

Epoxy DP-190 Gray

3M Scotch-Weld Epoxy Adhesive DP190-Gray is a two-part epoxy adhesive used for metals, ceramics, wood, fiberboard, glass, rubber and plastics.

Characteristics:

The **work life** of the Epoxy is 90 minutes. Then, the surfaces need to be ready to joint.

Maximum Temperature: 300 °F (Avoid heat guns or any sudden increase in the temperature).

Cured time: 7 days at 72 °F (room temperature) or 24 hours at 72 °F and 2 hours in the oven at 200 °F.

The data sheet is [here](#).



In the lab, we have used Epoxy DP-190 for:

Stainless Steel-Aluminum

Aluminum-Aluminum

Teflon-Brass

And, they have been tested under vacuum and at Liquid Nitrogen temperature.

Do not use for Stainless Steel - Stainless steel, it won't survive to the cryogenic temperatures.

What do you need?

- Epoxy adhesive DP-190 Gray.
- Dispensing gun
- Mixer Nozzles for Dual Cartridges with Bayonet Connection
- Alcohol
- Acetone
- Sand Paper (100 - 150 grit)
- Wipers
- Gloves

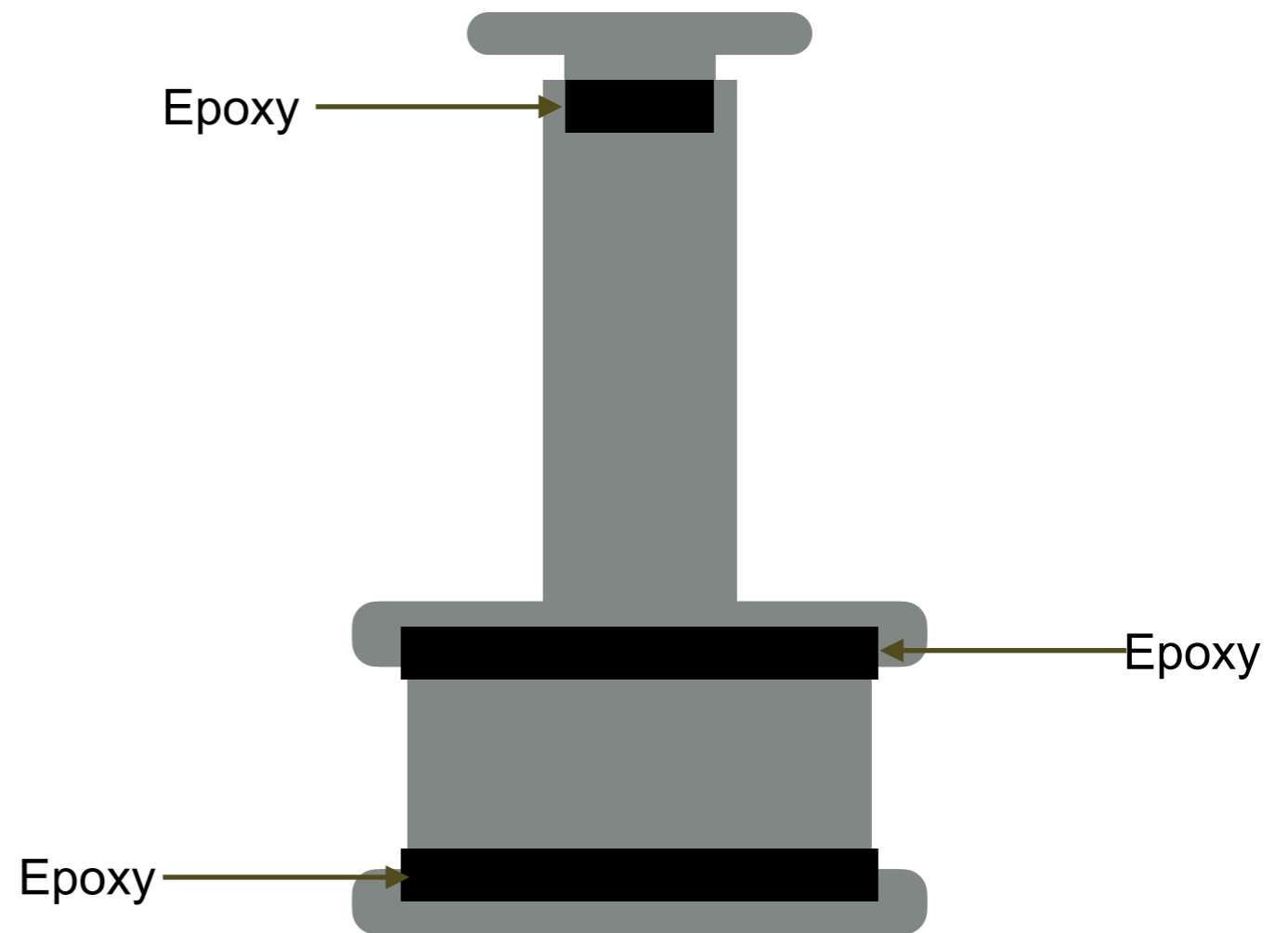


Joints surface area

The surface area of the joints play a big role in the quality of the Epoxy performance. it will not support the shear stress if is not good enough. Hence, it is necessary to calculate them before to epoxy any material.

The user guide may help you to design your joint:

- [User Guide to Adhesives](#)



Use of epoxy

1. Clean the surfaces with acetone and alcohol and let it to dry.
2. Sand the surfaces S/C W/P Paper 150 grit.
3. Clean again all the residues.
4. Put epoxy in both surfaces and spread with a steak or some tool. For Aluminum use sand wet paper 280 Blue-Bak Waterproof Paper T414 (Mixing the epoxy with the aluminum for better absorption).
5. When putting avoid any air or material between the joints. If they are circular as the vessels slowly rotate to the desired position.
6. Clean the excess of epoxy with a cotton swab.

Take into account....

- Calculate the surface area necessary for the joint.
- The work time of the epoxy is 90 minutes. For a big surface two people could be necessary.
- The time for the epoxy to dry can be accelerated with an oven. But, it is not necessary if you can wait one week.
- The distance between one surface and the other need to be from 5 to 10 thousands of an inch.
- Be careful using epoxy with different materials. For example, the aluminum shrinks more than the SST.



How to remove epoxy?

They are very hard to remove, but you can try to make a big change of temperature. For example, put the sample in liquid nitrogen and then use the heat gun to heat it up, or heat it up above 400°F for a couple of hours.

Excess uncured adhesive can be cleaned up with ketone type solvents. (This has not been checked)

