

NFRC Ventilation Rating Subcommittee Update

November 9th 2011
Atlanta Ga



Ventilation Subcommittee

➤ **SCOPE**

- *To create a NFRC Ventilation rating system utilizing net clear opening less a screen factor.*

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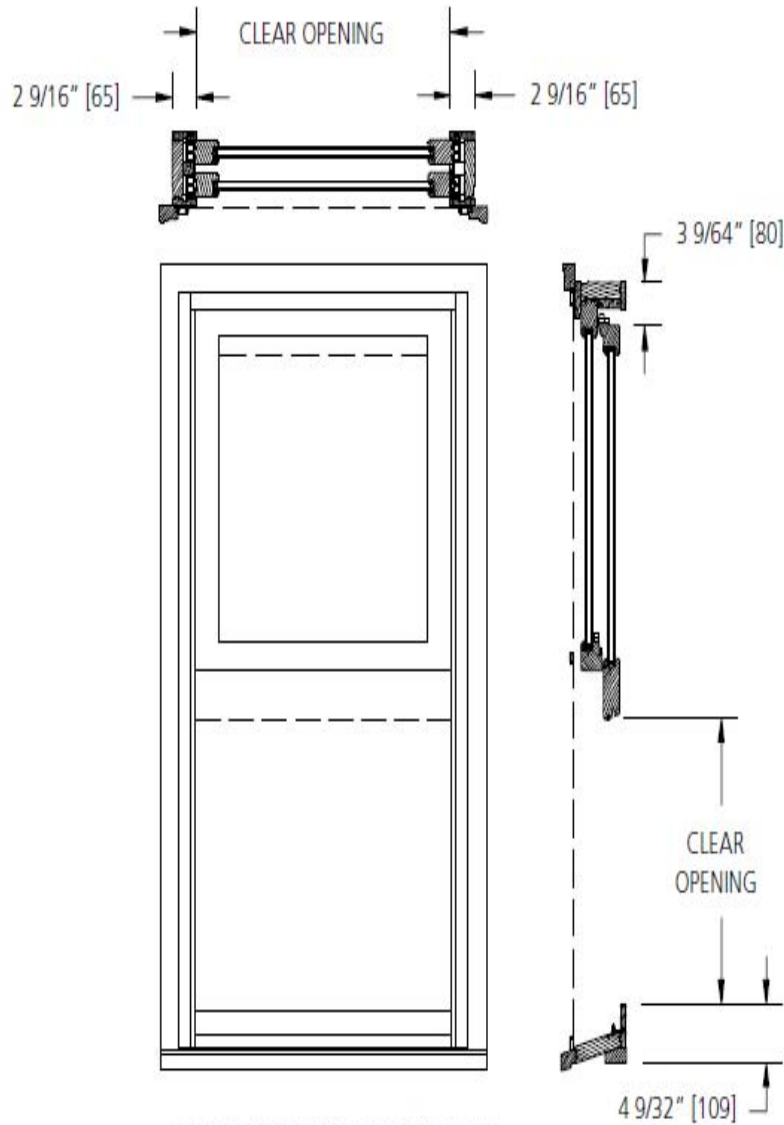
The process for developing the rating will be in three phases

- 1) Standardize the method for calculating fenestration net clear ventilation area dimensions*
- 2) Standardize the effect of screen mesh for two or three representative screen cloth categories*
- 3) Develop a rating system for NFRC certification purposes based on current standardize sizes*

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- Standardize calculated fenestration net clear opening-
- .Clear Opening Width 32.45
- Clear Opening Height 21.862
- Clear Opening Sq. Ft. 4.9275.
- Daylight Open Sq. Ft. 8.728
- Vent Area Sq. Ft. 2.96

CLEAR OPENING LAYOUT



DOUBLE HUNG WINDOW

CLEAR OPENING FORMULAS

HORIZONTAL

$$\text{Frame} - 4\frac{7}{8}" = \text{Clear Opening}$$

VERTICAL

Double-Hung

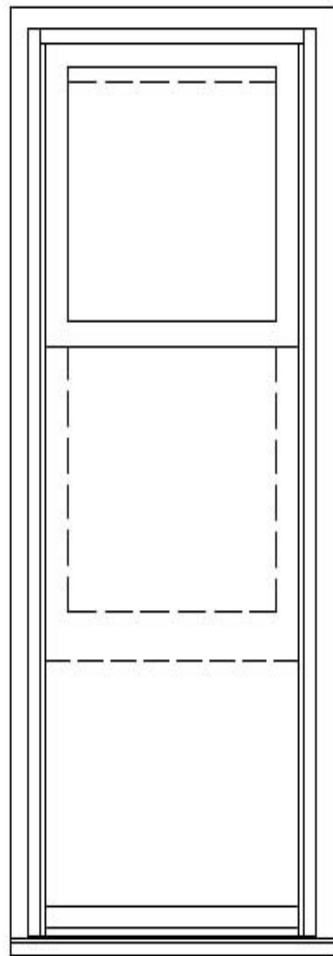
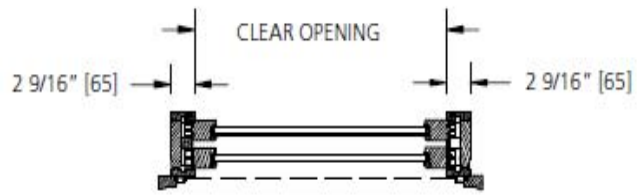
$$\text{Frame Height} - (\text{Lower Sash} + 7\frac{13}{32}") = \text{Clear Opening}$$

Cottage

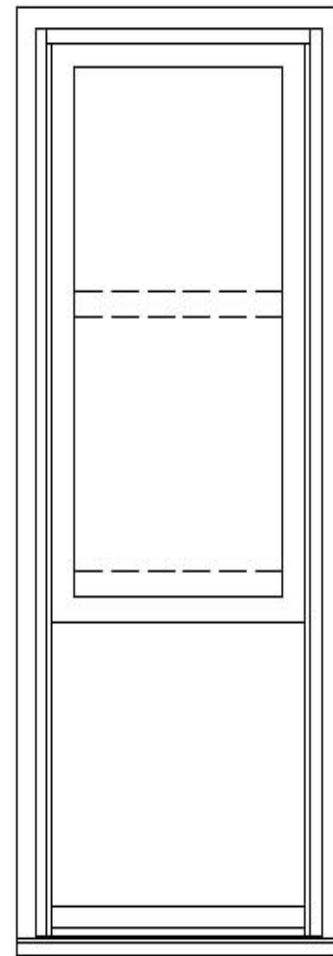
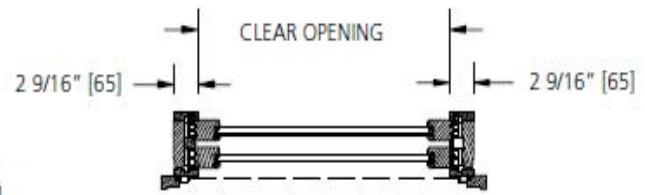
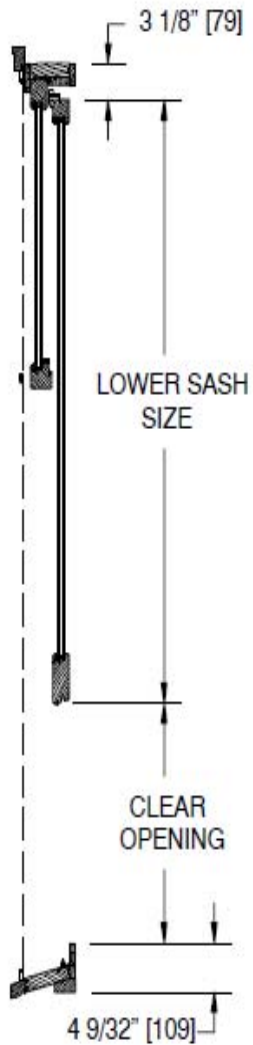
$$\text{Frame Height} - (\text{Lower Sash} + 7\frac{13}{32}") = \text{Clear Opening}$$

Reverse Cottage

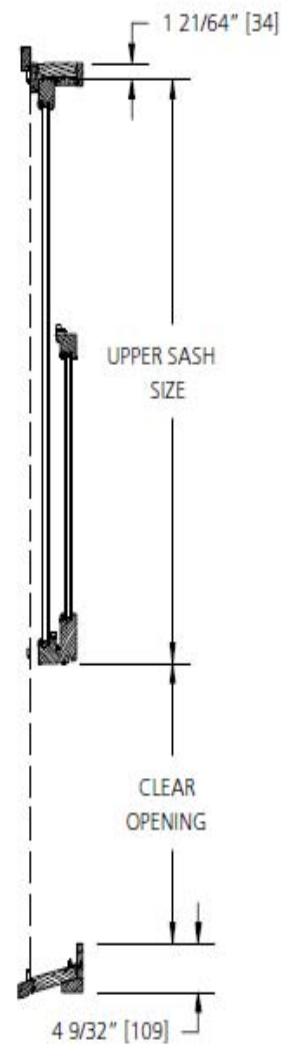
$$\text{Frame Height} - (\text{Upper Sash} + 5\frac{19}{32}") = \text{Clear Opening}$$



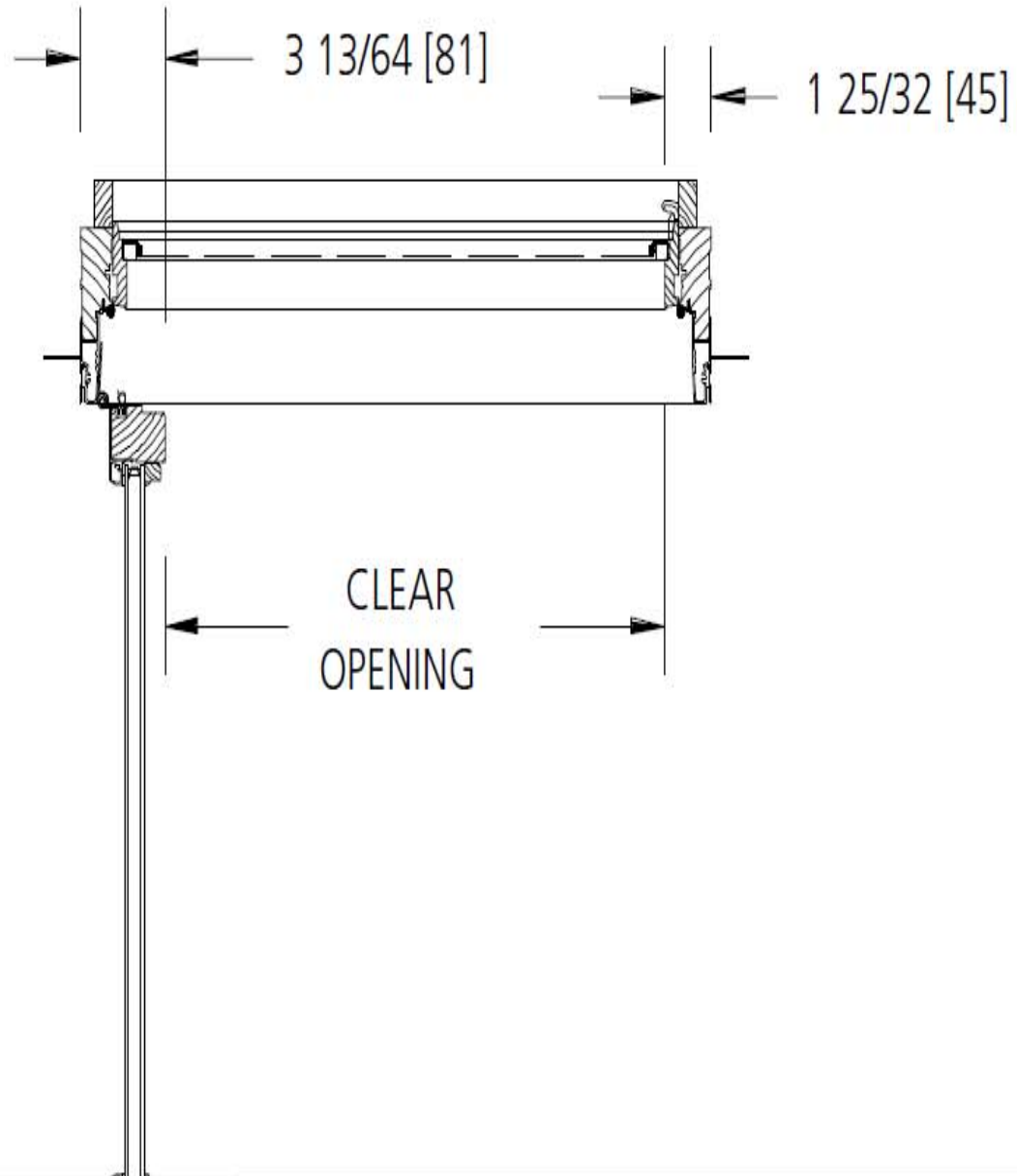
COTTAGE WINDOW



REVERSE COTTAGE WINDOW



HORIZONTAL CLEAR OPENING



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- **Current decisions on base calculation inclusions/exclusions**
- A. Screen factor on all units
- B. Screen frame reduction included
- C. Two screen factors (-40%, -30%)
- D. Sliding products- fully open including hardware limits
- E. Swinging products- fully open less sash profile


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- Base calculation inclusions/exclusions
- F. Rating is ratio of total SF vs. vent SF
- G. Rating expressed as whole number
- F. Rating scale of 0-100
- H. Graphic scaling

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- **Current work in process:**
- A. Draft standard using NFRC 200 as base
- B. Calculations of existing std products
- C. Investigations of geometric and non standard products

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- **Work plan**
 - A. Complete Draft for SC ballot
 - B. Request trial run of 5 manufacturers
 - C. Investigate CFM option
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Microsoft Excel - ventilation Rev 4 0 [Read-Only]

File Edit View Insert Format Tools Data Window Help

Draw AutoShapes List

EI21

Ventilation Calculations (products sorted in ascending order)							
fenestration type	fenestration overall unit dimensions (inches) & frame area (sq. ft.)			fenestration ventilation dimensions (inches) & vent area (sq. ft.)			
	width	height	area	width	height	area	
NFRC Standard Size	casement	24	59	9.83	18.56	53.56	6.90
	awning	24	59	9.83	18.56	53.56	6.90
	skylight	47	47	15.34	41.39	40.21	12.71
	single hung	47	59	19.26	43.63	26.75	8.10
	double hung	47	59	19.26	42.93	24.75	6.64
	horz. Slider	59	47	19.26	26.75	43.62	8.10
	sliding door	79	79	43.34	34.75	75.88	18.31
Common Size	skylight	31	46	9.80	25.39	39.21	6.91
	casement	36	60	15.00	30.58	54.58	12.75
	single hung	36	60	15.00	32.63	27.31	6.19
	double hung	36	60	15.00	31.94	25.25	5.04
	horz. Slider	60	36	15.00	29.81	29.81	6.17
	sliding door	72	80	40.00	31.25	76.88	16.68
	sliding door	96	96	64.00	43.25	92.88	27.90

revisions from prior worksheet:

4.0 3/18/2011 J. Lewis deleted 'flow per square area' and 'total flow' rating columns described in the 03-18 minutes also added 0-100 rating, and 'Water Heater' rating columns

ratings (4) screens /

Ready Sum=608

"Water Heater" Scale (0-100)

casement 76
awning 76
skylight 100
single hung 24
double hung 9
horz. Slider 23
sliding door 24

skylight 74
casement 100
single hung 22
double hung 9
horz. Slider 22
sliding door 23
sliding door 26

hung to arrive at smallest rating of 21
to arrive at largest rating of 58

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Questions?

