



Building with conscience.

**Sto Corp.**

3800 Camp Creek Parkway  
Building 1400, Suite 120  
Atlanta, GA 30331  
Tel: 404-346-3666  
Toll Free: 1-800-221-2397  
Fax: 404-346-3119  
www.stocorp.com

## Sto Guide Specification 81948

### StoShield™ SA NP, Vapor Non-Permeable Air and Water-resistive Barrier Specification

#### Section 07 27 00

##### Self-Adhered Sheet Air Barriers – Vapor Non-Permeable

*This specification is intended for use by the design/construction professional and user of Sto products to assist in developing project specifications for the application of StoShield SA NP to vertical above grade concrete, concrete masonry, and frame wall construction with sheathing. StoShield SA NP is designed for use in Sto proprietary wall assemblies – StoVentec®, StoTherm® ci, StoPowerwall®, StoQuik® Silver, and StoPanel® – and other building code compliant wall assemblies.*

*StoShield SA NP functions to restrict air movement through wall assemblies and to resist water penetration. When used as directed in combination with StoGuard Detail Components to connect with other air and water-resistive barrier components, StoShield SA NP creates a complete StoGuard Air and Water-resistive Barrier assembly. This assembly minimizes the risk of condensation within the building envelope by eliminating mass transfer of warm moisture laden air into the wall assembly to a cold surface where it can condense. StoShield SA NP also works in conjunction with flashing to prevent water infiltration. Flashing must always be integrated with the air and water-resistive barrier in the wall assembly to direct water to the exterior of the cladding, not into the wall assembly, particularly at potential leak sources such as windows. Refer to Sto Guide Details and Sto Tech Hotline No. 0403-BSc, **Critical Detail Checklist for Wall Assemblies**, Sto Tech Hotline No. 0603-BSc, **Moisture Control Principles for Design and Construction of Wall Assemblies**, and Sto Tech Hotline No. 1001-BSc, **Effects of Temporary Heating on Construction Materials in Cold Weather**, at [www.stocorp.com](http://www.stocorp.com)*

*The function of an air barrier should not be confused with that of a vapor barrier. A vapor barrier is placed in the wall to resist differential vapor pressures, whereas the air barrier is designed to resist the structural live loads induced by air pressure difference. A vapor barrier should not be used on the interior side of walls in warm humid climates. If a vapor permeable air and water-resistive barrier is desired refer to Sto Specification 81949, StoShield SA VP, for a vapor non-permeable air and water-resistive barrier.*

*Notes in italics, such as this one, are explanatory and intended to guide the design/construction professional and user in the proper selection and use of materials. This specification should be modified where necessary to accommodate individual project conditions. Verify that section titles in this specification are correct for the Project Specifications. Verify that table headers and spacing are aligned after final edit, including table header repeated at top of table, at any new pages.*

## Table of Contents

<b>PART 1</b>	<b>GENERAL</b> .....	<b>3</b>
1.1	RELATED DOCUMENTS .....	3
1.2	SUMMARY .....	3
1.3	DEFINITIONS .....	3
1.4	PRE-INSTALLATION MEETINGS .....	3
1.5	REFERENCES .....	4
1.6	COORDINATION/SCHEDULING.....	5
1.7	SUBMITTALS.....	5
1.8	QUALITY ASSURANCE.....	5
1.9	PRE-CONSTRUCTION TESTING.....	6
1.10	DELIVERY, STORAGE AND HANDLING .....	6
1.11	PROJECT/SITE CONDITIONS .....	7
1.12	WARRANTY.....	7
<b>PART 2</b>	<b>PRODUCTS</b> .....	<b>7</b>
2.1	MANUFACTURERS.....	7
2.2	MATERIALS .....	7
2.3	PERFORMANCE REQUIREMENTS.....	8
2.4	DESIGN CRITERIA .....	9
<b>PART 3</b>	<b>EXECUTION</b> .....	<b>9</b>
3.1	EXAMINATION .....	9
3.2	SURFACE PREPARATION .....	10
3.3	INSTALLATION.....	11
3.4	FIELD QUALITY CONTROL.....	11
3.5	PROTECTION AND CLEANING.....	12

## **PART 1 GENERAL**

### **1.1 RELATED DOCUMENTS**

*Retain or delete this article in all sections of the Project Manual*

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### **1.2 SUMMARY**

- A. Section includes materials and installation of vapor non-permeable self-adhered sheet air and water-resistive barrier over vertical above grade concrete walls, concrete masonry walls, and wall sheathing.

*Add or delete section below depending on specific project requirements*

- B. Related Requirements
  - 1. Section 03 30 00: Cast-In-Place Concrete
  - 2. Section 04 22 00: Concrete Unit Masonry
  - 3. Section 06 16 00: Sheathing
  - 4. Section 07 25 00: Weather Barriers
  - 5. Section 07 26 00: Vapor Retarders
  - 6. Section 07 50 00: Membrane Roofing
  - 7. Section 07 60 00: Flashing and Sheet Metal
  - 8. Section 07 90 00: Joint Protection
  - 9. Section 08 50 00: Windows

### **1.3 DEFINITIONS**

- A. Air Barrier Material: A primary element that provides a continuous barrier to the movement of air.
- B. Air Barrier Accessory: A transitional component of the air barrier that provides continuity<sup>1</sup>.
- C. Air Barrier Assembly: The combination of air barrier materials and accessories applied to an opaque wall, including joints and junctions to abutting construction, to control air movement through the wall.

### **1.4 PRE-INSTALLATION MEETINGS**

- A. Pre-installation Conference
  - 1. Review air barrier installation requirements and installation details, mock-ups, testing requirements, protection, and sequencing of work.

<sup>1</sup>. *Standard Test Method for Determining Air Leakage Rate of Air Barrier Assemblies*, ASTM E2357, ASTM International, West Conshohocken (2018): <https://www.astm.org>

## 1.5 REFERENCES

- A. Building Codes and Standards
  - 2018, 2021 IBC International Building Code
  - 2018, 2021 IRC International Residential Code
  - 2018, 2021 IECC International Energy Conservation Code
  - ICC ES AC38 Acceptance Criteria for Water-Resistive Barriers
  - ICC ES AC212 Acceptance Criteria for Water-resistive Coatings Used as Water-resistive Barriers over Exterior Sheathing
  
- B. AAMA – American Architectural Manufacturers Association Standards
  - AAMA 711 Specification for Self-Adhering Flashing Used for Installation of Exterior Wall Fenestration Products
  - AAMA 714 Voluntary Specification for Liquid Applied Flashing Used to Create a Water-Resistive Seal around Exterior Wall Openings in Buildings
  
- C. AATCC – American Association of Textile Chemists and Colorists
  - AATCC -TM127 Test Method for Water Resistance: Hydrostatic Pressure
  
- D. ASTM - American Society for Testing and Materials Standards
  - C1177 Specification for Glass Mat Gypsum Substrate for Use as Sheathing
  - C1325 Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units
  - D412 Standardized Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension
  - D1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
  - D3330 Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape
  - D3759 Standard Test Method for Breaking Strength and Elongation of Pressure-Sensitive Tape
  - D4541 Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers
  - E84 Standard Test Method for Surface Burning Characteristics of Building Materials
  - E96 Test Method for Water Vapor Transmission of Materials
  - E779 Standard Test Method for Determining Air Leakage Rate by Fan Pressurization
  - E783 Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors
  - E1186 Standard Practices for Air Leakage Site Detection in Building Envelopes and Air Barrier Systems
  - E1827 Standard Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door
  - E2178 Test Method for Air Permeance of Building Materials
  - E2357 Standard Test Method for Determining Air Leakage of Air Barrier Assemblies
  
- E. APA – The Engineered Wood Association
  - E30W Engineered Wood Construction Guide

- PS 2 Performance Standard for Wood Structural Panels
- F. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE)
  - ASHRAE 2021, Handbook-Fundamentals
  - ASHRAE 90.1 2022, Energy Standard for Buildings Except Low-Rise Residential Buildings
- G. NFPA – National Fire Protection Association
  - NFPA 285 Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components
- H. South Coast Air Quality Management District (South Coast AQMD)
  - Rule 1113 (2019) Architectural Coatings
- I. Sto Corp. Publications
  - StoShield Self-Adhered Membrane Air and Water-Resistive Barrier Installation Guide
  - Sto RapidGuard® Air & Water-Resistive Barrier Installation Guide
  - StoGuard Conformable Membrane Installation Guide

## **1.6 COORDINATION/SCHEDULING**

*The work in this section requires close coordination with related sections and trades. Sequence work to provide protection of construction materials from weather deterioration*

- A. Coordinate installation of foundation waterproofing, roofing membrane, windows, doors and other wall penetrations to provide a continuous air and water-resistive barrier.
- B. Provide protection of rough openings before installing windows, doors, and other penetrations through the wall.
- C. Provide sill flashing to direct water to the exterior before windows and doors are installed.
- D. Install window and door head flashing immediately after windows and doors are installed.
- E. Install diverter flashings wherever water can enter the assembly to direct water to the exterior.
- F. Install parapet cap flashing and similar flashing at copings and sills to prevent water entry into the wall assembly.
- G. Install cladding within 90 days of air and water-resistive barrier installation.

## **1.7 SUBMITTALS**

- A. Manufacturer’s specifications, details and product data.
- B. Manufacturer’s standard warranty.
- C. Samples for approval as directed by architect or owner.
- D. Shop drawings of: substrate joints, cracks, flashing transitions, penetrations, corners, terminations, and tie-ins with adjoining construction, and interfaces with separate materials that form part of the air barrier assembly.

## **1.8 QUALITY ASSURANCE**

- A. Manufacturer requirements
  - 1. Manufacturer of exterior wall air and water-resistive barrier materials for a minimum of 35 years in North America.
  - 2. Maintain current registered ISO 9001 Certified Quality System and ISO 14001 Certified Environmental Management System
- B. Contractor requirements
  - 1. Knowledgeable in the proper use and handling of Sto materials.
  - 2. Employ skilled mechanics who are experienced and knowledgeable in waterproofing and air barrier application, and familiar with the requirements of the specified work.
  - 3. Provide the proper equipment, manpower and supervision on the job-site to install the air barrier assembly in compliance with the project plans & specifications, shop drawings, and Sto's published specifications and details.
- C. Regulatory Compliance
  - 1. Primary air barrier, joint treatment, rough opening, and flashing materials:
    - a. Comply with air barrier material requirements of ASHRAE 90.1 – 2022
    - b. Comply with 2018 and 2021 IBC and IRC requirements for a continuous air barrier
    - c. Comply with air barrier material requirements of 2018 and 2021 IBC, IRC, and IECC
    - d. Comply with ICC-ES AC38 requirements for a water-resistive barrier
    - e. Liquid-applied flashing for rough openings and sheathing joints: comply with AAMA 714
    - f. Self-adhered flashing for rough openings and sheathing joints: comply with AAMA 711
- D. Mock-ups
  - 1. Build stand-alone site mock-up or sample wall area on as-built construction to incorporate back-up wall construction, typical details covering substrate joints, cracks, flashing transitions, penetrations, corners, terminations, tie-ins with adjoining construction, and interfaces with separate materials that form part of the air barrier assembly. Include windows and other wall penetrations as applicable to the project.

## **1.9 PRE-CONSTRUCTION TESTING**

- A. Conduct site testing by qualified test agency or building envelope consultant
  - 1. Conduct assembly air leakage testing in accordance with ASTM E783
  - 2. Conduct adhesion testing to substrates in accordance with ASTM D4541
  - 3. Conduct wet sealant compatibility testing in accordance with sealant manufacturer's field quality control test procedure.
  - 4. Notify design professional minimum 7 days prior to testing.

## **1.10 DELIVERY, STORAGE AND HANDLING**

- A. Deliver all materials in their original sealed containers bearing manufacturer's name and identification of product.

- B. Protect STPE products from moisture and humidity, freezing temperatures, and temperatures in excess of 90 degrees F (32 degrees C). Store under cover off the ground in a cool, dry location. Store away from direct sunlight.
- C. Protect Portland cement based materials (bag products) from moisture and humidity. Store under cover off the ground in a cool, dry location.
- D. Protect and store AWRB barrier accessories and products in accordance with manufacturer's written instructions.

### **1.11 PROJECT/SITE CONDITIONS**

- A. Self-Adhered Sheet product
  - 1. Maintain ambient and surface temperatures between 20 degrees F (-6.6 degrees C) and rising, and 110 degrees F (43.3 degrees C) during application period
- B. STPE products
  - 1. Maintain ambient and surface temperatures between 40 degrees F (4 degrees C) and rising, and 100 degrees F (38 degrees C), during application and drying period
- C. Portland cement-based products
  - 1. Maintain ambient and surface temperatures above 40 degrees F (4 degrees C) and rising
  - 2. Provide supplementary heat for installation if surface temperature is likely to fall below 40 degrees F (4 degrees C)
- D. Provide protection of surrounding areas and adjacent surfaces from application of materials.

### **1.12 WARRANTY**

- A. Provide manufacturer's standard warranty.

## **PART 2 PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Sto Corp.
- B. Obtain primary air barrier and accessory air barrier materials from single source.

### **2.2 MATERIALS**

- A. Primary Air Barrier Material: StoShield SA NP – self-adhered primerless vapor non-permeable sheet membrane air and water-resistive barrier
- B. Accessory Materials

*Select one or more of the following options as applicable to the project*

- 1. StoGuard Detail Components for: sealing sheathing joints and seams, small penetrations or attachments (scupper, pipe, electrical box) and other static transitions in above grade wall construction, rough opening protection, and counterflashing

- a. Sto RapidGuard®: one component gun-applied STPE liquid flashing, rough opening protection, joint treatment and transition detailing material
- b. StoGuard Conformable Membrane: self-adhered membrane flashing, rough opening protection, sheathing joint treatment, and transition detailing material
2. StoGuard Detail Components for transitions: sheathing to foundation, dissimilar materials (e.g. CMU to frame wall), wall to balcony floor slab or ceiling, and other detailing in above grade wall construction
  - a. Sto RapidGuard®: one component gun-applied STPE liquid flashing, rough opening protection, joint treatment and transition detailing material
  - b. StoGuard Conformable Membrane: self-adhered membrane flashing, rough opening protection, sheathing joint treatment, and transition detailing material
3. Floor line deflection joints, masonry control joints, expansion joints in masonry or frame construction, and other dynamic joint conditions in above grade wall construction
  - a. StoGuard Conformable Membrane: self-adhered membrane flashing, rough opening protection, sheathing joint treatment, and transition detailing material for static and dynamic joints
4. Wet sealant

*Wet sealant typically requires field adhesion testing to verify compatibility with other air barrier components*

- a. StoSeal STPE: low modulus, non-sag one component STPE joint sealant for dynamic joints or connections with other air barrier components
- b. Other compatible sealant for dynamic joints or connections with other air barrier components
5. Spray foam
  - a. Sto TurboStick: single component polyurethane spray foam adhesive for filling gaps and cracks, if needed
  - b. Other compatible low expanding spray foam for filling gaps and cracks, if needed
- C. Patching and Leveling Material for Concrete and Masonry
  1. Sto Leveler and Skim Coat: polymer modified portland cement-based patch and leveling material for prepared concrete and masonry surfaces for leveling up to 1/4 inch (6mm).
  2. Sto BTS Xtra: polymer modified portland cement-based lightweight patch and leveling material for prepared concrete and masonry surfaces for leveling up to 1/8 inch (3mm).

### **2.3 PERFORMANCE REQUIREMENTS**

- A. Air permeance: ASTM E2178,  $\leq 0.004$  cfm/ft<sup>2</sup> (0.02 L/s·m<sup>2</sup>) air leakage at 1.57 psf (75 Pa)
- B. Water vapor permeability: ASTM E96 Method A,  $< 0.1$  perm (5.72 ng/Pa·s·m<sup>2</sup>)
- C. Surface burning: ASTM E84, Flame Spread  $\leq 25$ , Smoke Developed  $\leq 75$ , Class A Building Material
- D. Tensile Strength: ASTM D3759, Procedure A:  $\geq 5.71$  pli (1.92 N/mm)
- E. Nail Sealability: AAMA 711-Section 5.2, no water penetration after 24 hours at 40°F (4°C)
- F. Peel Adhesion: AAMA 711 / ASTM D3330 - Sections 5.3-5.6 and 5.8, minimum 1.5 pli to substrates, minimum 1.5 pli after Accelerated UV Aging, Elevated Temperature, Thermal Cycling, Water Immersion



- G. Cold Temperature Pliability: AAMA 711 / ASTM D1970 - Section 5.7, no cracking or loss of adhesion after 0°F (-17.8°C) conditioning for 2h
- H. Resistance to Peeling: AAMA 711-Section 5.9, meets Level 3 resistance to curling
- I. Water Penetration Resistance after Conditioning: AC212 / AATCC 127, No water on underside after 210h UV Light Exposure, 25 cycles at 120 F for 3h followed by 3h H<sub>2</sub>O immersion at 73F, then 18h air dry, condition at 70F and 65% RH, then test 55cm hydrostatic head for 5h at 70 F
- J. Assembly air leakage: ASTM E2357, < 0.04 cfm/ft<sup>2</sup> (0.2 L/s·m<sup>2</sup>) air leakage at 1.57 psf (75 Pa) after conditioning protocol
- K. Water-resistive Barrier (WRB): ICC-ES AC38, meets requirements as a water-resistive barrier

## **2.4 DESIGN CRITERIA**

- A. Structural (Wind and Axial Loads)
  - 1. Design for maximum allowable deflection normal to the plane of the wall of: L/240. Where cladding dictates stiffer deflection criteria use cladding design criteria for maximum allowable deflection.
  - 2. Design for wind load in conformance with code requirements.
- B. Moisture Control
  - 1. Prevent the accumulation of water in the wall assembly and behind the exterior wall cladding:
    - a. Minimize condensation within the assembly.
    - b. Drain water directly to the exterior where it is likely to penetrate components in the wall assembly (windows and doors, for example).
    - c. Provide corrosion resistant flashing to direct water to the exterior in accordance with code requirements, including: above window and door heads, beneath window and door sills, at roof/wall intersections, floor lines, decks, intersections of lower walls with higher walls, and at the base of the wall.
- C. Air Barrier Continuity: provide continuous air barrier assembly of compatible air barrier components.
- D. Substrates
  - 1. Concrete Masonry Units: provide CMU surfaces in conformance with the applicable building code, and such that a void and pinhole free air barrier is achieved. Provide normal weight units with flush joints (struck flush with the surface).
  - 2. Concrete: provide concrete in conformance with the applicable building code.
  - 3. Sheathing:
    - a. Provide frame/sheathing assembly that meets required design wind pressures.
    - b. Provide gypsum sheathing in compliance with ASTM C1177
    - c. Provide Exterior Grade plywood sheathing in conformance with PS 2
    - d. Provide Exposure 1 OSB (Oriented Strand Board) sheathing in conformance with PS 2
    - e. Provide cementitious sheathing in compliance with ASTM C1325 Type A and with ICC-ES listing or other nationally recognized product evaluation agency

- E. Mechanical Ventilation: maintain pressurization and indoor humidity levels in accordance with recommendations of ASHRAE (see 2021 ASHRAE Handbook—Fundamentals).

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. Inspect concrete and concrete masonry surfaces for:
  - 1. Contamination – algae, dirt, dust, efflorescence, form oil, fungus, grease, mildew or other foreign substances.
  - 2. Surface deficiencies – weak, friable, chalkiness, laitance, bugholes, and spalls.
  - 3. Cracks – measure crack width and record location of cracks.
  - 4. Damage or deterioration.
  - 5. Moisture content and moisture damage – use a moisture meter to determine if the surface is dry enough to receive the air and water-resistive barrier and record any areas of moisture damage or excess moisture.
  - 6. Flush masonry mortar joints completely filled with mortar.
- B. Inspect sheathing application for compliance with applicable requirement:
  - 1. Exterior Grade and Exposure I wood based sheathing: E30W-2019, Engineered Wood Construction Guide, and the requirements of the applicable building code.
  - 2. Glass mat faced gypsum sheathing in compliance with ASTM C1177: consult manufacturer’s published recommendations and ICC-ES Report. Conform with project requirements for wind load resistance.
  - 3. Cementitious sheathing – Consult manufacturer’s published recommendations and ICC-ES Report. Conform with project requirements for wind load resistance.
- C. Report deviations from the requirements of project specifications or other conditions that might adversely affect the air and water-resistive barrier installation. Do not start work until deviations are corrected.

### **3.2 SURFACE PREPARATION**

*IMPORTANT: for “rough” CMU wall surfaces skim coat the entire wall surface with levelling material to fill and level the surface. Use the mock-up and site tests as the basis for the work.*

- A. Concrete Masonry
  - 1. Surface must be structurally sound and free of weak or damaged surface conditions such as laitance or spalls. Surface must be clean, dry, frost-free, and free of any bond-inhibiting materials such as dust, dirt, oil, algae, mildew, salts, efflorescence, or any other surface contamination. Mortar joints must be struck flush with the surface.
  - 2. Remove excess mortar from masonry ties, lintels and shelf angles.
  - 3. Remove loose or damaged material by water-blasting, sandblasting or mechanical wire brushing. Remove surface contamination such as dirt or efflorescence by chemical or mechanical means. Repair surface defects such as spalls, voids and holes with Sto BTS Xtra (up to 1/8inch [3 mm] thick) or Sto Leveler and Skim Coat (up to 1/4 inch [6 mm] thick).

4. Repair non-structural cracks up to 1/8 inch (3 mm) wide by raking with a sharp tool to remove loose, friable material and blow clean with oil-free compressed air. Apply one component knife grade STPE air barrier joint treatment material over crack at minimum 20 WFT and allow to dry. Consult a structural engineer for structural cracks.
- B. Concrete
1. Surface must be structurally sound and free of weak or damaged surface conditions such as laitance, bugholes, or spalls. Surface must be clean, dry, frost-free, and free of any bond-inhibiting materials such as dust, dirt, oil, form release, algae, mildew, salts, efflorescence, or any other surface contamination.
  2. Remove projecting fins, ridges, form ties, and high spots by mechanical means.
  3. Remove loose or damaged material by water-blasting, sandblasting or mechanical wire brushing. Remove form release by chemical or mechanical means. Repair surface defects such as honeycombs, pitting, spalls, voids or holes with Sto BTS Xtra (up to 1/8 inch [3 mm] thick) or Sto Leveler and Skim Coat (up to 1/4 inch [6 mm] thick).
  4. Repair non-structural cracks up to 1/8 inch (3 mm) wide by raking with a sharp tool to remove loose, friable material and blow clean with oil-free compressed air. Apply one component knife grade STPE air barrier joint treatment material over crack at minimum 20 WFT and allow to dry. Consult a structural engineer for structural cracks.
- C. Sheathing
1. Remove and replace damaged sheathing.
  2. Spot surface defects such as over-driven fasteners, knot holes, or other voids in sheathing with knife grade STPE air barrier joint treatment material.

### 3.3 **INSTALLATION**

**Air and water-resistive barrier installation over Exterior or Exposure I Wood-Based Sheathing (Plywood and OSB), Glass Mat Faced Gypsum Sheathing in compliance with ASTM C1177, Cementitious sheathing in compliance with ASTM C1325 Type A, and prepared concrete, and concrete masonry (CMU) wall construction**

*Refer to StoShield Self-Adhered Membrane Air and Water-Resistive Barrier Installation Guide, StoGuard Conformable Membrane Installation Guide, and Sto RapidGuard Air and Water-Resistive Barrier Installation Guide as needed*

- A. Coordinate work with other trades to ensure air barrier continuity with connections at foundation, floor lines, flashings, lintels and shelf angles, openings and penetrations such as pipes, vents, windows and doors, masonry anchors, rafters or beams, joints in construction, projections such as decks and balconies, and roofing.
- B. Transition detailing: detail transition areas with appropriate StoGuard Detail Components.
- C. Rough opening protection
  1. Install rough opening protection with StoGuard Conformable Membrane or Sto RapidGuard
- D. Sheathing joints

*Generally, sheathing joints do not need to be treated with StoGuard detail components when StoShield SA NP is the AWRB*

1. Install StoGuard joint treatment – Sto RapidGuard or StoGuard Conformable Membrane - over sheathing joints if necessary

### **3.4 FIELD QUALITY CONTROL**

- A. Owner’s qualified testing agency or building envelope consultant shall perform inspections and tests.
- B. Inspections: air barrier materials are subject to inspection to verify compliance with requirements.
  1. Condition of substrates and substrate preparation.
  2. Installation of primary air barrier material and accessory materials over structurally sound substrates and in conformance with architectural design details, contractor’s shop drawings, project mock-up, and manufacturer’s written installation instructions.
  3. Air barrier continuity and connections without gaps and holes at foundation, floor lines, flashings, lintels and shelf angles, openings and penetrations such as pipes, vents, windows and doors, masonry anchors, rafters or beams, joints in construction, projections such as decks and balconies, and roofing.
- C. Tests: air barrier materials and assembly are subject to tests to verify compliance with performance requirements
  1. Qualitative air leakage test: ASTM E1186
  2. Quantitative air leakage test: ASTM E779, E783, and E1827
  3. Adhesion test: ASTM D4541
  4. Qualitative adhesion and compatibility testing: wet sealant manufacturer’s field quality control adhesion test
- D. Repair non-conforming substrates and air barrier material installation to conform with project requirements.
- E. Take corrective action to repair and replace, or reinstall materials, and to seal openings, gaps, or other sources of air leakage to conform with project performance requirements.

### **3.5 PROTECTION AND CLEANING**

- A. Protect air barrier materials from damage during construction caused by wind, rain, freezing, continuous high humidity, or prolonged exposure to sun light.
- B. Protect air barrier materials from damage from trades, vandals, and water infiltration during construction.
- C. Repair damaged materials to meet project specification requirements.
- D. Clean spills, stains, soiling from finishes or other construction materials that will be exposed in the completed work with compatible cleaners.
- E. Remove all masking materials after work is completed.

**ATTENTION**

Sto products are intended for use by qualified professional contractors, not consumers, as a component of a larger construction assembly as specified by a qualified design professional, general contractor or builder. They should be installed in accordance with those specifications and Sto's instructions. Sto Corp. disclaims all, and assumes no, liability for on-site inspections, for its products applied improperly, or by unqualified persons or entities, or as part of an improperly designed or constructed building, for the nonperformance of adjacent building components or assemblies, or for other construction activities beyond Sto's control. Improper use of Sto products or use as part of an improperly designed or constructed larger assembly or building may result in serious damage to Sto products, and to the structure of the building or its components. **STO CORP. DISCLAIMS ALL WARRANTIES EXPRESS OR IMPLIED EXCEPT FOR EXPLICIT LIMITED WRITTEN WARRANTIES ISSUED TO AND ACCEPTED BY BUILDING OWNERS IN ACCORDANCE WITH STO'S WARRANTY PROGRAMS WHICH ARE SUBJECT TO CHANGE FROM TIME TO TIME.** For the fullest, most current information on proper application, clean-up, mixing and other specifications and warranties, cautions and disclaimers, please refer to the Sto Corp. website, [www.stocorp.com](http://www.stocorp.com).