Use of High Impact Mesh

Vital to Long Term Durability of EIFS

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As I was eating lunch recently at a popular restaurant, I happened to strike up a conversation with the owner. I had noticed his building was clad with an EIFS and asked if he was satisfied with its performance. He remarked that he liked the clean, modern, sharp design of the system and said it added to the image he wanted to convey for his restaurant. He also noted the system’s energy efficiency but questioned its durability, pointing to the damage his ground floor walls had received. I asked if he had used a high impact mesh. I sensed some frustration in his voice as he told me he had never been informed it was available.

This example illustrates a common problem that exists in the EIFS industry. Although high impact mesh has been available for over a decade, and extensive testing has shown that heavier weight glass fiber mesh ensures the long term durability of EIFS and prevents unnecessary wall damage from abuse or vandalism, lighter weight meshes continue to be specified and chosen for ground floor and high traffic areas.

Why is this the case? The main reason is architects and owners are not fully aware of the benefits that can be derived from using high impact mesh. Recently the Exterior Insulation Manufacturers Association (EIMA) has taken positive steps to emphasize the importance of high impact mesh to the long term health of a building. Individual contractors and EIFS manufacturers, however, need to play a larger role in this education process to encourage the continued growth of EIFS within the building market.

An EIF system has never had to be repaired or replaced simply because it wore out. The potential for problems begins when the system is exposed to abnormal abuse or deliberate impacts. To counteract this...
threat of damage to ground floor and high traffic areas, high impact mesh should be applied to reinforce the base coat component of a typical EIFS system and increase its impact resistance.

Its use becomes a win/win situation for all involved--the owner, architect, contractor and manufacturer. The specially woven and treated mesh, when embedded in the base coat, enhances the long term performance and durability of the system. Potential damage to the system is all but eliminated.

**The Contractor’s Role**

The contractor can help promote the use of high impact mesh by providing it as a recommended alternative in a bid if it’s needed but not specified. By educating the architect and building owner as to the benefits of high impact mesh and encouraging them to incorporate the proper material on the specifications, the chances of a successful project and greater acceptance of EIFS within the building industry will be maximized.

The successful contractor takes as much pride in the finished work as the architect does in the design and the manufacturer does in the materials. By using appropriate products for specific applications, such as high impact mesh for all ground floor and high traffic areas, the chances of the work standing the test of time are greatly increased. As a result, contractors realize a reduction in the amount of call-backs for time-consuming repairs and an increase in their pool of satisfied customers--a benefit for future new business.

For example, the unhappy restaurant owner I alluded to earlier might have wanted to use an EIFS on the other buildings he owns if he was aware of the availability of high impact mesh. Now he may use a different building material which could be one less job up for bid.

In these competitive times, it’s difficult, indeed, to recommend anything that will add to the cost of a job. However, the minimal cost differential of high impact mesh will be more than offset through building owner satisfaction. If cost cutting is needed to bring projects within budget, high impact mesh is not one of the areas which should be sacrificed.

**Manufacturers Need To Be Proactive**

Although the contractor can assist in voicing the importance of high impact mesh, EIMA and the individual EIFS manufacturers need to take a strong leadership position and educate the architectural and owner communities on its significance to the long term durability and efficiency of the system.

Dryvit® Systems, Inc., realizing that optimum durability is of key importance to the system, has long been an advocate of the use of high impact glass fiber reinforcing mesh at all ground floor and high traffic areas. The company made a formal proposal to EIMA outlining its position and encouraging the association to adopt an easily definable high impact mesh standard.

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**Benefits of the New EIMA Fiber Mesh Standard**

EIMA formulated and approved such a standard guide for the use of resin-coated, glass fiber mesh in EIFS. The guide states that all ground floor applications and all facades exposed to abnormal abuse or deliberate impacts shall have the base coat reinforced with a double layer of glass fiber mesh consisting of a 14 oz/sq yd minimum first layer and a 4 oz/sq yd minimum second layer. The standard also states that this application should achieve a minimum mechanical stress resistance of 150 in.-lbs, according to EIMA, and 180 ft-lbs according to ASTM.

The new standard takes a giant step toward simplifying the performance measurement of high impact mesh for the architect by putting the emphasis on the product weight. The new standard measurement is based on the premise that the impact strength and durability of a wall is directly related to the weight of the mesh, which is determined by the number of glass fibers utilized in the manufacturing process. The higher the mesh weight, the better the wall will stand up to abuse.

In the past, these meshes have been distinguished by manufacturer name and by inch pounds or foot pounds of performance. It was determined that manufacturers’ product names do not always provide proper references to the architect and that past measurements and test of impact strength, such as inch pounds or foot pounds, have been open to debate.

Hopefully all manufacturers will introduce high impact mesh products with weight designations. Sales of Dryvit’s high impact mesh products, as a percentage of overall sales, have increased over the past year.

And, there is further reason to be optimistic. Owners and architects are witnessing the effectiveness of high impact mesh on completed projects.
Application of High Impact Mesh

For those jobs that do specify high impact mesh, it is the contractor's responsibility to continue to apply it in the proper way. High impact meshes are the initial layer of mesh embedded into the base coats. Edges of high impact mesh pieces should be tightly butted but not overlapped. After a minimum 24-hour curing, examine for projections and correct them as necessary to project a flat surface. A layer of at least 4 oz mesh is then applied into a second layer of base coat.

It is important to follow the application procedures to the letter. If the high impact mesh is used by itself with no second layer the system will be much more susceptible to cracking. If a plasterer decides to eliminate the second layer by overlapping the high impact mesh, the end result will be an uneven surface.

Contractors and EIFS manufacturers need to begin the process of re-emphasizing the importance of utilizing high impact mesh to architects and building owners so the EIFS industry can gain greater acceptance and continue to expand into the 21st century.

About the Author:
Steven James Collins, marketing manager-nonresidential, for Dryvit Systems, Inc., West Warwick RI, is responsible for marketing the EIFS manufacturer’s systems and products as well as developing new market opportunities for the company. Prior to his position at Dryvit, Collins was vice president of sales and marketing for Insul/Crete Co. Inc., Madison, WI, and regional sales manager at Sencon Systems, Inc., Chicago, IL. He is a graduate of the University of Michigan, Ann Arbor, MI.