PPG ARE™ 3D Printed Sealants Installation Reference Guide

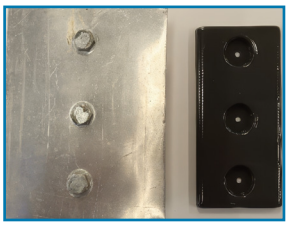
Introduction

PPG ARE™ 3D printed sealants is an innovative 3D printing technology capable of manufacturing easy to install, consistent, and uniform preformed seals and gaskets using PPG's qualified sealants.

1. Preparation for *PPG ARE* 3D printed sealants part application

Caution: For all steps in this guide, utilize all appropriate personal protective equipment as required in aircraft maintenance manual, sealant instructions, and manufacturers guidelines.

The below recommendations are based on PPG's internal testing, and customers should always refer to their own specifications or process and validate new materials before implementing any design changes. Substrate composition and bonding characteristics can vary greatly, and if there are any questions regarding proper surface preparation or use of adhesion promoter, please contact your local PPG sales representative or aerospace engineering services department.

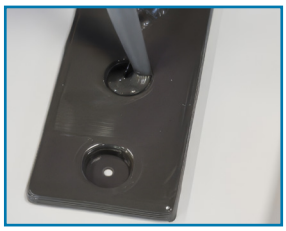


Substrate & 3D printed part

1.1 Removal of sealant

1.1.1 Remove existing/old sealant, if applicable, using approved methods.

1.1.2 Test fit the part on the cleaned application area before installation to ensure proper placement.

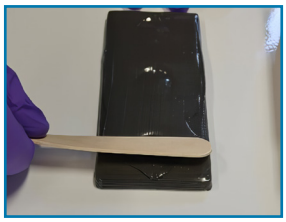


Sealant application

1.2 Preparation of sealant surface

1.2.1 Follow the surface preparation guide for the sealant being used, utilizing all primers, cleaning materials, adhesion promoters, etc.

1.2.2 It is highly recommended that the surface preparation and sealant application be performed in a clean and controlled environment within the temperature range of 60°-90°F to maintain the ideal sealant application and curing conditions.



Sealant application & consistent layer (Buttering)

2. Application of *PPG ARE* 3D printed sealants part

2.1 Installation of *PPG ARE* 3D printed sealants part

2.1.1 Ensure the application area is clean and free of any contaminants that could compromise adhesion.

2.1.2 Visually inspect the *PPG ARE* 3D printed sealants part for damage.

2.1.3 Apply a thin and uniform layer of sealant to the part. Ensure that enough sealant is applied to the part to guarantee squeeze out from underneath the printed part.

Note: Utilize the same PPG sealant from which the *PPG ARE* 3D printed sealants part is manufactured for the application/adhesion process. If using a different material, contact PPG engineering services before application.

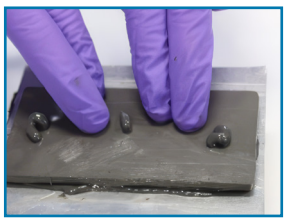
2.1.4 Install the 3D printed part on the application surface.

2.1.5 Firmly apply pressure to the part, starting from the center and working towards the edges to ensure full surface adhesion. Visually confirm complete and continuous sealant squeeze out from under printed part and through appropriate relief holes.

2.1.6 Apply appropriate pressure to the part after installation to ensure surface mating.

2.1.7 Clean the work area and excess squeeze out sealant.

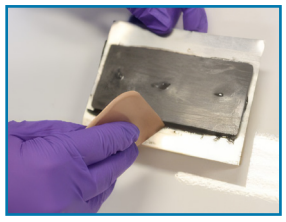
2.1.8 Allow the applied sealant to cure for the time specified in the sealant technical data sheet (TDS).



Gasket install & squeeze out

2.2 Post installation

2.2.1 Inspect the *PPG ARE* 3D printed sealants part after the sealant has fully cured to ensure proper adhesion to the installation area.



Squeeze out verification & excess clean up

PRC-DeSoto International, Inc.
12780 San Fernando Road
Sylmar, CA 91342
Telephone (818) 362-6711
Toll Free (800) AEROMIX
www.ppgaerospace.com

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