



***Senergy***<sup>®</sup>

# Exterior Insulation & Finish System

Proven to perform in any environment

A brand of  
**MASTER**<sup>®</sup>  
**» BUILDERS**  
SOLUTIONS

# An Introduction to EIFS

Master Builders Solutions' Exterior Insulation and Finish Systems (EIFS) are highly decorative, multi-layered insulating and protective finish systems for exterior walls. EIFS are the only exterior wall covering that insulate and provide weather protection in selection of shapes, colours and textures that can replicate almost any architectural style or finish material, or stand by itself as an architectural feature. Our EIFS are:

- E** - environmentally friendly
- I** - insulating and therefore energy saving
- F** - flexible in design
- S** - sustainable

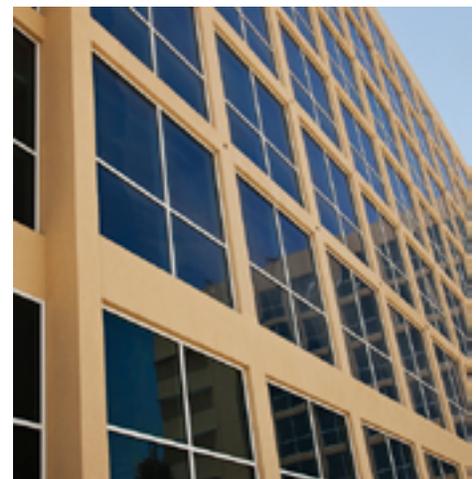
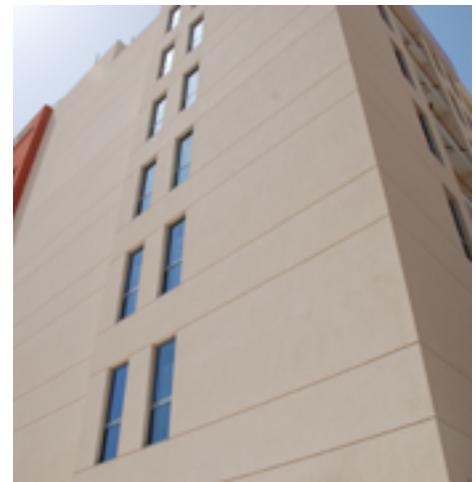
## 60 Year Success Story

EIFS were developed in Europe after World War II and were initially used to reclad many damaged buildings. Most of those structures are made of cement or stone walls as substrate where EIFS were applied. EIFS were designed to meet the demand of the European construction market for retrofitting of solid masonry walls. When EIFS are applied on existing structures it improves the appearance and provides a cost-effective insulation option to any type of structure.

The use of EIFS spread to North America in the 1960s and started to be used on commercial buildings, and later on residential villas.

EIFS became popular in the United States during the 1970's when the oil embargo created a surge in interest in high energy efficiency wall systems. Over the past five decades, EIFS have become the first choice for commercial building cladding in North America, with more than 20,000,000 m<sup>2</sup> installed every year. The primary benefits that EIFS offer are:

- Energy efficiency
- Aesthetics
- Unlimited design flexibility



## Energy Efficiency



About one-third of global energy demand is consumed by private households. Up to 60% of this energy is used for space heating and air conditioning. In 2002 the building sector contributed to 21% of global CO<sub>2</sub> emissions. Therefore reducing the amount of electricity consumed by a building will help to reduce its carbon footprint as well as energy costs, which in turn leads to a more sustainable future.

### Exterior Insulation

The insulation of buildings is widely seen as the most effective way to improve the energy efficiency of a structure. The external location of the insulation puts the insulation in the best place: as far towards the outside (where the temperature fluctuates) as possible. It can also cover the structure completely without any thermal breaks.

This allows the wall structure to act like a cold/heat sink reducing the energy needed to maintain a constant indoor temperature (Fig. 1).

Exterior Insulation offers many benefits; internal comfort levels are improved year-round, the costs of heating and cooling can be reduced on average by 30-55%, and condensation on walls and ceilings is virtually eliminated.

In an ongoing US Governmental wall cladding study, EIFS (with 10 cm insulation board) have been rated as the best performing wall system in terms of moisture management while maintaining superior thermal insulation performance.

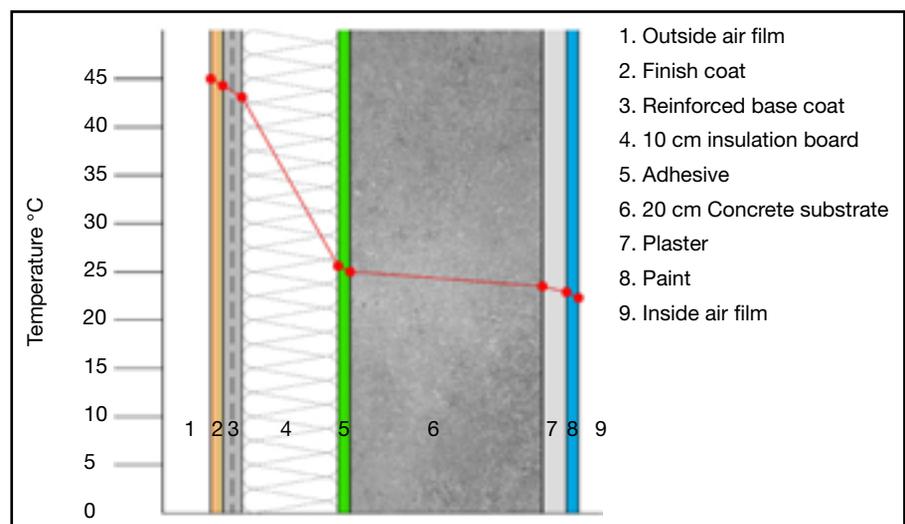


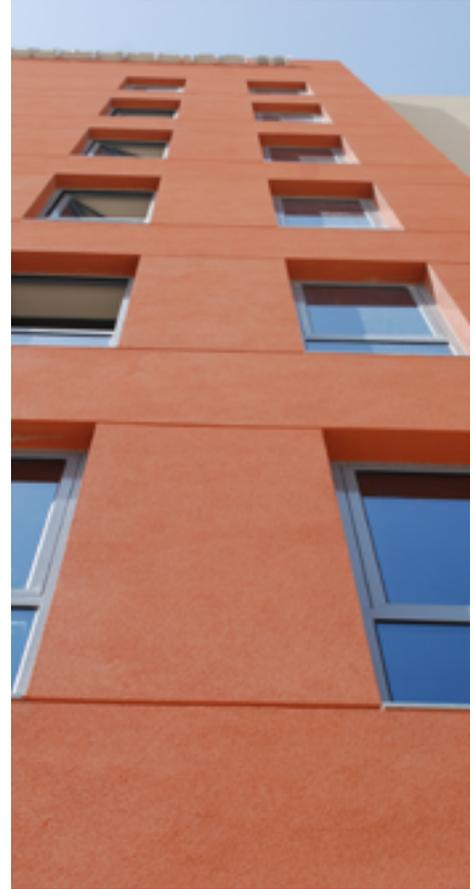
Fig. 1

The temperature gradient through an EIFS wall, note how the wall structure remains cool.

## Aesthetics - Create a Feeling

Different colours, textures and shapes are all around us, nature provides us with an infinite variety of these elements and inspires us to create imaginative and eye catching structures in which to live, work, rest and play.

Colours affect our emotions and can make structures stand out or blend into their surroundings. Different finishes and textures can give character and style to a building, i.e., antique, modern, metallic or stone-like. Architectural features add interest in a structure. Senergy Wall Systems offer the design flexibility to create almost any feature; from graceful arches and columns to cornices and intricate mouldings.





### The Power of Colour

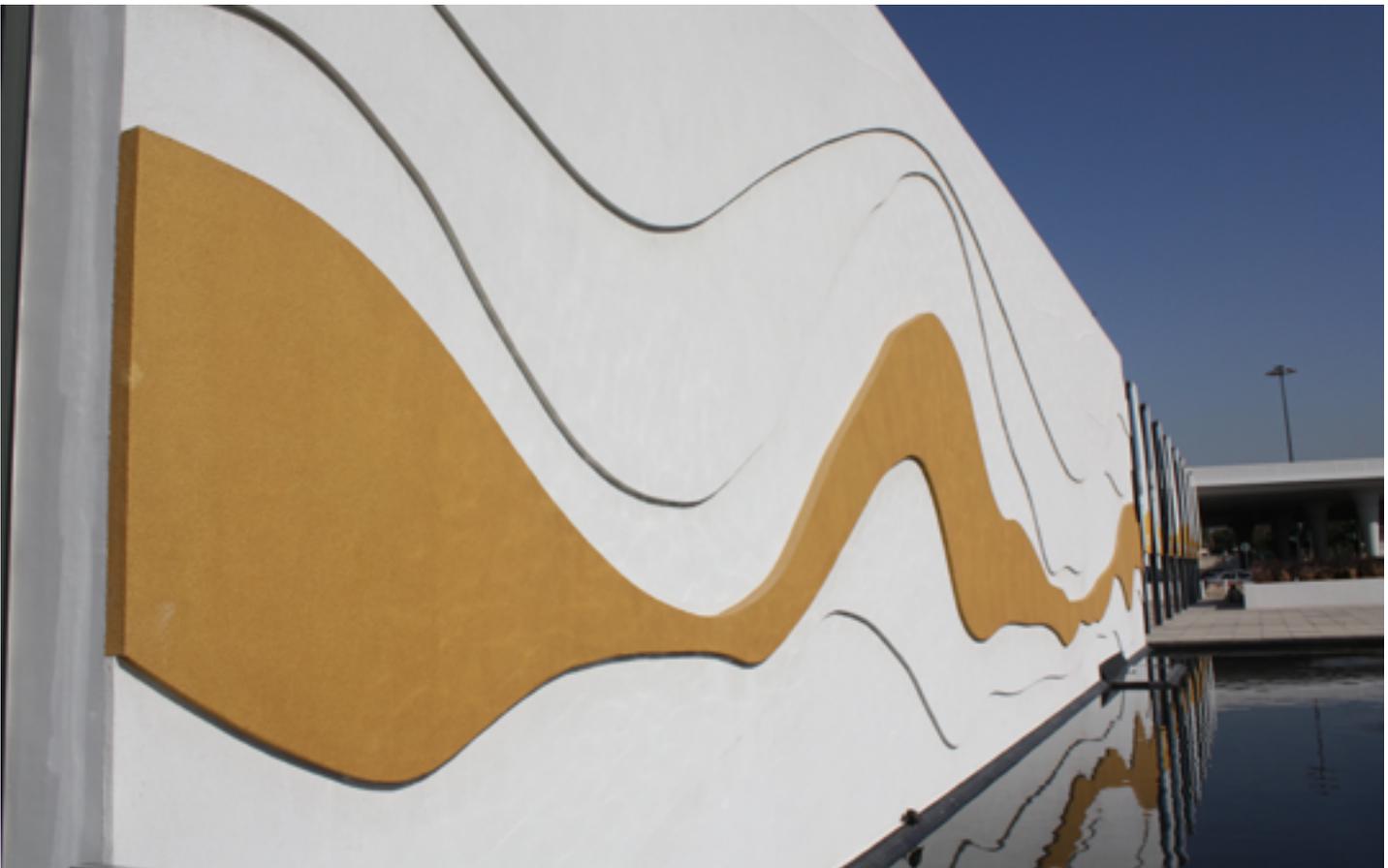
Everyone feels differently about colours and this is why we offer hundreds of colours as well as unlimited custom colour options to choose from. Colour samples should be viewed in natural light and on site if possible for final colour decisions. Our Colour Logic process helps ensure accurate colour matching and consistency.

### Texture

Our architectural textures are inspired both by nature and historical stuccos, providing surfaces with depth and richness. Our popular finishes range from the elegance of Fine and Classic “riled” textures to more expensive coarse, stippled and stone finishes. Hand trowelled finishes give the opportunity for rich and unique textures and patterns.

### Design Flexibility

Specially designed details are hand crafted utilizing expanded polystyrene (EPS) insulation boards. Lightweight and responsive to sculpting, EPS gives the freedom to create shapes and details impossible or too expensive to produce with other claddings.



## System Guide

EIFS from Master Builders Solutions Wall Systems are a symbiosis of style and function, they are multi-layered systems composed of:

- Adhesive and optional secondary weather barrier
- Insulation board
- Base coat
- Reinforcing mesh
- Finish

### Insulation Board

Master Builders Solutions' EIFS use either Expanded Polystyrene (EPS) or Rockwool which offers excellent insulating capabilities in tandem with their many other features and benefits.

Expanded Polystyrene (EPS) is made from polymer impregnated with a foaming

agent. It is highly resistant to heat flow and moisture penetration. EPS is incredibly lightweight, cost-effective and easy to install. Rockwool is made from durable stone fibers bonded with a minimum quantity of thermosetting resin binder. It provides fire resistance properties while also achieving high thermal performance. Rockwool is a breathable material and provides excellent acoustic insulation.

The insulation board is adhesively and/or mechanically attached to the substrate and therefore serves as an exterior insulating layer. An optional secondary weather barrier provides additional protection against moisture and air infiltration.

### Base Coat and Reinforcing Mesh

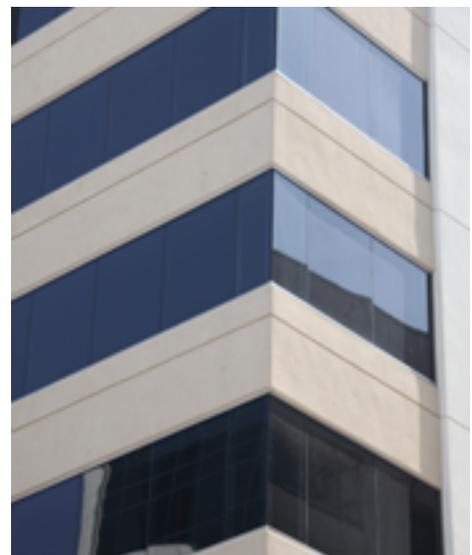
On top of the insulation board a layer of cementitious polymer-modified base coat is applied, in which an alkaline resistant, reinforcing fibreglass mesh is fully embedded. Four levels of impact resistance are available, each meeting the ASTM Standard E 2486-06.

### Finish Coat

Based on 100% acrylic binder technology the finish coat can be trowel or spray applied onto the base coat. This final layer provides a durable, crack and weather resistant surface giving the system its final stylish appearance.

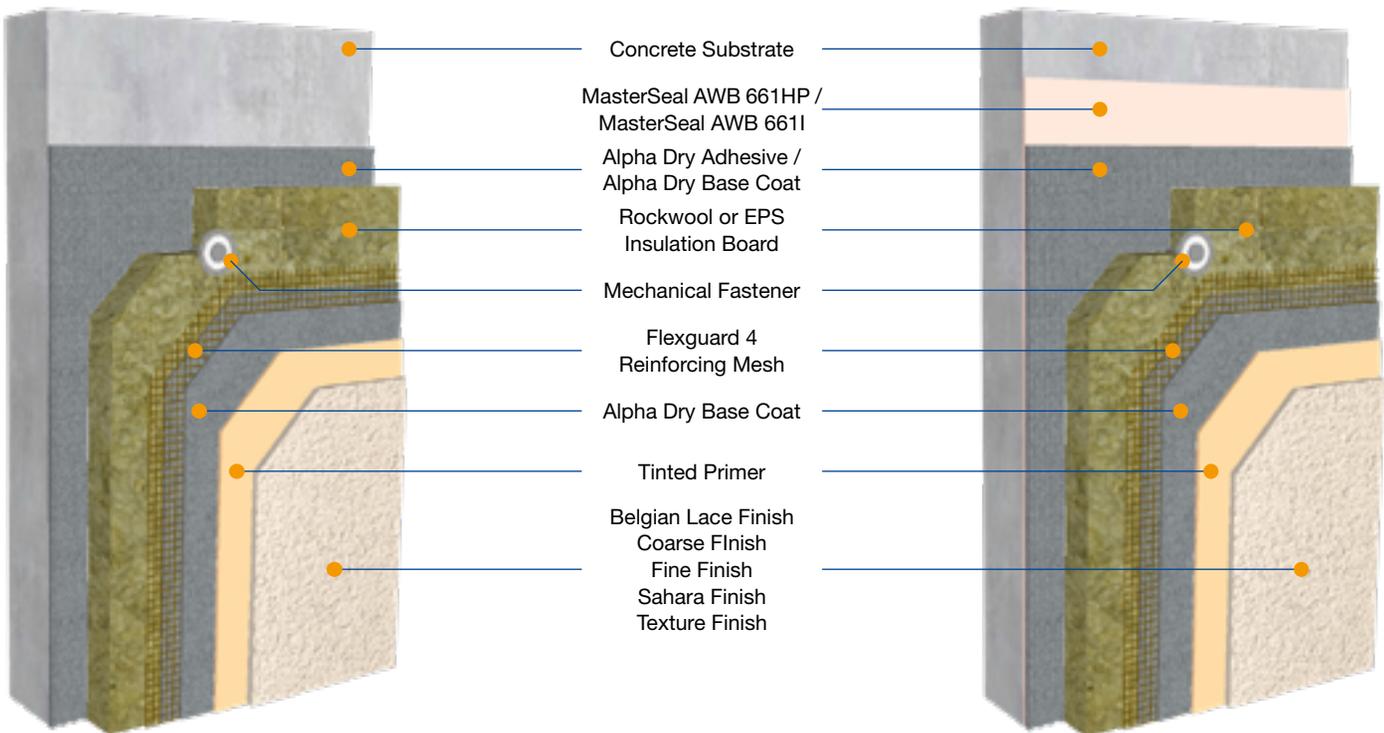


In September 1999, the 155mph hurricane Floyd ripped through the Bahamas, toppling 30-foot trees and ripping roofs from homes. The Atlantis Resort and Casino, clad with 40,000m<sup>2</sup> of Senerflex remained unscathed.



System	Components	Uses	Benefits
<b>Senerflex Classic PB</b> Primary barrier moisture control	Adhesive + Insulation board + Insulation fastener + Reinforced base coat + 100% Acrylic polymer finish	<ul style="list-style-type: none"> <li>■ High rise</li> <li>■ Low rise</li> <li>■ New and retrofit construction</li> <li>■ In all climates</li> </ul>	<ul style="list-style-type: none"> <li>■ Design flexibility</li> <li>■ Aesthetic appeal</li> <li>■ Adhesively applied system to meet most wind-load requirements</li> <li>■ Energy saving</li> <li>■ Exceptional durability</li> <li>■ Low maintenance</li> </ul>

<b>Senerflex Secondary Weather Barrier</b> Primary and secondary barrier moisture control	Weather barrier + Adhesive + Insulation board + Insulation fastener + Reinforced base coat + 100% Acrylic polymer finish	<ul style="list-style-type: none"> <li>■ High rise</li> <li>■ Low rise</li> <li>■ New and retrofit construction</li> <li>■ In all climates</li> </ul>	<ul style="list-style-type: none"> <li>■ When secondary weather barrier is desired</li> <li>■ An added protection of the sheathing is desired</li> <li>■ An air barrier is desired</li> <li>■ Adhesive attachment is required to meet wind-load requirement</li> </ul>
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**Senerflex Classic PB**

**Senerflex Secondary Weather Barrier**



# Master Builders Solutions for the Construction Industry

## MasterAir®

Complete Solutions for air entrained concrete

## MasterBrace®

Solutions for strengthening and structural adhesives

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Solutions for the manufactured concrete product industry

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Density reducing admixtures

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