



Application Tips and Frequently Asked Questions

Application Tips

1. Clean surface with sandpaper.
 - Stress the importance of cleaning the surface. Repairs done without surface preparation are likely to fail under pressure.
2. Apply a dab of resin to an appropriate sized piece of Applicator Tab.
 - The Applicator Tab allows you to force the resin onto the surface. This is particularly important when doing repairs on wet surfaces.
 - Applicator Tabs are a clear Teflon-type material that the resin does not stick to. It is not an overhead transparency or “just any clear plastic”.



Correct Method:
Use index finger and thumb to control dispensing plunger.



Incorrect Method:
Will cause excess amount of resin to be dispensed.

3. Place the Applicator Tab with resin over the hole. Gently press and hold in place.
4. Shine the LED light directly on the resin for 30 seconds.
 - Shining the light on the resin longer than 30 seconds will further cure the resin.
 - The intensity of the Blue Light is what cures the resin. The farther the light is from the repair, the longer it will take to cure the resin.
5. Remove the re-usable Tab. Lightly sand edges of the repaired area until smooth and flush with surface.
 - Sanding the cured resin so that you feather the edges of the repair is an effective way to minimize someone tampering (mechanically peeling) the resin from the repaired area.



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Tips for Underwater Repair:

1. Apply a liberal amount of resin on the Applicator Tab. Resin should be in a mound.
2. When applying the Tab with resin onto the pipe, roll the Tab onto the surface. Do not push straight down.
 - This motion will allow the resin to flow across the bond line, pushing the water away and leaving resin in place of the water.
 - Physically hold the Tab in place during the Blue Light cure process.

For Larger Repairs:

1. Cure the resin in a specific area by holding the light in place as close as possible to the surface. Leave the light in this position for 30 seconds, then move to the adjacent area and repeat. Perform these sequential curing steps until the total area is complete.

Technology Background:

The technology was developed based on Department of Defense funded research related to rapid underwater attachment. The research goal was to identify technology that would allow divers to apply hangers for attaching things underwater to various objects – fast. We have modified the chemistry and developed accessories that make this research valuable and relevant to the industrial market. It is a tool for the harsh, time critical applications that are typically faced out in the field.

Frequently Asked Questions:

1. Is this what my dentist uses?

NSR resins utilize a similar chemistry/technology. The dental industry has been using light activated materials for years as a way to set crowns in people's mouth (a wet environment where rapid, cure-on-command function is important). North Sea Resins products are **not** intended for dental or health related uses. **North Sea Resins products are for industrial uses and are not approved for medical/dental applications.** See Question #13 regarding NSR as an approved product for Drinking Water lines.

2. Is this UV light?

No, this is Blue light in the visible spectrum. There is no need for protective eyewear or any concern about adverse skin effects typically associated with UV light sources.

3. How do I open the syringe?

Twist the cap on and off. Do not cut the tip.



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4. Once I open the syringe, do I have to use all the resin?

The Luer-lock tip allows for multiple uses of the resin.

5. What if the tip becomes clogged?

If the syringe is left out in bright sunlight, or in room light for an extended period of time with the cap off, the tip may become closed. Scrap the cured resin off the tip, and the resin is fine to use. Use a drill to clean out the tip if the resin cures to a depth you cannot scrape off.

6. Do I have to use the Applicator Tab?

Applicator Tabs are not an essential step, although on flat surfaces, they make the repair cleaner and stronger. For joints, elbows and irregular surfaces, the tab may not be effective. If the tab does not lie flat along the surface it may not be a benefit to use. Cutting smaller, thinner tabs can increase their effectiveness on joints, threads, and seams.

7. When I do not use the Applicator Tab the resin does not cure all the way.

Without the Tab, the cured resin will have a slightly tacky/greasy residue. The resin is cured and will withstand pressure. It is recommended that you wipe the surface with a cloth so the surface feels dry. Use of applicator tabs eliminates the tacky/greasy layer on the surface.

8. Do I need the Light?

Yes. The Blue Light provides the proper wavelength of light with enough intensity to cure the resin in 30 seconds. Direct sunlight will also cure the resin.

9. Can I use a regular flashlight?

A Wal-Mart grade low-end flashlight is not effective for curing the resin. Blue light is what cures the resin. A high-end very bright white LED flashlight will cure the resin but not as fast as the Blue Light in the kit. The white LED flashlight can serve as a back up light source. A red light will never cure the resin.

10. Will it work with Stainless or Galvanized?

NSR250 resin bonds well to metals, including stainless, galvanized, and aluminum. NSR150 is formulated for use on non-metals.

11. How long will the repairs last?

Currently the kit is a tool for temporary repairs that allow large disruptive jobs to be scheduled. Having said this, temporary is a very relative term. For drain lines or vent lines, the repairs will last years. For repairs that are under high pressure or carrying oils, gases, refrigerants, these are more temporary (on the order of days, weeks, or months depending on the situation).

12. What temperature range can cured resin withstand?

Cured resin can resist temperature extremes from – 40°F to 300°F.



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13. Can this be used on drinking water lines?

Yes, NSR150 and NSR250 resins are listed by UL as being NSF Standard 61 compliant for use on drinking water systems.

14. What pressure can a repair handle?

A repair of a 1/16th inch hole in aluminum can be pressurized up to 800psi without failure. Successful repairs have been done to aluminum coils.

15. What about a hot water line?

Yes, it can work on hot water lines.

16. What about a steam line?

Repairs to steam lines are temporary. The life expectancy of the repair will vary depending on the temperature and pressure. It is not recommended for use on high-pressure steam lines (200+ °F and 100psi).

17. Will it work under pressure?

Ideally the pressure should be turned off. Pressurized leaks that are reduced to a slow weep can still be repaired. It will work on a wet, dry or underwater surface.

18. How many repairs can be done with one syringe?

A 5ml syringe of NSR150 or NSR250 resin will repair approximately 20 pin-holes. A pin-hole is typically 1/16 inch. A 5ml syringe of resin will cover approximately a 12 sq inch area when applied in conjunction with fiberglass mesh. 5ml of resin provides enough material to apply 12 inches of resin at a depth of 1/8 inch and with a width of 1/8 inch (similar to applying a bead of resin around the complete circumference of four 1-1/2" PVC joint)

19. Shelf life?

The shelf life is specified as 24 months. Room temperature storage is recommended. Avoid extended storage at greater than 110°F.

20. How fast does the resin cure if it is less than 32°F?

The resin is light activated and is not temperature dependant for cure time. The resin will cure @ 28°F as fast as it does at 70°F, as fast as it does at 104°F.