



The following pages include a typical specification (in the Construction Specification Institute format). This specification is intended to be used as part of a project or as a stand-alone specification for the purchase of a swimming pool, aquatic facility or water feature item.

This specification is not proprietary or intended to limit competition. To the contrary, the purpose of this specification is to establish the minimum performance and quality standards. The use of this specification does not preclude other manufacturers or suppliers from bidding. In fact, the use of a comprehensive and detailed specification ensures that the purchaser or owner actually receives the expected quality and performance required.

Natare recommends that purchasers understand their needs, specify the item that meets their requirements and demand that all potential suppliers meet those minimum requirements.

Please contact Natare for assistance in selecting and specifying your swimming pool, aquatic facility or water feature items.

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SECTION 13 11 XX – (PVC Membrane System)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The provision of the Notice to Bidders, Instructions to Bidders, Proposals, General Conditions, Supplementary Conditions, General Requirements, related Sections, and other Divisions of these documents if used as part of this project are included as a part of this Section as though bound herein.

1.2 SUMMARY

- A. It is the intent of this specification to describe the installation of a complete reinforced PVC membrane lining system specifically designed and formulated for use in swimming pools. The system shall consist of two layers of flexible PVC totally encapsulating a polyester inner reinforcement in combination with required accessory items to complete the installation. The system shall be installed in accordance with the configuration as detailed in the drawings, including all necessary equipment within this specification. Individual sections of reinforced PVC membrane shall be custom-fitted and welded together at the job site using hot air welding techniques to form a watertight continuous membrane lining. Upon completion, the system shall provide a waterproof, yet flexible membrane, complete with all necessary compression strips, compression flanges, or other required termination materials and markings.
- B. The performance characteristics and installation qualifications as established herein reflect the minimum requirements for any membrane system to be utilized on this project. Systems not meeting the minimum requirements established for this project will not be considered.
- C. This specification includes, but is not limited to, the following components:
1. Flexible reinforced PVC membrane
 2. Slip-resistant reinforced PVC membrane
 3. Liquid PVC Edge Sealant
 4. Geotextile Underlayment/Fleece Separator
 5. PVC-coated stainless-steel strips & angles
 6. ABS expansion joint covers, as needed
 7. Sanitizing agents
 8. Compression Strips & Flanges
 9. Adhesives
 10. Refer to Section _____, Alternates, for alternates that may affect the Work of this Section.
 11. This Specification describes Natatec® PVC Membrane Lining System as illustrated by the drawings. Should the requirements of this specification contradict any other section of the project specifications, this section shall govern.

1.3 Scope of Work:

- A. Work Included: The work specified herein and as indicated on the drawings includes, but is not necessarily limited to, furnishing all the labor, materials, equipment, and drayage to all the operations related to the

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fabrication and installation of the PVC Membrane System. The Work shall be as specified herein and as denoted on the accompanying drawings.

- B. Related Work and Responsibilities Assigned to Others: Coordinate all activities with the appropriate parties. Advise the owner's representative if proper conditions are not maintained or if the responsibilities of others are not properly completed. Related work responsibilities generally include, but are not limited to the following:
1. Provide and maintain appropriate and suitable environmental conditions, including temporary heat shelter and weather protection for the completion of the work.
 2. Surface preparation, beyond the scope of minor surface patching of concrete (up to 1/3 cubic ft. of patching material) and broom cleaning, prior to system installation. Extensive surface repairs or cleaning, including removal of debris and water, are not included in base bids. (Optional) Contractor may include extended surface repair if such work can be quantified and materials specified.
 3. Perimeter sealant, caulking, or other sealing except sealants that are integral to the PVC Membrane System.
 4. Removal and reinstallation of deck and accessory equipment.
 5. Provide means for storage and disposal of scrap material, coating debris, and other material near pool area.
 6. Electrical work, including grounding of the pool, installation of underwater lights or other components, or any related electrical work.
 7. Temporary facilities, including electrical power, close to the installation site.
 8. Provide temporary water at fifty (50) psi (to gallons per minute) minimum for cleaning, rinsing, and testing purposes, as well as facilities for draining the pool and maintaining workable conditions within the pool area.
 9. Final cleaning of pool area outside of the PVC Membrane System.
 10. Provide and maintain all necessary barricades, signs, lights, flares, and other security as required protecting workmen and the public.
 11. Drain pool, coordinate with the contractor to ensure proper hydrostatic relief is maintained. Closely monitor the water table around the pool to minimize hydrostatic damage to the pool shell and maintain the removal of rain and ground water throughout the installation.
 12. Immediately after installation, protect the pool from damage, contamination, spatter, and spillage caused by construction work of other trades. This shall include covering the pool with protective materials when necessary, and responsibility for prompt repair or corrective measures in the event of damage.
- C. Where items of the architectural, mechanical, or electrical general conditions, special conditions, and specifications are repeated in this Section of the Specifications or Project Documents, it is intended to call particular attention or qualify these items or to indicate that the requirements of this Section shall govern in the event of conflict with other Sections. It is not intended that any other parts of the documents shall be assumed

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to be omitted if not repeated herein. Should the requirements of any other Section of the project documents contradict this section, the requirements of this section shall govern.

1.4 DEFINITIONS

- A. References Standards: Certain applicable reference standards are incorporated herein to the extent such references are relevant, with the latest revision applicable including, but not limited to:
1. Fabrication standards:
ASTM - American Society for Testing Materials
ANSI - American National Standards Institute
NSF - National Sanitation Foundation
 2. The following are utilized as applicable:
NCAA - National Collegiate Athletic Association
FINA - Federation Internationale de Natation Amateur
USS - United States Swimming Incorporated
- B. The intent of these specifications is not to establish specific quantities, amounts, or dimensions. Thus, the reference to "one", "each", "an", "a", or like wording is for semantic purposes only. Unless specifically stipulated otherwise, provide materials, equipment, and items as detailed on the drawings or as reasonably required for complete, operational PVC Membrane System installation(s).

1.5 SUBSTITUTIONS

- A. The PVC Membrane System has been the subject of a detailed investigation, and the design and operation of adjoining equipment and systems is based upon the specified membrane system. All base bids shall include only the equipment and systems listed herein or subsequently approved by addendum. The Owner reserves the right to reject all substitutions without cause and for any reason whatsoever, and the contractor is obligated to provide only the products, equipment or systems as described by the specified manufacturer.

1.6 TRADE NAMES

- A. When a particular manufacturer's product, system or brand name is designated in the project documents, either in the drawings, specifications, or addenda thereto, only such designated products or systems by the named manufacturer may be provided.
1. When reference is made in the project documents to trade names, brand names or the products of a particular manufacturer, such references are made solely to indicate what products or systems may be furnished under the base bid and are not intended to restrict competition. Should any bidder desire to use products, systems or trade or brand names that are different from those mentioned in the project documents, application for the approval of such different products, systems, trade names or brand names must be provided to the Architect in writing a minimum of 10 days prior to the date set for the opening of bids.
 2. The burden of proving acceptability rests with the applicant and any application for approval must be accompanied with adequate and sufficient technical data, drawings, and details to clearly and convincingly establish beyond all doubt that the proposed product or system meets or exceeds all express requirements of the project documents.
 3. Unless requests for approval of other products, systems, trade names or brand names have been received and approvals have been published by addendum, only such designated products or systems by the named manufacturer may be provided.

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1.7 SEQUENCING AND SCHEDULING

- A. Coordinate all work activities and installation of the PVC Membrane System with other building components and the work activities of other trades.

1.8 DRAWINGS:

- A. The drawings are generally diagrammatic and are intended to convey the scope of work and indicate general arrangement. The drawings are intended for contractors having experience, skill, and discretion in the execution of the work implied by the drawings.
- B. Under no circumstances shall any dimensions be decreased or increased significantly, or radical changes made in any part of the installation without the written consent of the Consultant or the Owner.

1.9 SUBMITTALS

- A. Upon notice to proceed under this Contract, installation details and submittal documents shall be provided, fully illustrating the materials and procedures to be utilized. These details and submittal documents, once accepted by the Owner or Owner's Representative, shall be the basis for the fabrication, installation, and inspection.
- B. Product Data: Submit manufacturer's technical information and product data for the PVC Membrane System including the following:
 - 1. List of materials to be used including color/finish options, if applicable.
 - 2. Provide dimensional shop drawings showing all pertinent dimensions.
- C. Program and Procedures: Prepare and submit a summary of the installation program which involves scheduling, preparation and installation procedures, quality control and project close-out. Submit to architect for approval.
- D. Submit comprehensive operations and maintenance manuals. Include recommendations for corrective action of typical situations that may be encountered.
 - 1. Submit recommended and required values for swimming pool water chemistry and other operational aspects of maintaining the swimming pool facilities.
 - 2. Maintenance Instructions and Maintenance Program: Provide complete descriptive information detailing proper care, maintenance, and cleaning of the system.

1.10 QUALITY ASSURANCE

- A. This is a performance specification. The complete and functional reinforced PVC membrane system, as specified herein and shown on the drawings, is to be the basis for receiving bids. While it is not the intent of these specifications to, in any way, limit competition or restrict the bidder in the preparation of their bid, the bidder shall offer products and materials in literal compliance with these specifications. The bidders are cautioned that offering products or systems failing to meet these specifications will be considered non-responsive.
- B. Past performance on similar prior projects will be a basis for acceptance or rejection of bids. Price will not be the sole factor in the contract award. Bidders will be evaluated on the following factors, and the Owner reserves

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the right to reject any bid with or without explanation and for any reason whatsoever. Factors to be evaluated will include the following:

1. Quality of product and service, including, but not limited to compliance with previous contract requirements, accuracy of communications, technical excellence, expertise, and experience.
 2. Timeliness of Performance, including but not limited to meeting dates and milestones, reliability, responsiveness, on-time delivery, and adherence to contract schedule.
 3. Cost Control, including, but not limited to value of deliverables, completeness of proposals and work scope, limited and reasonably priced change orders, and accurate, complete, and timely requests for payment.
- C. The PVC Membrane System shall be the product of a firm having at least ten (10) years' experience in the design, manufacture and installation of PVC Membrane Systems used in swimming pool, aquatic or water feature applications. The firm also must have at least ten (10) installations of similar projects currently in satisfactory operation for no less than three (3) years. All systems shall follow the code requirements that govern the State of the installation.
1. In the event an alternate manufacturer's system is approved, all contractors will be advised in addendum prior to bid opening to allow for inclusion of such a system or equipment in their bids. In the absence of approval for an alternate manufacturer, only the specified manufacturer's system may be incorporated in the project.
 2. Listing or subsequent approval of a particular manufacturer as an approved manufacturer does not constitute acceptance of the manufacturer's standard configuration, materials, or equipment, except as they specifically meet or can be made to conform to the requirements defined in this specification. Any bid shall be assumed to include all costs to change, modify or otherwise comply fully with the requirements of this specification. Claims for additional compensation to comply with these specifications after bid for any reason whatsoever will not be considered. Only materials, equipment, or systems that absolutely comply with these specifications in all regards will be accepted. Any substitute systems from alternate manufacturers shall follow all requirements of these specifications.
- D. Warranty: The PVC Membrane System shall be guaranteed for materials and performance for a period of ten (10) years with an optional extended warranty for 15 years. This warranty shall not include or cover abusive or improper treatment of the PVC Membrane System by others either during construction or when operational.
- E. A sample copy of the warranty statement in accordance with these specifications must be provided prior to approval.
- 1.11 DELIVERY, STORAGE AND HANDLING:
- A. The PVC Membrane System components shall be delivered to the job site adequately packaged to prevent damage. Unloading and storage shall be executed by the Owner, Customer, or optionally the Contractor. The materials shall not be stacked or stored in any manner which could cause damage or deformity. Site assembly

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or fabrication of any part of the PVC Membrane System without the complete coordination and supervision of the manufacturer or his representative is strictly prohibited.

1.12 PROJECT SITE CONDITIONS:

- A. The project site shall be in accordance with the Manufacturers' technical bulletins. Access for the installation of the PVC Membrane System will be provided by others.
- B. All surface preparation necessary to produce a reasonably smooth, firm, clean and dry surface shall be completed prior to the onset of installation. The surface must be free of angular materials, bubbles, voids, and large cracks. These irregularities shall be filled with suitable patching material dictated by existing substrate material/construction. Tar, oil, or petrochemical compounds must be removed or isolated. Contractor can provide surface preparation as an Option.

1.13 COORDINATION:

- A. The manufacturer shall provide complete descriptive information detailing the design, construction, and installation.
- B. [Optional]. The contractor shall include all costs for visits to the project site to coordinate various aspects of design, construction, installation, and commissioning of the lining system. Coordination shall include the cost for aspects of the installation and to coordinate manufacturing, testing, and commissioning programs with the main contractor(s), and other suppliers. Such visits shall take place immediately upon notice to proceed to enable all contractors to be briefed, and a complete production and installation program to be established.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Manufacturer: Natare Corporation, Indianapolis, Indiana, or Renolit Corporation (worldwide). All bids shall include only PVC Membrane Lining Systems from these manufacturers. There are no known equals to these products.
- B. The system specified is based upon either the Natatec® Swimming Pool Membrane System or Renolit AlkorPlan 2000, which are proprietary products of these manufacturers. The characteristics, standards and criteria listed herein have been established as the minimum acceptable values for any membrane product to be offered on this project. As all aspects and equipment within the pool system have been designed to utilize this system,

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products not approved and listed prior to bidding as meeting the minimum requirements listed will not be accepted as that could adversely affect the performance of the system.

- C. If alternate systems are approved prior to bidding, all bidders will be notified by addendum.
- D. Source Limitations: Provide all PVC Membrane System components through one source from a single manufacturer.

2.2 MATERIALS

- A. Ensure that all materials used are compatible with the swimming pool environment, and that these materials are supplied as a system.

2.3 COMPONENTS AND EQUIPMENT

- A. Flexible Reinforced PVC Membrane: The flexible PVC membrane shall be installed to the dimensions detailed on the drawings and as required. The membrane shall consist of two (2) layers of PVC fuse, bonded to a polyester mesh substrate. The membrane shall be no less than 60.0 mil in thickness (.060-inch/1.5 mm) and shall conform strictly with the following chemical and physical properties as listed herein. The flexible PVC membrane shall be furnished with a proprietary acrylic polymeric MicroShield coating to resist abrasion, staining, UV deterioration and microbial action. The polymeric coating shall be Natare MicroShield™ coating or Renolit AklorPlan 2000. Only those membranes specifically formulated for swimming pool use shall be considered. Roofing membranes, general waterproofing membranes, and vinyl liners shall not be acceptable. Additionally, only those swimming pool membranes meeting or exceeding the following ASTM test values, substantiated by independent documentation from a certified testing laboratory, shall be acceptable. The membrane shall be furnished in a color scheme as detailed by the drawings or in a standard color as selected by the owner.

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-Smooth PVC Membrane Chemical and Physical Properties:

Characteristic	Value	Test Method
Composition specifications		
Mass per unit area	2.58 x 10 ⁻³ lbs/in ² ± 10 %	ASTM D3776
Reinforcement	0.11 x 0.11 inch PET 110 Tex	
Water absorption	< 1 % of mass	ASTM D570
Dimensional specifications		
Mean thickness	60 mil ± 5 %	ASTM D374C
Mechanical specifications		
Yield strength md/td	290/260 lbs/in	ASTM D638
Break strength md/td	140/130 lbs/in	ASTM D638
Tear resistance	≥ 45/43 lbs	ASTM D1004
Dimensional stability	≤ 0.5 %	ASTM D1204
Cold bending resistance	-49 °F	ASTM D2136
Puncture resistance	230 lbs	ASTM D4833
Delamination resistance	13 lbs/in	ASTM D413
Durability specifications		
UV resistance	Maintenance of tensile properties > 90%	ASTM D4355
Chemical resistance (Chlorine solution 20 mg/l pH 7)	No changes	ASTM D543 procedure 1

-Slip Resistant variant of Flexible Reinforced PVC Membrane: A slip-resistant reinforced PVC membrane, 67 mil minimum thickness (.067-inch/1.7 mm), which includes a specifically designed embossed surface suitable for shallow depth areas requiring slip-resistance surfaces, shall be installed as detailed on the drawings. Furnished in the color scheme as detailed by the drawings or as selected by the owner.

-Slip Resistant PVC Membrane conforms to the following classifications for slip resistance:

- a. DIN51097 Class C, OR RESULT >24° according to EN13451-1:2021
- b. 3 CTE Class, or result .45° according to UNE 41901:2017 EX
- c. SUITABLE, according to code ANSI A137.1-2017 or DCOF > 0.42

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-Slip Resistant PVC Membrane Chemical and Physical Properties:

Characteristic	Value	Test Method
Composition specifications		
Mass per unit area	3.14 x 10 ⁻³ lbs./in ² ± 10 %	ASTM D3776
Reinforcement	0.11 x 0.11 inch PET 110 Tex	
Water absorption	< 1 % of mass	ASTM D570
Dimensional specifications		
Mean thickness	70 mil ± 5 %	ASTM D374C
Mechanical specifications		
Yield strength md/d	290/260 lbs/in	ASTM D638
Break strength md/d	140/130 lbs/in	ASTM D638
Tear resistance	≥ 45/43 lbs	ASTM D1004
Dimensional stability	≤ 1 %	ASTM D1204
Cold bending resistance	-49 °F	ASTM D2136
Puncture resistance	230 lbs	ASTM D4833
Delamination resistance	13 lbs/in	ASTM D413
Slip resistance	DCOF > 0.42	ANSI A326.3-2021
Durability specifications		
UV resistance	Maintenance of tensile properties > 90%	ASTM D4355
Chemical resistance (Chlorine solution 20 mg/l pH 7)	No changes	ASTM D543 procedure 1

- B. Geotextile Underlayment, "Fleece Separator": The interior surfaces of the swimming pool shall be covered with an engineered polyester fleece separator, a minimum of 125.0 mil in thickness (.125-inch/3.175 mm), weighing at least 10 ounces per square yard. The fleece separator must be resistant to freeze, thaw, moisture, soil-chemical abrasion, or ultraviolet deterioration and shall conform strictly to the following chemical and physical properties. All fleece separators shall be certified and guaranteed to be free of foreign materials, which could potentially be damaging to the liner.
- C. Chemical and Physical Properties (Property Unit Value Test)
- | | | |
|--------------------------|------------------------|------------|
| Weight: | 10 oz./sq.yd. | ASTM D5261 |
| Thickness: | 125 mils | ASTM D5199 |
| Grab Strength: | 305 lbs. | ASTM D4632 |
| Grab Elongation: | 60% | ASTM D4632 |
| Trapezoid Tear Strength: | 100 lbs. | ASTM D4533 |
| Puncture resistance: | 130 lbs. | ASTM D4833 |
| Mullen Burst Strength: | 510 psi | ASTM D3786 |
| Water Flow Rate: | 80 gpm/ft | ASTM D4491 |
| Permittivity: | 1.07 sec ⁻¹ | ASTM D4491 |
| Permeability: | 0.34 cm/sec | ASTM D4491 |
| AOS: | 70/0.210 sieve size/mm | ASTM D4751 |
- D. PVC Coated Stainless Steel: PVC-coated stainless-steel strips or angles shall be used in select areas to form edges, angles, corners, or other transitions where required to form and anchor PVC membrane. Configurations

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where PVC membrane is to terminate above water line on a horizontal surface such as coping stone to deck joint or similar may use PVC coated stainless-steel as final termination.

- E. ABS Strips, 1/16-in. x 6-in, may be installed over expansion/control joints in concrete pool shells where incompatible petroleum-based sealants exist. These ABS strips provide separation of incompatible sealants from PVC membrane to prevent premature degradation and/or discoloration of PVC membrane.
- F. Sanitizing Agents: Sanitizing agents, formulated from a mixture of halogenated organic compounds, and specifically designed for this purpose, shall be applied to the pool surface, beneath the pool liner, to prevent the growth of microbes or fungus.
- G. Compression Strip & Flanges: Extruded rigid PVC Compression strip & Compression flanges fabricated of rigid 0.25-in. thick white polymer, shall be furnished as required for sealing of PVC membrane at all terminating edges, penetrations, or openings within PVC membrane systems coverage. All transition flanges shall be secured with stainless steel anchoring systems.
- H. Edge Sealant: Liquid PVC edge sealant solution shall be applied to all exposed material edges after welding. This process is to provide a properly detailed edge on material lap joints. Only those membrane systems utilizing a liquid PVC edge sealant solution will be considered, as this process is critical to the overall durability of the membrane.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. The supervising representative or installer shall verify that the site conditions are in accordance with the Manufacturers' requirements, shop drawings and/or technical bulletins and are suitable for the installation of the membrane.

3.2 Preparation

- A. Surface preparation shall be completed prior to the commencement of installation. The surface shall be reasonably smooth without oil or tar-based materials present. Deteriorated surfaces or voids shall be repaired with appropriate patching materials. Areas immediately surrounding fittings, lights, and other transitions or entrances to the pool shall be sound and suitable for appropriate anchoring for the installation of the PVC compression strips & flanges.

3.3 Installation and Application

- A. All work to be performed by skilled technicians having adequate experience with, and specific training in, the field welding and fabrication of flexible PVC swimming pool membrane systems. Additionally, to ensure the overall integrity of the installation, the installing crew shall be supervised by a crew leader having had no less than two (2) years' experience in the application of PVC membrane systems on at least five (5) pool projects similar in size and scope to this project.
- B. To ensure the integrity of the membrane installation and to secure a single source of responsibility for any required warranty service, all membrane system installation personnel shall be full-time regular employees of

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the Contractor, system manufacturer, or shall be trained & certified in installation by Contractor or Manufacturer.

- C. All work is to be performed in accordance with the manufacturer's technical bulletins. Should the requirements of these bulletins contradict this or any other section of the specifications, the procedures called for in the bulletins shall govern. The work under this section shall be performed by or directed by a trained and certified installer of the Contractor or system manufacturer so that the complete installation will function in accordance with the intent of these specifications.
- D. (Optional) Connection to new or existing perimeter gutter systems: When installing the PVC Membrane System in swimming pool or aquatic facilities with new or existing stainless steel perimeter gutter systems, a 12-gauge stainless steel termination skirt may be continuously welded to the stainless-steel gutter system for attachment of primary main termination of PVC membrane system.
1. The stainless-steel termination skirt shall be fabricated as detailed in the drawings and shall provide a smooth, uninterrupted surface onto which the membrane shall be compressed. The PVC membrane and an RTV silicone sealant shall be compressed between a rigid PVC compression strip and the termination skirt through the installation of ¼"-20 stainless steel screws or threaded 10-24 stainless-steel studs and hex nuts, located no greater than 3-inches on-center.
 2. Stainless-steel perimeter gutter system with integrated stainless-steel filtered water supply tube requires pressure testing after installation of stainless-steel perimeter gutter and/or stainless-steel PVC membrane termination skirt. Addition of a stainless-steel PVC membrane termination skirt to an existing stainless-steel perimeter gutter requires pressure testing prior to installation to verify its integrity. This is to ensure no breaches exist in stainless-steel supply tubes' welds which may direct water beneath the PVC membrane system. The Contractor shall perform pressure testing on an existing stainless steel gutter's supply tube prior to and after installing the compression skirt to ensure that the gutter system is watertight. Pressure testing of new stainless-steel perimeter gutters and or other critical stainless-steel portions of system performed by Others shall be performed by Others.

3.4 Sequence of Work

- A. Prepare anchoring for primary main termination appropriate for pool substrate and top of wall configuration. Install PVC membrane starter strip with compression strip ("Springfield"), if applicable. Install PVC coated stainless-steel for primary termination, if applicable.
- B. Attach the geotextile underlayment/fleece separator to the pool floor and/or walls with the appropriate adhesives in the amounts adequate to secure the fleece. Geotextile underlayment/fleece separator to be installed in stages coinciding with PVC membrane installation to minimize direct exposure to elements.
- C. Install PVC-coated stainless-steel strips and/or angles as necessary to form angles, edges, corners, or other transitions.
- D. Fit and install PVC membrane on pool walls sealing top edge via hot air welding to "Springfield", PVC coated stainless-steel, or clamping with main terminations compression strip.
- E. Fit and install PVC membrane on pool floors, hot air welding all interior and perimeter seams.

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- F. Weld the flexible reinforced PVC membrane in accordance with the procedures established by the manufacturer. The joints shall be hot air welded with a minimum of two (2) inches of overlap. All seams shall be probed to verify welding and Liquid PVC Edge Sealant applied.
- G. All inlets, outlets, drains, underwater lights, skimmers, stanchion posts, and other required membrane penetrations shall be fitted with rigid PVC compression flanges or strip securely anchored to the pool structure to ensure a watertight seal. The “wrapping and clamping” of the membrane material around stanchion posts, ladder rails, and other protrusions through the membrane will not be considered acceptable. Only rigid compression flanges shall be utilized for all membrane penetrations.
- H. The PVC membrane shall be terminated around recessed steps and any other recessed areas in the pool. (Optional) Recessed areas in the pool shall be coated with 2-part high solids epoxy pool paint.
- I. Apply special markings, targets, lines, etc., as indicated on the drawings or as specified. The owner's representative is to provide detailed instructions as to necessary markings.

3.5 Cleaning

- A. After installation is complete, “broom” clean all surfaces. Remove all scraps, debris, or construction material and dispose of it properly.

3.6 Field Quality Control

- A. Limit access to the project site to minimize the possibility of damage to the membrane. Materials and equipment shall not be dragged across the surface of the liner or allowed to slide down the slopes. All parties working on the liner shall wear soft-soled shoes. Immediately following installation, verify completion and testing of all seams. Retesting may be necessary to ensure complete sealing.
- B. Prepare a Warranty Application to be executed at the final walk-through with Owner representative.

3.7 Project Close-Out

- A. Provide PDF copies of operation and maintenance manuals that fully detail the proper system operation and maintenance techniques, and a warranty statement.



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