

# SOLARGARD<sup>®</sup> ELASTOMERIC 6083 / SOLARGARD ACRYTHANE SYSTEM

WATERPROOFING SYSTEM FOR METAL ROOFS

## PART 1 – General

### 1.01 General

- A. This document is intended to provide only **general** guidelines regarding the application of listed materials as furnished by Republic Powdered Metals, Inc. These general guideline specifications are **NOT** intended as project-specific specifications and should not be used as such. The information contained herein may be used, and modified where necessary, by the owner, architect, and contractor in preparing specifications for particular roofing projects. It is the responsibility of the owner, architect, and/or contractor to ensure that these general guideline specifications are consistent with the contractual and construction requirements relating to the project.

### 1.02 Quality Assurance

- A. Applicator’s Qualifications
  - 1. Applicator shall have knowledge and general understanding of building design as well as Republic’s products specified for the project.
  - 2. Applicator shall have business stability and own, or have access to, the equipment necessary for successful completion of the project
  - 3. Technical service on application and suitability of Republic’s materials is available by contacting Republic Powdered Metals, Inc., 2628 Pearl Road, Medina, Ohio 44256.

### 1.03 Submittals

- A. In the normal course of bidding, descriptive literature and technical data on all materials proposed for usage under this specification will be submitted. A roof survey shall be submitted by the bidder identifying total area to be coated, along with pictures of panel profile, seams, and details including any repairs to seams, protrusions, and general conditions of the existing roof along with a completed Notice of Award to Republic.

### 1.04 Product Storage And Handling

- A. Storage of Materials:
  - 1. Store materials in accordance with manufacturer’s recommendations.
  - 2. Store acrylic latex materials so that they will not freeze.
- B. Handling and Protection of Materials: Meet requirements of manufacturer’s recommendations for handling and protection of materials during installation. Handle products so that they are not contaminated by foreign materials.
- C. Damaged Materials: Contaminated or damaged materials shall not be used in the installation and shall be immediately removed from site upon discovery.
- D. Exercise caution when working with solvent based materials within the limitations described by the manufacturer.

## PART 2 – Products as Manufactured by Republic Powdered Metals, Inc.

### 2.01 Coating System

#### A. SOLARGARD ELASTOMERIC 6083

##### 1. Description

SOLARGARD ELASTOMERIC 6083 is a water-based, acrylic, elastomeric roof coating formulated to meet and/or exceed the standards as established in ASTM D 6083. SOLARGARD ELASTOMERIC 6083 will resist the effects of weather, water, abrasion, and substrate movement.

##### 2. Performance Values

Weight per gallon (ASTM D-1475)	12.18 lbs.		Flexibility @ -15°F (ASTM D-522)	Passes 1/2" mandrel after 1000 hrs. accelerated weathering
Specific gravity (ASTM D-1475)	1.46		Tensile Strength @ 73°F (ASTM D-2370)	> 250 psi
Solids by Weight (ASTM D-1644)	> 60%		Dry time (ASTM D-1640)	6 hours to touch Min. 24 hours to recoat
Solids by Volume (ASTM D-2697)	> 50%		Flash point (ASTM D-3278)	None

# SOLARGARD ELASTOMERIC 6083 / SOLARGARD ACRYTHANE SYSTEM

Elongation @ 73°F (ASTM D-2370)	> 390%		Clean-up	Water
Viscosity (ASTM D-562)	115 K.U. ± 3		VOC	< 50 g/l
Solar Reflectance (White)	0.85 Initial 0.81 Aged		Solar Reflectance Index (SRI) (White)	107 Initial 101 Aged

## B. SOLARGARD ACRYTHANE

### 1. Description

SOLARGARD ACRYTHANE is a single component, water based, acrylic urethane roof paint formulated to provide industrial performance with low VOC and no odor. SOLARGARD ACRYTHANE is a protective roof paint that can be directly applied to specific substrates.

### 2. Performance Values

Pencil Hardness (ASTM D-3363)	2B		Flexibility (ASTM D-522)	180° on ½" Mandrel
Cyclic Prohesion (ASTM D-5894, 2 cycles, 672 hours)			Blistering – 10 per ASTM D-714 Corrosion – 10 per ASTM D-1645 Rusting – 10 per ASTM D-610	
Impact Resistance (ASTM D-2794)	100 lbs.		Gloss at 60° (ASTM D-523)	40% - 50%
Accelerated Weathering (% Gloss Retention @ ASTM D-4587)	91%		Crosshatch (ASTM D-3359-87)	5A
Salt Spray Resistance (ASTM D-B117, CRS, 30 day cure)	> 800 hours		Hiding Power	Excellent 1850 sq. ft./ .9 wet mils
Weight per gallon (ASTM D-1475)	10.9 ± 0.2 lbs.		Solids by Weight (ASTM D-1644)	55% ± 1%
Solids by volume (ASTM D-2697)	40% ± 1%		Viscosity (ASTM D-562)	85-90 KUs
Flash point (ASTM D-3278)	>212° F		Clean-up	Soap & Water
Dry time (ASTM D-1640)	30 minutes to touch Min. 4 hours to recoat			

## 2.02 Accessory Materials

- SOLARGARD Seam Sealer is a white single component, urethane industrial maintenance coating for waterproofing metal building seams and sealing fastener heads.
- SOLARGARD Acrylic Sealer is a high solids acrylic elastomeric sealer designed to provide waterproofing protection at seams, fasteners and penetrations. **Note: All rusted areas must be primed prior to the application of SOLARGARD Acrylic Sealer.**
- REPUBLIC Metal Primer is a water-based acrylic metal primer for treating rusted areas on metal.
- REPUBLIC FLUORO-PRIME is a water-based primer specifically for fluoropolymer/PVDF/Kynar 500 metal surfaces.
- PERMAFAB is a 100% stitchbonded polyester fabric used as reinforcement in flashings and faulty seam repairs.

## PART 3 – Execution

### 3.01 Preparation for Coating

- Roof Panels
  - Loose rust, mill scale, and paint must be removed by any of the following: HAND TOOL CLEANING to include scraping, sanding, and wire brushing; POWER TOOL CLEANING to include power sanding, power wire brushing, or power grinding; WATER BLASTING to include high pressure water blast at not less than 2,000 psi.

# SOLARGARD ELASTOMERIC 6083 / SOLARGARD ACRYTHANE SYSTEM

2. Roof surfaces containing heavy soot, dirt, chemical contaminants, oil, grease, or wax deposits must be cleaned with a surface cleaner and rinsed thoroughly with high pressure water blast. Note: New galvanized panels must be weathered a minimum of six months or treated with a phosphoric acid wash to remove factory oil film.
3. Severe chalking, if evident, must be removed to ensure adhesion as must all debris, dust and dirt by using high pressure water wash.
4. Remove all loose existing acrylic and asphalt coatings and all existing sealants and mastics prior to installing SOLARGARD Seam Sealer or SOLARGARD Acrylic Sealer. **Note: If using SOLARGARD Acrylic Sealer for detail work, all rusted areas must be primed prior to the application of the SOLARGARD Acrylic Sealer.**
5. If previously coated, including factory finish, check for adhesion and compatibility of any remaining, tightly adhered, existing coating. To check adhesion of the existing coating film, conduct adhesion test per ASTM D 3359-09. A test application is the best method of determining compatibility with and adhesion of a new coating to a previously coated surface. After application and curing of the SOLARGARD test area, an X-Cut Tape Test per ASTM D3359-09 is used to determine adhesion and compatibility of the SOLARGARD to the substrate. Contact Republic's Technical Department for further information.
6. If metal panel finish is Kynar 500 or similar, conduct a test application using REPUBLIC FLUORO-PRIME and SOLARGARD Elastomeric 6083. Conduct adhesion test per ASTM D 3359-09. Contact Republic's Technical Department for further information.
7. If metal panel finish is NOT Kynar 500 or similar, prime all rusted areas using REPUBLIC Metal Primer at a rate of 100-200 sq. ft./gal. (8-16 wet mils).
8. Roof panels exhibiting holes and/or posing safety concerns should be replaced with new metal panels with a similar panel design.
9. Closely inspect underside of all metal panels for corrosion at endlaps, curbs and penetrations. Replace as required.

## B. Priming

1. If metal panel finish is Kynar 500 or similar, prime all areas at a rate of 200-250 sq. ft. per gallon (6-8 wet mils) with REPUBLIC FLUORO-PRIME. When REPUBLIC FLUORO-PRIME has been applied longer than 72 hours prior to application of SOLARGARD Elastomeric 6083, REPUBLIC FLUORO-PRIME may need to be reapplied. All surfaces, which have been primed, must be clean and free of dirt, grease, oil and other foreign matter, which could prevent proper adhesion of SOLARGARD Elastomeric 6083.
2. If metal panel finish is NOT Kynar 500 or similar, prime all rusted areas using REPUBLIC Metal Primer at a rate of 100-200 sq. ft./gal. (8-16 wet mils). When REPUBLIC Metal Primer has been applied longer than 72 hours prior to application of SOLARGARD ELASTOMERIC 6083, REPUBLIC Metal Primer may need to be reapplied. All surfaces, which have been primed, must be clean and free of dirt, grease, oil and other foreign matter, which could prevent proper adhesion of SOLARGARD Elastomeric 6083.

## C. Roof Penetrations

1. The base of all roof penetrations and curbs, i.e. stacks, vents, etc., must be sealed using SOLARGARD Seam Sealer or SOLARGARD Acrylic Sealer at the rate of 30 - 40 lineal ft./gal. in a three-course combination with PERMAFAB. A three-course combination consists of sealer / fabric / sealer.

## D. Seams

1. All end-lap (horizontal) and faulty side-lap (vertical) seams must be treated with SOLARGARD Seam Sealer or SOLARGARD Acrylic Sealer back-brushed into any open seam areas. SOLARGARD Seam Sealer or SOLARGARD Acrylic Sealer is best applied by brush. (In typical situations one (1) gallon will cover approximately 60 - 100 lineal ft./gal. at a thickness of 1/8"). Seams with openings greater than 1/8", reinforce SOLARGARD Seam Sealer or SOLARGARD Acrylic Sealer with PERMAFAB in a three-course combination. Approximate coverage for SOLARGARD Seam Sealer or SOLARGARD Acrylic Sealer will be 30 - 40 lineal ft./gal. Seams with greater than 1/4" openings must be drawn together with a self-tapping sheet metal screw and neoprene washer.
2. At all vertical seams apply SOLARGARD ELASTOMERIC 6083 at a rate of 1 gal./100 sq. ft. (16 wet mils). Apply using roller, brush or spray equipment.

## E. Ridge Caps

1. All seams on and around ridge cap must be sealed using SOLARGARD Seam Sealer or SOLARGARD Acrylic Sealer and PERMAFAB in a three-course combination. Approximate coverage for SOLARGARD Seam Sealer or SOLARGARD Acrylic Sealer will be 30-40 lineal ft./gal.

# SOLARGARD ELASTOMERIC 6083 / SOLARGARD ACRYTHANE SYSTEM

2. All seams around ridge ventilators must be sealed using SOLARGARD Seam Sealer or SOLARGARD Acrylic Sealer and PERMAFAB in a three-course combination. Approximate coverage for SOLARGARD Seam Sealer or SOLARGARD Acrylic Sealer will be 30 - 40 lineal ft./gal.

## F. Fasteners

1. All existing fasteners must be checked and tightened.
2. Replace stripped or missing fasteners using an oversize "repair type" fastener. BUILDEX TRAXX<sup>®</sup> or TEKS<sup>®</sup>, FABCO<sup>®</sup>, FAB-LOK<sup>®</sup>, or others. Add additional fasteners, where necessary, to draw uplifted sheets together.
3. Encapsulate all fasteners with SOLARGARD Seam Sealer or SOLARGARD Acrylic Sealer (one gallon will encapsulate approximately 150 - 200 fasteners).

## G. Metal Components

1. Damaged fascia, gutters, vents, ridge caps, flashings, etc., must be replaced.

## 3.02 The Protective Coating

### A. General

For optimum results, the protective coating must be applied after the morning dew has dried and postponed if rain is imminent.

### B. Application

1. Following cleaning and preparation work, apply appropriate primer (REPUBLIC METAL PRIMER or REPUBLIC FLUORO-PRIME) to roof surface and allow to dry. If primer has been applied longer than 72 hours prior to application of SOLARGARD ELASTOMERIC 6083, the primer may need to be reapplied. All surfaces, which have been primed, must be clean and free of dirt, grease, oil and other foreign matter, which could prevent proper adhesion of SOLARGARD Elastomeric 6083.
2. SOLARGARD Elastomeric 6083 may be applied by brush, 1/2" nap roller or spray equipment.
3. **Mixing:** Mix each container of SOLARGARD 6083 and SOLARGARD ACRYTHANE with a power assisted mechanical mixer before use. Mix until coating is smooth and consistent. For pails, a Jiffy Mixer attached to a low speed power drill is recommended. For drums, a 600 Series Drum Mixer is recommended. Do not hand mix. DO NOT THIN.
4. **Coverage:** Apply SOLARGARD ELASTOMERIC 6083 in selected color at a minimum of 1 gal./100 sq. ft. (16 wet mils, 8 dry mils), not to exceed 20 wet mils. Note: On metal roofs with irregular panel and rib design, multiple length x width by 1.15 to calculate actual surface area to be coated.
5. Allow to cure until it can support the required foot traffic based on specific job site conditions and roof slope, etc. Environmental or site specific conditions may require variations in cure times.
6. Depending on environmental or site specific conditions, a low pressure water rinse (or whatever means necessary) may be required prior to application of the SOLARGARD ACRYTHANE to remove contaminants from the roof.
7. Apply SOLARGARD ACRYTHANE at 200 sq. ft./gal. (6-8 wet mils). Allow to cure for a minimum of 4 hours between coats.
8. Apply SOLARGARD ACRYTHANE at 200 sq. ft./gal. (6-8 wet mils).

### 9. Spray Equipment Recommendation

**Pumps:** Graco King 45:1, Graco Bulldog 30:1 or gas powered equivalents. Graco GH733, HydraMax 350 or GMax 7900 or other manufacturer's equivalents.

**Hose/Pressure:** 50' - 300' length (depending on spray rig pressure). When using hoses longer than 100' use the next larger hose ID every 50'. Every 50' of hose will reduce the spray pressure of the rig by 10% at the gun tip. i.e., 300' hose - 3/4" (50/100') to 5/8" (50/100') to 1/2" (50/100') to 3/8" (50'). Good results are generally obtained @ 2000-3000 psi at spray tip.

**Gun:** Graco Contractor Gun, Graco Contractor FTx gun, Graco Silver Plus or equivalent. (Tip extrusions or pole guns can be used).

- **Graco Heavy-Duty RAC Switch tip (GHDXXX) Grey**

\* Skill and experience of the spray applicator is important to the success of the coating application. Periodic checking of the film build is necessary to ensure best results.

\* Do not permit traffic on completed roof surfaces unless absolutely necessary, and only after complete cure.

# SOLARGARD ELASTOMERIC 6083 / SOLARGARD ACRYTHANE SYSTEM

## \*Tip Sizes – SOLARGARD ELASTOMERIC 6083:

Fan Width (in)	.035	.037	.039	.041	.043	.045
10" – 12"	535	537	539	541	543	545
12" – 14"	635	637	639	641	643	645
14" – 16"	735	737	739		743	745
16" – 18"	835	837	839		843	
Flow Rate	1.60 gpm	1.80 gpm	1.98 gpm	2.17 gpm	2.37 gpm	2.58 gpm

## \*Tip Sizes – SOLARGARD ACRYTHANE:

Fan Width (in)	.013	.015	.017	.019
10" – 12"	513	515	517	519
12" – 14"	613	615	617	619
14" – 16"	713	715	717	
16" – 18"	813	815	817	
Flow Rate	1.60 gpm	1.80 gpm	1.98 gpm	2.17 gpm

## Air-Atomized Spray – SOLARGARD ACRYTHANE:

Method	Fluid Tip	Fluid Delivery	Atomized Pressure
Pressure	0.055-.070	12-16 oz./min.	40-60 psi
Siphon	0.055-.070	-	40-60 psi
HVLP (var.)	0.043-.070	-	10 psi at tip
Air cap for highest pressure			

### 3.03 Material Requirements

### 3.04 Clean Up

- A. As work progresses, it is essential to keep equipment in clean, working condition. After each days spraying, equipment should be cleaned as follows:
  1. Flush lines with clean water, followed by mineral spirits or kerosene, to keep metal parts from corroding.
  2. General clean-up with same.
- B. At the conclusion of the project, all equipment should be cleaned and returned to its designated location. Disposal of empty, partially full or full drums should be discussed with the building owner, contractor, or engineer.

## PART 4 – File Data

### 4.01 Enclosures

### 4.02 Warranty Disclaimer

- A. Please note that if Republic Powdered Metals is requested to furnish a warranty, the contractor/owner must comply with the conditions for warranty issuance set forth on the reverse side of the warranty document, a sample copy of which is available upon request. Republic Powdered Metals reserves the right to refuse issuance of a warranty pursuant to such conditions.

Contact Republic Powdered Metals, Inc. for details regarding available warranties on the SOLARGARD® ELASTOMERIC 6083 / SOLARGARD ACRYTHANE System.

