

CITY OF PARKLAND BUILDING DEPARTMENT
6600 UNIVERSITY DRIVE
PARKLAND FL 33067
PHONE 954.753.5447

SKYLIGHT REPLACEMENT STAND ALONE OR WITH RE ROOF PLEASE PROVIDE THE FOLLOWING:

1. PROVIDE DIMENSION DRAWING OF THE ROOF AREA
2. LOCATIONS OF SKYLIGHTS TO BE REPLACED (WHICH ZONE THEY FALL ON THE ROOF)
3. PROVIDE ACTUAL SIZE OF SKYLIGHTS
4. PROVIDE HVHZ APPROVED PRODUCT APPROVAL DOCUMENTS
5. IDENTIFY WHICH TYPE OF CURB THAT WILL BE USED FROM PRODUCT APPROVAL PAPERWORK
6. EITHER HAVE ARCHITECT / ENGINEER PROVIDE ACTUAL SITE SPECIFIC WIND LOADS FOR

SKYLIGHT LOCATION ON THE SITE

OR

IDENTIFY ON AND USE BROWARD COUNTY FENESTRATION VOLUNTARY WIND LOAD CHART

(SEE ATTACHED FORM)



**City of Parkland
Building Department**
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Instructions for Calculating **Skylight Pressures**

When replacing a skylight include the following with your submittal:

- TWO (2) Copies of the Product Approval(s), calculations and Design Pressure Chart.**
- Additional information required on *Section B: Roof Plan* Include skylight *size, distance* from hip, ridge, eave etc. Provide overall *Length* and *Width* of building and provide *mean roof height*. This plan must be submitted in one of the following formats.**
 - Option 1:** A Site specific plan (signed and sealed) by a Florida Professional Engineer or Architect, indicating the location of all skylight openings and their required design pressure.
 - Option 2:** A site specific plan (not sealed) indicating the location of all skylight openings and accompanied by a worst case design pressure chart (signed and sealed) by a Florida Professional Engineer or Architect.
 - Option 3:** A site specific plan (not sealed) indicating the location of all skylight openings and indicating the design pressures based on Figure 6-3 in ASCE 7-05 for walls and roofs.
(For this option you may use Broward County Component and Cladding Wind Load Chart accompanied with these instructions. These charts have been prepared to include the multipliers, therefore no further calculations are required when using this chart.)
- Design Criteria-140mph (3-second gust) Exposure C.**

Directions for Calculation of Design Pressures:

1. **Using City of Parkland's Component and Cladding Zone 1, 2 & 3 Calculation Worksheet, -or-Figure 6-3 from ASCE 7-05, Building:** Determine the zones for your particular job. To calculate the zones you have 2 options as shown below. You will use the **lowest** result but in no case can the end zone be less than 3ft. (36")
 - a. **0.1 (10 %) of the *least horizontal distance*:** (convert dimensions of the entire building as if it were a "rectangle" i.e. "overall" length and "overall" width. Enter the smallest measurement in the box and multiply by 0.1 and enter your result.)

- b. 0.4 times the *mean roof height*: (eave height + $\frac{1}{2}$ distance from eave to peak = mean roof height.) Enter the mean roof height and multiply by 0.4 and enter your result

The lowest result from the above calculations is your Zone 2(perimeter) distance.
Note: this cannot be less than 3 ft. Zone 3 is the portion of the roof where zone 2 intersects at a hip, ridge or eave. Zone 1 (interior) is the central portion of the roof adjacent to perimeter zone 2. See Diagram on worksheet.

- 3. Based on the dimensions of the skylight location(s), determine which zone the skylight is located within and note this next to each skylight on the plan.

(Note: if any portion of the skylight is located closer to either the hip, ridge or eave than the dimension calculated in step 2 you note that it is located in zone 2 otherwise zone 1) (Zone 3 conditions are very unlikely in regards to skylights).

Zone 1 = interior zone, Zone 2 = end (perimeter) zone, Zone 3 = Corner zone

- 4. **Using Broward County Component Cladding Wind Load Charts –or- Figure 6-3 from ASCE 7-05.**

- a. Locate roof pitch on *appropriate chart (based on Mean Roof Height)*
 - 0-7 degrees = up to 2/12
 - 7-27 degrees =>2/12 to 6/12
 - 27-45 degrees =>6/12 to 12/12
- b. Based on size of skylight (i.e. $2 \times 4 = 8$ sq ft) find the corresponding sq footage under effective wind area column on chart in this example you would use 10
- c. Follow the row over to the pressures indicated for 140 mph wind load and note them down for each zone 1, 2, and 3

Note: if you are using Broward County Chart stop here, no other calculations are needed, but if using the ASCE 7-05 book continue to the following steps to complete your calculations.

- d. Now you must adjust the pressures you just found for exposure C by going to Figure 6-3 Adjustment Factor table. Find the Mean roof height on left and follow row over to exposure C this will be your multiplier
- e. Now take the pressures from c above and multiply by the multiplier from d above the result will provide the design pressure required for the skylight.
- 5. Compare the design pressure you just calculated to the NOA Pressure rating to verify that your selected product is appropriate for use on this project.