

proto-fill®

(prototype-filler)

What is in this leaflet?

This leaflet contains some common questions about **Proto-fill**®. Please retain a copy of these instructions with the product. You may want to read it again

What **Proto-fill**® is used for

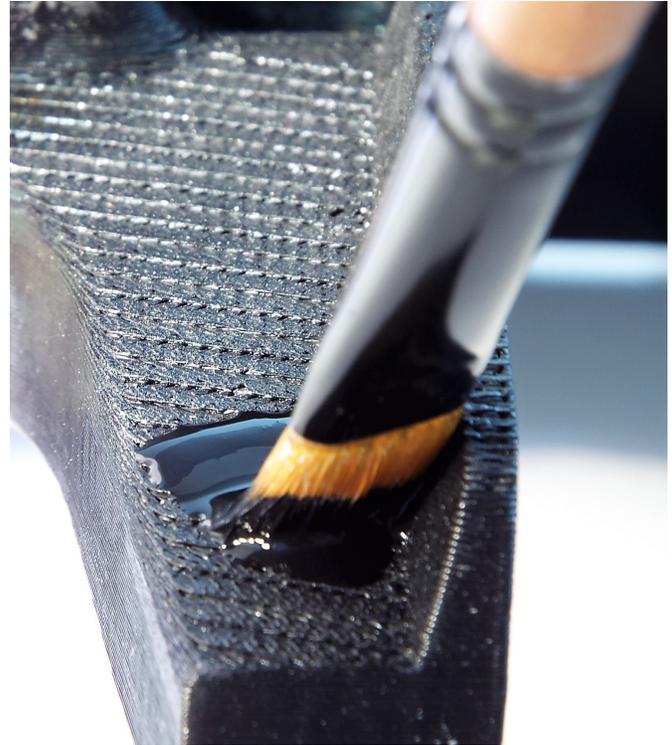
Sanding, bead blasting, and vapour smoothing have been the most-popular methods for achieving smooth plastic 3D-printed parts. However, these “subtractive” practices are difficult to control and are contrary to the very principle of “additive” manufacturing. **Proto-fill**® is designated as (3) in the **3d formulations**® product range, is a “workable”, functional coating used to quickly and easily fill striations (print-lines) and join lines. **Proto-fill**® may be used in conjunction with **Poly-clear**® and **Proto-colour**® and shares the same suite of properties.

Denoted as number 3 in the **3d formulations**® “**exclusively professional**” series of products, **Proto-fill**® is a unique water-based functional coating, specifically formulated for additive manufactured parts and 3D printed prototypes and projects. **Proto-fill**® has a suite of very desirable technical properties, which will provide a strong advantage, now, and as we move to mass additive manufactured parts.

Careful consideration must be given to each of these technical properties and how, one, some or all properties can advance innovation and ensure your project’s success.

To mention just a few:

- Safety
- Rapid filling, excellent coverage & self priming
- Water-Proof
- Scratch & Abrasion Resistance
- U.V. Resistance
- Strength & Flexibility
- Easily smoothed and corrected with alcohol or sanding
- Chemical Resistance
- Removable if desired



Before you use it

Surface preparation is key. After completion of normal support material removal procedures, clean objects, first with **Proto-fill**® (1) before applying this product, to remove residual support materials which can inhibit proper adhesion of this product.

Test first, on a inconspicuous area. Do not apply if the temperature is below 10 degrees Celsius, or in high humidity, such conditions will slow drying and poor adhesion may result.

Safety first!

This product is not classified as hazardous, according to criteria of Safe Work Australia. However, common sense in consideration, to its safe use, must prevail.

Keep out of reach of children. Provide adequate ventilation during use. If swallowed, seek medical attention.

Eye contact. Flush eyes with large amounts of water until irritation subsides. Hold eye lids apart. Seek medical attention if irritation persists.

Skin contact. Wash affected skin with water.

Inhalation. Move the affected person from the expose, into fresh air.

How to use it

Proto-fill® can be applied by spraying, brush or by dipping the object. Should air bubbles form, blow, or pop them, before the product begins to dry. **Proto-fill**® is touch dry within 20-30 minutes under normal conditions of approximately 16 degrees Celsius, and can be re-coated after two hours.

Spraying

Proto-fill® is too viscous to use with most spray gun equipment. However, we have had success spraying **Proto-fill**® using a 2.5mm nozzle spray gun, such as the Ozito® 400W SGP-300, which is available from Bunnings stores for less than \$40. The product needs to be sufficiently diluted with clean water for spraying purposes. Please refer to the instructions supplied with your particular spray gun.



Brush

The product may be thinned by up to 20% with clean water, to aid application and to eliminate brush marks.

Roller

For larger projects with even surfaces, a small foam roller such as the Unipro® foam roller can be used to apply the product, quickly and evenly. The slight stipple effect, from the roller, may help disguise print lines, if complete filling is not required.



Dipping

In some instances, dipping objects in the product may be a suitable method.

Smoothing & sanding

The product rather than your object, can be easily sanded if required. A clean white cloth dipped in methylated spirits or isopropanol alcohol can be used to smooth or remove excess product.

Clean-up & Removal

Use clean water to clean equipment with water, immediately after use. Alcohols such as methylated spirits and isopropyl alcohol can be used to clean-up spills and if desired, can also be used to remove the product from your project at any stage.