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SPEC NOTE: **Henry® Synko-Flex® Waterstop** or **Synko-Flex® Waterstop FR Self-Sealing, Non-Swelling Preformed Joint Sealant.** This specification is ideally suited for the protection and waterproofing of non-moving cold joints at footings, walls and slabs on a wide variety of concrete structures using a non-swelling, preformed adhesive waterstop that fuses with fresh concrete during the hydration and curing process.

SPEC NOTE: This guide specification is a reference for recommended installation procedures of the products/assembly described; formatted in accordance with the Construction Specifications Canada (CSC) Manual of Practice. It is the discretion of the project specification author to use the information within as a whole, or in part, to set a minimum standard of performance. Update “[project specific]” notes and coordinate as required. Use of General Contractor/installing Subcontractor identified accordingly; modify as required.

SPEC NOTE: This document includes Henry Company notes to assist the architect/specification writer. A Henry Company “SPEC NOTE” will always immediately precede the text to which it is referring. The section serves as a guideline; modify to meet specific project requirements.

SPEC NOTE: Delete “SPEC NOTE” sections in the final copy of the specification.

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1. **GENERAL**
	1. GENERAL REQUIREMENTS
		1. The General Conditions, Supplementary Conditions, Instructions to Bidders, and Division 01- General Requirements shall be read in conjunction with and govern this section.
		2. Read this Specification as a whole by all parties concerned. Each Section may contain more or less than the complete Work of any trade. The Contractor is solely responsible to make clear to the installing Subcontractor the extent of their Work.
	2. SUMMARY
		1. This Section includes requirements for supplying labor, materials, tools, and equipment to complete the Work as shown on the Drawings Architectural Division and as specified herein including, but not limited to, the following:
			1. Primer (optional)
			2. Waterstop

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SPEC NOTE: Coordinate related Sections per this specification and project specific requirements.

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* 1. RELATED REQUIREMENTS
		1. DIVISION 03 – Concrete, Section 03 11 00 – Concrete Forming
		2. DIVISION 03 – Concrete, Section 03 20 00 – Concrete Reinforcing
		3. DIVISION 03 – Concrete, Section 03 30 00 – Cast-In-Place Concrete
		4. DIVISION 07 – Thermal and moisture protection, Section 07 10 00 – Dampproofing and Waterproofing
		5. DIVISION 07 – Thermal and moisture protection, Section 07 13 24 – Pre-applied Sheet Membrane Waterproofing

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SPEC NOTE: Projects not referencing LEED delete Sections “1.3.6” and “1.5.3” as stated below.

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* + 1. DIVISION – Project Specific # - LEED Requirements [Section Project Specific #] – Project Specific Title.
	1. ALTERNATES
		1. Submit requests for alternates in accordance with Section [project specific].

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SPEC NOTE: Henry Company supplies two types of non-swelling waterstops. Select Henry Synko-Flex FR for applications requiring chemical resistance to gasoline, jet fuel, kerosene, motor oil, transmission fluid, brake fluid, and other corrosive chemicals (e.g., mineral spirits, toluene, alcohol, anti-freeze, runway de-icers, and insecticides). Delete sections not applicable to project specific conditions.

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* + 1. Waterproofing must meet the following standards:
			1. A single source manufacturer must warrant waterproofing assembly components.
			2. Waterstop; choose from the following:
				1. Standard applications; having the following properties:

Non-swelling

Self-sealing adhesive compound

Certified NSF/ANSI Standard 61 for use in potable water systems

Flow Resistance: Meets Federal Specification SSS-210

Can be installed on wet surfaces

Resistance to hydrostatic head: 68 feet (20 meters) of water (on non-moving joints)

* + - * 1. Applications requiring resistance to chemicals and hydrocarbons; having the following properties:

Non-swelling

Self-sealing adhesive compound

Chemical Resistance:

Gasoline, jet fuel, kerosene, motor oil, transmission fluid, brake fluid, and other corrosive chemicals (e.g., mineral spirits, toluene, alcohol, anti-freeze, runway de-icers, and insecticides).

* + 1. Alternate submission format to include:
			1. Evidence that alternate materials meet or exceed performance characteristics of product requirements and documentation from an approved independent testing laboratory certifying that the performance of the system including auxiliary components exceed the requirements of the local building code.
			2. References clearly indicating that the waterproofing system is supplied by a Waterproofing Manufacturer with a minimum of ten (10) years of experience in the production and sales of waterproofing assemblies.
			3. Waterproofing Manufacturer’s complete set of technical data sheets for assembly.
		2. Submit requests for alternates to this specification a minimum of ten (10) working days prior to bid date. Include a list of projects of similar design and complexity completed within the past five (5) years.
		3. Issued addendums confirm acceptable alternates. Do not submit substitute materials after tender closing.
	1. REFERENCES
		1. American Society for Testing and Materials (ASTM):
			1. ASTM D113: Standard Test Method for Ductility of Asphalt Materials
			2. ASTM D217: Standard Test Methods for Cone Penetration of Lubricating Grease
			3. ASTM D36: Standard Test Method for Softening Point of Bitumen (Ring-and-Ball Apparatus)
			4. ASTM D4: Standard Test Method for Bitumen Content
			5. ASTM D6: Standard Test Method for Loss on Heating of Oil and Asphaltic Compounds
			6. ASTM D71: Standard Test Method for Relative Density of Solid Pitch and Asphalt (Displacement Method)
			7. ASTM D92: Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
		2. Canadian Green Building Council (CaGBC), Leadership in Energy and Environmental Design (LEED)
	2. ADMINISTRATIVE REQUIREMENTS
		1. Pre-installation meetings:
			1. When required, and with prior notice, a Waterproofing 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.
	3. SUBMITTALS
		1. Provide the following requested information in accordance with Section [project specific] Submittal Procedures.
		2. Action Submittals:
			1. Product Data:
				1. Waterproofing Manufacturer’s guide specification
				2. Waterproofing Manufacturer’s technical data sheets
				3. Waterproofing Manufacturer’s standard details
			2. Certificates:
				1. Product certification stating that assembly components are supplied and warranted by a single source Waterproofing Manufacturer
			3. Sample Warranty as specified
	4. QUALITY ASSURANCE
		1. Single Source Responsibility:
			1. Obtain waterproofing and auxiliary materials from a single Waterproofing Manufacturer regularly engaged in the manufacturing and supply of the specified products.
			2. Verify product compliance with federal, state, and local regulations.
		2. Manufacturer Qualifications:
			1. Waterproofing Manufacturer shall demonstrate qualifications to supply materials of this section by certifying the following:
				1. Waterproofing Manufacturer must not issue warranties for terms longer than they have been manufacturing and supplying specified products for similar scope of Work.
		3. Installer Qualifications:
			1. Waterproofing installing Subcontractor:
				1. Perform Work in accordance with the Waterproofing Manufacturer’s published literature and as specified in this section.
				2. Maintain one (1) copy of the Waterproofing Manufacturer’s instructions on site.
				3. Allow the Waterproofing Manufacturer representative site access during installation.
				4. Contact the Waterproofing Manufacturer a minimum of two weeks prior to scheduling a meeting.

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SPEC NOTE: Mock-ups establish quality of Work for the materials indicated in this Section. Delete the following paragraph if the scope of work in this Section is minimal and a mock-up is not required.

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* 1. MOCK-UPS
		1. Mock-ups:
			1. Where directed by [engineer] [architect] [consultant] construct mock-ups to verify selections made under submittals and to set quality standards for materials and execution in accordance with Section [project specific].
	2. DELIVERY, STORAGE, AND HANDLING
		1. Delivery of Materials:
			1. Deliver materials to the jobsite in undamaged and clearly marked containers and/or wrapping indicating the name of the Waterproofing Manufacturer and product.
		2. Storage of Materials:
			1. Store materials as recommended by the Waterproofing Manufacturer and conform to applicable safety regulatory agencies. Refer to all applicable data including, but not limited to, SDS sheets, Product Data sheets, product labels, and specific instructions for personal protection.
			2. Keep solvents away from open flame or excessive heat.
			3. Store rolled materials on end.
			4. Product requirements may vary. Refer to Waterproofing Manufacturer’s published literature.
		3. Handling:
			1. Product requirements may vary. Refer to Waterproofing Manufacturer’s published literature.
	3. SITE CONDITIONS
		1. Environmental Requirements:
			1. Product requirements may vary. Refer to product specific technical data sheet.
		2. Protection:
			1. It is the responsibility of the General Contractor to organize and protect installed waterproofing components from damage by other trades.
		3. Complete preparation Work prior to installing the waterproofing assembly.
	4. WARRANTY
		1. Manufacturer Material Warranty:
			1. Provide Waterproofing Manufacturer’s standard one (1) year material warranty.
1. **PRODUCTS**
	1. MANUFACTURERS
		1. Acceptable Manufacturers:
			1. Henry Company

15 Wallsend Drive,

Scarborough, Ontario, M1E 3X6

(800) 486-1278

[www.henry.com](http://www.henry.com)

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SPEC NOTE: Henry Company supplies two types of non-swelling waterstops. Select Henry Synko-Flex FR for applications requiring chemical resistance to gasoline, jet fuel, kerosene, motor oil, transmission fluid, brake fluid, and other corrosive chemicals (e.g., mineral spirits, toluene, alcohol, anti-freeze, runway de-icers, and insecticides). Delete sections not applicable to project specific conditions.

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* 1. MATERIALS
		1. Obtain waterproofing and auxiliary materials as a single-source from the Waterproofing Manufacturer to ensure compatibility, warranty, and compliance with the following requirements:
			1. Waterstop; choose from the following:
				1. Standard applications; having the following properties:

Non-swelling

Self-sealing adhesive compound

Certified NSF/ANSI Standard 61 for use in potable water systems

Flow Resistance: Meets Federal Specification SSS-210

Can be installed on wet surfaces

Resistance to hydrostatic head: 68 feet (20 meters) of water (on non-moving joints)

* + - * 1. Applications requiring resistance to chemicals and hydrocarbons; having the following properties:

Non-swelling

Self-sealing adhesive compound

Chemical Resistance:

Gasoline, jet fuel, kerosene, motor oil, transmission fluid, brake fluid and other corrosive chemicals (e.g., mineral spirits, toluene, alcohol, anti-freeze, runway de-icers, and insecticides).

* + 1. Primary Assembly Products:
			1. Waterstop; choose from the following:
				1. Non-swelling preformed joint sealant with a single component, self-sealing adhesive compound that provides a lasting, watertight bond to both fresh and cured concrete surfaces; having the following typical properties:

Basis of Design: Henry Synko-Flex® Waterstop

Color: Black

Certified NSF/ANSI Standard 61 for use in potable water systems

Flow Resistance: Meets Federal Specification SSS-210

Can be installed on wet surfaces

Resistance to hydrostatic head: 68 feet (20 meters) of water (on non-moving joints)

* + - * 1. Non-swelling preformed joint sealant with solvent resistant elastomers and plasticizers designed to control the ingress and egress of hydrocarbons and containing liquids at the control joints between concrete to concrete and concrete and dissimilar products; having the following typical properties:

Basis of Design: Henry Synko-Flex® Waterstop FR

Color: Blue

Can be installed on wet surfaces

Chemical Resistance:

Gasoline, jet fuel, kerosene, motor oil, transmission fluid, brake fluid, and other corrosive chemicals (e.g., mineral spirits, toluene, alcohol, anti-freeze, runway de-icers, and insecticides).

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SPEC NOTE: Henry Company non-swelling waterstops can be installed onto cured concrete or directly into fresh (uncured) concrete. Primer recommended for cured concrete applications when installed on vertical substrates or where enhanced adhesion is desired. Delete sections not applicable to project specific conditions.

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* + 1. Assembly Auxiliary Materials:
			1. Primer; choose from the following:
				1. Solvent based primer specifically designed to penetrate concrete pores and seal concrete surfaces to provide optimal waterstop adhesion; having the following typical properties:

Basis of Design: Henry Synko-Flex® Solvent Based Primer

Color: Black

Certified to ANSI/NSF 61

Maximum VOC Content: 350 g/L

* + - * 1. Emulsion based primer specifically designed to penetrate concrete pores and seal concrete surfaces to provide optimal waterstop adhesion; having the following typical properties:

Basis of Design: Henry Synko-Flex® Emulsion Primer

Color: Black

Certified to ANSI/NSF 61

Maximum VOC Content: 10 g/L

Can be applied on damp or “green” concrete

1. **EXECUTION**
	1. EXAMINATION
		1. It is the installing Subcontractor’s responsibility to verify the substrate is in accordance with Waterproofing Manufacturer requirements and as specified in this Section prior to installation of pre-applied waterproofing. Commencement of the Work or any parts thereof, indicates installer acceptance of the substrate.
			1. Substrates must be continuous, secured, clean, dry, and free from oils, release agents, curing compounds, laitance and other dirt or debris.
	2. PREPARATION
		1. Do not apply waterproofing components until substrate and environmental conditions are in accordance with Waterproofing Manufacturer’s product specific technical data sheets, and as specified in this Section.
		2. Cured concrete applications:
			1. Clean substrate with a wire or stiff bristle brush prior to priming.
	3. INSTALLATION
		1. Verify substrate is ready to receive the waterproofing in accordance with the Waterproofing Manufacturer’s technical data sheets and guide specification.
		2. Air and substrate temperature limitations:
			1. Cured concrete applications:
				1. Warm concrete surface in cold weather applications prior to waterstop placement.
			2. Fresh (uncured) concrete applications:
				1. None

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SPEC NOTE: Henry Company non-swelling waterstops can be installed onto cured concrete or directly into fresh (uncured) concrete. Primer recommended for cured concrete applications when installed on vertical substrates or where enhanced adhesion is desired. Delete sections not applicable to project specific conditions.

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* + 1. Primer Installation:
			1. Vertical substrates or where enhanced adhesion is desired:
				1. Refer to product specific technical data sheet for installation guidelines and concrete cure times.
		2. Waterstop Installation:
			1. Cured concrete applications:
				1. Peel protective release paper from one side of waterstop.
				2. Install waterstop, adhesive side down, and adhere waterstop into place.
				3. Firmly press waterstop onto substrate to achieve optimal adhesion.
				4. Overlap waterstop strips twenty-five (25) millimeters minimum.
				5. Keep remaining protective release paper on waterstop to protect waterproofing until area is ready for subsequent concrete pour.
				6. Remove protective release paper and install fresh concrete directly onto waterstop per project specific requirements.
			2. Fresh (uncured) concrete applications:
				1. Horizontal substrates:

Peel protective release paper from one side of waterstop.

Carefully press waterstop into fresh concrete, adhesive side down, while the concrete is still wet.

Leave approximately forty (40) millimeters exposed waterstop above concrete surface.

Keep remaining protective release paper on waterstop to protect waterproofing until area is ready for subsequent concrete pour.

Remove protective release paper and install fresh concrete directly onto waterstop per project specific requirements.

* + - * 1. Vertical substrates:

Peel protective release paper from one side of waterstop.

Install waterstop, with protective release film side facing formwork, and nail waterstop into place with small finishing nails.

Finishing nails will pull through waterstop when formwork is removed.

Install twenty-five (25) millimeter chamfer strips on each side of waterstop.

* 1. FIELD QUALITY CONTROL
		1. Final Observation and Verification:
			1. [Architect] [Consultant] [General Contractor] and Waterproofing Manufacturer to complete final inspection of waterproofing as required by warranty.
			2. Contact Waterproofing Manufacturer for warranty issuance requirements.
	2. CLEANING
		1. 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.
		2. Clean soiled surfaces, spatters, and damage caused by Work of this Section.
		3. Check area to ensure cleanliness and remove debris, equipment, and excess material from the site.

END OF SECTION