



# WATERPROOFING

## MiraWELD™-H

### Description

MiraWELD-H is a nominal, 70-mil horizontal grade, self-adhering, blindside waterproofing membrane. The dual laminate membrane fuses a 45-mil thick, reinforced TPO sheet to a 25-mil butyl adhesive coating, combining two of the most time-tested waterproofing technologies used worldwide. MiraWELD-H is not only tough, durable and flexible, it also has an uncoated TPO selvage for superior seam integrity using conventional hot-air welding equipment.

MiraWELD-H waterproofing membrane is designed for below-grade, preapplied waterproofing under structural concrete slabs, elevator pits, pile caps, grade-beams and footings.

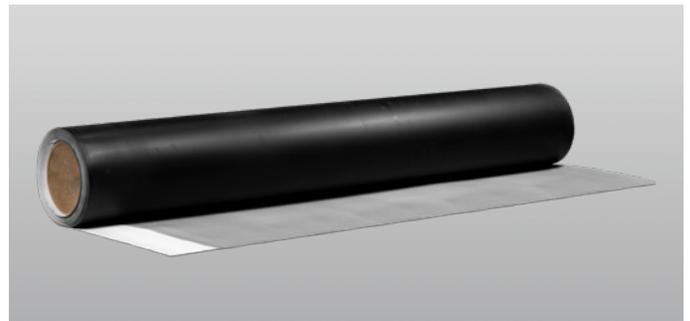
### Features and Benefits

- **Tough** – Pliable TPO layer has superior puncture resistance compared to HDPE, making MiraWELD the best system to meet the active demands of heavily trafficked construction sites
- **Durable** – Resistance to most groundwater and soil contaminants, serves as an effective Radon and Methane barrier and can bridge shrinkage cracks in concrete
- **Tenacious Bond** – Butyl Alloy adhesive creates a permanent, chemical bond with placed concrete to eliminate water migration between membrane and concrete, while ensuring protection against ground settlement beneath slabs
- **Superior Seams** – Easy to weld TPO using an automatic or handheld welder provides “Best in Class” seam integrity
- **Efficient Application** – Prefabricated detailing accessories reduce labor while increasing workmanship quality

### Installation

#### Substrate Preparation

The substrate must be relatively even without noticeable high spots or depressions, relatively smooth, free of protrusions, debris, sharp edges or foreign materials and must be free of accumulated water, ice and snow. Concrete mud slab should be relatively smooth and regular without any sharp protrusions or exposed aggregate. Earth, crushed stone, or soil shall be compacted such that the soil is not displaced from traffic



or concrete placement. Typically, #57 stone compacted to 85% Proctor density provides a suitable substrate. MiraWELD can span voids and gaps up to 1". MiraDRAIN® can span voids and gaps up to 2" and shall be installed over subbase prior to MiraWELD-H.

#### Application

Unroll the first sheet of MiraWELD-H square/parallel to building wall starting at one corner with the TPO surface against the prepared substrate and the adhesive side facing up with the TPO selvage on the side for the succeeding sheet to lap onto. At side laps, carefully position successive sheets to overlap the previous sheet by 3 in. (75mm) minimum along the TPO selvage (i.e. side lap). Be sure the product lays flat with no openings. Use an Automatic Hot-Air Welder or a Hot-Air Hand Welder to form welded seams. Probe all seams prior to applying MiraPLY™ Detail Tape. Center Detail Tape over edge of welded seams, remove release liner and roll the tape with a hard rubber roller using firm hand pressure. At end laps, carefully position a 12" minimum inverted strip of MiraWELD-H or Carlisle TPO Flashing centered under end laps to provide a TPO target strip. Be sure the product lays flat with no openings. End laps must be staggered. Use an Automatic Hot-Air Welder and a Hot-Air Hand Welder to form welded seams. Probe all seams prior to applying MiraPLY Detail Tape. Center Detail Tape over edge of welded seams, remove release liner and roll the tape with a hard rubber roller using firm hand pressure.

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### Detailing and Protection

Consult CCW Technical Services or visit [www.carlisleccw.com](http://www.carlisleccw.com) for detail drawings. Visit [carlisleccw.com](http://carlisleccw.com) for more information and search for CCW Technical Bulletin “CCW Blindside Waterproofing – Best Practices and Jobsite Requirements”.

### Rebar and Concrete Placement

Rebar chairs/supports shall be non-spiked and must lay flat to prevent damage during rebar placement. Concrete shall be placed following proper American Concrete Institute guidelines and practices.

### Repairs

Inspect the MiraWELD membrane for damaged areas after rebar installation and before concrete placement. Repair slices, cuts and small punctures (½" or less) with MiraPLY Detail Tape. Repair larger areas with a patch of MiraWELD. Weld the patch to the surrounding MiraWELD using CCW TPO Flashing Strip and seal all edges of the patch with Detail Tape.

### Technical Notes

Refer to CCW Technical Bulletins “CCW Blindside Waterproofing – Best Practices and Jobsite Requirements” to assist with installation and coordination with other trades; available at [www.carlisleccw.com](http://www.carlisleccw.com).

### Packaging

CCW MiraWELD-H Blindside Membrane is supplied in 4' x 50' (1.22 m x 15.24 m) rolls

CCW MiraPLY Detail Tape is supplied in 6" X 50' (0.15 m x 15.24 m) rolls

CCW MiraWELD Inside Corner and Outside Corner are supplied with 6" (150 mm) legs/flanges

CCW MiraWELD Detail Strip is supplied in 2' x 50' (0.6 m x 15.24 m) rolls

CCW TPO Flashing Strip is supplied in 10" X 100' (0.25 m x 30.5 m) rolls

CCW MiraWELD Tieback Cover 6" and 9" are supplied as individual units

### Availability

Available through local CCW Representatives or Distribution. Visit [www.carlisleccw.com](http://www.carlisleccw.com) to contact us, or select “Find a Rep or Distributor.”

### Limitations

- Protect membrane from physical damage, and torching, welding or cutting operations
- Do not leave exposed for more than 60 days
- Installation below 25°F requires special tools and techniques
- Concrete forms must remain in place a minimum of 3 days after concrete is poured

### Warnings and Hazards

Review Safety Data Sheets before handling; available online at [www.carlisleccw.com](http://www.carlisleccw.com).

### Storage

Always store MiraWELD and accessories in a protected and dry location in original, unopened containers. Do not store in direct sunlight. When stored at temperatures of 40–86°F (4–30°C) in the original, unopened containers, shelf life is 12 months.

### Disposal

MiraWELD and accessories should be discarded as unregulated trash but confirm with local, state, and federal regulations.

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### Typical Properties

Property	Method	Unit	Typical Value
TPO Thickness	—	mils (mm)	45 (1.14)
Butyl Alloy Thickness	—	mils (mm)	25 (0.64)
Total Membrane Thickness	ASTM D5147	mils (mm)	70 (1.78)
Water Vapor Transmission (Water Method)	ASTM E96	perms	0.020
Tensile Strength <sup>1</sup>	ASTM D882	psi	1,500
Tensile Strength <sup>1</sup>	ASTM D412	psi	2,100
300% Modulus <sup>1</sup>	ASTM D412	psi	1,000 ± 10%
Elongation @ Break @ 23°C (Die C) <sup>1</sup>	ASTM D412	%	500
Factory Seam Strength	ASTM D751 grab method	pli	66.0
Field Seam Strength	ASTM D1876	pli	25.0
Flexibility Temperature @ -29°C (-20°F) <sup>1</sup>	ASTM D1970	pass/fail	No Cracking @ -29°C (-20°F)
Hydrostatic Pressure Resistance	ASTM D5385	ft.	>231 ft. (100 psi)
Peel Strength Over Poured Concrete	ASTM D903	lb.	>5.0
Resistance to Puncture	ASTM E154	lb.	300
Tear Strength of Vulcanized Rubber and Thermoplastics Die C <sup>1</sup>	ASTM D624	psi	250
Soil Decay E 96 Testing Water Vapor Transmission	ASTM E154		Pass
Soil Decay Testing (Weight Loss)	ASTM E154		Pass
Lateral Water Migration Resistance <sup>2</sup>	ASTM D5385 modified		Pass at 100 psi (231 ft) of hydrostatic pressure

<sup>1</sup> Data listed according to Machine Direction criteria where applicable

<sup>2</sup> Lateral water migration resistance test is performed by casting concrete against butyl side of membrane with a hole and applying a hydrostatic head pressure with water. This test measures the resistance of lateral water migration between membrane and concrete.

### Limited Warranty

Carlisle Coatings & Waterproofing Incorporated (Carlisle) warrants this product to be free of defects in workmanship and materials only at the time of shipment from our factory. If any Carlisle materials prove to contain manufacturing defects that substantially affect their performance, Carlisle will, at its option, replace the materials or refund its purchase price. This limited warranty is the only warranty extended by Carlisle with respect to its materials. There are no other warranties, including the implied warranties of merchantability and fitness for a particular purpose. Carlisle specifically disclaims liability for any incidental, consequential, or other damages, including but not limited to, loss of profits or damages to a structure or its contents, arising under any theory of law whatsoever. The dollar value of Carlisle's liability and buyer's remedy under this limited warranty shall not exceed the purchase price of the Carlisle material in question.