Temporary Barriers and Enclosures Specification

For:

**Siplast® Monarflex®**

 **Temporary Enclosure System and Accessories**

Prepared by:

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This specification is provided as a general guide for use of Siplast, Inc. products based on typical building conditions and standard roofing practices. This guide specification is not a substitute for professional design services. The information in this guide specification must be reviewed/approved by a design professional and modified as necessary and appropriate for each project. Each project has unique requirements and Siplast, Inc. recommends that the Owner's representative independently verify the accuracy and appropriateness of the specification provided for a particular project. Each selection or deletion made to this guide specification should be carefully considered. Users of this guide specification assume sole responsibility for its use.

Siplast recommends that WALLcontrol products 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.

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SECTION 01 56 00 TEMPORARY BARRIERS AND ENCLOSURES (Rev 08/2024)

1. **GENERAL**
	1. RELATED DOCUMENTS
		1. The project plans, details, and general Contract requirements apply to this Section.
	2. SUMMARY
		1. Items Included:
			1. HIGH WIND RESISTANT SHEET MATERIAL
			2. STANDARD SHEET MATERIAL
			3. HIGH STRENGTH ANCHOR STRAPS
			4. STANDARD BUNGEE STRAPS
			5. BUTYL DOUBLE-SIDED SHEET TAPE
			6. FABRIC DOUBLE-SIDED SHEET TAPE
		2. Related Requirements
			1. Section **<Insert Section number and title> for <insert material or product to be installed and that requires coordination>.**
	3. REFERENCES
		1. References in these specifications to standards, test methods, and codes, are implied to mean the latest edition of each such standard adopted. The following is an abbreviated list of associations, institutions, and societies that may be used as references throughout this specification section.
			1. ASTM: American Society for Testing and Materials
			2. NFPA: National Fire and Protection Agency
	4. ADMINISTRATIVE REQUIREMENTS
		1. Pre-installation meetings:
			1. When required, and with prior notice, a Manufacturer representative will meet with the necessary parties at the jobsite to review and discuss project conditions as it relates to the integrity of the assembly.
		2. Agenda
			1. Project scheduling of temporary barriers and enclosures
			2. Storage of materials and equipment
			3. Discuss arrangements and attachment configuration of temporary barriers and enclosures.
	5. SUBMITTALS
		1. Product Data: Manufacturers' technical data sheets for each product type and accessory utilized in the assembly.
		2. Manufacturer Instructions: For installation of each product specified.
	6. QUALITY ASSURANCE
		1. Source Limitations: Obtain primary temporary enclosure materials and accessories from one source from a single manufacturer.
		2. Applicator Qualifications: A firm experienced in applying materials similar in material, design, and extent to those indicated for this project, whose work has resulted in applications with a record of successful in-service performance.
			1. Perform Work in accordance with manufacturer’s published literature and as specified in this section.
			2. Allow the Manufacturer representative site access during installation.
			3. Contact the Manufacturer a minimum of two weeks prior to scheduling a meeting.
	7. DELIVERY, STORAGE, AND HANDLING
		1. Delivery of Materials:
			1. Deliver materials and products in labeled packages.
			2. Sequence deliveries to avoid delays, but minimize on-site storage.
		2. Storage of Materials
			1. Store and handle in strict compliance with the manufacturer’s requirements and conform to applicable safety regulatory agencies. Refer to all applicable data including, but not limited to, Safety Data Sheets, Product Datasheets, product labels, and specific instructions for personal protection.
			2. Protect products from damage from sunlight, weather, excessive temperatures and construction operations.
			3. Remove damaged material from the site and dispose of in accordance with applicable regulations.
	8. SITE CONDITIONS
		1. Environmental Requirements:
			1. Do not perform Work during rain or inclement weather, including during high winds, snow, rain, fog, or mist.
			2. Product requirements may vary. Refer to Manufacturer’s published literature.
		2. Protection:
			1. It is the responsibility of the installing Subcontractor to protect all surfaces not included in scope of Work from damage.
			2. Complete preparation Work prior to installing the temporary enclosure assembly.
2. **PRODUCTS**

2.01 TEMPORARY BARRIERS AND ENCLOSURES SYSTEM

* + 1. Obtain temporary enclosures and auxiliary materials as a single-source from the Manufacturer to ensure compatibility and compliance.

2.02 HIGH-WIND RESISTANT SHEET MATERIAL

* + 1. HIGH-WIND RESISTANT SHEET MATERIAL: A reinforced scaffold sheeting designed for use over scaffold or cable framework to provide jobsite protection and containment. Comprised of low-density virgin polyethylene (LPDE), with an interlayer of polyester multifilament mesh and includes grommets (molded plastic discs) that are fused with the sheeting, with holes for attachment, insertion, and anchoring sheets. Product shall have the following minimum physical properties:
			1. Thickness (at scrim): 16.5 mil
			2. Sheet Material Weight: Greater than 7.4 oz/yd² (250 g/m²)
			3. Fire Resistance: NFPA 701 (Method #2), PASS
			4. Sheet Tensile Strength per ASTM D882: 8571 psi MD, 9988 psi XMD
			5. Eyelet Pullout Strength: 208 lb/force
			6. Sheet Elongation per ASTM D882: 14.5%
			7. Sheet Light Transmission: 70%
			8. Thermal Stability: -40°F –140°F (-40°C – 60°C)
			9. Wind Resistance: Installations greater than 60 mph wind speeds.

*(Note to Specifier: Combining Monarflex Super T scaffold sheeting with Monarflex Anchor Straps can result in resistance to windspeeds greater than 60 mph. See the Siplast Monarflex Attachment Guide for wind load resistance for various spacing and strap types for Monarflex Super T scaffold sheeting.)*

* + 1. Basis of Design Product: Subject to compliance with requirements provide **Siplast Monarflex Super T Plus Flamesafe** or comparable product by one of the following:
			1. <Insert manufacturer's name>.

2.02 STANDARD SHEET MATERIAL

* + 1. STANDARD SHEET MATERIAL: A reinforced scaffold sheeting designed for use over scaffold or cable framework to provide temporary jobsite protection. Product shall have the following minimum physical properties:
			1. Air Permeance per ASTM E2178 and CAN/ULC S741: Not to exceed 0.004 cfm/sf under a pressure differential of 1.57 psf (0.02 L/sq.m @ 75 Pa).
			2. Thickness (at scrim): 12 mil
			3. Reinforcing Bands: 210 g/m² HDPE reinforcement band with inner band pre-punched holes every 4 inches and outer 4 inch wide band with a double row of pre-punched holes.
			4. Sheet Material Weight: Greater than 5.7 oz/yd² (190 g/m²)
			5. Fire Resistance: NFPA 701 (Method #2), PASS
			6. Sheet Light Transmission: 50%
		2. Basis of Design Product: Subject to compliance with requirements provide **Siplast Monarflex® Scaffband Plus Flamesafe** or comparable product by one of the following:
			1. <Insert manufacturer's name>.

2.03 HIGH STRENGTH ANCHOR STRAPS

* + 1. HIGH STRENGTH ANCHOR STRAPS: A heavy duty EPDM rubber strap and high strength plastic fasteners designed to puncture temporary barrier sheets from the inside of the membrane. Used for high performance situations. Product shall have the following minimum physical properties:
			1. Strap Breaking Strength: 165 lb/force
			2. Strap Material: EPDM rubber
			3. Anchor Material: High strength plastic
		2. Basis of Design Product: Subject to compliance with requirements provide **Siplast Monarflex Anchor Straps.**

2.04 STANDARD BUNGEE STRAPS

* + 1. STANDARD BUNGEE STRAPS: A flexible, bungee-style attachment for light and medium duty wind resistance applications. Designed to puncture temporary barrier sheet from the inside of the membrane. Product shall have the following minimum physical properties:
			1. Strap Breaking Strength: 99 lb/force
			2. Strap Material: Bungee elastic fabric
			3. Anchor Material: High strength plastic
		2. Basis of Design Product: Subject to compliance with requirements provide Siplast **Siplast Monarflex Flexitie Straps** or comparable product by one of the following:
			1. <Insert manufacturer's name>.

2.05 ADDITIONAL SELF ADHERING GROMMETS

* + 1. ADDITIONAL SELF ADHERING GROMMETS: Self-Adhered Grommet includes a peel and stick adhesive, which can be applied onto the sheeting membrane where desired.
		2. Basis of Design Product: Subject to compliance with requirements provide **Siplast Monarflex Self-Adhered Grommet.**

2.06 BUTYL DOUBLE-SIDED SHEET TAPE

* + 1. BUTYL DOUBLE-SIDED SHEET TAPE: A permanently flexible butyl-based joint tape for sealing where two sheeting sections overlap. The adhesive is comprised of a butyl-based, non-hardening, permanently flexible, high-performance sealant. Product shall have the following minimum physical properties:
			1. Color: Dark Blue
			2. Thickness: 79 mils (2 mm)
			3. Elongation per ASTM D882: 400% @ 0.13 in/ft (10 mm/m)
			4. Chemical Resistance: Resistant to diluted acids and alkalis
			5. Application Temperature: 10°F – 140°F (-12°C – 60°C)
			6. Service Temperature: -40°F – 195°F (-40°C – 90°C)
		2. Basis of Design Product: Subject to compliance with requirements provide **Siplast Monarflex Blue Monobond Tape** or comparable product by one of the following:
			1. <Insert manufacturer's name>.

2.07 FABRIC DOUBLE-SIDED SHEET TAPE

* + 1. FABRIC DOUBLE-SIDED SHEET TAPE: A synthetic, cloth-reinforced, joint and lap sealant double coated with an aggressive adhesive. It is designed to offer superior adhesive strength over difficult substrate surfaces in a variety of exterior applications. The tape is effective for wrapping or sealing joints and junctions, where bonding to a difficult substrate is a concern, and where temporary enclosure is to be bonded. Product shall have the following minimum physical properties:
			1. Color: White
			2. Thickness: 14 mils (2 mm)
			3. Elongation: 10%
			4. Application Temperature: 35°F – 120°F (2°C – 49°C)
			5. Service Temperature: -30°F – 140°F (-35°C – 60°C)
		2. Basis of Design Product: Subject to compliance with requirements provide **Siplast Monarflex White Monobond Tape** or comparable product by one of the following:
			1. <Insert manufacturer's name>.
1. **EXECUTION**

3.01 SUBSTRATE EXAMINATION

* + 1. Refer to manufacturer’s literature for requirements for acceptable applications.
		2. Verify that substrates and conditions are ready to accept the Work of this section. Notify **[engineer] [architect] [consultant]** in writing of any discrepancies. Commencement of the Work or any parts thereof shall mean acceptance of the prepared substrates.

3.02 STRUCTURE AND SCAFFOLD PREPARATION

* + 1. Ensure the structure is evaluated by a qualified designer/engineer to determine wind loads and the maximum design load for an enclosed structure. This includes anchoring scaffold components and rigging to the permanent structure.
		2. Scaffold should be tagged for approved use by a person competent in scaffold use as recommended by OSHA before work is performed. Ensure all scaffold components including guardrails, midrails, cross braces, platforms, planks, etc. are secure. Sharp edges of scaffold connections should be covered to protect sheeting installation.
		3. For cable installations, it is important to ensure all cables are secured and tensioned per design recommendations. All structural and cable connectors require sharp edges to be covered to prevent tearing of the sheeting.
		4. The temporary enclosure sheeting is not intended as a replacement for guardrails on the structure.
		5. For applications to elevated work platforms, contact the specific platform and manufacturer for approval.

3.03 INSTALLATION AND REMOVAL

* + 1. General Installation
			1. Do not apply temporary enclosure products if there is a threat of high winds.
			2. Install temporary enclosure scaffold sheeting in accordance with the current standards and codes.
			3. Care should be taken to reduce unnecessary wear and mechanical damage to sheeting when dragging over rough surfaces and contact with sharp edges.
			4. The sheeting should be in direct contact with and fixed firmly to the open edges of platforms, handrails, etc., leaving no gaps where possible.
			5. When extending temporary enclosure over the top of a scaffold to weatherproof the juncture of the scaffold and structure, either install a scaffold truss or, alternatively, install cables as roof supports to attach the scaffold sheeting.
			6. Always install near the grommet line or reinforcing band to ensure attachments can be secured.
			7. Attachments and Fastening Frequency:
				1. At a minimum, there should be one Flexitie per 100 square feet or every 38 inches. Do not over-stretch attachment straps/ties.
				2. Attachment straps/ties should not be placed within two inches of the edge of the sheet.
				3. See the Manufacturer’s Attachment Guide for wind load resistance for various spacing and strap types. The spacing and attachment type is determined by the desired or specified wind load. In some cases, fewer attachments may be required to ensure that the sheeting breaks away from structures in weather events to prevent damage to the structure.
		2. Application To Scaffolding
			1. Installation of temporary enclosure sheeting is designed for application on the outside of the scaffolding, with the eyelets or reinforced bands or stripe facing outward. This will allow the sheeting to detach in high winds, as per its design, alleviating the build-up of pressure on the structure.
			2. The sheeting overlap should be determined according to containment type.
				1. Debris containment should be lapped with the bottom horizontal sheet overlapping the upper sheet to ensure debris is contained
				2. Weatherproofing containments should be applied in a shingle fashion, with the upper horizontal sheet overlapping the lower horizontal sheets.
				3. Containments are typically applied horizontally from the ground level upward. Sheeting should be overlapped 5 to 8 inches.
			3. Double-sided tape can be applied to provide weatherproof junctures. End laps on both horizontal and vertical applications should overlap a minimum of 5 to 8 inches.
			4. It is good practice to have end laps near a structural component to secure joints in the sheeting. Double-sided tape can be applied to weatherproof junctures.
		3. Application To Cable Structures

*(Note to Specifier: Monarflex can also be applied to aircraft cable or wire rope when using Siplast Monarflex Anchor Straps and Monarflex Super T sheeting membrane. Monarflex Scaffband is not recommended for cable structure applications)*

* + - 1. Cable installations should be designed and evaluated by a qualified designer/engineer.
			2. Cables can be installed horizontally, vertically, or ideally in both directions.
			3. Horizontal base cables should be installed at ground level and at the top of the containment or the termination, with an additional horizontal cable at each seam of 13 foot height run parallel to the planned grommet lines.
			4. Horizontal cables should be tensioned and connected to the vertical cables. Anchor all vertical cables to steel brackets or structure to withstand the wind loads caused by the scaffold sheeting attached to them.
			5. For horizontal applications, using the 13 foot wide rolls of temporary barrier sheeting, recommended supplemental vertical cables spacing is as follows:
				1. Cables spaced every 7 feet 0 inches provide a higher wind-resistant application.
				2. Cables spaced every 9 feet 4 inches provide a medium grade wind resistance,
				3. Cables spaced every 11 feet 8 inches offers lower wind resistance.
			6. Steel outriggers or fabricated brackets may be required to extend the cable structure beyond the building, ensuring the sheeting can be installed free from contact with uneven building surfaces.
			7. C-clamps or similar can be used to terminate temporary enclosure sheeting at steel I-beams or similar conditions.
		1. Removal and Disposal
			1. Always ensure weather conditions permit the safe removal of temporary enclosure materials.
			2. Working in an upward fashion, the intermediate attachment straps and upper straps should be removed, allowing the top half of the horizontal sheeting run to fold over on itself. It is best to have a minimum of two people for removal of sheeting. One person can cut the attachment straps and loose sheeting while the other is gathering and rolling the loose sheet. With the temporary enclosure sheet horizontally folded on itself, cut the lower straps while simultaneously rolling the sheet.
			3. Sections of removed temporary enclosure should be bundled with rope and marked by size and condition if re-usable or disposed of.
			4. Dispose of used temporary enclosure by taking used material to an appropriate treatment and disposal facility in accordance with applicable laws and regulations at the time of disposal.
			5. In cases where the sheeting may have been in contact with suspect contaminants, seek advice from the appropriate environmental agency for disposal requirements.

3.04 FIELD QUALITY CONTROL

* + 1. Remove and replace deficient temporary barrier components as specified.
		2. Rips, large holes, or temporary windows should be patched with the same material used on the project. These patches can be taped in place with the specified double-sided tape.
		3. For a more robust repair, apply the Self-Adhesive Grommet along with Anchor Straps to splice the sheets together.
		4. Larger repairs may require full replacement of damaged areas.
		5. It is important to repair damage as soon as possible as these holes allow wind infiltration, which can damage other parts of the enclosure or structure.

3.05 CLEANING AND PROTECTION

* + 1. Protect membranes to avoid damage by other trades and construction materials during subsequent operations.
		2. As the Work proceeds, and upon completion, promptly clean up and remove from the premises all rubbish and surplus materials resulting from the foregoing Work.
		3. Clean soiled surfaces, spatters, and damage to adjacent areas caused by Work of this Section.
		4. Check area to ensure cleanliness and remove debris, equipment, and excess material from the site.