic "B" who doesn't agree with tire manufacturer "A" who doesn't agree with tire manufacturer "B" who doesn't agree with the company who makes one type of patch kit, who doesn't agree with the company makes another type of patch kit, who doesn't agree with the company who makes tire plugs. No matter what my answer, someone will surely strongly disagree.

The the answer to the question of whether tire plugs are an acceptable repair is certainly more objective than the statement "Blue is a pretty color," but less objective than a fact: "Water boils at 212F at sea level." The most credible sources don't like the tire plug as a stand alone repair, especially if the tire is not removed from the rim for inspection. If you are the type who wants

the best quality repair, regardless of cost, I'm convinced that the integral plug-patches are the *best* repair option. If that's you, well, congratulations on your financial success, and I'd be more than happy to install a costly plug-patch and help you redistribute some of your wealth (into my pocket). But what about the customer who's struggling to make ends meet, or would rather spend money on their kid's piano lessons than on the very best tire repair? Should we tell them about how professional we are and how we don't do nonstandard repairs, and how their tire could lose pressure and crash killing their whole family (failing to mention, of course, that they could run over a nail on their way out the driveway after getting an expensive patch repair, and that it's extremely unlikely a tire leak will result in their death, or any other adverse outcome other than a flat tire)? Should we worry so much about the ever-so-faint possibility of a lawsuit that we refuse to do tire plugs for customers, even though every mechanic working here has used tire plugs on their own cars? I'd rather leave the scare tactics and stonewalling to the professionals out there. We just want to fix cars as a means of supporting ourselves.

Before we knew better, we pulled nails from tires and installed tire plugs from the outside of the tread in, without removing the tire from the rim. Now that we know better, we do the exact same thing several times per day. Why? Because after many years of installing tire plugs on whole wheel assemblies, and 99 out of 100 working perfectly, we're pretty confident tire plugs will make a good permanent repair for certain types of punctures. At one point my wife's car had 5 tire plugs in its 4 tires, all installed from the outside in, without removing the tire from the rim, and yes, I do love her, and no, none of the plugs ever failed.

The Rubber Manufacturers Association states that a tire driven low on pressure (as a tire likely might have been if it had a nail hole) can develop damage to the carcass that can not be detected and could cause rapid air loss (a blowout). But they're not talking about a tire with a hole, they're talking about a tire that is just low on air! If we took that statement to the extreme, how would the "professional" mechanic handle a low tire? Mechanic: "Ms. Smith, we found one of your tires was low on pressure". Ms. Smith: " Oh. Thanks. Did you fill it up?" Mechanic: " Why no, that would be unprofessional! We replaced it. We wouldn't want invisible carcass damage to cause a blow out!" Silly isn't it? I'm not trying to say the RMA is wrong. They no doubt know more about tires than I ever will. I just want to temper their recommendations with a little personal experience and common sense. The RMA also says 88% of the tire repairs they found when examining used tires were "improperly done". We may be doing tire repairs wrong, but so is the majority of the industry, whether they are aware of it or not.

Let's face it — sometimes tires go flat! Sometimes it's because a repair didn't work. Sometimes it's because the tire was under-inflated Sometimes it's because the tire was overloaded. Sometimes it's because there was something sharp on the road and you drove over it. Does it really matter why? If you get a flat, are you going to install the spare and continue on with your commute? Or do you have the fantasy of hiring a company that does failure analysis and a team of lawyers to avenge your lateness to work and grease smudged shirt? Yeah, that's it. I can see it in my minds eye.... It's like an episode of CSI, your team of beautiful lawyers will argue the improper repair caused the low pressure that caused the structural failure that caused the blowout, against another team of lawyers that will argue the improper repair was holding and the carcass damage from the low pressure was caused by the driving done with low pressure caused by the original injury before the repair. All this will take place in a courtroom full of plasma TVs

running 3D computer animations in slow motion. Your lawyers will no doubt be better looking and your plasma TVs will be bigger, so you'll win and receive one zillion dollars and buy your own island. Back to reality. If you want an improper repair with a 99% success rate, get a plug. If you're the unlucky 100th customer, I'll give your \$12 back and you buy yourself a consolation lunch while we fix it again.

Now that I've lured you to the dark side, I should say that there are times a tire plug is a poor repair choice.

If a tire has been driven low on pressure for long enough, it may be damaged, and should not be plugged, patched, or repaired in any way. How do you tell if the tire was damaged from driving low on pressure? Some sources say to check for rubber powder inside the tire. If you find it, the tire needs to be replaced. Obviously you'd have to remove the tire from the rim to do that. Instead, we usually just look at the sidewall for wear where there ought to be none. If the lettering or sidewall design is worn down, we recommend a new tire instead of repair. We also digitally inspect the sidewall (fingers, not computers) with the tire deflated, to see if there are any abnormal soft spots. We feel this is all that needs to be done before repair.

If the puncture is on the sidewall, we feel it should not be repaired using a patch or plug or both. This is one of those rules repeated by many in the tire industry. Why do we choose to obey this rule while flouting the "never repair a tire on the rim" rule? We'll, I suppose it intuitively makes sense that a patch or plug on a continually flexing sidewall will fail.

If the puncture is caused by anything other than a nail or screw, plugging is not a good option.

If the nail or screw did not go in fairly close to perpendicular to the tread, the chances of the plug failing to seal go way up. It's better to patch this type of injury.

If the tire is a performance tire and the driver pushes it (hopefully on a track rather than around my neighborhood), it's probably better to use a plug patch or buy a whole tire. Many tire manufacturers say **any** type of repair will void the speed rating on the tire.

If the tire has a hole larger than 1/4", it probably should not be repaired with a plug or any other method.

Other than these exceptions, we're gonna keep on plugging away. *

**See update. No plug-only repairs available at Art's*