

Installation of fixtures to YES powdercoat finished enclosure structures

Introduction

Making enclosure penetrations is not generally desirable since done incorrectly puts the product at risk from corrosion and water ingress perspectives.

The following procedure provides guidelines for attaching fixtures / making penetrations.

Please note that this document provides guidelines for tasks considered as small fixtures e.g. door stops, external small bore conduit saddles, exterior lighting by examples.

Any modifications being considered that may involve structural, vibration, acoustic or performance altering issues such as airflow shall be done in full consultation with YES to avoid any warranty or performance related issues.

Considerations

- Powder coat is a tough durable paint finish applied to ASTM A-366 oiled steel substrate. The substrate is phosphate cleaned and treated with Standard Polyester powder coat.
- Powder coat is more durable than wet painted surfaces however it is prone to chipping under excessive force. Obviously chipping will expose raw steel.
- Generally speaking the areas where fixtures will be installed will not be accessible due to internal insulation and acoustic treatment. Consequently it will not always be possible to use conventional bolting methods.
- The enclosure substrate material is not thick enough to permit drilling and tapping (in the majority of cases).

Given the above our guidelines for attaching fixtures are as follows

Do's

- Use flat surface contact areas.
- Use bracketry that meet the intent of these guidelines to support those fixtures that cannot be attached in accordance with the intent described herein.
- Use Sikaflex 221 sealant between contact faces. (or product supplied soft Nitrile rubber or silicon based gaskets if sufficient flat contact area is available to prevent water ingress)
- Clean/Prime joint areas using Sikacleaner 226. (in color match)
- Use aluminum pop rivets. Coat the pop rivet in the 221 sealant prior to insertion and fill the rivet center after fitting with 221 sealant.
- De-Burr drilled holes prior to installing fixture / rivets.
- Touch up paint damage immediately following damage (see paint repair procedure in additional information below).
- Take adequate safety precautions.
- Follow SDS guidelines for Sikaflex products.

Don'ts

- Screw using mild steel fasteners in non-powder coated holes.
- Attach fixtures that have low surface area contact e.g. certain types of hollowed out cast fixtures that have either rough edges or uneven surfaces that will cause pressure points and the potential of powder coat chipping when fasteners are tightened.
- Leave burred edges that will cause pressure points when fasteners are tightened.
- Use self-tapping screws.
- Leave paint damage un-repaired.
- Use fixtures such as conduit saddles that use screws that could penetrate beyond the contact area that could penetrate the powder coat.
- Be unsafe.

The photograph below depicts a YES installed device, in this case a door bump stop, that has been applied using the above procedure. In this case holes were not installed prior to manufacture for panel standardization / production reasons.



Note - You will find certain fixtures on the enclosure such as door hinges that have not been treated this way. In these cases holes were installed prior to Powdercoat and use zinc treated fasteners and high contact area mating faces (in relation to prevailing loads).

Additional Information

Both Sikaflex products as referred to above can be purchased from YES or a reputable fastener suppliers such as Fastenal, etc.

Powdercoat repair procedure

Areas where no rust is prevalent:

1. Area must be cleaned and free of all oil and dirt. A light solvent may be used to remove oil and dirt.
2. Lightly scuffed using an abrasive material such as scotch-brite, fine grit sandpaper, etc. This will promote adhesion to the substrate.
3. Apply quality solvent-based enamel, the color match is PPG (manufacturer), # Q1590-3664. White Enamel.

Areas where rust is prevalent:

1. All rust must be removed. Area cleaned and free of all oil and dirt.
2. Lightly scuffed to promote adhesion
3. Primer applied to surface. Liquid enamel supplier should recommend primer.
4. Apply quality solvent-based enamel, the color match is PPG (manufacturer), # Q1590-3664. White Enamel.

Smaller paint chips can be repaired by hand application of primer and enamel. Larger areas will require paint spray.