



Feb. 20, 2015

Summary Specification Re-Skinning

Maintenance and Repair Warranty Upgrade for Up to 30 Years Re-Skinning Over an Existing Smooth Surface Roof Membrane With a New 2001 Co. Wind Vented Membrane Using The Existing Roof's Intact Angle Change Terminations as a Shear Skirt Wind Resistance Depending on the Existing*

The existing roof angle change terminations and flashings when sound and intact can be reused. Simply clean the existing roof angle change area and seam the new 2001 Co. re-skinning repair membrane to the existing membrane using 6" EPDM inseam zip tape or heat welding.

This maintenance and repair warranty upgrade restoration is a 2nd ply roof membrane to the existing roof membrane, similar to a roof coating or a cap sheet to a smooth surface BUR.

This repair may be tax deductible in the year installed because it is not a new roof.

This is a 30-Year Warrantable maintenance upgrade 2nd ply to the existing roof.

Existing Roof Assembly Information

<u>Original 1st Roof</u>	<u>2nd Roof Assembly</u>
1. Deck	Separator
2. Air/Vapor Barrier	Air/Vapor Barrier
3. Insulation	Insulation
4. Cover Board	Cover Board
5. Attachment	Attachment
6. Roofing Membrane	Roofing Membrane
7. Membrane Attachment	Membrane Attachment
8. Membrane Surfacing	Membrane Surfacing

2001 Co. Wind Vented Roof Maintenance & Repair Membrane System

1. Separator	5. Attachment
2. Air/Vapor Barrier	6. Roof Membrane
3. Insulation	7. Membrane Attachment
4. Cover Board	8. Membrane Surfacing

Additional Pertinent Roof Information

*Wind Riders are available with 2001 Co. Air Seal and Re-fastening Techniques

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As a Shear Skirt for a New 2001 Co. Membrane

1.00 Preparation of Existing Membrane Surface

- 1.01 **Clean existing roof surface of dirt and debris:** Power washing is recommended.
- 1.02 **Refasten or remove and replace deteriorated bowing or cupping existing 2nd roof system membrane and insulation.** When replacement is necessary, replace to equal height with insulation and ½" Weighted Cover Board, Dens Deck or equal to 2001 Co. air seal specifications and details.
- 1.03 **Remove existing deteriorated angle change terminations and bridging flashings:** Repair with new to 2001 Co. Shear Skirt or other 2001 Co. Air Sealing details.
NOTE: If the existing terminations and flashings are intact, they can be left in place and used as a shear skirt for the new 2001 Wind Vented membrane skin over the existing repair.
- 1.04 **Replace Nailers wherever deteriorated or deficient:** If the existing angle change terminations and flashings are intact, they can be left in place and re-roofed over directly.
- 1.05 **When necessary replace existing angle change terminations, install new 2001 Co. Air Seal details for Wind Rider chosen or Shear Skirt 2' or 3'4" wide reinforced membranes to 2001 Co. Specifications and Details:** Shear Skirts can also be installed on the existing angle change and fastened in place with a new nailing board on gravel stops and vertical walls used as a termination bar into the vertical wall or horizontal roof surface. (See 2001 Co. Shear Skirt details attached with a termination board).
Make sure there is a two inch (2") membrane extension beyond the term bar or new nailing board for Shear Skirt rip through resistance. When new plywood or treated lumber nailing securement board is used instead of a termination bar to fasten a Shear Skirt, fasten the board

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6" on center, in a stagger fastener pattern so the nailer board will not split. Nails are not an acceptable fastener. Use screws or appropriate masonry fasteners.

- 1.06 **When using an existing roof's intact angle change terminations as a Shear Skirt for a new 2001 Co. membrane:** Clean the existing membrane angle change area for 36" or more out from angle change termination.
- 1.07 **Clean the existing roof membrane:** Use soapy water, Spick and Span, and a 3M Doodle Bug Scotch Bright Scrub Pad, vacuum up dirty water with a shop vac. Wipe up remaining residue with clean rags and rinse water. For final cleaning of the existing compatible roof membrane use Windex window cleaner and clean rags or paper towels.
- 1.08 **Inseam Tape Preparation:** After cleaning the existing angle change area, use the proper membrane cleaner and primers to install 6" double sided EPDM inseam tape or seam prep solvent for heat weldable thermoplastic membranes.

2.0 Re-skinning Procedure with 2001 Co. Membrane

- 2.01 **Install the new 2001 Co. Re-Skinning membrane over the field of the roof, then seam and flash to 2001 Co. Specifications and Details.**
- 2.02 **Two 6" double sided inseam tapes are installed on the existing roof membrane horizontal surface:** The 1st one installed 24" or more out from the angle change termination and the 2nd on the existing angle change to attach the new 2001 Co. Wind Vented EPDM Re-Skinning 2nd ply roof membrane to the existing. When a thermoplastic membrane is used the 1st is a six inch (6") double-sided inseam tape out from the angle change. The 2nd is heat welded on the angle change.

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- 2.03 In areas where deficient angle change terminations were replaced with new 2001 Co. Shear Skirts, or other 2001 Co. Air Seal Termination methods attach the new Wind Vented roof membrane to the new angle change termination.
- 2.04 **Note an option on existing thermoplastic membrane on an Air Sealed Deck:** Use the existing compatible thermoplastic membrane and heat weld new to old wherever possible. Sometimes the new membrane needs to be heat welded to the underside of the existing for ease of welding.

Do not cut the existing membrane if it is the air barrier against internal building air flow. If a PVC maintenance membrane is chosen, use a separator layer or fleece backed PVC membranes over existing membranes to block plasticizer migration from new to old.
- 2.05 **Install one of the following optional separator layers over the existing roof:**
- A. **Nothing:** The new 2001 membrane can be installed directly over an existing smooth surface roof membrane provided the existing will not abrade or contaminate the new membrane from the underside. If existing roof membrane is permeated for a **Wet Roof Drying Rider**, you must use separator.
 - B. **2001 Co. Fleece Backed Membrane**
 - C. **Geotextile Felt, Fireguard Fiberglass Shingle Mat, or**
 - D. **2001 Co. Gravel Mat:** Comes in 5/16" or 7/16" is loose laid over the existing permeated roof surface.
 - E. **Weighted Cover Board:** Gypsum, Dens Deck, Cement Board, or approved equal.
 - F. **Rigid Roof Insulation Boards:** Expanded polystyrene 1-lb. minimum density, Polyisocyanurate, ISO, and the like insulation boards are loose laid and weighted in place with a **Weighted Cover Board**.

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G. **Rigid Roof Insulation Boards:** Mechanically fastened into the roof deck.

Note: Over existing loose laid and gravel ballasted roofs when the ballast is removed, a weighted cover board or mechanically attached insulation board is required.

2.06 **Loose Lay 2001 Co C-EPDM, TPO, Hylon or PVC Roof Membrane:** over the existing roof assembly and optional separator layer in the field of the roof.

2.07 **Attach the Field membrane:** To the cleaned, primed and seam taped existing membrane angle change termination areas or new 2001 Co. Air Seal Termination with 6" seam tape: 24" or more out from the existing angle change termination, and at the termination.

Note: Compatible heat weldable thermoplastic membranes are heat welded to the existing angle change termination when possible.

2.08 **Totally adhere the new 2001 Co. field membrane** Over the remainder of the existing field membrane and additionally seam tape it over the existing actual angle change termination fastening area and continue the new membrane as a base flashing in itself to perimeter penetration and angle change terminations whenever possible.

2.09 **Where new angle change terminations and flashing are required:** Adhere the new field membrane over the Shear Skirt and up the vertical wall as a flashing in itself. 2001 Co. recommends that new base flashings **to be finished on top of the existing counter flashing metal** with 4" seam tape and termination bars, to 2001 Co. details.

Note: On through wall and raglet counter flashing metal skirts 2001 Co. recommends not bending up metal counter flashings and terminating a base flashing under the metal counter flashing. This causes kink water dams in the metal counter flashing forcing water to seep backwards into the masonry around the counter flashing. 2001 Co. recommends to Terminate vertical wall flashings on the lower face of metal counter flashings.

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Note: Repair existing counter flashing metal on vertical walls if kinked where it goes into the masonry wall. Flatten kinked metal with an oak board edge so it will drain water properly.

Clean plugged up weep holes above the metal through wall counter flashing so they can drain seeping water out of above masonry construction.

2.10 **Double-Sided EPDM seam tape is used to attach the base flashing membrane to the face of the metal counter flashing on the vertical wall:** A termination bar is installed in a convex position, a $\frac{1}{2}$ " down on the counter flash metal to compress the new flashing membrane, the counter flashing metal, and the existing flashing into the vertical wall, parapet, curb, etc.

2.11 **Install the 2001 Co. Wind Venting Equalizer Valves™ for wind uplift transfer and continual drying of the wet roof substrate:** According to the 2001 Company's Equalizer Valve Placement diagram pin pointing the wind vortex intensity zones for this specific building in all eight directions of wind into the building.

2.12 **Finish Flashing on Existing perimeters and penetrations are not necessary when existing are in tact:** They are a future maintenance/repair with the installing roofer that the building owner can add to the 2001 Co. Re-skinning warranty once completed.

2.13 **Newly flashed perimeters and penetrations:** When installed to 2001 Co. detail drawings, are included in the **2001 Co. Re-Skinning Maintenance Warranty Protection.**

2.14 **Provide optional walk-way pads, equipment sleepers, oil drip pans, safety equipment, and other roof top accessories:** At building owner's requests, as an optional cost extra per item for the building owner to purchase now or in future maintenance.

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3.00 Option 1 – Permeation Of The Existing Wet Roof For a 2001 Co. Wet Roof Self Drying Rider

3.01 On monolithic substrates such as poured in place structural concrete, gypsum on form

board, light weight insulated concrete fill decks, and air permeable decks sealed with a vapor

barrier or air barrier: The waterproofing membrane of the first and second roof are permeated by drilling a one-half inch (1/2") hole, one for every two square feet, or using a roof saw to cut both membranes two feet (2') on center across the roof in the wet areas. This permeation, hole, or cut will allow water vapor to egress up through the old roofs and into the new 2001 Co. Wind Vented repair system. This old roof water vapor will condensate on the under side of the new 2001 Co. Wind Vented membrane cold surface in a heated building. This moisture accumulation under the new 2001 Co. membrane and separator is easily exhausted out through the **Equalizer Valves™** when the wind provides low pressure and controlled air exchange under the Wind Vented Roof Membrane.

This interaction of wind uplift low pressure transfer, water vaporization and controlled air exchange under the new 2001 Co. waterproofing membrane will **self-dry an existing wet roof**.

3.02 On air permeable roof decks without an air barrier/vapor barrier (wood, metal, tectum, and pre-cast concrete panels, gypsum panel etc.): The original first roof membrane serves as the air barrier/vapor barrier and must remain intact.

Patch all holes, cuts, and deficiencies in the existing roof membrane. Trapped water below the first roof membrane will vaporize down into the building with convection air currents inside the building egressing up through the air permeable roof deck.

Only the 2nd roof assembly membrane above the first roof waterproofing membrane can be permeated for water vapor to egress up through the layers into the new 2001 Co. Wind Vented Self Drying Repair and Maintenance System on air permeable roof decks.

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In varying wind uplift low pressures the 2001 Co. Patented Wind Vented Self-Drying Roof will vaporize liquid water. This water vapor is exhausted out of the roof through the **Equalizer Valves™** in controlled air exchange, thus drying the wet roof assembly.

Do not drill or cut through the air barrier/vapor barrier 1st roof on an air permeable deck,

this 1st roof is the air barrier/vapor barrier that controls internal building positive pressure up through the roof assembly. This air barrier must be maintained in its integrity or the new 2001 Co roof membrane will balloon and flutter causing an energy drain on the building.

In addition, the new 2001 Co. Wind Vented roof will require mechanical attachment throughout the roof to remedy the holes in the 1st roof/air barrier.

Warning: This self drying permeation specification is not for cooler or freezer buildings where vapor drive is down through the roof assembly.

3.03 On an existing 2nd roof that is horizontally air permeable over an air sealed deck or

substrate: Examples, such as a mechanically fastened insulation system for a totally adheared mechanically attached or loose laid membrane that air can flow from one building perimeter edge to another, permeation of the existing roof membrane is not necessary.

The new 2001 Co. Wind Vented Roof **Equalizer Valve™** holes are cut through the existing roof membrane to the air barrier. This will bring wind uplift generated low pressure to the area of the existing wet roof substrate to vaporize liquid water.

Horizontal controlled air exchange in the existing roof, from Leeward to Windward building perimeters will exhaust water vapor out the **Equalizer Valves™** thus drying a wet roof.

The 2001 Co. Wind Vented Roofs use wind generated vacuum pressures transferred through the **Equalizer Valves™** to develop low pressure horizontally throughout the roof assembly.

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Low pressure combined with controlled air exchange will vent water vapor out of the wet roofs restoring the roof assembly components to their dry insulating R-Value*.

3.04

Slower Non-Permeation Drying

Non-permeation of the existing roofs will take longer to dry than if the roofs were permeated through their top water proofing membranes allowing water vapor to migrate vertically up through the roof assembly. But slower horizontal drying works, it just takes longer.

Accelerated Drying With a Mechanical Blower

3.05 To accelerate the drying of any wet roof substrate, mechanical blowers can be installed to increase low pressure and controlled air exchange in the roof assembly:

2001 Co. can design a forced air drying system for the specific roof assembly and building usage to rapidly dry a wet roof substrate with T.L. Kelly patented wet roof drying techniques.

Drying Roofs on Special Use Buildings

3.06 On cold storage, freezer buildings, high humidity, food processing, internally pressurized, clean buildings, Pharmaceutical, Electronic Assembly, and like buildings: 2001 Co. must analyze the internal environment of the building and the external atmospheric conditions of the building using the zip code to calculate roof drying capability of each and every specific building's roof. 2001 Co. will create a specific design to accomplish **drying a wet roof** on these special building types in their geographic atmospheric location.

3.07 Submit the 2001 Co. preapproved design and details for permeating the existing roof and venting moisture for a 2001 Co. Self-Drying Rider for the specific building.

*R-Value resistance of a building material to allow heat to flow through it. The higher the "R," the better the resistance.

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4.0 Option 2 – “Wind Vented Upper Parapet Wall

Self-Drying Waterproofing Membrane Application Technique”

Install an optional self-drying, Wind Vented, reinforced membrane upper parapet wall

and cap flashing above the base flashing to 2001 Co. details in the following manner:

4.01 **Install term bar tape under front and back sides of the parapet cap and at 4' (four foot)**

increments vertically on the parapet interior wall: If the parapet wall is a stud wall, align the termbar tape with the studs so the finish termbar fasteners can go into the structural wall studs.

4.02 **Install 4" (four inch) EPDM in seam tape on the top edge of the base flashing:** Spacing of

7' 6" (seven foot six inch) increments with a 6" (six inch) gap for water weeping and air exchange to take place along the top of the base flashing. If base flashing was installed under a metal counter flashing, install seam tape on the metal counter flashing face, one-half inch (1/2") below the top.

Warning: Do not cover up weep holes or above through wall metal entry lines. These need to weep water and be open to the 6" space between every 7'6" attachment seam on the top of the base flashing.

4.03 **Hang the upper parapet wall reinforced membrane flashing loose over parapet and**

position in place: Seam tape the bottom edge to the top of base flashing or the counter flashing metal face. Be attentive and install the 6" (six inch) weep space between 7' 6" (seven foot-six inches) adhered strips. This will allow through wall counter flashings and weep holes to drain water out this upper parapet wind vented self-drying membrane flashing. Parapet face rain water will vaporize in masonry, egress through a parapet wall and condensate on the roof side parapet wall flashing. This is why it is imperative to have the six inch (6") weep space between the 7' 6" attachment seam.

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4.04 Pull the wall flashing membrane back onto the roof surface: Pull the release paper on the four foot (4') on center vertical and under the parapet cap termbar tape strips.

4.05 Re-align the parapet flashing membrane over the parapet cap: Press the reinforced flashing membrane into the termbar tape strips on the interior parapet face.

4.06 Term bar the flashing membrane under the existing parapet cap edge on the roof side:
Zamac type fasteners are recommended in brick and concrete walls. #14 roof screws are recommended on stud wall construction, and into wood cap nailer boards.

See 2001 Co. Parapet Cap Flashing Detail Options

4.07 2001 Co. Parapet Cap Waterproofing Detail Options: See attached detail drawings.

- A. Remove metal cap, install waterproofing membrane, and reinstall cap.
- B. Totally encapsulate the existing cap and parapet wall with membrane.
- C. Waterproof top of stone cap with membrane, then fasten termbar 1" back from cap face. This method will not spaul off the face of the stone cap.
- D. Waterproof parapet wall vertical roof side and terminate under the existing aesthetic pleasing cap.
- E. Waterproof joints of cap top.

4.08 Totally adhere the remainder of the membrane: Across the top of the parapet cap, and down the parapet cap exterior face, when total parapet cap encapsulation is acceptable to the building owner.

Note: Reinforced membrane can be loose laid over clay Bell Tile Coping Caps and term barred on both front and back side walls. This is a saggy, baggy looking waterproof but a secure encapsulation of a deteriorating Bell Tile Clay Coping Caps.

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4.09 Term bar the exterior side of the cap membrane under the cap with 2001 Co. Termination Bar:

Begin at the middle of the top brick to limit spauling. If fasteners are not holding in parapet, masonry epoxy fastener fixation maybe necessary, or fasten into a lower brick line that is not water blasted.

Note: Black termination bar makes a beautiful finish under exterior cap encapsulation faces. Black or white engine paint on solvent cleaned term bars is a cost effective way to paint term bars, to match membrane color. (See your friendly car paint shop to spray paint term bars)

4.10 Cut in a 2001 Co. covered semi-circle (smile face) vertical wall ventilator in the top of the parapet wall waterproofing membrane according to the 2001 Co. Wind Venting diagram for the specific building's parapet wall (usually in the same area as Equalizer Valves).

Note: use the bottom of a 5-gallon bucket for a smile face cutting pattern.



4.11 Mechanically fasten vertical term bars: Fasten 4' (four feet) on center over the pre-installed term bar tape to mechanically fasten the upper parapet wall membrane flashing.

Note: Leave 3" (three inch) minimum space top and bottom of vertical termbars for air circulation between sections, so air exchange can egress to the covered smile face ventilators from the base attachment weep gaps. See 2001 Co. Wind Vented Parapet Wall Detail Drawings.

4.12 2001 Co. recommends waterproofing front of Parapet Masonry: Use clear waterproofing sylaxines or silicone treatments for very porous surfaces, on split block masonry use exterior paint.

4.13 Submit the 2001 Co. pre-approved design and details for a Wind Venting Upper Parapet Wall Rider: For the specific parapets of this building with bid proposal.

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5.0

Warranty and Rider Pricing Options

Upon roof completion and 2001 Company final approval inspection, provide the Building Owner with the following Warranties and Riders from 2001 Company:

5.01 2001 Co. Roof System – Labor and Material Warranty

1¢ per sq. ft. per year 20 year = 20¢ per sq. ft.

Roof area and Base Flashing _____ sq. ft. x 20¢ = \$_____

5.02 Wind Vented Upper Parapet Wall Flashing – Labor and Material Warranty

1¢ per sq. ft. per year: 20 year = 20¢ per sq. ft. x _____ sq. ft. = \$_____

5.03 “Self-Drying Rider” For Existing Wet Roof and Parapet Substrates

A. 5¢ per sq. ft. of roof and base flashing For Roof design when installed to

2001 Co. specifications 5¢ x sq. ft. _____ = \$_____

B. 5¢ per sq. ft. of parapet wall and cap For Walls design when installed to

2001 Co. specification 5¢ per sq. ft. x _____ sq. ft. = \$_____

5.04 Hail Damage Rider: with 2001 Co. C-EPDM Membranes Only on weighted cover boards

No Hail Riders with Thermoplastic Membranes

A. 1" Hail	45 mil. EPMD.....	\$ <u>FREE</u>
B. 2" Hail	60 mil. EPDM.....	\$ <u>FREE</u>
C. Unlimited Hail	90 mil. EPDM.....	\$ <u>FREE</u>

5.05 Wind Rider* 1¢ per sq. ft. for every 10MPH over 50MPH*

*Depending on air seal termination

For Roof _____ sq. ft. x _____¢ = \$_____

For Walls _____ sq. ft. x _____¢ = \$_____

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5.06 Wind Blown Vegetative Debris and Puncture Rider Available with 90 mil. C-EPDM

Only on a Weighted Cover Board \$ FREE

5.07 “2001 Co. Roof Assembly Components Rider” roof assembly materials bought directly from 2001 Co. to be included in the 2001 Co. Warranty.

1. Air or Vapor Barrier	5. Cover Boards
2. Fire Barrier	6. Separator
3. Insulation	7. Drains
4. Tapered or Crickets	8. Sheet Metal Counter Flashings Gravel Stops

5.08

Membrane Pricing Section

1. Base price for 90mil. C-EPDM Black

30-Year Warrantable 2nd Ply Repair and Maintenance Membrane \$ _____

2. Option Price for 80mil. PVC White Solar reflectant

25-year warrantable 2nd ply Repair and Maintenance Membrane \$ _____

3. Option price for 60mil. C-EPDM Black

20-Year Warrantable 2nd Ply Repair& Maintenance Membrane \$ _____

4. Option price for 60mil. PVC White

20-Year Warrantable 2nd Ply Repair & Maintenance Membrane \$ _____

Option 1 – Permeation of the existing wet roof for self drying

Total area of permeation _____ sq. ft. Cost \$ _____

Option 2

Upper Parapet Wall Wind Vented Self Drying Waterproofing Membrane Application

Total parapet and cap area _____ sq. ft. = \$ _____