

SPECIFICATION

GEOGARD®

WATERPROOFING SYSTEM FOR SPRAYED IN PLACE POLYURETHANE FOAM

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 to Republic identifying total area to be coated, along with pictures of close up surface conditions, seams, and all details including any repairs to seams, protrusions, and general conditions of the existing roof along with a completed Notice of Award, prior to Republic's acceptance of the project.

1.04 Product Storage And Handling

- A. Storage of Materials: Store in accordance with manufacturer's recommendations.
- 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 two-coat, high performance, urethane elastomeric fire resistant coating system. The system consists of a single component, modified aromatic urethane base coat and a single component, modified aliphatic urethane top coat.

GEOGARD®

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% stitchbonded 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 circular roof penetrations.
- C. GEOGARD Primer is a intercoat adhesion primer for reactivating GEOGARD Base Coat.

PART 3 – Execution

3.01 Preparation For Coating

- A. Cleaning
 1. Remove all loose gravel, dirt, dust, debris, etc., by mechanical brush, stiff broom, vacuum, power washing, etc. All surfaces must be clean and dry.
 2. Flashings, blisters, and other damaged areas must be repaired and allowed to cure for 24 hours prior to applying the GEOGARD Base Coat to the entire roof.
 3. 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.
 4. Prevent mechanical units from distributing solvent fumes into the building.

B. Flashings

Flashings can be repaired using polyester fabric and GEOGARD Base Coat.

1. Cant strips should be provided at vertical surfaces to receive flashing.
2. Fabric should be unrolled and cut to a maximum length of ten feet prior to setting in place.
3. Apply GEOGARD Base Coat to all areas at 2 gal./100 sq. ft (32 wet mils).
4. Embed fabric into the coating from 4" onto the roof surface to a minimum of 8" above roof surface. Adjacent pieces should be lapped a minimum of 4". Brush for proper adhesion and removal of all voids.
5. Apply a second coat of GEOGARD Base Coat at 2 gal./100 sq. ft. (32 wet mils) over the fabric and a minimum of 2" beyond edges in each direction.

GEOGARD[®]

6. Install metal counter flashing as required.

C. Blisters

1. Make an X cut of sufficient size and completely open blister, sponge out water and allow area to air dry.
2. Apply GEOGARD Base Coat at 1 gal./100 sq. ft. (16 wet mils) to the inside of the blister.
3. Apply GEOGARD Base Coat at 2 gal./100 sq. ft. (32 wet mils) and 8" wider than the blister area.
4. Cut fabric 6" wider than the blister area in each direction and embed in the GEOGARD Base Coat, brush for proper adhesion and removal of all voids.
5. Apply a second coat of GEOGARD Base Coat at 2 gal./100 sq. ft. (32 wet mils) over the fabric and a minimum of 2" beyond edges in each direction.

D. Splits

1. Apply GEOGARD Base Coat at 2 gal./100 sq. ft. (32 wet mils) over the entire area and 8" beyond the width of the split in each direction.
2. Cut fabric 6" wider than the split in each direction and embed in the GEOGARD Base Coat, brush for proper adhesion and removal of all voids.
3. Apply a second coat of GEOGARD Base Coat at 2 gal./100 sq. ft. (32 wet mils) over the fabric and a minimum of 2" beyond edges in each direction.

NOTE: If splits are extensive and continuous in one direction, determine cause before proceeding as more extensive repairs may be indicated.

E. Roof Penetrations

1. The base of all curb penetrations must be sealed using GEOGARD Base Coat embedded into fabric. Apply GEOGARD Base Coat at 2 gal./100 sq. ft. (32 wet mils), embed fabric (cut to size), brush for proper adhesion and removal of all voids. Apply a second coat of GEOGARD Base Coat at 2 gal./100 sq. ft. (32 wet mils) over the fabric and a minimum of 2" beyond edges.

3.02 GEOGARD Waterproofing System

A. New Urethane Foam

1. New foam installation must be in accordance with foam manufacturer's specifications.
2. GEOGARD Base Coat should be applied as soon as the foam has sufficient compressive strength to allow foot traffic on the surface without causing depressions. Depending upon weather conditions, this is normally achieved within 3 to 4 hours after application.
3. The foam should be protected with at least the first coat of GEOGARD Base Coat on the same day it is applied to prevent foam degradation.
4. Apply GEOGARD Base Coat at the rate of 3 gal./ 100 sq. ft. (48 wet mils) to the roof surface including flashings.
5. Allow Base Coat to cure (min. 24 hours). Then apply GEOGARD Top Coat at the rate of 1 gal./100 sq. ft. (16 wet mils).
6. Do not permit traffic on completed roof surfaces unless absolutely necessary, and only after complete cure.

B. Existing Urethane Foam

1. Power wash existing roof. Remove all loose existing coating, dirt, dust, debris, etc.
2. Replace damaged or saturated foam with new foam. Small spot repairs in existing foam can be made with GEOGARD Base Coat and fabric.
3. Check for compatibility of any remaining, tightly adhered, existing coating with GEOGARD Base Coat.
4. Apply GEOGARD Base Coat at the rate of 3 gal./ 100 sq. ft. (48 wet mils) to the roof surface including previously coated flashings, blisters, splits, etc.
5. Allow Base Coat to cure (min. 24 hours). Then apply GEOGARD Top Coat at the rate of 1 gal./ 100 sq. ft. (16 wet mils).

GEOGARD®

6. Do not permit traffic on completed roof surface unless absolutely necessary, and only after complete cure.
7. Use GEOGARD Primer when Base Coat is not top-coated within 72 hours.

3.03 The Protective Coating

A. General

For optimum results, the protective coating must not be applied to wet or damp surfaces, and postponed if rain is imminent. Failure to comply can result in blistering. In addition, GEOGARD Top Coat must be applied to the base coat within 72 hours of its application. If more than 72 hours before top-coat application apply GEOGARD Primer at a rate of 300–400 sq. ft./gal.

B. Application

GEOGARD can be applied by brush, roller, notched squeegee, or proper spray equipment. **DO NOT THIN!!!**

1. Spray Equipment Recommendation

Application of urethane coatings with spray equipment may require some masking and possible erection of wind screens to prevent over spray and drift damage. Protect surfaces of unrelated areas from coatings and overspray possibility.

Pumps: Graco King 45:1 or gas powered equivalents. Graco GH733, HydraMax 350 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 @ 2500–3500 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	.043	.047	.051	.055	.059
10" – 12"	539	543	547	551	555	559
12" – 14"	639	643	647	651	655	659
14" – 16"	739	743	747	751	755	
16" – 18"	839	843	847	851	855	
Flow Rate	1.60 gpm	1.98 gpm	2.37 gpm	2.79 gpm	3.25 gpm	3.74 gpm

* 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 Clean Up

- A. As work progresses, it is essential to keep equipment in clean, working condition. If spray equipment is used, flush lines with mineral spirits or kerosene. General clean-up with same.
- B. Do not allow the GEOGARD to remain in the spray equipment overnight.

GEOGARD[®]

- 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

Please note that if Republic Powdered Metals has been 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 GEOGARD[®] System.

