

H.U.D. Requirements for Proper Ventilation - Ref.: M.P.S. 403-3.

The following U.S. Department of Housing and Urban Development Statutes covering ventilation of structural space, provide a basic guide for determining proper ventilator styles and sizes required for any home. These statutes appear in the latest edition of Minimum Property Standards.

Attics and Structural Spaces

The space ventilated should have a net free ventilated area of 1/150. This means that for each 150 square feet of attic floor space, 1 square foot of free area is required. If at least 50 percent of the required ventilating area is provided by ventilators located in the upper portion of the space to be ventilated and the remainder of the required ventilation provided by undereave vents, the ratio can be reduced by 1/300, or 1 square foot of free area to every 300 square feet of attic space.

Structural spaces should include porch roofs, canopies, and any enclosed structural space where condensation may occur. All spaces should be cross ventilated.

Openings shall be screened and protected from the entrance of rain and snow.

Basementless (Crawl) Spaces

Space ventilated shall have a net free ventilated area of 1/500 of the ground area except that the ratio may be 1/1500 when the ground surface is covered with a vapor barrier. These spaces shall be cross-ventilated.

Openings shall be screened and protected from the entrance of rain and snow.

Determining Ventilation Needs

To tell exactly how much ventilation is needed for a home with a natural or static system, it is necessary to determine the square feet of attic floor and relate that to the FREE AREA of the ventilation system selected.

Free area is the approximate clear or free opening of the ventilator through which air may move.

Natural Ventilation

To find the exact free area needed to properly ventilate a home, find the length of the area to be ventilated in the vertical column of the chart and the width of the are in the horizontal column. The total net free area required is shown where these two columns intersect. This free area is expressed in square inches. (Chart utilizes 1/300 ratio; double for 1/150 ratio.)

For example, let us suppose the total area to be ventilated is 1200 square feet, such as a house 30' x 40'. By looking at the chart, we find that we would need a total of 576 square inches. If roof or gable end and undereave vents are used, 50% of the 576 square inches, or 288 square inches are required for the roof or gable end vents and the same amount would be required for the undereaves. This is the equivalent to 1/300 ratio.

If undereave vents are not used, the above total free area requirements must be doubled. This is the equivalent to 1/150 ratio.

Even if the attic area is presently vented, it should be carefully checked to determine whether or not the present vent arrangement is adequate to provide proper ventilation.

To Balance Ventilation Use Undereave Vents

16" x 4"	-	22 sq. in.
16" x 8"	-	58 sq. in.
8' Continuous	-	61 sq. in.

**SQUARE INCHES / FREE AREA
F.H.A. NATURAL VENTILATION (FOR STATIC VENTILATOR SIZING:)**

LENGTH (In Feet)	WIDTH (In Feet)															
	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50
20	192	211	230	250	269	288	307	326	346	365	384	403	422	442	461	480
22	211	232	253	275	296	317	338	359	380	401	422	444	465	486	507	528
24	230	253	276	300	323	346	369	392	415	438	461	484	507	530	553	576
26	250	275	300	324	349	374	399	424	449	474	499	524	549	574	599	624
28	269	296	323	349	376	403	430	457	484	511	538	564	591	618	645	672
30	288	317	346	374	403	432	461	490	518	547	576	605	634	662	691	720
32	307	338	369	399	430	461	492	522	553	584	614	645	676	707	737	768
34	326	359	392	424	457	490	522	555	588	620	653	685	718	751	783	816
36	346	380	415	449	484	518	553	588	622	657	691	726	760	795	829	864
38	365	401	438	474	511	547	584	620	657	693	730	766	803	839	876	912
40	384	422	461	499	538	576	614	653	691	730	768	806	845	883	922	960
42	403	444	484	524	564	605	645	685	726	766	806	847	887	927	968	1008
44	422	465	507	549	591	634	676	718	760	803	845	887	929	972	1014	1056
46	442	486	530	574	618	662	707	751	795	839	883	927	972	1016	1060	1104
48	461	507	553	599	645	691	737	783	829	876	922	968	1014	1060	1108	1152
50	480	528	576	624	672	720	768	816	864	912	960	1008	1056	1104	1152	1200
52	499	549	599	649	699	749	799	849	899	948	998	1048	1098	1148	1198	1248
54	519	570	622	674	726	778	829	881	933	985	1037	1089	1140	1192	1244	1296
56	538	591	645	699	753	806	860	914	968	1021	1075	1129	1183	1236	1290	1344
58	557	612	668	724	780	835	891	947	1002	1058	1114	1169	1225	1281	1336	1392
60	576	634	691	749	806	864	922	979	1037	1094	1152	1210	1267	1325	1382	1440
62	595	655	714	774	833	893	952	1012	1071	1131	1190	1250	1309	1369	1428	1488
64	614	676	737	799	860	922	983	1044	1106	1167	1229	1290	1352	1413	1475	1536
66	634	697	760	824	887	950	1014	1077	1140	1204	1267	1331	1394	1457	1521	1584
68	653	718	783	849	914	979	1044	1110	1175	1240	1305	1371	1436	1501	1567	1632
70	672	739	806	874	941	1008	1075	1142	1210	1277	1344	1411	1478	1545	1613	1680