

MONOLITHIC / GEODESIC DOME SYSTEM SUMMARY

This is a generic summary of IPC's more detailed **MONOLITHIC/GEODESIC DOME SYSTEM SPECIFICATION**. For warranty purposes, Approved Applicators are responsible for studying, understanding, and following the specification. As always, contact IPC for technical assistance.

I. SURFACE PREPARATION

1. Pressure wash surface to be coated using TSP or other suitable cleaner and rinse with water.
2. Repair voids, fissures, and other problem areas with **ACRYCAULK[™]** and allow to cure overnight.
3. Geodesic Domes Only: Seal all seams according to the following procedure:
 - a. Brush a coat of **ACRYCAULK[™]** along either side of seam.
 - b. Embed 4-inch strip of non-woven polyester in **ACRYCAULK[™]**.
 - c. Brush heavy coat of **ACRYCAULK[™]** over polyester, ensuring no wrinkles or fishmouths.
 - d. Allow to cure overnight. Inspect and repair as necessary.
4. Repair serious problem areas in accord with dome construction standards and practices.

II. COATING APPLICATION

1. The surface to be coated must be clean and dry.
2. Apply **ACRYLINK G[™]** elastomeric roof coating with an airless sprayer or roller, giving special attention to seams and repaired areas.
3. Use an appropriate number of coats to achieve the correct millage.
4. Monolithic Domes:
 - a. 5-year: 2.75 gallons of **ACRYLINK G[™]** per square total.
 - b. 10-year: 3.67 gallons of **ACRYLINK G[™]** per square total.
 - c. 20-year: 5.5 gallons of **ACRYLINK G[™]** per square total.
5. Geodesic Domes:
 - a. 5-year: 3.2 gallons of **ACRYLINK G[™]** per square total.
 - b. 10-year: 4.125 gallons of **ACRYLINK G[™]** per square total.
 - c. 20-year: 6.0 gallons of **ACRYLINK G[™]** per square total.
6. Shotcrete-Surfaced Domes:
 - a. 10-year: 4.6 gallons of **ACRYLINK G[™]** per square total.
 - b. 20-year: 6.5 gallons of **ACRYLINK G[™]** per square total.
7. Backroll the base coat as it is being applied. Backroll the second coat on shotcrete-surfaces and then do not backroll subsequent coats.
8. Allow each coat to dry, inspect and repair as necessary before applying next coat.
9. Apply 0.5 gallons per square (200 square feet per gallon) of **ACRYSHEEN[™]** surface coating as a top coat, if desired.

III. LIMITATIONS

1. This procedure is to be used only in conjunction with commonly accepted waterproofing and dome construction standards.
2. No material shall be applied to wet, dirty, or frozen surfaces.
3. **ACRYLINK G[™]**, **ACRYCAULK[™]**, and **ACRYSHEEN[™]** shall not be applied during inclement weather, when a precipitation appears imminent, when the temperature is below 45 °F, when the relative humidity exceeds 85%, or within 4 hours of sundown.
4. In order to qualify for factory warranty, applicator must have Approved Applicator status, the surface must meet the square foot minimum, the **ACRYLINK G[™]** membrane must be continuous, and the membrane must meet the TDM minimum.
5. In conjunction with the final inspection, all debris, material, and equipment are to be removed from the job site, leaving the area in an undamaged and acceptable condition.

MONOLITHIC / GEODESIC DOME SYSTEM SPECIFICATION

Section 1.0 Scope

The intention of this specification is to outline procedures for the application of an **ACRYLINK G[™]** elastomeric coating membrane for the purposes of waterproofing, protecting, extending the life, and/or renewing an existing monolithic or geodesic dome. This specification describes materials, methods, and conditions necessary for the proper installation of this membrane.

Section 2.0 Materials

All materials shall be manufactured or approved by IPC, and shall meet the following minimum specifications:

2.1 **ACRYLINK G[™]** Elastomeric Coating

Vehicle Type	Crosslinking Acrylic
Pigment to Vehicle Ratio	1.5 to 1
Solids (Volume)	63%
Elongation.....	360%
Tensile Strength	304 psi
Permeance @ 45 mils	2.21 perms
Reflectivity (White).....	79%

2.2 **ACRYCAULK[™]** Brush or Trowel Grade Sealant

Vehicle Type.....	100% Acrylic
Pigment to Vehicle Ratio	1.97 to 1
Solids (Volume)	70%
Elongation.....	325%

2.3 **ACRYSHEEN[™]** Surface Coating

Vehicle Type.....	100% Acrylic
Pigment to Vehicle Ratio	1.2 to 1
Gloss	Medium Low
Color	Bright White (tintable)
Reflectivity (untinted)	80%

2.4 Delivery and Storage

- 2.4.1 Materials shall be delivered in their original, tightly sealed containers or unopened packages, clearly labeled with the manufacturer's name, Underwriter's Laboratories file number, and—where appropriate—product identification and lot numbers.
- 2.4.1 Materials shall be kept from freezing, and shall be stored out of the weather, in their original tightly sealed containers or unopened packages, as recommended by the manufacturer.

Section 3.0 Contractor

- 3.1 The **ACRYLINK G[™]** elastomeric coating membrane shall be applied by a single, experienced, and competent contractor or applicator, approved by IPC.
- 3.2 Contractor or applicator shall be responsible for selecting and supplying all labor and supervision, and shall be responsible for furnishing all materials required to complete the job satisfactorily, in accordance with manufacturer's specifications.
- 3.3 Contractor or applicator shall be responsible for assessing and determining the integrity of the existing substrate. All structural repairs shall be the exclusive responsibility of the contractor or applicator.
 - 3.3.1 All repairs shall be completed before coating application commences.
 - 3.3.2 All repairs shall be performed in accordance with commonly accepted dome construction and waterproofing standards and practices.

Section 4.0 Surface Preparation—Cleaning

Preparations shall include all requirements specified by IPC to ensure adequate adhesion of the **ACRYLINK G[™]** elastomeric coating membrane to the substrate surface. Preparation shall include, but shall not be limited to, the following:

- 4.1 All structural repairs shall be completed before coating application commences.
- 4.2 The entire surface to be coated shall be pressure washed in order to remove all loose texture, dust, dirt, debris, chalk, oil, tar, and the like from the substrate surface. A suitable cleaner, such as TSP, and a broom shall be used as necessary. If a cleaner is required, the surface shall be rinsed with water to remove residue.

Section 5.0 Surface Preparation—Repairs

Preparations shall include all requirements specified by IPC to ensure adequate adhesion of the **ACRYLINK G[™]** elastomeric coating membrane to the substrate surface. Preparation shall include, but shall not be limited to, the following:

- 5.1 All penetrations and transitions shall be inspected and repaired as necessary in order to ensure that there is an adequate seal before coating application commences.
- 5.2 Voids, fissures, and other problem areas shall be repaired with **ACRYCAULK[™]** sealant and allowed to cure overnight before coating application commences.
- 5.3 Seriously damaged areas shall be repaired in accordance with commonly accepted dome construction practices. Manufacturer of repair materials shall be consulted for specifications.

Section 6.0 Surface Preparation—Detailing

Preparations shall include all requirements specified by IPC to ensure adequate adhesion of the **ACRYLINK G[™]** elastomeric coating membrane to the substrate surface. Preparation shall include, but shall not be limited to, the following:

- 6.1 Detail work shall not commence during inclement weather, when a precipitation appears imminent, when temperature is below 45 °F, or when relative humidity exceeds 85%. To provide adequate curing time, coating application shall terminate at least four (4) hours before sundown.
- 6.2 Entire surface to be coated shall be free of dust, dirt, tar, oil, moisture, frost or any other material that would impair the adhesion of **ACRYLINK G[™]** elastomeric coating to the substrate surface.
- 6.3 Monolithic Dome Preparation
 - 6.3.1 Inspect air form for fissures, cracks, holes, and the like.
 - 6.3.2 Repair problem areas with **ACRYCAULK[™]** and allow to dry overnight.
 - 6.3.3 Polyester cloth shall be embedded in **ACRYCAULK[™]** where necessary.
- 6.4 Geodesic Dome Preparation
 - All seams across the entire substrate surface shall be sealed using the following method:
 - 6.4.1 On a clean, dry surface, a light coat of **ACRYCAULK[™]** shall be applied to both sides of the area to be flashed or bridged.
 - 6.4.2 A strip of non-woven or spun polyester roofing cloth, of an appropriate width, shall be pressed down into the caulk, thus bridging the gap. It is important to ensure that there are no fishmouths or wrinkles in the polyester.

- 6.4.3 The polyester cloth shall then be completely covered with a second coat of **ACRYCAULK™**. This second coat shall completely cover the polyester cloth, and shall be applied within the same working day as the application of the polyester cloth.
- 6.4.4 Narrow gaps and small holes may be sealed with **ACRYCAULK™** alone, without the use of polyester cloth.
- 6.4.5 Seams shall be allowed to cure overnight. Inspect and repair as necessary.

Section 7.0 Coating Application

- 7.1 Coating application shall not commence during inclement weather, when a precipitation appears imminent, when temperature is below 45 °F, or when relative humidity exceeds 85%. To provide adequate curing time, coating application shall terminate at least four (4) hours before sundown.
- 7.2 Entire surface to be coated shall be free of dust, dirt, tar, oil, moisture, frost or any other material that would impair the adhesion of **ACRYLINK G™** elastomeric coating to the substrate surface.
- 7.3 **ACRYLINK G™** elastomeric coating: Base Coat
 - 7.3.1 The base coat of **ACRYLINK G™** shall be applied at a minimum rate of 1.5 gallons per 100 square feet using conventional airless spray equipment or rollers.
 - 7.3.2 Coating shall be applied so as to cover the substrate uniformly. All flashed or repaired areas shall be coated again at this time, and during each subsequent coat.
 - 7.3.3 The base coat may be applied in more than one pass, if desired, to accelerate curing, provided adequate curing time has been allowed between passes to prevent damage being done to the membrane when it is walked upon.
 - 7.3.4 If sprayed, the base coat (the first pass of the base coat if applied in multiple passes) shall be backrolled as it is being applied in order to maximize adhesion to the substrate and to eliminate voids.
 - 7.3.5 The base coat shall be allowed to cure for at least two (2) hours, depending on temperature and humidity conditions, after which an inspection shall be performed. Any defects in the coating membrane shall be repaired with **ACRYLINK G™** or an approved building sealant.
- 7.4 **ACRYLINK G™** elastomeric coating: Second Coat
 - 7.4.1 The second coat of **ACRYLINK G™** shall be applied as soon as practical, within 24-72 hours, at approximate right angles to the direction in which the base coat was applied.
 - 7.4.2 Shotcrete-Surfaced Domes
 - 7.4.2.1 If sprayed, the second coat shall be backrolled immediately as it is being applied in order to maximize adhesion to the substrate and to eliminate voids.
 - 7.4.2.2 IPC does not require backrolling the second coat when coating geodesic or monolithic domes unless the substrate surface is unusually rough as with a shotcrete surface.
 - 7.4.3 The second coat shall be allowed to cure for at least four (4) hours, depending on temperature and humidity conditions, after which an inspection shall be performed. Any defects in the coating membrane shall be repaired with **ACRYLINK G™** or an approved building sealant.
- 7.5 **ACRYLINK G™** elastomeric coating: Subsequent Coats
 - 7.5.1 **ACRYLINK G™** coating may be applied in contrasting color coats. Order of application shall be as contractor specifies.
 - 7.5.2 The surface of the **ACRYLINK G™** base coat, and all subsequent coats, shall be free of all moisture, dirt, and debris before a subsequent coat is applied.
 - 7.5.3 Subsequent coats shall be applied at a right angle to the direction in which the previous coat was applied. For example, if the previous coat was applied with a north-south motion, the subsequent coat shall be applied with an east-west motion.
 - 7.5.4 Shotcrete-Surfaced Dome
 - 7.5.4.1 All subsequent coats shall be applied by conventional airless spray only.
 - 7.5.4.2 Subsequent coats **shall not** be applied with a roller and **shall not** be backrolled.
 - 7.5.5 Subsequent coats may be applied in more than one pass, if desired, to accelerate curing, provided adequate curing time has been allowed between passes.
 - 7.5.6 Subsequent coats shall be applied at the rate required to achieve the TDM minimum. It is essential to realize that the true surface area may be greater than the apparent surface area because of surface texture or profile. In order to achieve the TDM minimum on such a surface, the application rate must be increased appropriately.
 - 7.5.7 Each coat shall be allowed to cure for at least four (4) hours, depending upon temperature and humidity conditions, and inspected and repaired as necessary, before a subsequent coat is applied.
- 7.6 **ACRYSHEEN™** surface coating: Optional Coat
 - 7.6.1 A top coat of **ACRYSHEEN™** surface coating may be applied by conventional airless spray or roller at a minimum rate of ½ gallon per 100 square feet. ½ gallon per 100 square feet of **ACRYSHEEN™** surface coating may be substituted for ¼ gallon per 100 square feet of **ACRYLINK G™** elastomeric coating.
 - 7.6.2 Surface coat may be applied in more than one pass, if desired, to accelerate curing. Adequate curing time shall be allowed between passes.
 - 7.6.3 Surface coat shall be applied at a right angle to the direction in which the previous coat was applied. Surface coat shall completely mask the color of the previous coat.
 - 7.6.4 Surface coat shall be allowed to cure for at least four (4) hours, and inspected and repaired as necessary, before a subsequent coat is applied.
- 7.7 The cured **ACRYLINK G™** elastomeric coating system membrane shall be TDM minimum in all areas and shall be free of all pinholes and defects.
- 7.8 Required spread rates for the **ACRYLINK G™** membrane are as follows:
 - 7.8.1 Monolithic Domes (airform)
 - 7.8.1.1 5-year application: 2.75 gallons per 100 square feet of **ACRYLINK G™** total (27.5 dry mil average, 23 dry mil minimum).
 - 7.8.1.2 10-year application: 3.67 gallons per 100 square feet of **ACRYLINK G™** total (37 dry mil average, 32 dry mil minimum).
 - 7.8.1.3 20-year application: 5.5 gallons per 100 square feet of **ACRYLINK G™** total (55.0 dry mil average, 48 dry mil minimum).
 - 7.8.2 Geodesic Domes

- 7.8.2.1 5-year application: 3.2 gallons per 100 square feet of **ACRYLINK G[™]** total (32.0 dry mil average, 28 dry mil minimum).
- 7.8.2.2 10-year application: 4.125 gallons per 100 square feet of **ACRYLINK G[™]** total (41.5 dry mil average, 36 dry mil minimum).
- 7.8.2.3 20-year application: 6.0 gallons per 100 square feet of **ACRYLINK G[™]** total (60 dry mil average, 52 dry mil minimum).
- 7.8.3 Shotcrete-Surfaced Domes
 - 7.8.3.1 10-year application: 4.6 gallons per 100 square feet of **ACRYLINK G[™]** total (46 dry mil average, 40 dry mil minimum).
 - 7.8.3.2 20-year application: 6.5 gallons per 100 square feet of **ACRYLINK G[™]** total (65 dry mil average, 56 dry mil minimum).
- 7.9 Having completed the procedures specified above, and having achieved the TDM minimum in all areas, the **ACRYLINK G[™]** membrane shall be given adequate time to cure.

Section 8.0 Clean-Up

Upon completion of all work covered in this specification, and before the job is inspected, the contractor shall remove all equipment, material, and debris, leaving the area in an undamaged and acceptable condition. In no case shall the job be considered complete before the job site has been properly cleaned.

Section 9.0 Limitations

This system is to be used only in conjunction with commonly accepted waterproofing and masonry standards including but not limited to the following:

- 9.1 In order to qualify for a factory warranty, applicator must have Approved Applicator status, the roof must meet the square foot minimum, the **ACRYLINK G[™]** membrane must be continuous, and the membrane must meet the TDM minimum.
- 9.2 No application of component materials shall commence during inclement weather, when a precipitation appears imminent, when temperature is below 45 °F, or when relative humidity exceeds 85%.
- 9.3 No material shall be applied to wet, dirty, or frozen surfaces.
- 9.4 Coating application shall not commence until all other trades are off of the dome surface.
- 9.5 In conjunction with the final inspection, all debris, material, and equipment are to be removed, leaving the area in an undamaged and acceptable condition.