

**INSTALLER AND INSPECTOR QUICK-REFERENCE:
2022 NRCA-ENV-03-F
Daylighting Design Power Adjustment Factors**

Purpose and Scope of the Test

The purpose of the test is to ensure that clerestory windows, interior and exterior horizontal slats, and interior and exterior light shelves meet the daylighting design requirements in the Energy Code when claiming a power adjustment factor (PAF). These daylighting design features increase the amount of daylighting that can enter a space, thus reducing the need for electric lighting during the day. When used in conjunction with automatic daylighting controls, a significant amount of energy can be saved. Spaces that have clerestory windows, horizontal slats, or light shelves, and compliant automatic daylighting controls may receive a power adjustment factor if the daylighting feature meets the design criteria in the Energy Code.

Test Trigger

This test is required to qualify for PAFs for clearstory fenestration, interior and exterior horizontal slats, and interior and exterior light shelves in nonresidential, hotel/motel, and high-rise multifamily buildings.

Relevant Energy Code References and Required Compliance Documents

Title 24, Part 6 of the California Building Code, Building Energy Efficiency Standards (Energy Code) sections 110.6(a)6, 140.3(d), 140.6(a)2L, 170.2(e)2Bxii; NA7.4.4, NA7.4.5, NA7.4.6; NRCC-ENV-E, Tables K & L.

Who Can Perform the Test

There are no restrictions. The installing contractor will typically perform this test.

Required Tools

A tape measure is necessary to measure the dimensions of the daylighting feature and to verify that the design criteria is met.

Estimated Time to Complete Test

Construction inspection: 0.25 to 0.5 hours (per daylighting feature)

Potential Issues and Cautions

Each horizontal slat assembly should be accompanied with documentation of visible reflectance testing per ASTM E903 and may come with documentation of visible transmittance testing per ASTM E1175.
Each interior light shelf shall be provided with documentation of visible reflectance testing per ASTM E903. Exterior light shelves may be provided with documentation of visible reflectance testing per ASTM E903.
The documentation shall be located at the job site for verification by the ENFORCEMENT AGENCY.

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Inspection Enforcement

- Verify that the certificate of installation NRCI-ENV-01-E is complete, and that the declaration statement is signed by the responsible person.
- Verify that the construction inspection and functional testing items on NRCA-ENV-03-F are marked with "Complies."
- Verify that all declaration statements on the last page of the NRCA-ENV-03-F are complete and that the document is signed.

Acceptance Criteria

The installation of the daylighting feature meets the manufacturer's installation instructions.

The installation of the daylighting feature matches the specifications shown on the building plans.

The daylighting feature is permanently mounted.

The installer has completed and signed the certificate of installation NRCI-ENV-01-E.
Clerestory fenestration:

- If operable shading is installed on the clerestory fenestration, it is controlled separately from other fenestration shading control.

Interior and exterior horizontal slats:

- There is a factory installed label permanently affixed and prominently located at a mounting point of the slat to the building.
- The visible reflectance on the ASTM E903 test results match the building plans.
- If the horizontal slat surfaces are not opaque and free of perforations, the horizontal slat ASTM E1175 test results match the building plans.
- The horizontal slat assemblies extend the entire height of the window.
- The exterior horizontal slats are horizontal or slope downwards from the window and the interior horizontal slats are horizontal or slope upwards from the window.

Interior and exterior light shelves:

- The visible reflectance on the ASTM E903 test results of the interior light shelf matches the building plans.
- The visible reflectance on the ASTM E903 test results of the exterior light shelf matches the building plans if the exterior light shelf is less than two feet below the clerestory windowsill.
- The interior light shelves are horizontal.
- The exterior light shelf is horizontal or slopes downwards from the window.
- If operable shading is installed on the clerestory fenestration, it is controlled separately from other fenestration shading control.

Follow the **Construction Inspection** instruction on NRCA-ENV-03-F.