

A complete list of frequently asked questions about polyurethane (poly) bushings

Frequently Asked Questions about Polyurethane:

What is Polyurethane?

Polyurethane is a term used to describe a wide ranging family of elastomers (any compound exhibiting the characteristics of natural rubber; stretchy and elastic.). Poly meaning "many" and "urethane" the classification of the chemical structure. Polyurethane or urethane for short, is used as a solid cast material (bushings). Polyurethane can be as soft as a rubber band or as hard as plastic.

Is there a benefit over rubber?

Many advantages can be found over rubber. Depending on the formulation, urethane has a higher load-bearing capacity, greater tear strength, better compression set, greater abrasion resistance, tolerant to greases, oils and ozone and allows for more unique designs.

What's the difference between rubber and urethane?

Rubber is the sap of trees found mostly in tropical climates. The sap is altered by mixtures of carbon (why it's black) and mineral oils and various fillers. Polyurethane is completely chemical or man-made. Because rubber is a biodegradable product it is affected by ozone and will over time dry rot and degrade, while urethane will keep going and going.

How are urethanes rated?

There are approximately 20 categories in which urethanes are rated based on physical properties. The most common is hardness. Others include: abrasion resistance; compression set; tensile strength; tear strength; etc.

How are bushings manufactured?

Most all urethane bushings and mounts are manufactured from a two part liquid cast system. It basically constitutes a polyol or prepolymer and a curative. Much like epoxy, when the two are mixed together, they begin to harden and form a solid material. This mixture is poured into molds where it forms the bushing, mount or pad when it turns a hard solid. Other ways include injection of melted urethane pellets. This is accomplished much like plastic injection molding where the pellets are melted and forced through a small opening into a closed mold cavity. Another way is to cast a solid round bar and then machine it to the desired shape.

Is there a difference between colors?

No. In most cases the color of the part has no relation to the hardness or other physical characteristic. The pigment used to color our urethane components is a paste-like product that is mixed into the urethane in quantities of about 2-4%. You have your choice between red or black colors.

Does urethane squeak?

In a word, no. Squeaking is caused by high frequency vibrations that can be heard rather than felt. It is usually caused by lack of lubrication, poor installation, incorrect part, urethane that may be too hard for the application. In sway bar mount applications, most squeaking comes from not cleaning the sway bar prior to installing the bushings and not using our "squeak proof" grease! Additionally, all our dynamic application bushings feature grooves or splines to hold in our waterproof, highly adhesive, high temperature and pressure grease.

Does urethane ride really hard (harsh)?

The original rubber bushing or mount was fairly soft which helped to attenuate noise and vibration that is generated by the tires and road surface. Increasing the hardness of the bushing either with harder rubber, urethane or even bronze, will allow more transmission of noise and vibration. Some manufacturers formulate the hardness and design to reduce this effect. A softer urethane bushing allows the vehicle to perform better without the harshness, even over the same hardness rubber piece.

Are all urethane bushings the same? Same material, same hardness?

No, no and no. Each manufacturer has their own idea as to the best way a bushing should be designed. We select materials based on physical performance and choose the right hardness for each application.

Can urethane be used for all types of vehicles?

Urethane can be formulated for anything from an MG to a Cadillac to a rough and ready 4X4 or lowered Honda street car.

Do I need special tools to install?

No. Installing urethane components requires no special tools. However, if unique tools and equipment are required due to the type of vehicle, you will need them in order to do a correct job.

Will I need to reuse my metal shells?

We have a complete shell program for most popular applications. Many of our control arm bushing kits come complete with a new shell. On some applications you will need to reuse the metal shell, so be very careful when removing it from the vehicle. The shells themselves are not a replacement item. If you do damage a shell during the removal procedure, you have a few choices: Obtain a used piece from a repair shop or salvage yard or purchase a new shell with rubber bushings from your local parts store.

<https://www.spohn.net/support/questions/56/>