

SPECIFICATION

# GEOGARD®

WATERPROOFING SYSTEM FOR STRUCTURAL CONCRETE 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 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, urethane, elastomeric fire resistant coating system. The system consists of a single component, high performance, modified, aromatic, urethane base coat, and a single component, high performance, modified, aliphatic, urethane top coat.

2. Performance Requirements

	<b>GEOGARD Base Coat</b>	<b>GEOGARD Finish Coat</b>
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

	<b>GEOGARD Base Coat</b>	<b>GEOGARD Finish Coat</b>
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

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## 2.02 Accessory Materials

- A. DURATHANE is a premium grade, moisture cured, one component, polyurethane sealant for use in filling cracks and sealing penetrations.
- B. GEOGARD Seam Sealer is a gray single component, urethane industrial maintenance coating for waterproofing metal building seams and sealing fastener heads, as well as sealing joints in copings, flashings, vents, protrusions etc.
- C. GEOGARD Primer is an inter-coat adhesion primer for reactivating GEOGARD Base Coat.
- D. PERMAFAB is a 100% stitchbonded polyester fabric used in conjunction with Republic coatings and mastics as a flashing and surface break repair fabric.

## PART 3 – Execution

### 3.01 Preparation For Coating

- A. Surface Preparation Cleaning
  - 1. All surfaces are to be free of loose mortar, dirt, grease, oil, loose paint and, other foreign matter which could prevent proper adhesion.
  - 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 (2,000 psi.). All surfaces must be completely dry prior to application of the coating/coating system.
  - 3. Mold or mildew must be removed. Scrub surfaces with a solution of one quart household bleach to three quarts of water. Wear protective goggles and rubber gloves. Scrub well with brush and allow solution to remain on the surface for ten minutes then rinse thoroughly with clean water.
  - 4. 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.
  - 5. Prevent mechanical units from distributing solvent fumes into the building.
  - 6. Concrete shall be a minimum 28 days old. If a curing compound or sealer was used, a test for adhesion and compatibility with coating system must be made.
- B. Surface Repairs
  - 1. Large Cracks (thickness of a credit card, 30+ mils)
    - a. Fill with DURATHANE Sealant or use GEOGARD Seam Sealer at the rate of 30 - 40 lineal ft./gal. in a three course combination with PERMAFAB fabric. A three course combination consists of sealer / fabric / sealer.
  - 2. Spalled or Deteriorated Concrete
    - a. To be repaired using a patching and resurfacing compound.
- C. Roof Penetrations
  - 1. The base of all roof penetrations, i.e. stacks, vents, curbs, etc., must be sealed using GEOGARD Base Coat and PERMAFAB. 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.
- D. Metal Components
  - 1. Damaged fascia, gutters, vents, flashings, etc., must be replaced.

### 3.02 GEOGARD Waterproofing System

- A. Application
  - 1. Apply GEOGARD Base Coat at the rate of 3 gal./100 sq. ft. (48 wet mils).
  - 2. Allow Base Coat to cure (min. 24 hours) and apply GEOGARD Finish Coat at the rate of 1 gal./100 sq. ft. (16 wet mils).
  - 3. Do not permit traffic on completed surfaces unless necessary, and only after complete cure.
- B. GEOGARD Non-Skid Applications - Traffic Areas
  - 1. Apply GEOGARD Base Coat at the rate of 3 gal./100 sq. ft. (48 wet mils)
  - 2. Allow Base Coat to cure (min. 24 hours) and apply GEOGARD Finish Coat at the rate of 100 sq. ft./gal. (16 wet mils).

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3. Immediately broadcast and back roll #20-40 mesh, angular cut, washed silica sand into the wet film at the rate of 13 lbs./100 sq. ft. Allow to cure overnight.
4. Allow to cure 24 hours before permitting traffic.

## 3.03 The Protective Coating

### A. General

GEOGARD Base Coat and Finish Coat are not recommended for roofs where all plies have become embrittled or where the insulation has become saturated. Not recommended over unweathered asphalt less than two seasons old, tar roofs, or silicone-based coatings. Not recommended for vehicular traffic. Apply at temperatures over 40°F. Surfaces must be completely dry. Do not apply when rain is imminent. CAUTION: Application of this product in high humidity or temperatures, or over water saturated substrates can lead to improper curing, surface defects, and/or loss of gloss. All surfaces suspect for moisture contamination should be evaluated prior to application. Republic makes no warranty as to appearance or color since application methods and job site conditions are beyond our control, and can affect product performance. GEOGARD Finish Coat must be applied to the Base Coat within 72 hours of its application.

### B. Application

GEOGARD Base Coat and Finish Coat may be applied by brush, roller, squeegee, or heavy-duty airless spray. MIX WELL BEFORE USE. When applying GEOGARD over a previously coated substrate, a test patch should be applied to determine compatibility and adhesion. 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, 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 @ 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.
- 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.

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## PART 4 – File Data

### 4.01 Enclosures

### 4.02 Warranty Disclaimer

- A. 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.



2628 Pearl Road ■ Medina, Ohio 44256  
800-551-7081 ■ 800-382-1218 Fax  
[www.rpmrepublic.com](http://www.rpmrepublic.com)

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