



SECTION 07 18 13 PEDESTRIAN TRAFFIC COATING
SECTION 07 54 19 POLYVINYL-CHLORIDE ROOFING

WATERPROOF TRAFFIC MEMBRANE

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This section includes editing notes to assist the user in editing the section to suit project requirements. These notes are included as hidden text, and can be revealed or hidden by one of the following methods:

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PART 1

GENERAL

1.1 SECTION INCLUDES

- A. Waterproof vinyl traffic membrane, single-ply, walkable roof surface.
- B. Waterproof vinyl traffic membranes can be used on the following residential applications:
 - 1. Balcony decks.
 - 2. Roof decks.
 - 3. Walkways.
 - 4. Stairways.
 - 5. Above grade court yards.

1.2 RELATED SECTIONS

- A. Section 03 30 00 - Cast-In-Place Concrete: Concrete flooring to receive vinyl decking.
- B. Section 06 16 00 - Sheathing: Subfloor plywood or cementitious underlayment to receive vinyl decking.
- C. Section 06 20 13 (subsection) – Exterior Finish Carpentry: Moldings and trims at floor penetrations and terminations.

- D. Section 07 18 13 (subsection) - Pedestrian Traffic Coatings.
- E. Section 07 54 19 (subsection) – Polyvinyl-Chloride Roofing.
- F. Section 07 60 00 – Flashings and Sheet Metal.
- G. Section 07 70 00 – Roof and Wall Specialties and Accessories: Scuppers, drains counter flashings and reglets.

1.3 REFERENCES

- A. CAN/CGSB 37.54-95 - Canadian General Standards Board Standard for Roofing and Waterproofing Membrane, Sheet Applied, Flexible Polyvinyl Chloride. For Econodek Ultra and Select Vinyl deck membranes. Intertek Test report 100400406COQ-003H / SPEC ID 67313
- B. CCMC Code Compliance Evaluation for Econodek Ultra and Select Vinyl deck membranes – CCMC-TG-075419.01-15 / CCMC Technical Guide for Sheet applied Decking membranes (exposed to light pedestrian traffic)
- C. Intertek Quality Control Manual and Intertek Test report 1000911691COQ-003.
- D. Nemo Physical Properties Testing for code compliance to CGSB 37.54-95 for Econodek Premium Series Vinyl deck membranes – Report #:4r-CGT-20-SSTHP-01.c
- E. Nemo Physical Properties Testing for code compliance to ASTM 4434-21 for Econodek Premium Series Vinyl deck membranes – Report #:4r-CGT-19-SSTHP-01.e

1.4 DESIGN REQUIREMENTS

- A. Drainage:
 1. Slope: 1/4 inch in 12 inches (6mm in 305mm) recommended.
 2. Direction: Slope towards drain or drainage point.
 3. Ponding Water: Exterior decks should slope away from the building to a deck edge, or drainage collection point. Decks shall be designed and constructed to avoid excessive water ponding, the responsibility of which lies with the design professional having authority of the project and not the waterproofing contractor. Some incidental ponding after a rain is to be expected and is not covered under warranty. Standing water exceeding the following shall be rectified: 6 mm (1/4”) in depth that exceeds 1.0 square meter (10.76 square feet) and remains standing in excess of 48 hours after a rainfall has stopped on days of evaporation. The standing water must be a result of rainfall, some retained water at drains, deck edges, seams, transitions or flashing is not uncommon and is not considered an installation defect or warranty issue. Water must not be collected from other points on the building envelope such as roofs and dispensed on or across the vinyl deck surface for the purpose of drainage.
- B. Structural:
 1. Econodek membranes are acceptable for use with structures designed to support lightweight deck / roof assemblies.
 2. Econodek is not acceptable for use in commercial or public access areas.
 3. Adequacy of the structural support must be verified by the owner or the owner's technical representative and is their sole responsibility to determine.
 4. Potential live loads, such as snow or ponding water, should be considered.

5. TJI joists are not acceptable for exterior deck support or framing.
- C. Acceptable Substrate:
1. Minimum 5/8" – Recommended 3/4" T&G exterior rated Fir plywood.
 2. Minimum 5/8" – Recommended 3/4" Tolko T-Ply Pro or Ultra T&G plywood.
 3. For typical Class "A" Fire rating use Minimum 1/2" PermaBase, cement underlayment installed over one of the acceptable substrates noted above in C-1 or C-2. (Currently Econodek is engineered to meet Class A fire ratings but has not been lab tested, this data is for information only. Tuff Industries makes no claims to fire testing compliance at this time).
 4. Cured suspended slab concrete if not over metal pans or other waterproofing materials. Concrete must comply with the requirements of the applicable code.
 5. Refer to the Tuff Industries Plywood Specification Bulletin and include it in the project documents.
 6. Econodek membranes function as air and vapor barriers, proper ventilation is critical to the performance of the Econodek waterproofing system. Poorly ventilated areas under the deck surface can lead to premature rot and deterioration of the deck and structure.
 7. **WARNING:** Some plywood grades such as G2S (good two side) and G1S (good one side) contain artificial / synthetic filler material which must be removed prior to installing Tuff vinyl membranes. If removal of synthetic filler material is not an option then it must be sealed with two coats of Zinnser Bin Shellac Based Primer Sealer.
- D. Chemical Compatibility:
1. Econodek membranes must not come in contact with bitumen or tar based products, pressure treated wood products or polystyrene insulations. Roof areas must not drain on or across the Tuff vinyl deck surface, long term exposure from roof area run off can affect the appearance and performance of the vinyl deck membrane.
 2. Econodek membranes must not come in contact with copper based metals as water runoff from copper can discolor the surface of the membrane.
 3. Econodek membranes can be affected by chemicals found in commercial / residential environments. Many chemicals left to absorb into the membrane and then exposed to heat or ultra violet light can cause permanent discoloration or damage to Econodek membranes. Contact Tuff Technical Department for question related to chemical incompatibilities.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 1. Preparation instructions and recommendations.
 2. Storage and handling requirements and recommendations.
 3. Installation methods.
- C. Detail Drawings: Submit copies of manufacturer's standard detail drawings describing installation methods, seaming plan showing joints, termination details and interface with other materials as well as flashing conditions applicable to the project.
- D. Selection Samples: For each finish product specified two complete sets of color samples 8 1/2 inches by 11 inches (216mm x 280mm), representing manufacturer's

full range of available colors and patterns.

- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.
- F. Installer's qualifications.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of five (5) years experience.
- B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of two (2) years demonstrated experience in installing products of the same type and scope as specified.
- C. Each dealer and installation contractor is independently owned and operated. Each dealer is an authorized licensed user of the trademark Econodek which trademark is owned by Tuff Industries Inc. Dealers and installation contractors have no authority to assume or create any obligation whatsoever, expressed or implied, in the name of Tuff Industries Inc., nor to bind Tuff Industries Inc. In any manner whatsoever. Dealers and installation contractors are solely liable for all installation-related repairs and defects and related warranty work. Tuff industries Inc. strongly recommends that customers first conduct their own independent due diligence and investigations regarding the experience and qualifications of such dealers and installation contractors prior to retaining them.
- D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship, color, and details are approved by Architect. Complete mock-up area as required to produce acceptable work.
 - 3. Pre Installation Meeting: Discuss waterproof practices and precautions applicable to this project.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.
- C. Deliver all materials to the job site in their original, tightly-sealed container or unopened packaging.
- D. All materials must be clearly labeled with the manufacturer's name and product identification.
- E. All materials must be protected from damage during transit, handling, storage and installation. Leave all materials on pallets fully protected from moisture.
- F. Reject damaged materials at delivery. Replace all damaged materials with new materials.
- G. All materials shall be stored in a dry area and protected from the elements. Store membrane rolls flat on pallets.

- H. Store adhesive at temperatures between 5 C (40 F) and 26 C (80 F); if adhesives are exposed to lower temperatures, verify usability with manufacturer before using.
- I. Store all flammable materials in a cool, dry area away from sparks and open flames. Follow precautions outlined by manufacturer / supplier.

1.8 AMBIENT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 WARRANTY AND MAINTENANCE

- A. At project closeout, provide to Owner or Owners Representative a copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage. Include a copy of the manufacturer's current Econodek membrane maintenance instructions.

PART 2 PRODUCTS

2.1 MANUFACTURERS

Acceptable Manufacturer: Tuff Industries Inc, located at:
9570 Bottom Wood Lake Rd; Lake Country, BC, Canada V4V 1S7;
Toll Free: 877-860-9333; Email: info@tuffindustriesinc.com Web: www.econodek.com

- A. Substitutions: Not permitted.
- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 APPLICATIONS/SCOPE

- A. Apply Econodek vinyl deck flooring on any light foot, traffic bearing decks and roof decks in residential applications; restoration and new construction.
- B. Fully adhered vinyl flooring without ballast to solid construction, suspended concrete or fir plywood, on flat, sloped and unusual configuration traffic decks.

2.3 TRAFFIC MEMBRANE

- A. Econodek 60 Mil PVC Waterproof Traffic Membrane:
 - 1. Membrane Overall Thickness: 60 mil, (1.52 mm).
 - 2. Sheet Width: 72 inches (1828.8 mm) typical; other standard widths as applicable to project requirements and available from the manufacturer.
 - 3. Weight: 52 oz/sq yd.
 - 4. Seam Strength - CGSB 37.54-95: PASS.
 - 5. Elongation Tear Strength - ASTM D 751: PASS.
 - 6. Dimensional Change - CGSB 37.54-95: PASS.
 - 7. Accelerated Weathering - ASTM G 154 at 5000 hours: PASS.

ULTRA SERIES NON - WOVEN BACK VINYL MEMBRANES

- 8. Ultra-Series: Color - Marble Grey.
- 9. Ultra-Series: Color - Agate.
- 10. Ultra-Series: Color - Topaz.

11.

SELECT SERIES NON - WOVEN BACK VINYL MEMBRANES

12. Select-Series: Color - 3D Pebblestone.

13. Select Series: Color - Brown Timber.

14. Select Series: Color - Grey Timber.

PREMIUM SERIES VINYL BACK REINFORCED VINYL MEMBRANES

15. Premium Series: Color - Cobalt

2.4 ADHESIVES

- A. Tuff – “Trowel-On”: Water-based synthetic polymer adhesive used for bonding all Econodek membranes to flat horizontal wood surfaces, Shelf life 1 Year.
- B. Tuff – “Low VOC Contact Adhesive”: Solvent based, adhesive for bonding all Econodek membranes to flat or vertical wood and / or concrete surfaces. Shelf life 1 Year.
- C. Tuff – “Roll-On”: Water-based synthetic polymer adhesive used for bonding all Econodek membranes to flat horizontal or vertical wood and / or concrete surfaces, Shelf life 1 Year.
- D. Tuff – “Econodek SBA Contact Adhesive”: Solvent based, adhesive for bonding Non- Woven (Fuzzy Back) Econodek membranes only to flat or vertical wood and / or concrete surfaces. Shelf life 1 Year. (Never to be used on vinyl backed membranes)

2.5 ACCESSORIES

- A. Tuff – “Deck-Patch”: Cement based floor leveling compound used for filling plywood gaps, knot holes and uneven surfaces, follow directions for mixing and application thickness on container.
- B. Tuff-Seal Drain: Spun aluminum drain with PVC coated flange and removable clamping ring.
- C. Tuff-Seal Overflows: Welded aluminum overflows with PVC coated flange and a 12 inch (304.8 mm) outflow pipe.
 - 1. Drain Diameter: 2 inch (50.8 mm) O.D. (sloped at 10%).
 - 2. Drain Diameter: 3 inch (76.2 mm) O.D. (sloped at 10%).
 - 3. Drain Diameter: 2 inch (50.8 mm) I.D. (sloped at 0%).
 - 4. Drain Diameter: 3 inch (76.2 mm) O.D. (sloped at 0%).
- D. Tuff-Clad H/D PVC Metal: 21 mil unreinforced membrane laminated to 24 gauge G-90 Galvanized steel fabricated by contractor into metal flashings and edge details.
 - 1. Color: Grey.
 - 2. Color: Sandalwood.
 - 3. Color: White.
 - 4. Color: Black.
- E. Aluminum L-Trim mechanical fastener with butyl tape and screws to mechanically fasten the Econodek at deck edge and / or upturns.
 - 1. Color: Beige.
 - 2. Color: Gray.
 - 3. Color: White.
 - 4. Color: Black.

- F. Tuff-Seal Box Scuppers: All aluminum construction with PVC coating. 3" x 3" x 16" (101 mm x 101 mm x 406 mm).

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

It is the Installation contractor's responsibility for ensuring the substrate is acceptable for the installation of the Econodek membrane system

A. Correct Substrate Defects.

1. Defects that need to be corrected before work can commence should be brought to the attention of the General Contractor or Owner in writing and addressed by them.
2. For re-decking applications, remove existing waterproof system components as specified by the project designer. If components are discovered during installation that could be detrimental to the performance of the new Econodek system, they should be brought to the attention of the Project Designer, General Contractor or Owner for corrective action.
3. If soundness and integrity of the existing structure cannot be verified, good practice requires a complete tear-off for inspection and repair. However, recovering an existing structure is an alternative to removing all existing components. Non-destructive testing, in conjunction with core cuts, must be completed to determine the condition of the existing structure.
4. The installation contractor is responsible for assuring that all wet substrate materials are dry prior to the installation of the new waterproof system.
5. In the absence of a Design Professional or General Contractor, the Installation Contractor should coordinate with the building owner to assure conditions are satisfactory to commence with the project as designed.

B. Remove Moisture

1. Ponded water, snow, frost and/or ice, must be removed from the work surface(s) and completely dried prior to installing the Econodek System.

C. Prepare Surface

1. Acceptable substrates to which the Econodek System is installed must be properly prepared prior to the system installation. The surface must be relatively even, clean, dry, smooth, free of sharp edges, fins, loose or foreign materials, oil, grease and other materials that may damage the system. Rough surfaces that could cause damage to the membrane must be repaired as determined by the Design Professional.

D. Fill Voids

1. All surface voids of the immediate membrane substrate greater than 1/4" (6.35 mm) wide must be filled.

3.3 FULLY-ADHERED MEMBRANE

- A. Unroll the Econodek membrane and position without stretching. Allow the membrane to relax for 15 minutes if the temperature is above 60 F (15 C), or at least

30 minutes if temperature is lower. Inspect membrane, remove or replace any product that is creased or damaged.

- B. Lap sheets a minimum of 1.0 inch / 25.4 mm (minimum) for hot air welded seams and 1.5 inch / 38 mm (minimum) for liquid welded seams or per acceptable standard roof practice to allow for a continuous weld area leaving room for adjustments and trimming of seams if necessary.
- C. Fold back one half the width of the membrane and apply adhesive in accordance with the manufacturers written instructions. Upon proper curing of the recommended adhesive roll membrane into the adhesive and push out air as to not create wrinkles or bubbles under membrane. Fold back the remaining half, and repeat the process.
- D. Refer to all manufacturer's instructions / specifications or contact Tuff Industries Technical Department for requirements.
- E. Hot-air weld all seams with a continuous nominal 1.5 inch (38 mm) (minimum) or per acceptable standard roof practice to allow for a continuous weld area leaving room for adjustments and trimming of seams if necessary. Cap all weld edges to ensure no water ingress.
- F. Inspect all welded seams for continuity and integrity using a seam probe, rounded screwdriver or similar blunt object. Seam checks are to be made daily by the contractor.

3.4 FLASHINGS

- A. Install Tuff-Clad PVC metal and / or membrane flashings and hot air weld 1.0 inch / 25.4 mm (minimum) or liquid weld 1.5 inch / 38 mm or per acceptable standard roof practice to all metal and membrane flashings.
- B. Install L-Trim mechanical fastener according to manufacturer's instructions.
- C. Install all flashings concurrently with the membrane as Work progresses.

3.5 INSTALLATION

- A. Install in accordance with manufacturer's instructions.

3.6 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION