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Critical Lighting of Wall Surfaces

“Critical lighting” is the description of conditions where light is cast across a surface at an angle such that inconsistencies in the flatness of the wall are most visible. Typically this occurs when light is at a low angle to the surface and shadows are cast from high points in the wall surface.

It is common for critical lighting conditions for a given exterior wall to occur only for short periods of the day and possibly only at limited times of the year due to the constantly changing location of the sun relative to the wall.

The construction tolerances that are accepted for EIFS wall flatness do not prevent the effect of critical light on the wall’s appearance during all lighting conditions; to do so would require a perfectly flat wall surface that is not possible to construct. Therefore, temporary visual effects of critical lighting should not necessarily be judged as being indicative of a construction quality issue.

There is a critical lighting scenario for all surfaces, but all surfaces are not necessarily subjected to critical light in service. Walls on the north sides of buildings do not get direct sun, so variations in wall flatness are not as noticeable as they might be on walls that are lit by the rising or setting sun.

Critical lighting may be more of a consideration for interior walls and finishes where the location and direction of lighting is fixed. In this case, imperfections in the wall flatness or finish can remain visible and objectionable at all times the wall is lit.