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Critical Light & Aesthetic Issues

Technical Bulletin

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Critical light is called "critical" because it will show imperfections in any wall or cladding system, and since critical light occurs only for a few minutes a day, slight irregularities will be visible for only a brief period of time. The appearance of a wall façade in critical light is typically an aesthetic issue and not one of functional performance.

All components of a wall assembly can have some bearing on the final disposition of the wall cladding. If the stud framing is not in a straight plane, then this irregularity will be reflected in the sheathing and also the final cladding. Most specifications for EIF Systems require the tolerance for the substrate itself (without the EIFS on it) to be 1/4" in a 4' radius, and this amount of unevenness would be very visible in critical light.

In an EIF System, rasping at high and low spots can level imperfections between adjacent insulation boards, but it may not be able to compensate for all imperfections in the building substrate. However, in a DEF System (Direct-applied Exterior Finish System), there is no foam plastic insulation that can be rasped in an attempt to level the surface for the final finish, so any irregularities in the substrate will be reflected in the final product. Depending on the levelness of the substrate in a DEFS application, it may be necessary to skim the surface with the appropriate leveling material in order to reduce the likelihood aesthetic issues occurring during critical light, or for that matter at any time.

Another variable in determining the appearance of a façade in critical light is the type of textured finish that is used. Irregular appearance that results from aberrations in the wall plane can be moderated, to some degree, by utilizing finishes with course or heavy textures. Since the thickness of a textured finish is determined by the size of the aggregate that is used, the courser textured finishes are thicker and therefore are more capable of filling depressions in the surface than a thinner, fine aggregate finish. And, in general, swirl finishes may be able to provide a little better ability to conceal irregularities than a sand finish of similar aggregate size.

Finish systems like EIFS or DEFS are, for the most part, applied by hand at the jobsite under varying environmental conditions, and not by a machine in a controlled atmosphere, so the resulting final surface will have some variations. Base coats with the reinforcing mesh embedded have differing thicknesses due to the overlap of the mesh or the use of multiple layers of high impact mesh in certain areas.

All of these factors should be taken into account when one assesses the appearance of a wall cladding during the period of critical light, or any time imperfections might be observed.

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