



COUNTY OF PRINCE WILLIAM

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DEPARTMENT OF
PUBLIC WORKS
Division of
Building Development

Robert W. Wilson
Director

Product Approval 00-02 April 15, 2004

<u>Division 07:</u>	Thermal and Moisture Protection	<u>Section 07100:</u>	Fluid Applied Waterproofing
<u>Product:</u>	Tuff-N-Dri with Warm-N-Dri Insulation	<u>Manufacturer:</u>	Koch Waterproofing 6402 E. Main St Suite 201 Reynoldsburg, OH 43068
<u>Report:</u>	ER-5746 (attached)		

Conditions

1. Tuff-N-Dri with Warm-N-Dry Insulation is approved in accordance with ICBO ER-5746 Evaluation Report. If the Evaluation Report does not remain current, this approval expires.
2. A copy of this approval and the ER Evaluation Report must be maintained with the approved construction drawings on-site for the inspectors review.
3. Tuff-N-Dri is not a replacement or substitution for foundation drain tile.
4. Tuff-N-Dri can only be applied when the ambient temperature is above 20 deg. F.
5. Applied Tuff-N-Dri shall not be exposed to direct sunlight for more than 15 days.
6. When the backfill material contains angular stone or sharp objects, protection boards shall be provided over Tuff-N-Dri.

Eric M. Mays, P.E., C.B.O.
Building Official

Cc: Product Approval Folder
Building Plan Review Branch
Construction Inspections Branch

Filing Category: WEATHER-RESISTIVE BARRIERS

TUFF-N-DRI® EXTERIOR FOUNDATION WATERPROOFING MEMBRANE

**KOCH WATERPROOFING SOLUTIONS
6402 EAST MAIN STREET
REYNOLDSBURG, OHIO 43068**

1.0 SUBJECT

TUFF-N-DRI® Exterior Foundation Waterproofing Membrane.

2.0 DESCRIPTION

2.1 TUFF-N-DRI:

Koch Waterproofing Solutions' TUFF-N-DRI waterproofing membrane is a spray-applied foundation waterproofing material composed of polymer-modified asphalt in a water carrier that cures to a monolithic, elastomeric membrane.

TUFF-N-DRI is installed to a minimum wet-film thickness of 63 mils (1.6 mm) [40 mils (1 mm) dry] on the exterior of below-grade concrete or masonry foundation walls. The material is available in 55-gallon (208.2 L) drums, and has a density of 8.2 pounds per gallon (1 kg/L). Storage must be at temperatures above 50°F (10°C). Shelf life is a maximum of 12 months.

2.2 WARM-N-DRI® Insulation Protection Drainage Board:

WARM-N-DRI Insulation Protection Drainage Board is used to protect the TUFF-N-DRI membrane from damage due to back-fill placement, and to provide a drainage pathway for groundwater. WARM-N-DRI Insulation Protection Drainage Board is a dense fiberglass board, available in 3/4-inch (19.1 mm), 1 3/16-inch (30.1 mm), and 2 3/8-inch (60 mm) thicknesses. Sizes include 4 feet by 4 feet (1219 mm by 1219 mm) and 4 feet by 8 feet (1219 mm by 2438 mm).

2.3 Installation:

2.3.1 TUFF-N-DRI: TUFF-N-DRI is applied only by a Koch Waterproofing Solutions selected waterproofing contractor, to ensure proper installation. The installation must conform to the manufacturer's instructions, revised April 1, 1996, and this report. A primer material is not required prior to application of the material, and immediate backfill pressure, after application, is not necessary.

Before application, the walls are prepared for waterproofing in accordance with the 1997 *Uniform Building Code*™ (UBC). Substrates must be clean, smooth, firm, and free of dust, mud, loose mortar, wires and any other substances that might prevent proper placement and bonding. Wall ties must be removed from the concrete wall and must be sealed with a bituminous material or other

approved material or method. Mortar joints must be flush. Cracks, voids and holes must be patched with a nonshrinking grout or asphalt mastic, with nonshrinking grout preferred for large defects.

TUFF-N-DRI waterproofing materials must be applied only when the air temperature is above 20°F (-6°C) and when heated to between 110°F (43°C) and 130°F (54°C). The time needed for the coating to cure, prior to backfilling, is 16 to 24 hours; lower air temperatures require a longer curing time. Application rate of the material is dependent upon the foundation wall surface. For cast-in-place or precast concrete and parged concrete masonry units, the rate is 25 sq. ft./gal. (0.6 m²/L), and for concrete masonry units, the rate is 20 sq. ft./gal. (0.5 m²/L). TUFF-N-DRI may be applied to concrete foundations as soon as the forms are removed, and to concrete masonry unit foundations when the mortar has cured.

Concrete and masonry must not be frozen during the application of the TUFF-N-DRI membrane. After application, exposure of the TUFF-N-DRI membrane to sunlight is limited to 15 days.

2.3.2 WARM-N-DRI Insulation Protection Drainage Board: WARM-N-DRI boards are adhered to the TUFF-N-DRI membrane either as the membrane begins to cure or with supplemental adhesives after the membrane has cured. Curing of the membrane occurs when color changes from brown to black. This color change takes approximately 2 to 7 minutes at 70°F (21.1°C) ambient temperature; lower temperatures will extend the curing period. At the base of the foundation wall, the WARM-N-DRI board must be placed in contact with the drainage system of the foundation. When applying the boards before the membrane has cured, the boards must be pressed into place; sliding is not permitted. Mechanical fasteners are permitted to be used to ensure board attachment until after the TUFF-N-DRI is cured. When attaching the WARM-N-DRI boards after the membrane has cured, supplemental adhesives are permitted to be used to ensure board attachment. The foundation wall may be backfilled in 16 to 24 hours.

2.4 Identification:

Each container and package shall be identified with a label indicating the Koch Waterproofing Solutions name and address, the product name, and the evaluation report number (ICBO ES ER-5746).

3.0 EVIDENCE SUBMITTED

Data and reports of tests in accordance with the ICBO ES Acceptance Criteria for Cold, Liquid-applied, Below Grade, Exterior Dampproofing and Waterproofing Materials (AC29), dated January 1994.

ES REPORTS™ are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICBO Evaluation Service, Inc., express or implied, as to any finding or other matter in this report, or as to any product covered by the report.



4.0 FINDINGS

That the Koch Waterproofing Solutions TUFF-N-DRI® exterior foundation waterproofing membrane complies with the 1997 *Uniform Building Code*™, subject to the following conditions:

- 4.1 Application is by a Koch Waterproofing Solutions selected waterproofing contractor.
- 4.2 Installation conforms to the manufacturer's instructions, revised April 1, 1996, and this report. A copy of the instructions must be on the jobsite at all times.
- 4.3 Protection boards are provided over the TUFF-N-DRI membrane when the backfill material contains angular stone or sharp objects.
- 4.4 Following application, the material is not exposed to sunlight for more than 15 days.
- 4.5 Where the groundwater table creates hydrostatic pressure conditions, WARM-N-DRI Insulation Protection Drainage Board connected to a drainage system or foundation is required over the membrane. The drainage system must meet the minimum requirements outlined in either the TUFF-N-DRI application instructions or the code, whichever is more restrictive.

This report is subject to re-examination in two years.