



PROPSPEED ANTIFOULING PROTOCOL OVERVIEW

PropSpeed is a foul release silicon coating, not an antifoul, that impedes biofouling adhesion. PropSpeed relies on movement for its effectiveness—the more it moves, the better it performs as marine growth can't get a grip to grow. PropSpeed can last up to a year and is relatively non-toxic according to the manufacturer.

Wildlife Computers leaves the decision to apply antifoul coating after manufacturing and before deployment entirely to the researcher's discretion, however, we strongly recommend that tags be treated with some antifouling coating to ensure the best possible chance of a successful deployment **as Wildlife Computers does not warranty against biofouling.**

Wildlife Computers offers an optional service to sand, mask, and paint tags with PropSpeed antifouling and coat the wet/dry sensors with conductive polymer. This comprehensive antifouling service is offered at a charge of \$100 per tag prior to shipping.

Safety Information

Even though PropSpeed is relatively non-toxic it is listed as a hazardous substance by the EPA and safety precautions should be taken. The following safety precautions should be followed:

- Read all label and safety instructions.
- Suitable respiratory protection should be worn in confined spaces or in case of inadequate ventilation. A suitable respirator must be worn if an aerosol or mist is generated.
- Wear protective gloves. Nitrile gloves are recommended.
- Tight-fitting goggles or face shields should be used. Avoid wearing contact lenses.
- Wear impervious clothing or overalls if significant skin contact is likely to occur.
- Wash hands after handling.

Use the following link to access the safety datasheet for PropSpeed materials: <https://propspeed.com/marine-products/propspeed/how-to-apply>



The safety guidelines must be followed and the correct PPE must be worn for the application of any antifouling coating.

PROPSPEED ANTIFOULING PROTOCOL – CONTINUED

Process Tips

- Apply any antifouling coating at least 24 hours in advance of deployment.
- Paint the antennas!
- Application of Propspeed requires planning so make sure you have all the required equipment and thoroughly understand the process.
- Wear protective respiratory, eye, and skin protection.
- After completing the application of the clear coat, inspect the tag. The clear coat dries to a glossy finish making it easier to find uncoated or delaminated areas.
- Avoid abrasive cleaning materials or direct high-pressure water after painting.

Application Requirements

Equipment Required

- Drying rack
- Paper clips shaped into an “S” pattern - to hang pop-up tags
- Roll of paper towels
- 1 Ziploc® or sealable zipper storage bags
- 80-grit sand paper
- Compressed air
- Propspeed Clear Coat
- Cup or receptacle
- Syringe or spoon
- Applicator brushes - small applicator brushes work best for SPLASH and SPOT tags
- Foam brushes - work best for pop-up tags (MiniPAT, mrPAT, or sPAT)
- Nitrile gloves

The application of Propspeed requires planning. Make sure all application gear is on hand, everything is taped over that needs to be taped over, and you thoroughly understand the process—then you’re ready to get started.

PROPSPEED ANTIFOULING PROTOCOL – CONTINUED

Application Preparation

Work Area Preparation

Make sure you are in a well-ventilated area. Set up a drying rack. Place at least two layers of paper towels on the rack for SPOT or SPLASH tags. Make enough room to space the tags out evenly without touching. Make sure there is room for pop-up tags to hang without touching.

Tag Preparation

Start by sanding the tags with 80-grit sandpaper. Tags need to be sanded so the Propspeed will adhere to the tag's surface. You want to be very careful to avoid sanding any of the sensors. You can tape these off to help avoid accidental sanding or painting. You will want to be firm in order to scratch it up but not too firm as to dig into the tag. On pop-up tags, make sure to sand the area where the antenna attaches to the tag. Once sanded, blow the tag off with compressed air. Then double-check to make sure you don't have any unscratched areas. You do not need to apply a primer before applying the Propspeed clear coat.

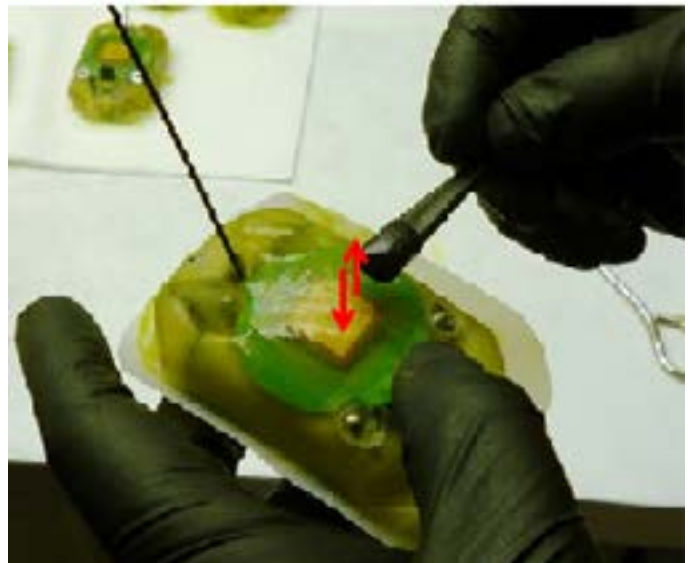
Application Procedure

Propspeed Application and Drying Time

After sanding and blowing off the dust, make sure all the sensors, communication ports, active washers, etc. are covered with tape. You will want to work with a small amount of Propspeed as it will dry out and gum up. Spoon or use the syringe to put some into a cup. Make sure the lid is closed on the can.

When applying the Propspeed clear coat, it is important to avoid brush strokes. Apply Propspeed using the dabbing method. The dabbing method consists of the following:

1. Dip a foam brush into the clear coat.
2. Dab the tip of the brush onto the tag by pushing the brush onto the surface, then lifting it off, and pushing it onto the surface again.
3. Repeat the process to cover the entire tag including the antennas, if applicable.
 - If your brush runs out of clear coat, dip it again.



Do not paint the nose cone on any PAT tag! It will impede the release mechanism.

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4. Make sure there are no heavy runs or sags in the clear coat before moving on to another area. You will have 5 to 10 minutes to touch up these areas before the clear coat dries. *You may notice moisture on the tags from “sweat.” This is perfectly normal.*
5. After completing the application of Propspeed, visually observe all areas to ensure there are no misses or gaps. The clear coat will dry to a glossy finish helping you to find any uncoated areas.
6. Arrange the tags on top of the paper towels on the drying rack so they aren’t touching. If painting pop-up tags, hang them from the nose on the “S” shaped paper clips.
7. Let the tags cure at least 12 hours before touching them. Propspeed requires a minimum of eight hours to dry before deployment. In cold conditions, 5°C -13°C, tags should dry for at least 24 hours.
8. Dispose of all garbage in a resealable plastic bag and throw it away.

Tag Handling

Once the tags are dry, they can be handled using gloves. Tags can be stored in a Ziploc® bag in the refrigerator until deployment.

Considerations for PAT Tags

Tethering

If you are applying antifouling coating to a PAT tag, you will be attaching a tether. When adding a tether, it is important to note that the tag will be heavier so it is important to test the buoyancy of the tag plus tether. If you find that the tag sinks during testing, you may need to shorten the tether.

Testing

Once the coating and tether are applied on a PAT tag, it is important to test if the tag floats. All of Wildlife Computers PAT tags are positively buoyant, so when the pin burns, the tag floats to the surface and Argos transmissions are initiated once a dry environment is recognized. Propspeed does not add that much weight compared to other coatings (~.7 grams per coat on average), however, it is important to perform a quick float test prior to deployment. Simply put the tags in a bucket or sink full of water and make sure they remain positively buoyant with the tether and coating.

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Resources

International Paints Primer



Propspeed is available in three kit sizes depending on the size of the area you are coating. Propspeed creates a chemical and physical bond between the metal substrate, primer, and top coat. Propspeed can be used in fresh or salt water.

Learn More:

Propspeed Safety Brochure: https://propspeed.com/docs/default-source/propspeed-documents/sds-propspeed-clear-coat.pdf?sfvrsn=1b4ce518_2

Propspeed Technical Documentation: https://propspeed.com/docs/default-source/propspeed-documents/tds-propspeed-clear-coat.pdf?sfvrsn=39c4d6b6_2

Propspeed Application Manual: https://propspeed.com/docs/default-source/propspeed-documents/propspeed-application-manual.pdf?sfvrsn=a3b9b832_2

PROPSPEED ANTIFOULING PROTOCOL – CONTINUED

Appendix 1



We know companies change formulations so in November 2019 we initiated another round of antifouling testing. We looked at Micron66, Lightspeed, Propspeed, an unnamed competitive product, and a placebo. We painted the tags according to the manufacturer's recommendations and secured it to a floating wharf in Northland, New Zealand.

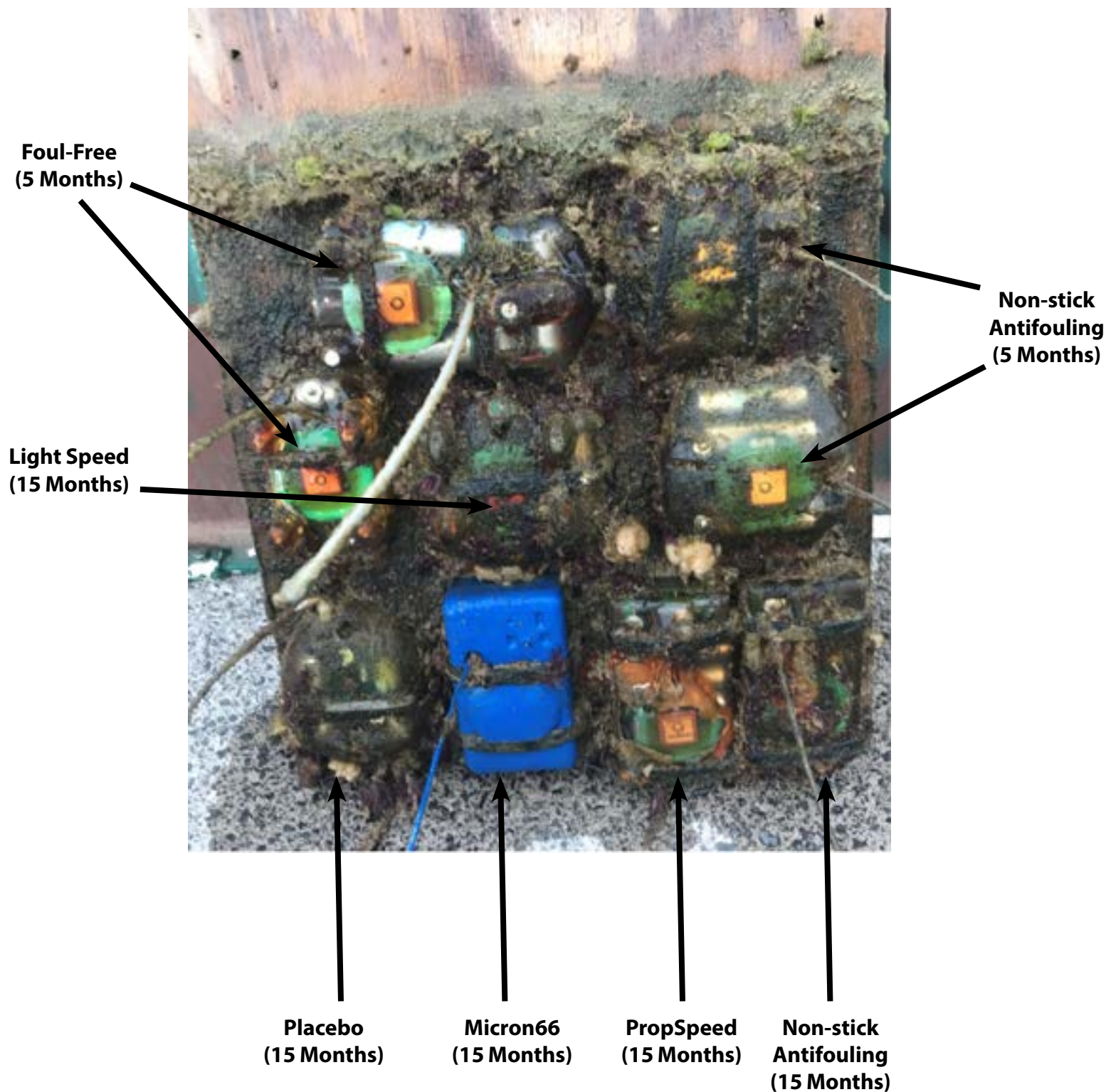
The blue tag, painted with Micron66, showed no evidence of fouling, with Propspeed coming in second. Micron66 has been used successfully for over two decades to limit biofouling on sea turtle satellite tracking tags.



PROPSPEED ANTIFOULING PROTOCOL – CONTINUED

Appendix 1—Continued

In August 2020, we added four additional tags. The tags were attached to the floating dock in a tidal channel in Whangaroa Harbour, New Zealand. The image was taken after a light hose wash to remove mud.



PROPSPEED ANTIFOULING PROTOCOL – CONTINUED

Contacting Wildlife Computers

U.S. and International

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For Asian Clients

While we welcome your direct correspondence, we recommend that you contact our colleague, Yong Huang, for assistance. Mr. Huang understands the special purchase processes for your countries, and will provide you with the best service for the best price. He also is fluent in Japanese, Chinese, and English.

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