WALLcontrol™ Liquid Applied

Installer's Guide

03-2024 Version

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With you every step of the way

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I. Siplast WALLcontrol Liquid Products System Overview

Siplast WALLcontrol System

Siplast WALLcontrol products provide high-performance solutions for vertical walls, helping to create a continuous air and water barrier for commercial buildings, and enabling complex transitions from roofing and waterproofing systems. Siplast WALLcontrol liquid applied products are vapor permeable liquid applied single-component silyl-terminated polyether (STPE) moisture-cure air and water-resistive barrier (AWB) for commercial wall systems. During application, the high solids formulation is resistant to wash-off when curing, has minimal dry film shrinkage, applicable by spray or roll in a single continuous coat, and is suitable for low-temperature conditions.

II. Products

Liquid AWB Membranes

- Siplast WALLcontrol Modified Silicone (STPE) VP Liquid AWB

Liquid Flashing and Sealants

- Siplast WALLcontrol Modified Silicone (STPE) VP Liquid Flashing
- Siplast PS-715 NS Elastomeric Sealant or a compatible approved sealant

Accessories (as needed)

- Siplast WALLcontrol Reinforced Aluminum Butyl Adhered AWB
- Siplast WALLcontrol Reinforced Aluminum Butyl Adhered Flashing
- Siplast WALLcontrol Stainless Steel Butyl Adhered Flashing
- Siplast Pro Primer AC or a compatible approved primer
- Termination bar with sealant catch lip
- Fasteners with appropriate blocking, attachment type, structural capacity, and head configuration
- Stainless steel formed metal drip edges, welded corners, and welded end dams
- Siplast Monarflex Temporary Enclosure Systems for tenting as protection as needed

III. Personal Protection

For professional use only. Prior to application, refer to the applicable WALLcontrol liquid products Commercial Product Data Sheets (CPDS), Safety Data Sheets (SDS), project specifications, and application instructions. Always read the full label and product safety data sheet for precautionary instructions before use. Use appropriate safety equipment and job-site controls during application and handling.

When applying WALLcontrol liquid products, typical exposure levels will be below OSHA permissible limits for most outdoor applications. The applicator is responsible for ensuring conditions are appropriate to proceed and proper application methods are followed. Refer to product SDS for health, safety, and environment-related hazards, and take all necessary measures and precautions to comply with specified exposure limits where required. When required, air monitoring should be performed by a qualified person to identify any hazards. Use personal protective equipment as required. If respiratory protection is required, use a NIOSH-approved air-purifying respirator.

IV. Storage and Handling

WALLcontrol liquid applied products should be stored on end between 40°F to 90°F (5°C to 32°C) on a clean, flat surface in dry conditions out of direct exposure to the elements. When stored in these conditions WALLcontrol liquid applied products have a shelf life of 12 months after the date of manufacture. This shelf life assumes upright storage of factory-sealed containers. Do not open the container until preparation work has been completed. Keep the container tightly closed when not dispensing. Do not alter or mix with other chemicals.

Use appropriate safety equipment and job-site controls during application and handling. Pallets should not be double-stacked. The contractor shall ensure compliance with OSHA, EPA and other local governing and disposal authorities for project-related safety and environmental requirements. Dispose of unused WALLcontrol liquid products in accordance with local, state, and federal regulations. Consult local, provincial, territory or state authorities to know disposal methods.

V. Building and Energy Codes

References are made to the 2012/2015/2018/2021 International Building Code (IBC), the 2012/2015/2018/2021 International Energy Conservation Code (IECC), the ASHRAE 90.1 2010/2013/2016/2019 Standard. This information is provided for educational purposes only, and is not a substitute for independent review of applicable building and energy code requirements. Siplast makes no representation or warranty (express or implied) as to the accuracy of the information contained herein.

IBC Section 1402.2 or 1402.3 "Weather Protection"

This code section states that exterior walls shall be protected by:

- A water-resistive barrier (WRB) behind the exterior veneer.
- A WRB designed and constructed to prevent the accumulation of water within the wall assembly.
- A WRB designed and constructed with a means for draining water to the exterior which enters the assembly.
- Include flashing to meet the requirements of IBC Section 1404.4.

IBC Section 1404.4 Flashing

This code section states that flashing shall be installed to:

- Prevent moisture from entering the wall or to redirect that moisture to the surface of the exterior wall, wall finish, or to a water-resistive barrier.
- Be part of a means of drainage complying with the weather-resistant exterior wall envelope (complying with IBC "Weather Protection" Section).
- Be installed at the perimeters of exterior door and window assemblies, penetrations and terminations of exterior wall assemblies, exterior wall intersections with roofs, chimneys, porches, decks, balconies and similar projections, and at built-in gutters and similar locations where moisture could enter the wall.
- Flashing with projecting flanges shall be installed on both sides and the ends of copings, under sills and continuously above projecting trim.
- Where self-adhered membranes are used as flashings of fenestration in wall assemblies, those self-adhered flashings shall comply with AAMA 711.
- Where liquid-applied membranes are used as flashings of fenestration in wall assemblies, those self-adhered flashings shall comply with AAMA 714.
- IBC Section 1404.4.1 Exterior Wall Pockets: Exterior walls of buildings or structures, wall pockets or crevices in which moisture can accumulate shall be avoided or protected with caps or drips or other approved means shall be provided to prevent water damage.
- IBC Section 1404.4.2 Masonry: Flashing and weep holes in anchored veneer (complying with IBC* Section 1404.6) shall not be located more than 10 inches above finished ground level above the foundation wall or slab. At other points of support including structural floors, shelf angles, and lintels, flashing and weep holes shall be located in the first course of masonry above the support.

IECC and ASHRAE 90.1 Continuous Air Barrier

These energy codes require the entire building envelope:

- Be designed, documented, and constructed with a continuous air barrier.
- Utilize air-impermeable materials or assemblies with manufacturer instructions for use as an air barrier.
- Be inspected and/or tested onsite for whole building air tightness compliance (code version dependent).

VI. Installation Tools

General Installation Tools

For liquid materials such as primers, liquid AWB, liquid flashing, and sealants, the following tools are recommended depending on the specific application:

- Wet mil gauge, rollers, brushes, trowels, backer rod, and sealant finishing tools.

For adhered materials such as butyl-adhered AWB and flashings, the following tools are recommended depending on the specific application:

- Tape measure, utility knife, shears, and hard rollers of various widths.

Powered Spray and Roller Equipment for WALLcontrol STPE Liquid AWB

WALLcontrol STPE Liquid AWB can be applied by spray, pressure roller, roller, and brush. When spraying or using a pressure roller WALLcontrol STPE Liquid AWB can be dispensed directly from pails and drums using air, electric, or engine-powered application equipment. WALLcontrol STPE Liquid AWB cures in the presence of atmospheric moisture thus spray or pressure roller equipment used to process this material:

- Must be free of water prior to loading product into the equipment.
- Must be designed to operate safely at the pressures required to deliver WALLcontrol STPE Liquid AWB.
- Must be capable of providing a minimum of 3000 psi (207 bar) at the gun.
- Should contain hoses that are solvent-resistant.
- Should contain hoses that are vapor lock in design if the product is intended to remain in the lines for extended periods of time.

WALLcontrol STPE Liquid AWB requires a minimum of 3000 psi (207 bar) at the gun to obtain an optimized spray pattern. WALLcontrol STPE Liquid AWB works in many commercially available pumping and spray systems however, individual system requirements will be based on a number of factors relative to the desired system and type (ex. hose length, hose diameter, spray tip, gas-powered, etc.), as well as the number of applicators to be operated from each pump.

There are a number of methods to deliver material from the drum or pail to the spray equipment, including: direct immersion, pouring material into a hopper, use of a transfer pump, and feed hoses on a self-priming pumping system. It is important that the feed system is able to supply enough material so as not to starve the system. Contact the spray equipment manufacturers for system advice based on the above variables and feed options.

Equipment that is used to apply both water-based and solvent-based material must be properly flushed with solvent prior to filling the equipment with WALLcontrol STPE Liquid AWB. It is recommended to have designated hoses, guns, roller kits, and pump feeds for each type of chemistry. Clean, dry, and non-reclaimed solvents should be used for flushing. Mineral Spirits, Xylene, Sunnyside 301, or Sunnyside 476 VOC-compliant solvents have been shown to be suitable. Spray tips can be cleaned in 100% mineral spirits or naphtha using airbrush cleaning tools.

Gas-Powered Pump Units

The list of equipment below has shown to be sufficient to atomize and properly spray WALLcontrol STPE Liquid AWB. When using power equipment, always follow the equipment manufacturer's operation and safety instructions. For assistance in finding equipment suppliers or determining the suitability of existing equipment, contact your local GRACO® supplier.

- GRACO® GH733 Big Rig™
- GRACO® GH833 Big Rig™ *(recommended)*
- GRACO® GH933 Big Rig™
- GRACO® TexSpray® 7900HD
- GRACO® DutyMax™ GH675 DI

Spray Equipment Accessories

The list of equipment below has shown to be sufficient to spray WALLcontrol STPE Liquid AWB.

- GRACO® 235462, Silver Plus Airless Spray Gun *(recommended)*. In this spray gun configuration, fluid flows directly to the tip through the gun fluid tube, providing the ability to spray high-solid liquid AWBs
- GRACO® RAC X SwitchTip™ 525 (0.025 orifice), *(recommended)*. Spray tips with an orifice size between 0.015" and 0.035" are suitable to spray WALLcontrol STPE Liquid AWB, but tip selection is dependent on the capabilities and condition of the pump unit, hoses, as well as the specific configuration of hose length, hose sizes, spray fan width, outdoor temperature, and material temperature.
- GRACO® 277253, 1/2 in x 50 ft BlueMax™ II HP Airless Hose rated for 4000 psi. The optimum hose length for spray applications is 50 ft of ½ in or ¾ in hose. The maximum hose length for spraying applications is 100 ft and may require combining two sections of 50 ft hoses with the descending diameter hoses from the pump to the spray nozzle. Configuration of hoses is temperature, equipment, temperature, and condition dependent. Installations with hose configurations greater than 100 ft in length are recommended to be applied by pressure roller.
- GRACO® 277351, 3/8 in x 3 ft BlueMax™ II HP Airless Whip Hose rated for 4000 psi.

Pressure Roller Equipment

The list of equipment below has shown to be sufficient to pressure roll WALLcontrol STPE Liquid AWB.

- GRACO® 245397, EvenFlow™ In-Line Valve Pressure Roller Assembly *(recommended)*
- GRACO® 107591, 9 in (230 mm) Roller Cover, 3/4 in (19 mm) nap *(recommended)*
- GRACO® 244281, EvenFlow™ Telescoping Roller Assembly *(optional)*

VII. Substrate Preparation

Prior to the installation of WALLcontrol liquid products the following are required:

- Roofing systems shall be capped and sealed, or the top of walls protected, in such a way as to eliminate the ability of water to saturate the wall or interior space, both before and after, air barrier system installation. Coordinate installation of WALLcontrol products with the roofing trade to ensure compatibility and continuity with the roofing system.
- Protect people, vehicles, property, plants and all other surfaces not intended for application. The installing professional should consider whether the structure should be tented or masked to protect the surrounding area from overspray. Siplast Monarflex Temporary Enclosure Systems are easy to install, durable, and meet industry standard configurations for site containment and protection.
- Substrate must be clean and dry and free from gross irregularities, loose material, unsound material, sharp protrusions, any foreign material (such as dirt, ice, snow, water, grease, bitumen/coal tar, oil, release agents, lacquers, paint coverings), or any other condition that would be detrimental to the adhesion of the membrane to the substrate.
- Clean loose dust or dirt from the surface to which the WALLcontrol liquid product is to be applied by wiping with a clean, dry cloth or brush.
- WALLcontrol products may be applied to most typical building materials such as exterior sheathing boards, CMU, concrete, exterior grade plywood, OSB, and metal surfaces.
    - Exterior sheathing shall be installed according to the manufacturer's installation instructions and fastening pattern. All board edges shall be sound and anchored in a way to provide minimum deflection. All board edges shall be cut cleanly and excess debris shall be removed. Where a WALLcontrol liquid product will be applied to the cut edges of gypsum sheathing, prime the exposed gypsum edges with Siplast Pro Primer AC or a compatible approved primer.
    - CMU walls shall have all joints filled and struck flush. Mortar should be cured for a minimum of 7 days. Where necessary, clean loose mortar and other contamination on the substrate with a wire brush or similar abrasion to provide a stable, clean, frost-free, and dust-free surface for application.
    - Exterior grade plywood, sheathing, and lumber shall be securely fastened. Ensure substrate is acceptable prior to application of WALLcontrol products.
    - Metal surfaces need to be clean and free of oils or other contaminants. Remove rust or other oxidation layers from the surface prior to application.
- When installing WALLcontrol liquid products, it is recommended to install the WALLcontrol adhered membranes and flashings prior to application of the WALLcontrol liquid systems.
- WALLcontrol adhered and liquid products adhere to common construction substrates without primers, however, it is always recommended that a mock-up or field adhesion test on the actual materials being used on the job be conducted to verify adhesion.
- Primers can also be used to improve adhesion to the substrate. Siplast Pro Primer AC is a water-based primer that imparts an aggressive, high-tack finish on the treated substrate.

VIII. General Applications

The following requirements apply to all WALLcontrol liquid product installations:

- When installing WALLcontrol liquid products, it is recommended to install the WALLcontrol adhered membranes and flashings prior to application of the WALLcontrol liquid systems.
- Refer to the *Siplast WALLcontrol Adhered Products Installer's Guide* for installation requirements of adhered AWB and flashing membrane that will interface with WALLcontrol liquid products.
- WALLcontrol products should be installed in a manner to shed water in a shingle fashion. The membrane should be installed in a sequence that maintains a continuous downward water drainage plane onto an acceptable air and water barrier with an unobstructed path to the exterior of the wall system.
- Sipalst WALLcontrol products as a system is a secondary water-resistive barrier (WRB), while the outer facade cladding is the primary water barrier. Follow the facade cladding manufacturer's installation and maintenance requirements in order to maintain the water holdout properties of the enclosure assembly. WALLcontrol products shall only be installed on a wall that features a continuous path for moisture drainage to the outside of the facade. All standing water must be able to drain from the WRB and flashings to the exterior.
- Application of WALLcontrol liquid products may proceed when ambient and surface temperature is a minimum 20°F (-7°C) and rising and the substrate is clean, dry, and frost-free.
- WALLcontrol liquid products may be applied to damp surfaces and tolerates rain immediately after application. It is suggested that the material be dry to the touch before being exposed to excessive rain. A surface is considered damp if there is no visible water on the surface and liquid water does not transfer from the surface when touched. As with any coating, application to substrates with high moisture content may lead to blistering of the material.
- WALLcontrol liquid products are not suitable for permanent UV exposure. See the specific commercial product data sheets (CDPS) for UV exposure limits.
- See the applicable WALLcontrol details for additional requirements regarding specific applications.

Substrate Treatment

Prior to the application of WALLcontrol STPE Liquid AWB, ensure the wall area is prepared as follows:

- Use WALLcontrol STPE Liquid Flashing on joints, seams, and all other interfaces, as needed. Allow the WALLcontrol STPE Liquid Flashing skin over before applying WALLcontrol STPE Liquid AWB.
- Repair or seal overdriven fastener heads and abandoned faster holes in the sheathing substrate with WALLcontrol STPE Liquid Flashing.
- Seal embedded masonry ties, pintles, and penetrations with WALLcontrol STPE Liquid Flashing.
- Treat all inside and outside corners with WALLcontrol STPE Liquid Flashing or WALLcontrol Reinforced Aluminum Butyl Adhered Flashing.
- Tool all sealants and liquid flashing materials to ensure it is worked into the surface.

AWB Membrane Application

The following requirements apply to WALLcontrol STPE Liquid AWB installations:

- Apply WALLcontrol STPE Liquid AWB as packaged. Do not dilute or alter, or use for applications other than specified. Stirring of the WALLcontrol STPE Liquid AWB is not necessary. If separation occurs, gently fold in the material until the mixture is uniform in the bucket. Avoid mixing air into the product.

- WALLcontrol STPE Liquid AWB can be installed by roller, brush, or spray application as a single continuous, monolithic membrane. Prevent sags, runs, or voids in the wet material by regularly checking wet mil thickness throughout the application to assure adequate coverage.
- The application of WALLcontrol STPE Liquid AWB should completely cover the treated WALLcontrol STPE Liquid Flashing detailed areas, and lap at least 2 in (50 mm) onto WALLcontrol adhered flashings.
- Some substrates will require additional material to achieve a continuous coating. Inspect surface after initial application, touch-up with WALLcontrol STPE Liquid Flashing or recoat WALLcontrol STPE Liquid AWB as needed.
- Repair any pinholes, voids, gouges, scratches, punctures, or damaged areas with WALLcontrol STPE Liquid Flashing. If the surface of the liquid air barrier or flashing membrane is damaged during construction, remove all loose surface contaminants before selective re-coating with additional WALLcontrol STPE Liquid AWB.
- All non-water shedding edges must be sealed with WALLcontrol STPE Liquid Flashing, Siplast PS-715 NS Elastomeric Sealant, or compatible approved sealant.
- Clean tools and equipment with mineral spirits or similar solvents immediately after use.
- Protect membranes to avoid damage by other trades and construction materials during subsequent operations. Insulation and/or protection products may be installed after membranes have been installed and cured.
- Inspect the membrane before covering with subsequent construction materials and repair any punctures, damaged areas or inadequately lapped seams.

Liquid Product Application Dimensions and Coverage

See the applicable Siplast WALLcontrol details for additional requirements regarding specific applications such as: joint sizes, reinforcement methods, and alternate installation options. The following are general application dimensional requirements for each product:

- Siplast WALLcontrol Modified Silicone (STPE) VP Liquid AWB
    - Minimum 20 mil thick coating extending at least 1 in (25 mm) onto each substrate and flashing.
    - The theoretical coverage rate at a thickness of 20 mils is approximately 80 ft2/gal, not including waste. Coverage will vary depending on the application technique and may be reduced over rough and uneven substrates. Adjust coverage rate accordingly to achieve a continuous membrane at 20 mils minimum.
- Siplast WALLcontrol Modified Silicone (STPE) VP Liquid Flashing
    - Minimum 60 mil thick coating extending at least 1 in (25 mm) onto both surfaces of joints and corners.
    - The theoretical consumption rate at a thickness of 60 mils, troweled 2 in (50 mm) wide is approximately 24 ln-ft per 20oz sausage tube, not including waste. Coverage will vary depending on the application technique, the width of joints applied, and may be reduced over rough and uneven substrates.
- Siplast PS-715 NS Elastomeric Sealant or a compatible approved sealant
    - Tooled fillet bead extending at least ½ in (12 mm) onto both surfaces.
    - The theoretical consumption rate of a 1/2 in (12 mm) x 1/2 in (12 mm) tooled sealant joint, is approximately 24 ln-ft per 20oz sausage tube, not including waste. Coverage will vary depending on the application technique, the width of joints applied, and may be reduced over rough and uneven substrates.

Spray Application Additional Items

When WALLcontrol STPE Liquid AWB is applied by a pressure sprayer the following items are required:

- If stored at temperatures below 65°F (18°C), the product must be warmed prior to spraying to a minimum 65°F (18°C), using various industry-accepted methods, for proper atomization at the spray tip.
- Avoid spraying WALLcontrol STPE VP AWB in windy or dusty conditions. The installing professional should consider whether the structure should be tented or masked to protect the surrounding area from overspray. Siplast Monarflex Temporary Enclosure Systems are easy to install, durable, and meet industry standard configurations for site containment and protection.
- When WALLcontrol STPE VP AWB will be sprayed onto the wall surface, ensure the outer edges of all interfaces are pretreated with WALLcontrol STPE Liquid Flashing, Siplast PS-715 NS Elastomeric Sealant, or compatible approved sealant and tapered to the substrate to provide a smooth transition, free of pinholes and voids.
- With the spray gun 12 to 18 inches from the surface, spray apply WALLcontrol STPE VP AWB to a thickness of 20 wet mils using a crosshatch spray pattern. Ensure there are no pinholes, voids, or gaps in the membrane.
- When spraying WALLcontrol STPE VP AWB, backrolling or joint pretreatment is required for gaps in the substrate 1/16 in wide or less.
- Do not allow WALLcontrol STPE Liquid AWB to sit idle in the sprayer for more than 15 minutes.

Drying and Curing Times

Surface & Air Temperatures Substrate and temperature conditions between 14°F (-10°C) and 110°F (43°C) are required for proper curing and drying of material to take place.

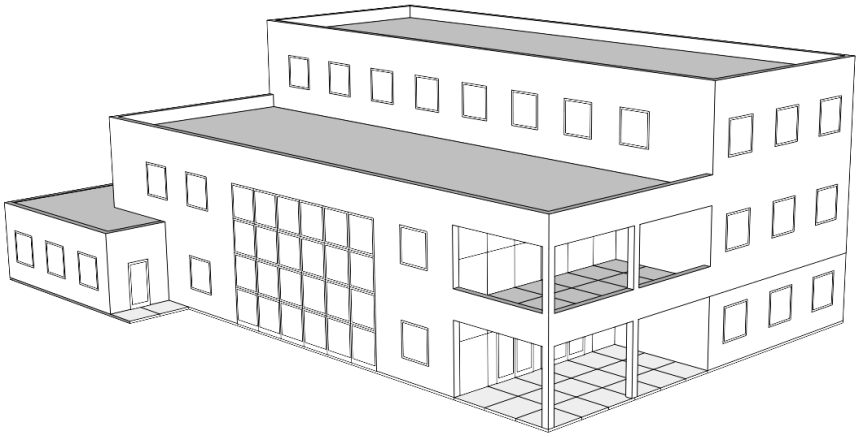
- When air or surface temperatures exceed 95°F (35°C), apply the product to the shady side of the structure before daytime air and surface temperatures reach their peak. Keep containers closed and out of direct sunlight when not in use. Do not apply when substrate temperature exceeds 110°F (43°C).
- Product may be applied to frost-free substrates at temperatures below 32°F (0°C). The product will cure more readily when temperatures reach 32°F (0°C) and remain above freezing. During cold weather, keep material stored in a heated environment prior to use.

The durations provided below are determined under normal conditions at 70°F (20°C) at 50% relative humidity (RH). Actual cure time may be slower with lower ambient or surface temperatures and/or lower RH.

- **Dry to Touch**. This is the time required to form a surface that is non-transferable or “skinned over”. This stage of curing is suitable for recoat or subsequent liquid applications.
    - 2 Hours for WALLcontrol liquid products, generally. See the specific commercial product data sheets (CDPS) for product-specific times.
- **Stress Resistant**. This is the time required for the surface to be resistant to minor abrasion. This stage is suitable for subsequent construction to proceed, such as the installation of cladding fasteners, continuous insulation, or cladding.
    - 24 Hours for WALLcontrol liquid products, generally. See the specific CDPS for product-specific times.
- **Full Cure**. This is the time required to develop a full cure for performance testing on a project site, mockups, or in a 3rd party lab facility. Examples of performance tests that require a full cure are: water infiltration testing, air leakage testing, peel adhesion testing, or pull testing.
    - 14 Days for WALLcontrol liquid products, generally. See the specific CDPS for product-specific times.

IX. Specific Applications

For specific application information refer to the WALLcontrol detail and sequence sheets. Product and installation requirements may vary by application and project conditions.



Detail Sequences Drawing List

Below is a list of detail sequence sheets relevant to the WALLcontrol adhered product installations:

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