

# ALUMANATION<sup>®</sup> 301

WATERPROOFING SYSTEM FOR MODIFIED BITUMEN 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. ALUMANATION 301

#### 1. Description

ALUMANATION 301 is a metallic pigmented, industrial maintenance, self-priming, aluminum coating formulated with selected high solids, asphaltic liquids, non-drying oils, a blend of natural and synthetic fibers, and fine aluminum pigment. The asphaltic vehicle has a minimum of 60% solids. The aluminum pigment exceeds Federal Specification TT-P-320D, Type 2. ALUMANATION 301 contains NO ASBESTOS or glass fibers. Exceeds performance standards as set forth in Federal Specification TT-C-1079, TT-C-498, ASTM-D-2824, and Canadian Specification 37G P42 M, containing no asbestos. Do not use in areas that pond water per NRCA Guidelines.

#### 2. Performance Requirements

Weight per gallon (ASTM D 1475)	8.8 ± 0.2 lbs.
Specific gravity (ASTM D 562)	1.00 ± 0.2
Solids (% by Weight)	61% ± 1%
Solids (% by Volume)	47% ± 1%
Metallic Content (ASTM D 2824)	Min. 15%

Flexibility @ 32°F (ASTM D 1737)	Passes 1/4 inch mandrel bend
Dry time (ASTM D 1640)	24 hours
Flash point (ASTM D 3278)	105°F
Reflectivity	> 60%
Clean Up	Mineral spirits

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## 2.02 Accessory Materials

- A. PERMAFAB is a 100% stitchbonded polyester fabric used in conjunction with Republic coatings and mastics as a flashing and surface break repair fabric.
- 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. PERMAFLEX is a water-based, non-fibered, elastomeric asphalt emulsion roof coating modified with neoprene rubber.

## PART 3 – Execution

### 3.01 Preparation For Coating

#### A. Cleaning

1. Remove all loose granules, 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 ALUMANATION 301 to the entire roof.
3. Check for adhesion and compatibility of any remaining, tightly adhered, existing coating with ALUMANATION 301. 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.

#### B. Flashings

Flashings can be repaired using PERMAFAB polyester fabric and GEOGARD Seam Sealer. *If flashings are damaged beyond repair, flashing must be replaced with granular modified bitumen cap sheet. The membrane should be installed per the manufacturer's written specification, to bring the flashings back to a water tight condition.*

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 Seam Sealer to all areas in 1/8" thickness.
4. Embed fabric into the cement from 4" onto the roof surface to a minimum of 8" above roof surface. Adjacent pieces should be lapped a minimum of 4". Trowel or brush for proper adhesion and removal of all voids.
5. Apply a top coat of GEOGARD Seam Sealer to 1/8" thickness over the fabric and a minimum of 2" beyond edges.
6. Install metal counter flashing as required.
7. After proper cure period, coat all vertical flashings with ALUMANATION 301 at the rate of 1 ½ gals./100 sq. ft. (24 wet mils).

**All tight flashing seams need to be addressed when applying field coat, by coating the seams of the flashings with an additional 2 gal./100 sq. ft (32 wet mils), 4 inches wide, centered over the flashing seams with ALUMANATION 301.**

#### C. Blisters

1. Make an incision in delaminated plies in a manner to allow the delaminated area to be folded back. Sponge out water and allow area to dry. Trowel a liberal application of GEOGARD Seam Sealer into the opening, pressing the delaminated plies into place. *If flaps are brittle, cut them off. Because of the thickness of typical built-up roofing plies, if a brittle blister needs to be removed it will need to be replaced with granular modified bitumen cap sheet. The membrane should be installed per the manufacturer's written specifications, to bring the roof membrane back to level with the existing membrane. Once repair is fully cured, 3-course the perimeter of the repair (GG SS / Permafab / GG SS).*
2. Replace flaps and apply GEOGARD Seam Sealer at about 1/8" thick and 8" wider than the blister area. If flaps are brittle, cut them off.
3. Embed fabric cut about 6" wider than the blister area and top coat with a 1/8" thick layer of GEOGARD Seam Sealer over the fabric and a minimum of 2" beyond edges.

#### D. Splits

1. Apply GEOGARD Seam Sealer about 1/8" thick over the area - 8" beyond the width of the split in each direction.
2. Cut fabric 6" wider than the split on each side and embed in the GEOGARD Seam Sealer.
3. Apply a 1/8" top coat of GEOGARD Seam Sealer over the fabric and a minimum of 2" beyond edges.

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

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## E. Fishmouths

1. Cut fishmouth to provide a smooth edge and apply GEOGARD Seam Sealer.
2. Cut fabric to size and embed in mastic.
3. Apply a 1/8" top coat of GEOGARD Seam Sealer over the fabric and a minimum of 2" beyond edges.

## F. Modified Bitumen Seams

1. Install PERMAFLEX or GEOGARD Seam Sealer to the modified seam area (approx. 4") at a rate of 32-40 wet mils. In typical situations, one (1) gallon of PERMAFLEX or GEOGARD Seam Sealer will cover approximately 50-70 lineal feet of seams at a thickness of 1/8".
2. If seams are faulty, three course with 4" PERMAFAB fabric embedded into either PERMAFLEX or GEOGARD Seam Sealer in a 6" wide application. A three-course combination consists of sealer/fabric/sealer. In typical situations, one (1) gallon of PERMAFLEX or GEOGARD Seam Sealer will cover approximately 30-40 lineal feet of seams in a three-course combination.
3. If using PERMAFLEX and felts or plies are dried out, apply REPUBLIC WB Primer at the rate of 200-400 sq. ft./gal. prior to the application of PERMAFLEX.
4. If using GEOGARD Seam Sealer, allow to cure 24-48 hours.
5. If using PERMAFLEX, allow to cure 48-72 hours, depending on temperature and humidity.

### 3.02 ALUMANATION 301

#### A. Weathered Modified Bitumen

1. Clean surface.
2. Repair flashings, blisters, and other damaged areas.
3. Coat all vertical flashings with ALUMANATION 301 at the rate of 1 ½ gals./100 sq. ft. (24 wet mils).
4. Apply ALUMANATION 301 at the rate of 2 ½ gal./100 sq. ft. (40 wet mils).

#### B. 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	
<i>Flow Rate</i>	<i>1.60 gpm</i>	<i>1.80 gpm</i>	<i>1.98 gpm</i>	<i>2.17 gpm</i>	<i>2.37 gpm</i>	<i>2.58 gpm</i>

**\* Graco Heavy - Duty RAC Switch tips (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.

### 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 mineral spirits or kerosene. 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.

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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 for details regarding available warranties on the ALUMANATION® 301 System.



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