



INSTALLATION GUIDELINE | AMERICAS

GSE Polylock



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1. PRODUCT DESCRIPTION

GSE® Polylock is an extruded high density polyethylene profile designed for anchoring HDPE geomembranes to cast-in-place concrete. The smooth HDPE surface remaining exposed after installing the **GSE** Polylock in the concrete provides an ideal point for attaching the geomembrane to the concrete structure by standard extrusion welding. A **GSE** Polylock connection provides a strong, dependable smoothly finished joint, eliminating the problems sometimes caused by the irregular surface of a bolt and batten connection.

GSE Polylock, when installed properly and utilized with a geomembrane provides an outstanding barrier to leakage. However, **GSE** Polylock does not assure a leak-proof or pressure resistant seal across the embedded anchor legs. Therefore, the geomembrane connections should be arranged to prevent direct exposure of the **GSE** Polylock to concrete joint if total leak resistance is required.

2. MATERIAL STORAGE AND HANDLING

GSE Polylock is UV stabilized and requires no special protection from moisture or sunlight. **GSE** Polylock is manufactured in 10 ft (3 m) lengths, 6 in (152 mm) wide and is typically banded together in bundles of 10 pieces.

3. TYPICAL INSTALLATION PROCEDURES

GSE Polylock is a rugged, durable HDPE profile that can be cast or inserted into wet concrete leaving the welding surface exposed upon completion of concrete preparation. The embedment of anchor legs provides a high strength mechanical anchor to the concrete.

A. General

GSE Polylock can be cut with a hand or power saw to facilitate installation around various shapes and configurations. Joints between **GSE** Polylock bars can be mitered or buttered; welding them is optional.

GSE Polylock can be bent to conform to smooth, fair curves with a radius of curvature exceeding 30 in (760 mm). Bending to more intricate shapes or shorter radius can be accomplished through heating or notching the legs of the **GSE** Polylock.

The **GSE** Polylock will not break or shatter under normal flexure, impact, or handling at temperatures as low as -40 F (-40 C). However, because the flexibility of HDPE is reduced as temperature decreases, it will also be more difficult to form at reduced temperatures.

B. Installation by fixing the GSE Polylock to forms

GSE Polylock can be nailed to the forms or alternatively, tied to the rebars with wire and spacers. The welding surface of the **GSE** Polylock should be firmly pressed against the form's surface to retain the desired configuration and minimize concrete intrusion. The concrete leaks onto the **GSE** Polylock surface are easy to clean after removing the forms.

The perforations caused by nails or wire ties should be located so that the geomembrane covers them once welded to the **GSE** Polylock.

GSE Polylock does not need special care concerning the concrete aggregate size. However, it is necessary to ensure that the pouring and vibrating procedures are correctly executed so that the channels between the anchor legs and surround are solid,

void-free, and without separation of the constituents of the concrete.

C. Installation by inserting the GSE Polylock on fresh concrete

GSE Polylock may be inserted directly into horizontal concrete surfaces during pouring, vibration and screeding to near the finish level by firmly pushing the **GSE** Polylock lock into the wet concrete. Preparing small drills between the anchor legs may help to remove trapped air below the **GSE** Polylock.

Solmax suggests that the contractor conduct a trial to ensure an understanding of the most appropriate aggregate and moisture specifications and demonstrate the procedure before pouring the concrete. Temporary wooden handles, floats, or cross battens can be nailed to the **GSE** Polylock to expedite and simplify the handling, positioning, and final location. Any minor damage caused by the attachments can be easily repaired by extrusion welding if they are not on the surface to be covered by the geomembrane.

GSE Polylock may try to float when the concrete is wet or when adjacent pouring, finishing, or placement operations proceed because HDPE density is lower than water. Still, it may also indicate that air is trapped under the **GSE** Polylock. Ballasting the **GSE** Polylock and producing a few drills on its surface will help ensure the system's quality and strength.

D. Welding GSE Polylock joints

GSE Polylock applications require no special attention at end-to-end joints. The concrete holds them in position. The joints must be welded if the exposed **GSE** Polylock surface is intended as a barrier.

Improved joint strengths and seal may be achieved by welding the joint on the side of the anchor legs before placing the **GSE** Polylock in the form and beveling the joining parts of the exposed side to ensure weld strength and a clean surface for later anchoring the geomembrane.

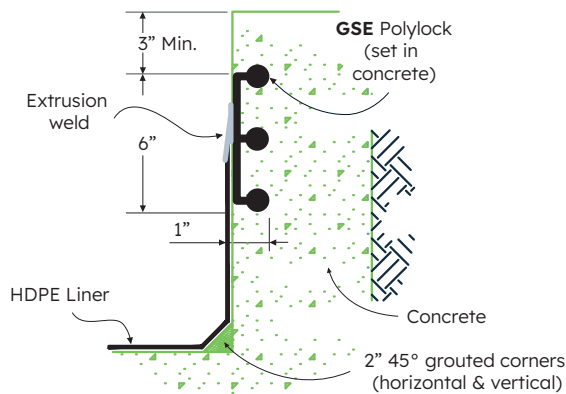
Sections of **GSE** Polylock shorter than about one ft (30 cm) should be welded to adjacent **GSE** Polylock sections, or trimming an adjacent longer section to eliminate the undesirable short piece.

APPENDIX: A CONCRETE EMBEDMENT STRIP

GSE Polylock was the first extruded HDPE concrete embedment strip in the geosynthetic industry, and it is the most effective and economical cast-in-place mechanical anchor system available for polyethylene geomembranes. **GSE** Polylock can be cast-in-place or inserted into wet concrete, leaving the welding surface exposed upon completion of concrete preparation. The embedment of anchor fingers provides a high strength mechanical anchor to the concrete. **GSE** Polylock is available in black, white and other colors.

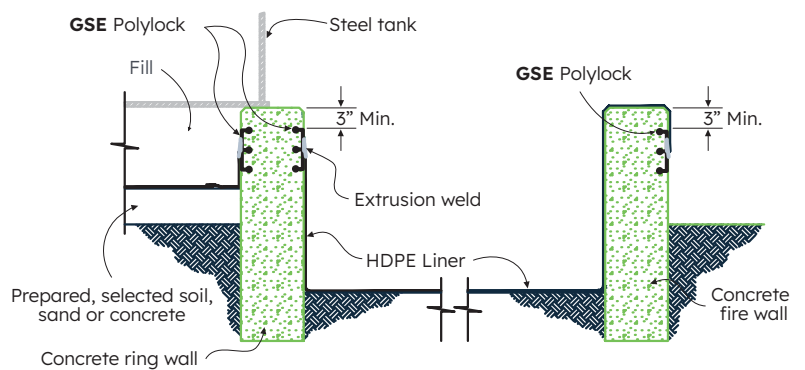
GSE Polylock specifications	
Standard length, ft (m)	10 (3)
Width, in (cm)	6 (15)
Anchor finger length, in (cm)	1 (2.5)
Chemical resistance	Excellent
Tensile strength, lb/in2 (MPa)	> 4,000 (28)
Low temperature brittleness, °F (°C)	< -120 (< 84)

GSE Polylock attachment
(not to scale)



Typical GSE Polylock attachment
(not to scale)

Typical secondary containment lining
(not to scale)



Typical secondary containment with attached GSE Polylock
(not to scale)

About Solmax

Solmax is a world leader in sustainable construction solutions, for civil and environmental infrastructure. Its pioneering products separate, contain, filter, drain and reinforce essential applications in a more sustainable way – making the world a better place. The company was founded in 1981, and has grown through the acquisition of GSE, TenCate Geosynthetics and Propex. It is now the largest geosynthetics company in the world, empowered by more than 2,000 talented people. Solmax is headquartered in the province of Quebec, Canada, with subsidiaries and operations across the globe. To find out more, contact infoasia@solmax.com.

Uncompromised quality

Our products are manufactured to strict international quality standards. All our products are tested and verified at our dedicated and comprehensive laboratories which maintain numerous accreditations. We offer our partners a wide scope of testing according to published standards to ensure products delivered to sites meet specified quality requirements.

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