



WATERPROOFING

MIRADRI® 860/861

Description

CCW MiraDRI 860/861 is a self-adhering sheet membrane consisting of 56 mils (1.4 mm) of rubberized asphalt laminated to 4 mils (0.1 mm) of polyethylene to form a minimum 60-mil (1.5 mm) membrane. The combination of these two excellent waterproofing materials provides a high-performance, extremely durable waterproofing barrier. MiraDRI 860/861 is suitable for installations where the ambient temperature is 40°F (4.4°C) or above. MiraDRI 860-861 can be used for applications between 25°F (-3.9°C) and 40°F (4.4°C) if the product is stored in a heated area until use and the laps are treated with CCW contact adhesive.

MiraDRI 860/861 membrane is used for vertical and horizontal waterproofing on structural foundation walls and decks. Below-grade foundation walls, tunnels, split slabs, plaza decks and parking decks are all areas where MiraDRI 860/861 may be applied. MiraDRI 860/861 also may be used in interior areas such as mechanical rooms, laboratories, kitchens and bathrooms. MiraDRI 860/861 should be covered with either CCW 200V/300HV Protection Course, CCW Protection Board, or CCW MiraDRAIN® drainage composites.

Installation

Temperature: Typical installation of MiraDRI 860/861 can be performed when ambient and substrate temperatures are 40°F and above. Installations below 40°F are best addressed with MiraDRI 860 ULT (ultra low temperature adhesive formula). However, installation between 25°F - 40°F may be performed if the MiraDRI 860/861 is stored in a heated area until use and the laps are treated with CCW contact adhesive. Consult your local CCW Technical Representative and the MiraDRI 860 ULT product data sheet for further information.

Preparation: Do not apply MiraDRI 860/861 to frozen or wet substrates. The membrane should not be left exposed to direct sunlight for longer than 14 days. MiraDRI 860/861 can be applied to concrete, metal, wood, insulated wall systems or masonry surfaces. All substrates must be clean, dry and free of surface irregularities.

Concrete Substrates: Structural concrete must be cured a minimum of 7 days and lightweight structural concrete must cure a minimum of 14 days before the application of MiraDRI 860/861. Repair surfaces that are not structurally sound or have voids, protrusions, rough spalled areas, loose aggregate or exposed course aggregate. Any voids exceeding ¼"

in width should be filled with latex Portland cement, concrete or epoxy concrete and troweled smooth to match the existing surface. Protrusions and other rough areas should be broken off and patched as above. CCW LM 800XL, CCW 201, or CCW 703V may be used to fill small voids, honeycombs or bug holes.

Masonry Substrate: Apply MiraDRI 860/861 waterproofing over concrete block with smooth trowel-cut mortar joints or rough surfaces prepared with a parge coat. Allow the parge coat to dry before priming and installing the MiraDRI 860/861 waterproofing membrane.

Chemical Additives: Concrete shall be cured by water curing method. Any curing compounds must be of the pure sodium silicate type or clear resin-based materials without waxes, oils or pigments and be approved by the Carlisle representative. Form release agents must not transfer to the concrete. Remove forms as soon as possible from below horizontal slabs to prevent entrapment of excess moisture. Excess moisture may lead to blistering of the membrane. Curing compounds or form release agents that adversely affect the adherence of the MiraDRI 860/861 waterproofing membrane must be removed from the substrate prior to application.

Priming: All concrete, metal, masonry, wood and sheathing substrates require CCW Contact Adhesive. Insulated concrete forms require a water-based CCW Contact Adhesive. Carlisle Coatings & Waterproofing recommends an adhesion test of the MiraDRI 860/861 on any bare substrate to verify proper adhesion. Apply the appropriate CCW Contact Adhesive at the specified coverage rate. Apply Contact Adhesive with a lambswool roller, brush or spray apparatus. Allow Contact Adhesive to dry for a minimum of 30 minutes. The CCW Contact Adhesive will dry to a tacky finish. Areas primed with a CCW Contact Adhesive but not covered with MiraDRI 860/861 within the same day must be re-primed.

When installing CCW sheet membranes and sheet flashings over gypsum sheathing with glass-mat facers, coverage rates for contact adhesives and primers will depend on the porosity and texture of the sheathing and will vary substantially by gypsum-sheathing brand and manufacturer. To achieve consistent contact adhesive and/or primer coverage with adequate tack, it may be necessary to decrease the coverage rate (i.e. increase the amount applied) of the contact adhesive and/or primer and/or the application of multiple coats. CCW Contact adhesives and primers shall be allowed to dry completely (lower temperatures will extend drying time) before additional coats are applied or membrane installed. Caution should be taken as contact adhesives and/or primers applied to

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gyp-sheathings with glass-mat facers will take longer to dry than other substrates. Multiple adhesion tests should be performed randomly to verify proper application of primer and ensure a successful application.

Detailing: All vertical-to-horizontal transitions must have a $\frac{3}{4}$ " (19.05 mm) fillet of CCW LM-800XL, CCW-201 Sealant or CCW-703V Liqueiseal. Allow CCW-LM-800XL to cure 1 hour, CCW-703V to cure 4 hours, CCW-201 to cure 16 hours before covering with the MiraDRI 860/861 membrane. All inside and outside corners, as well as the vertical-to-horizontal transitions, should have a minimum 9" detail strip of MiraDRI 860/861 installed prior to the field membrane of MiraDRI 860/861. The MiraDRI 860/861 Membrane Strip should be centered on corners, joints, cracks and transitions. After field membrane is installed, a sealant bead of CCW LM-800XL, CCW-704, CCW-201, or CCW-703V should all be placed over all laps at the footing/wall transition extending a minimum of 9" up the wall and 9" out over the footing. Refer to the standard detail drawings for specific detail instructions.

Vertical Installation

Start at the low point and work towards the high point. Remove 6"–8" (150–200 mm) of the release paper, and then begin applying the membrane. Press and smooth the membrane against the substrate while pulling the release paper free. Roll entire membrane and laps with a hard rubber hand roller. Install membrane with side laps overlapped a minimum of 2½" (63 mm) and end laps a minimum of 5" (127 mm). CCW recommends that the membrane be rolled in place immediately after its placement to ensure full adhesion to the primed substrate. Apply a bead of CCW 704, CCW LM 800XL, or CCW 703V Liqueiseal at terminations, cut edges, T-joints, drains, penetrations. CCW 704 Mastic should not be installed on the underside of CCW Miradri 860/861. For walls over 8' (240 cm), the membrane should be placed in lifts. Protect the MiraDRI 860/861 membrane with the appropriate CCW MiraDRAIN drainage composite, CCW 200V/300HV Protection Course, or CCW Protection Board V.

Horizontal Installation

Start at the low point (establish a starting point with a chalk line if necessary) and work towards the high point in shingle fashion. Remove 2'–3' (60–90 cm) of the release paper and apply the membrane to the substrate. Continue pulling the release paper free while pressing and smoothing the membrane against the substrate. Apply in a straight line avoiding wrinkles and over-correcting. Roll the membrane with a minimum 75-lb. (34 kg) linoleum roller. Install membrane with side laps overlapped a minimum of 2½" (63 mm) and end laps a minimum

of 5" (127 mm). Apply a bead of CCW-704 Mastic at all terminations of the membrane and T-joints. Apply a $\frac{3}{4}$ " (19.05 mm) fillet of CCW LM 800XL, CCW 201, or CCW 703V Liqueiseal in all inside corners of planter boxes, shower stalls and shower pans. Patch inadequately lapped seams and damaged areas with MiraDRI 860/861 membrane covering the damaged area by a minimum of 6" (150 mm). "Fish-mouths" and severe wrinkles should be slit, flaps overlapped and repaired as above. Protect the MiraDRI 860/861 membrane with the appropriate CCW MiraDRAIN drainage composite or CCW 300HV Protection Course.

Detail Requirements: For standard installation details follow the MiraDRI 860/861 details drawings. For non-standard installation instructions contact your local CCW representative.

Limitations

Do not apply where membrane will be subject to continuous exposure to sunlight. The membrane should not be left exposed to direct sunlight for longer than 14 days.

Do not apply primer or membrane to a damp, frosty, frozen, or contaminated surface.

Not recommended as a pond or tank liner except for between-slab applications.

Do not apply over sealants containing coal tar or polysulfides. In the event of existing bitumen-modified materials, consult your CCW representative.

Warnings and Hazards

CCW Contact Adhesives, Mastics and Sealants may contain flammable and combustible solvents. Avoid exposure to open flame or spark. Avoid breathing vapors. Use only in areas with adequate ventilation. Refer to MSDS for important warnings and product information.

Packaging

Product	Size/Weight
CCW MiraDRI 860/861	36" wide x 67' roll (200 ft ²) 25 rolls/pallet (5000 ft ²) Weight = 80 lb/roll (approx.)
CCW-702LV VOC-Compliant Solvent Base Contact Adhesive	5-gallon pails (45 pails/pallet)
CCW-702WB Water Base Contact Adhesive	5-gallon pails (45 pails/pallet)
CCW-AWP Water Base Contact Adhesive	1-gallon pails (100 pails/pallet) 5-gallon pails (45 pails/pallet)
CCW-702 Solvent Base Contact Adhesive	5-gallon pails (45 pails/pallet)
CCW-715 Damp Concrete Contact Adhesive	5-gallon pails (45 pails/pallet)
CCW-704 Mastic and CCW LM-800XL	30-oz. Qt. Tube (12 tubes/carton) 5-gallon pails (45 pails/pallet)
CCW-703V Liqueiseal	3.5-gal Part A/0.5-gal Part B (45 lbs/unit)
CCW-LM-800XL	5-gallon (19-liter) pails 29-oz. (822-kg) tubes, 12 per box
CCW-201	1.5-gallon kit (in 2-gallon pail)

Standards

- CCW MiraDRI 860/861 meets the applicable requirements of:
 - GSA; PBS PCD 07121
 - USN; NAVFAC TS-07111
 - VA; H-08-1
 - Federal Construction Guide Specs; FCGS-07111
 - Corps of Engineers; CEGS-07111-3-82
 - UL 790, Class A
 - LA Research Report Number 25094L

Typical Properties

Property	Method	Results
Color	—	Dark Gray
Thickness	ASTM D3767	60 mils
Tensile (Membrane)	ASTM D412	325 psi
Tensile (Film)	ASTM D882	5000 psi
Elongation	ASTM D412	350%
Permeance	ASTM E96	0.05 perms
Low Temp. Flexibility ¹	ASTM D1970	Unaffected
Crack Cycling ²	ASTM C836	Unaffected
Peel Strength	ASTM D903	10.0 lb/in
Lap Adhesion	ASTM D1876	19.0 lb/in
Puncture Resistance	ASTM E154	60 lb (min)
Soil Burial at 16 wks	GSA-PBS 07121	No effect
Water Absorption	ASTM D570	0.1% by wt
Hydrostatic Head	ASTM D5385	230 ft

¹ 180 deg bend over a 1" (25 mm) mandrel at -45°F (-43°C)

² 100 cycles at -25°F (-32°C)

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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.