



Drainage Efficiency of TYPAR® BuildingWrap and TYPAR® MetroWrap

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Introduction to Drainable WRB's – the Next Generation of Moisture Management in Walls

Drainage is widely accepted as one of the most effective measures for reducing the risk of building wrap damage caused by rain penetration. Historically, drainage has been achieved through the use of furring strips that separate the wrap from the structural sheathing and framing, but new and emerging technologies offer more efficient drainage solutions. Today's most advanced building wrap products feature integrated drainage gaps through creping, embossing, weaving, or filament spacers. These new products eliminate the need for furring strips, helping to reduce material costs and streamline installation.

TYPAR®'s line of drainable weather-resistive barriers (WRB's) provides a balance of properties ranging from durability, bulk air and water holdout, vapor permeability, and superior drainability. TYPAR® DrainableWrap™ (for structures up to 3 Stories) and TYPAR® DrainableWrap™ Commercial (for Structures 4 Stories and above) are specifically designed to increase the drainage efficiency of the wall. Thanks to an integrated layer of randomly oriented orange polypropylene fibers (Figure 1), TYPAR® DrainableWrap™ and TYPAR® DrainableWrap™ Commercial have been shown to achieve a 94.8% and 96.7%, respectively, drainage efficiency per ASTM E2273. This added layer of protection is particularly important in coastal climates and in areas subject to heavy wind-driven rainfall.

Both WRB's can be installed vertically and horizontally and still achieve a minimum drainage requirement of 90%.



Figure 1: Randomly Oriented Orange Polypropylene Fibers on TYPAR® DrainableWrap™ and TYPAR® DrainableWrap™ Commercial

Introduction to ASTM E2273



Figure 2: ASTM E2273 Test Setup at Independent, Third-Party Lab for TYPAR® BuildingWrap and TYPAR® MetroWrap

ASTM E2273 or “Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies” is the industry standard for testing drainage efficiency of a water-resistive barrier. In simple terms, this test involves spraying water onto a wall assembly and measuring its collection over time. Figure 2 shows actual setup of the ASTM E 2273 drainage test on TYPAR® BuildingWrap and TYPAR® MetroWrap. Two 4 ft. by 8 ft. walls, one with TYPAR® BuildingWrap and another with TYPAR® MetroWrap, were assembled and tested for drainage efficiency by an independent accredited third-party lab facility. During the ASTM E2273 test, a spray box with two small openings allowing for water application is sealed to the wall. Next, water is sprayed onto the wall for 75 minutes using a constant flow and dispersion, and the amount of water collected is measured every 15-minutes. Once the 75 minutes is complete, the wall sits idle for an additional 60 minutes before the collected water that has drained from the wall assembly is calculated. If greater than 90% of the total applied water has drained and been collected, the wall assembly is said to be in accordance with ASTM E2273. Section R703.9.2 of the 2018 International Residential Code (IRC) and Section 1407.4.1 of the 2018 International Building Code (IBC) both require the wall to have an average minimum drainage efficiency of 90% when tested in accordance with ASTM E2273.

When tested at an independent third-party lab, both TYPAR® BuildingWrap and TYPAR® MetroWrap achieved a drainage efficiency of greater than 90%. For a full comparison of ASTM E2273 results across TYPAR® WRB’s please refer to the chart below.

Typar® WRB	ASTM E2273	Meets 2018 IRC/IBC Minimum of 90%
TYPAR® BuildingWrap	>90%	X
TYPAR® MetroWrap		X
TYPAR® DrainableWrap™	≥95%	X
TYPAR® DrainableWrap™ Commercial		X