

Liquid-Applied Water-Resistive Barriers (LA-WRB's)

INTRODUCTION

Exterior Insulation and Finish System (EIFS) and EIFS with Drainage systems stand as a hallmark in the construction industry, offering superior energy efficiency performance and an infinite array of aesthetic design possibilities. The integration of Liquid or Fluid* Applied Water Resistive Barriers (LA-WRBs) within EIFS enhance its performance manifold.

This technical bulletin explores the multifaceted advantages of LA-WRBs, emphasizing their role not only as a secondary plane of protection against incidental moisture ingress but also, as an efficient air barrier material, aligning seamlessly with the stringent standards in Canada and the United States. LA-WRBs manufactured by EIFS manufacturers are also highly compatible for use behind a wide array of non-EIFS claddings, ensuring optimal performance and durability in diverse construction applications.

More specifically, LA-WRBs are a fluid material, applied by spray, roller or trowel, which dries to a membrane possessing low water absorption properties. The LA-WRB is installed on the substrate, and in effect, becomes the substrate for the installation of the EIFS.

The important properties of the LA-WRB include:

1. The ability to bond to the substrate;
2. The ability of the EIFS adhesive to bond to LA-WRB;
3. Resistance to water penetration;
4. Water vapour permeance

**The above definition is from the 2013 EIFS Practice Manual published by the EIFS Council of Canada and reflects common terminology in Canada. Common terminology in the United States for this product is Fluid-Applied Water Resistive Barrier Coating or Air/Water Resistive Barrier (A/WRB) for products that qualify as air and water resistive barriers.*

BENEFITS OF EIFS LA-WRB'S

1. **Water Resistance:** LA-WRBs act as a secondary plane of defense, guarding the building enclosure against incidental moisture ingress. They protect against rain, condensation, and other environmental factors, thereby enhancing the structure's durability and longevity.
2. **Superior Airtightness Levels:** LA-WRBs excel in achieving exceptional airtightness levels. EIFS LA-AWRBs provide an unbroken shield against both water and air infiltration. Their performance significantly reduces air leakage, meeting and surpassing energy code requirements (i.e. ASHRAE 90.1, ICC International Energy Conservation Code, and Passive House). This airtightness conserves energy for heating and cooling, ensures a comfortable indoor environment, and controls the movement of humid air in the wall where it may condense.
3. **Seamless Application:** LA-WRBs ensure a seamless barrier when integrated with the EIFS assembly.
4. **Flexibility:** LA-WRBs are flexible, allowing them to accommodate some building movement without cracking or losing their effectiveness. This flexibility is essential for maintaining the integrity of the system, especially in regions prone to seismic activity.
5. **Ease of Application:** Liquid-applied barriers are relatively easy to apply, especially in intricate or irregularly shaped areas. This ease of application can save time and labor costs during the construction process.
6. **Durability:** LA-WRBs are durable and resistant to UV exposure and harsh weather conditions.

7. **Fully adhered:** LA- WRBs are bonded to the substrate and remain in place under significant air pressure differentials.

TECHNICAL PROPERTIES OF LA-WRB'S

A LA-WRB is a fluid material, applied by spray, roller or trowel, which dries to a membrane possessing low water absorption properties. The LA-WRB is installed on the substrate, and in effect, becomes the substrate for the installation of the wall covering.

The important properties and performance attributes of the LA-WRB include:

1. The ability to bond to the substrate;
2. The ability of the EIFS adhesive to bond to LA-WRB;
3. Resistance to water penetration;
4. Water vapor permeance; and,
5. Resistance to UV radiation.
6. Resistance to nail pops in wood frame construction; and,
7. Durability such as weathering, freeze thaw, racking, environmental cycling, etc.
8. Resistance to transverse wind load
9. Air barrier

PERFORMANCE OF LA-WRB

Below are industry standards referenced in the Model Building Codes that contain specific tests and performance requirements for LA WRB and Air Barriers

Canada

CAN/ULC S716.1 and CAN ULC S741

United States

ASTM E 2570 and ASTM E 2178 (Air Barrier)
ASHRAE 90.1 and 2021 IECC

SUMMARY

EIFS Liquid-Applied Water Resistive Barriers stand at the forefront of building enclosure solutions, offering unmatched protection against moisture, and efficient air barrier functionality.

By providing continuity of the barrier, superior airtightness, and compliance with national standards, EIFS LA-WRBs ensure building enclosures meet the highest performance benchmarks while promoting energy conservation and environmental sustainability. Architects, builders, and project stakeholders can rely on EIFS LA-WRBs to create resilient, energy-efficient, and comfortable spaces that endure the test of time.

Refer to the manufacturers' specifications and published literature for further information.

ABOUT EIMA

Founded in 1981, the EIFS Industry Members Association (EIMA) is a North American non-profit technical trade association dedicated to advancing and promoting the Exterior Insulation and Finish Systems (EIFS) industry. As a leading authority on EIFS, EIMA serves as a vital hub for leading suppliers, manufacturers, distributors, contractors, architects, and professionals in the industry. EIMA stands as a cornerstone for individuals and businesses seeking to thrive in the dynamic world of Exterior Insulation and Finish Systems. Learn more at www.eima.com.

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