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INFORMAL CODE INTERPRETATION

NC Department of Insurance
Office of the State Fire Marshal - Engineering Division
1202 Mail Service Center, Raleigh, NC 27699-1202
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Mean Roof Height Calculation

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Code: 2012 Residential Code   **Date:** July 1, 2012
Section: R202

Question:
How do you calculate mean roof height for a house that has more than one roof level?

Answer:
You have 2 options.

Option #1) Calculate the percentage of each roof in relation to the total roof area. Calculate the mean roof height of each roof. Multiply each mean roof height by the percentage calculated earlier. Add those numbers together and you have the technically accurate mean roof height.

EXAMPLE:

total roof area:	100 sq. ft.	roof #2 ridge height:	40 ft.
roof #1 area:	40 sq. ft.	roof #1 area percentage:	40 sq. ft. / 100 sq. ft. = 40%
roof #2 area:	60 sq. ft.	roof #2 area percentage:	60 sq. ft. / 100 sq. ft. = 60%
roof #1 eave height:	10 ft.	roof #1 mean roof height:	(10 ft. + 20 ft.)/2 = 15 ft.
roof #1 ridge height:	20 ft.	roof #2 mean roof height:	(30 ft. + 40 ft.)/2 = 35 ft.
roof #2 eave height:	30 ft.		

building mean roof height: (15 ft. x 0.4)+(35 ft. x 0.6) = 6 ft. + 21 ft. = 27 ft.

Option #2) Use the eave and ridge height of the tallest roof because that would be the worst case scenario.

EXAMPLE:

total roof area:	100 sq.ft.
roof #1 area:	40 sq. ft.
roof #2 area:	60 sq. ft.
roof #1 eave height:	10 ft.
roof #1 ridge height:	20 ft.
roof #2 eave height:	30 ft.
roof #2 ridge height:	40 ft.
building mean roof height:	(30 ft. + 40 ft.) / 2 = 35 ft.

Obviously Option #2 yields a greater height, but is easier to calculate. You may use either.

Key Words: window, DP rating, door, design pressure