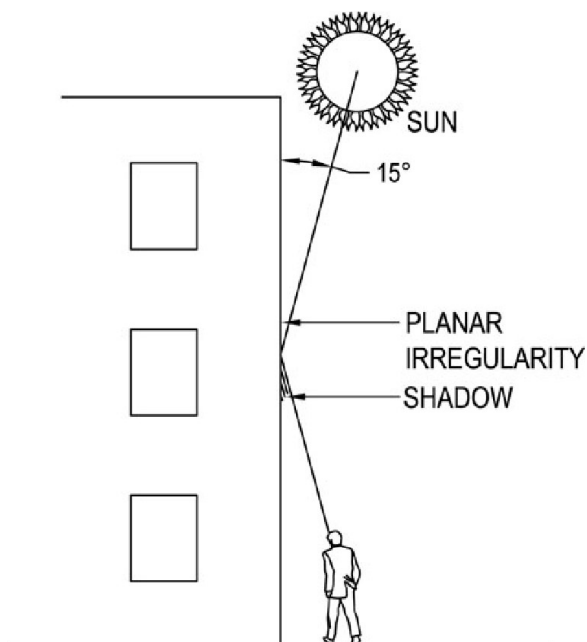


TECHNICAL BULLETIN

Critical Light and Tips to Minimize Aesthetic Irregularities

The phenomenon of critical light occurs when sunlight or another source of light strikes a wall surface at a 15° angle or less. At this angle, any irregularity in a wall surface 1/32" or greater can cast a shadow. The phenomenon of critical light can affect the appearance of trowel applied coatings on large walls that are generally flat and lack shapes or other architectural lines to help break up the wall area. Any elevation may be effected at a certain time of day for a short time period, then disappear as the sun changes its angle. It is important to understand that critical light is a natural phenomenon and will not adversely affect the performance of a specific wall system.



The following are some application tips that can be utilized to minimize the potential for the effects of critical light:

- Ensure that all sheathing substrates are installed in accordance with both the sheathing manufacturer's recommendations and all local code requirements. The sheathing or substrate surface should be flat, free of fins or planar irregularities greater than 1/4" in 10' (6mm in 3m).
- When installing EIFS, rasping to remove planar irregularities, board joints, high spots, shallow areas, etc is critical. Install slivers of EPS insulation board in all gaps in the EPS insulation board greater than 1/16" prior to rasping the wall surface. Never fill gaps with base coat.
- It is important that the proper rasp is utilized. Using cheaper alternatives, such as a trowel with screws, wood block with nails, etc. do not provide the uniformity, function or thoroughness of a high quality rasp. Shown below is a photograph of a proper rasp for use with EIFS installation. For a complete offering of EIFS tools and supplies, contact Wind-Lock (www.wind-lock.com) or Demand Products (www.demandproducts.com.)





- Throughout the rasping process, utilize a sufficient length straight edge to check and ensure planar uniformity of the wall surface. Generally, a 6' straight edge provides the right balance of ease of use and the ability to span a satisfactory amount of wall surface area. (Depicted in the photograph above).
- When installing the base coat and reinforcing mesh on EIFS, remember to feather all reinforcing mesh overlaps to minimize the likelihood of their read-through.
- Always ensure uniform floating of the finish utilizing similar technique, direction and pressure. When a "smooth" finish is required, it may be necessary to re-skim the original base coat and reinforcing mesh application with an additional application of Base Coat. Application of a skim coat of base coat can also be utilized to blend or "feather" any reinforcing mesh laps and is particularly effective when utilizing high-impact reinforcing meshes.
- Review project plans and determine areas which may require additional attention such as signage lighting, up or down lighting or other artificial lighting which may increase the potential effects of critical light.

When applying a traditional stucco system at any thickness, the most important step to minimize the effects of critical light is to properly darby the brown coat surface to ensure uniform thickness and to screed out low and high areas. During the floating process and regardless of the type of float used, ensure that the pressure used is uniform throughout.

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Despite the most meticulous application of any of these materials, it is important to understand that materials of this nature are hand applied, and some planar irregularities of the wall surface should be expected. The intention of the information provided above is simply to supply applicators, designers and owners with a variety of methods which minimize the impact of the critical light phenomenon to assist in achieving the desired aesthetic result.

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