



Product Data: HYDRO-FLEX II PIR (Heat Reflective) POLYURETHANE TOP COAT

PRODUCT DESCRIPTION

HYDRO-FLEX II PIR POLYURETHANE TOPCOAT is a high performance, heat reflective, single component water dispersible polyurethane. HYDRO-FLEX II PIR is formulated with heat reflective pigments and adhesion promoting additives to provide the option of painting vinyl and plastic substrates with dark colors that minimize heat gain. The product provides outstanding coverage, excellent durability and is easy to apply. HYDRO-FLEX II PIR is a low VOC and EPA compliant coating.

ENVIRONMENTAL ADVANTAGES

HYDRO-FLEX II PIR POLYURETHANE TOPCOAT is considered non-hazardous by EPA definitions and does not contain lead or chromates. The solid and semi-solid sludge produced in spraying and clean up can be flocculated, dried and sent to a "Class B" landfill. Check with local and state agencies for proper handling and disposal.

CHARACTERISTICS

- Excellent adhesion on most plastic substrates to include vinyl, PVC and fiberglass
- Excellent exterior durability
- Excellent heat reflective properties
- Excellent hardness/impact resistance
- Excellent mar and abrasion resistance
- Excellent linear flexibility
- Non-photochemically reactive
- Full gloss-80-85% at 60° glossometer
- Available in satin to gloss finish
- Coatings can be applied in a wide range of temperature and humidity without the use of retarders
- Water is used for reduction
- Water is used for clean-up
- Non-Hazardous
- Air dry or force curing preferred
- No discoloration or loss of flexibility when oven baked (250°F for one hour)
- Wide range of colors to include metallics
- Shelf life of 1 year
- Single component product-unused paint can be returned to container
- Non-Flammable

USES

- Rigid Vinyl
- Foam or Cellular PVC
- PVC
- Metal
- Fiberglass
- Most Plastics
- Wood

AIR QUALITY DATA

- VOC (Volatile Organic Compounds) 1.55 lb/gal, 188 gm/ltr
- Free of lead and chromates
- Non-photochemically reactive

PHYSICAL DATA

- Liquid
- Specific Gravity: 1.05
- Vapor Density: Heavier than air
- Evaporation Rate: Slower than ether
- VOC: 1.55 lb/gal, 188 gm/ltr
- Boiling Point: 340°F (171°C)
- Approx % Solid by weight: 42 ±2%
- Approx % Solid by volume: 39 ±2%
- Weight per gallon: 8.74 lbs
- Flash Point: 175°F CC

PERFORMANCE DATA

The tests below were conducted on AAMA approved vinyl substrates at a thickness of 1.2 dry mils after 14 days cure time at a room temperature of 77°F (25°C). Please see the Hydro-Flex II PIR Test Performance data sheet for more test results.

1. Solvent Resistance: lacquer thinner, acetone, MEK, gasoline; xylene-50 double rubs with saturated cloth.
 2. Pencil hardness: HB Minimum
 3. Flexibility: 1/8" conical mandrel
 4. Impact Resistance: Forward-180 inch pound, Reverse-180 inch pounds
 5. Taber Abrasion: CS17 wheel, 1,000 gm load (100mg loss/1,000 cycles)
 6. Theoretical Coverage at 1 mil: 665 ft² (1604 x 41.5% solids by volume)
 7. Dry Time (Air Dry): Recoat – 10 minutes @ 50% humidity and 75°F
 8. Dry Time (Air Dry): Dust free – 20 minutes @ 50% humidity and 75°F
 9. Dry Time (Air Dry): Dry to handle – 45 minutes @ 50% humidity and 75°F
- *Drying times are dependent upon temperature and humidity conditions*

SPECIFICATIONS

VINYL, PVC, CELLULAR/FOAM PVC: Excellent adhesion on most plastics. Surface must be dry and free of oil, dirt, and other foreign matter.

FIBERGLASS: Surface must be dry and dust free. Special pretreatment options may have to be performed on some fiberglass substrates to gain optimum adhesion due to release agents used during the pultrusion process.

METAL: Surface must be dry and free of any surface contaminants to include dirt, oil, oxidation, etc. As with any metal finishing project, applicator is responsible to insure that the all preparatory steps are followed to include selection of compatible cleaners, primers, or other requirements to achieve maximum coating performance.

APPLICATION DATA FOR ALL SUBSTRATES

As with most coatings, Hydro-Flex II PIR may settle over the course of time, especially if the product has been on the shelf for several months. It is necessary to thoroughly mix the paint before using. Before using, check the sides and bottom of the container to make sure all the pigment and other additives have been mixed properly. Proper mixing is normally accomplished by using paint agitators designed to fit on the container or to use an electric drill and appropriate sized mixing blade on low to medium speed. Stir/agitate the product until a vortex forms in the container without splashing the product outside the container. In the event the pigment has settled considerably, pour off half of the liquid from the top of the container into another container and then properly mix in any settled pigment, then remix the two parts together thoroughly prior to application. Adhere to all application instructions, precautions, conditions, and limitations to obtain optimum performance. Use only where application can proceed at temperatures above 10°C/50°F. Any reduction must be compatible with the existing environmental and application conditions.

SURFACE PREPARATION

Coating performance in general, is proportional to the degree of surface preparation. Follow recommendations carefully, avoiding shortcuts. Inadequate preparation of surfaces will virtually assure inadequate coating performance. As with any paint/coating project, test

For all applications, ensure that the substrate is clean of all dirt, oil, and foreign matter prior to application. Clean the substrate with Pow'r Cleaner at a mixing ratio of 30 parts water to 1 part Pow'r Cleaner. In some instances, the use of a standard Scotch Brite pad in conjunction with the cleaning solution will ensure maximum adhesion.

SPRAYING

1. Ensure substrate is clean and dry prior to coating application.
2. Stir contents before use. Do not use rocker type paint agitators. This will cause possible foaming of the product
3. If spraying with High Volume Low Pressure (HVLP) or electro static equipment (pressure or suction feed), reduce the coating with clean, filtered water to 20-28 seconds with a Zahn #2 viscosity cup. If spraying with Airless equipment, reduce coating with clean, filtered water to 25-35 seconds with a Zahn #2 viscosity cup. Spraying viscosity should be determined by local applicator to ensure that the desired film properties are obtained.
4. Depending upon customer requirements, the coating can be applied in a single or multiple pass procedure. If single pass application is required, ensure that the total thickness of the applied coating does not exceed 2.5 to 3.0 wet mils.
5. After application, the coating can be air dried or forced cured. Air-drying is accomplished by racking the substrate for a minimum of 8 hours prior to packing. Air-drying time requirements can be shortened with the use of fans that blow across the surface of the substrate and also by controlling the environmental conditions of the drying area. Force curing is dependent upon substrate characteristics and equipment available. Recommended force curing parameters are gas fired convection oven for 20 minutes at 100-150°F or Infrared curing ovens that do not increase surface temperature above recommended customer specifications. Other options can be used depending upon customer requirements.
6. Stir contents before use. Do not use rocker type paint agitators. This will cause possible foaming of the product.
7. Shelf life is 1 year.

BRUSHING

1. Ensure substrate is clean and dry prior to coating application.
 2. Stir contents before use. Do not use rocker type paint agitators. This will cause possible foaming of the product.
 3. Use a Nylon/Polyester or foam brush. Typically, the product will not need to be reduced with water for brush application. If reduction is necessary to obtain desired finish, reduce with clean water 1-2% by volume and paint out a test sample to determine if desired finish is achieved. Do not thin over 10%.
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HYDRO-FLEX II PIR (Heat Reflective) POLYURETHANE TOP COAT TEST PERFORMANCE DATA

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TESTING

AAMA 615-02-Superior Performing Organic Coatings on Plastic Profiles

HYDRO-FLEX II PIR POLYURETHANE TOPCOAT has been tested according to the American Architectural Manufacturers Association (AAMA) 615-02 (Voluntary Specification of Superior Performing Organic Coatings on Plastic Profiles) test requirements. All testing was performed on AAMA approved substrates. All tests were performed and certified by an AAMA certified laboratory. The results are as follows:

1. Color Uniformity - Pass-Standard
2. Specular Gloss - Pass-44.6
3. Dry Film Hardness - Pass-F minimum hardness and no rupture of film
4. Film Adhesion-Dry - Pass-No loss of adhesion
5. Film Adhesion-Wet - Pass-No loss of adhesion
6. Film Adhesion-Boiling Water - Pass-No loss of adhesion
7. Impact Resistance - Pass-No removal of film from substrate
8. Abrasion Resistance-Falling Sand - Pass-Abrasion Coefficient Value greater than 20
9. Chemical Resistance-Muriatic Acid - Pass-No blistering or visible change
10. Chemical Resistance-Mortar - Pass-No blistering or visible change
11. Chemical Resistance-Nitric Acid - Pass-No blistering, Delta E (Hunter) change 0.08
12. Detergent Resistance - Pass-No loss of adhesion or visible change
13. Window Cleaner Resistance - Pass-No loss of adhesion or blistering
14. Humidity - Test complete 10/2004
15. Cold Crack Cycle - Test complete 10/2004
16. Oven Aging - Test complete 10/2004
17. Solvent Wipe Test - Pass-HB hardness and no loss of adhesion
18. Florida Exposure - In Testing