

GEOGARD[®] SYSTEM / GEOGARD[®] SEAM SEALER

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. GEOGARD

1. Description

GEOGARD is a moisture-cured, modified urethane, elastomeric coating, consisting of an aromatic base coat and an aliphatic finish coat. GEOGARD is a Fire Resistant coating that will resist the effects of ultraviolet rays, weather, ponding water, and the micro-biological attack of mold, mildew, and algae. GEOGARD has excellent impact resistance and will withstand most acids, alkalis, salts, fats, and solvents.

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2. Performance Requirements

	GEOGARD Base Coat	GEOGARD Finish Coat
Weight per gallon (ASTM D 1475)	11.0 ± 0.2 lbs	8.8 ± 0.2 lbs.
Specific gravity (ASTM D 1475)	1.32 ± 0.02	1.06 ± 0.02
Solids by weight (ASTM D 1333)	74% ± 1%	69% ± 1%
Solids by volume	65 ± 1%	51% ± 1%
Elongation @ 77° F (ASTM D 2370)	450%	250%
Flexibility @ 0° F (ASTM D 1737)	Passes 1/8" mandrel	Passes 1/8" mandrel

	GEOGARD Base Coat	GEOGARD Finish Coat
Tensile strength (ASTM D 2370)	320 psi	3480 psi
Shore "A" hardness (ASTM D 2240)	37	80
Dry time (ASTM D 1640)	Rubbery cure 48 hrs	Cure 24 hrs.
Flash point (ASTM D 3278)	100° F	80° F
Clean up	Republic Thinner #1 or Xylene	Republic Thinner #1 or Xylene

2.02 Accessory Materials

- A. PERMAFAB is a 100% stitch bonded polyester fabric used in repairing blisters, fishmouths, splits, and as reinforcement for flashing details.
- B. DURATHANE is a premium-grade, moisture-cured, one component, polyurethane sealant, for use in sealing existing roof penetrations and termination bars, etc.
- C. REPUBLIC THINNER #1 is an aromatic petroleum solvent used for clean-up of the GEOGARD System.
- D. GEOGARD LO Base Coat is a high solids, low VOC, low odor, aromatic urethane base coat that can be substituted for GEOGARD Base Coat and used in conjunction with GEOGARD Finish Coat as a restoration system. Contact Republic Technical Service for application information.
- E. GEOGARD Primer is a single component industrial maintenance product utilized to enhance the adhesion of GEOGARD products.

PART 3 – Execution

3.01 Preparation For Coating

- A. Roof Panels
 1. 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.
 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 GEOGARD Seam Sealer.
 5. If metal panel finish is Kynar 500 or similar, please contact the Republic Technical Department for surface preparation recommendations.
 6. Check for adhesion and compatibility of any remaining, tightly adhered, existing coating with GEOGARD Base Coat. A test application is the best method of determining compatibility with and adhesion to a previously coated surface. An X-Cut Tape Test is used to determine adhesion of the existing coating to the substrate. Contact Republic's Technical Department for further information.
 7. Prevent mechanical units from distributing solvent fumes into the building.
 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. Roof Penetrations
 1. The base of all roof penetrations and curbs, i.e. stacks, vents, etc., must be sealed using GEOGARD Seam 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.

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C. Seams

1. All end-lap (horizontal) and faulty side-lap (vertical) seams must be treated with GEOGARD Seam Sealer back-brushed into any open seam areas. GEOGARD Seam 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 GEOGARD Seam Sealer with PERMAFAB in a three-course combination. Approximate coverage for GEOGARD Seam Sealer will be 30 - 40 lineal ft./gal. Seams with greater than 1/2" openings must be drawn together with a self-tapping sheet metal screw and neoprene washer.
2. Remove all existing acrylic and asphalt coatings and existing sealants and mastics prior to installing GEOGARD.

D. Ridge Caps

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

E. Fasteners

1. Encapsulate all fasteners with GEOGARD Seam Sealer (one gallon will encapsulate approximately 200 fasteners).

F. 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. GEOGARD Base Coat / Finish Coat system is to be applied in a two-coat application. GEOGARD Base Coat should be applied at a rate of 1 ½ gal./100 sq. ft. (24 wet mils) to prepared surface. Allow base coat to cure (min. 24 hrs). GEOGARD Finish Coat should then be applied at a rate of 1 gal./100 sq. ft. (16 wet mils). Allow to cure 24 hours before permitting traffic.
2. The coverage rates shown are intended as minimum application requirements. The surface dictates actual coverage needed. On metal roofs with irregular panel and rib design, multiply feet by 1.15 to calculate actual surface area to be coated.
3. GEOGARD Base Coat should be top-coated within 72 hours. If longer than 72 hours, GEOGARD Base Coat needs to be primed using the GEOGARD Primer to reactivate the base coat.
4. GEOGARD Base Coat and Finish Coat may be applied by brush, roller, squeegee, or heavy-duty airless spray. Preferred method of application is by roller. MIX WELL BEFORE USE utilizing power assisted equipment. When applying GEOGARD over a previously coated substrate, a test patch should be applied to determine compatibility and adhesion.

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 manufacturers 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).

*Tip Sizes:

Fan Width (in)	.039	.041	.043	.045	.047	.049
10" – 12"	539	541	543	545	547	549
12" – 14"	639	641	643	645	647	649
14" – 16"	739	741	743		747	749
16" – 18"	839	841	843		847	
Flow Rate	1.60 gpm	1.80 gpm	1.98 gpm	2.17 gpm	2.37 gpm	2.58 gpm

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- * Graco Heavy-Duty RAC Switch tips (GHDXXX) Grey
- * Additional tip sizes are available between .039–.059.
- * Base coat should be applied with a tip size of .043–.060.
- * Finish coat should be applied with a tip size of .039–.049.
- * 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.

3.03 Material Requirements

3.04 Clean Up

- A. As work progresses, it is essential to keep equipment in clean, working condition. If spray equipment is used, flush lines with Republic Thinner #1 or xylene. 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.
- C. 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 the 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 GEOGARD[®] System.

