

# NBC DUCT SIZING - SINGLE DUCT

for design and performance of residential ventilation systems to NBC 2015 - 9.32

<b>1. Design Condition</b>	<b>2. Equipment</b>															
Location: _____ Design Airflow: _____ cfm    ESP: _____ " w.c. Flex Pipe x 2: _____ (Minimum ESP of fans Smooth Pipe: _____ in accordance with Table Total Duct Length: _____ 9.32.3.10.A)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"></td> <td style="width: 33%; text-align: center;">Principal Fan</td> <td style="width: 33%; text-align: center;">Supplemental Fan</td> </tr> <tr> <td style="text-align: center;">HRV/ERV</td> <td style="text-align: center;">Exhaust Fan</td> <td style="text-align: center;">Inline Fan</td> </tr> <tr> <td>Make: _____</td> <td colspan="2">_____</td> </tr> <tr> <td>Model: _____</td> <td colspan="2">_____</td> </tr> <tr> <td colspan="3">Equipment Rated Airflow: _____ cfm @ _____ " w.c.</td> </tr> </table>		Principal Fan	Supplemental Fan	HRV/ERV	Exhaust Fan	Inline Fan	Make: _____	_____		Model: _____	_____		Equipment Rated Airflow: _____ cfm @ _____ " w.c.		
	Principal Fan	Supplemental Fan														
HRV/ERV	Exhaust Fan	Inline Fan														
Make: _____	_____															
Model: _____	_____															
Equipment Rated Airflow: _____ cfm @ _____ " w.c.																

<b>3. Duct Size (Table 9.32.3.11.A)</b>	<b>4. Diagram</b>
Max Duct Length from Table 9.32.3.11.A: _____ Diameter: _____ Oval Size: _____ Rect. Size: _____ x _____ Note: For flex duct, double actual lengths or go to next size duct from NBC Table 9.32.3.11.A	

<b>1. Design Condition</b>	<b>2. Equipment</b>															
Location: _____ Design Airflow: _____ cfm    ESP: _____ " w.c. Flex Pipe x 2: _____ (Minimum ESP of fans Smooth Pipe: _____ in accordance with Table Total Duct Length: _____ 9.32.3.10.A)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"></td> <td style="width: 33%; text-align: center;">Principal Fan</td> <td style="width: 33%; text-align: center;">Supplemental Fan</td> </tr> <tr> <td style="text-align: center;">HRV/ERV</td> <td style="text-align: center;">Exhaust Fan</td> <td style="text-align: center;">Inline Fan</td> </tr> <tr> <td>Make: _____</td> <td colspan="2">_____</td> </tr> <tr> <td>Model: _____</td> <td colspan="2">_____</td> </tr> <tr> <td colspan="3">Equipment Rated Airflow: _____ cfm @ _____ " w.c.</td> </tr> </table>		Principal Fan	Supplemental Fan	HRV/ERV	Exhaust Fan	Inline Fan	Make: _____	_____		Model: _____	_____		Equipment Rated Airflow: _____ cfm @ _____ " w.c.		
	Principal Fan	Supplemental Fan														
HRV/ERV	Exhaust Fan	Inline Fan														
Make: _____	_____															
Model: _____	_____															
Equipment Rated Airflow: _____ cfm @ _____ " w.c.																

<b>3. Duct Size (Table 9.32.3.11.A)</b>	<b>4. Diagram</b>
Max Duct Length from Table 9.32.3.11.A: _____ Diameter: _____ Oval Size: _____ Rect. Size: _____ x _____ Note: For flex duct, double actual lengths or go to next size duct from NBC Table 9.32.3.11.A	

**NBC Duct Sizing Table 9.32.3.11.A (Imperial Conversion) - For Reference**

Fan ESP (in. w.c.)	Duct Diameter (in.)	Maximum airflow in duct CFM							Fan ESP (in. w.c.)	Duct Diameter (in.)	Maximum airflow in duct CFM						
		15	30	50	70	100	150	200			15	30	50	70	100	150	200
		Maximum length of duct (feet)									Maximum length of duct (feet)						
0.1	3	30	3	0	0	0	0	0	0.6	3	193	46	16	6	3	0	0
	4	82	20	6	3	0	0	0		4	197	186	72	36	20	6	3
	5	197	56	20	10	3	0	0		5	197	197	197	111	55	26	13
	6	197	138	52	26	13	6	3		6	197	197	197	197	137	65	36
	7	197	197	111	59	29	13	6		7	197	197	197	197	197	137	78
0.2	8	197	197	197	114	59	26	16	8	197	197	197	197	197	197	150	
	3	52	13	3	0	0	0	0	NBC Table 9.32.3.11.B (Imperial Conversion) - For Reference								
	4	197	52	20	10	3	0	0									
	5	197	154	59	29	16	6	3									
	6	197	197	144	75	39	16	10									
7	197	197	197	160	82	39	23										
0.25	8	197	197	197	197	157	72	42									
	3	72	16	6	3	0	0	0									
	4	197	68	26	13	6	3	0									
	5	197	197	78	39	20	10	3									
	6	197	197	190	101	49	23	13									
0.4	7	197	197	197	197	108	49	29									
	8	197	197	197	197	197	95	55									
	3	124	29	10	3	0	0	0									
	4	197	118	46	23	10	3	3									
	5	197	197	134	72	36	16	10									
	6	197	197	197	173	88	39	23									
	7	197	197	197	197	186	88	49									
	8	197	197	197	197	197	167	98									

Required Round Duct Size (in.)	Permitted Equivalent Rectangular Duct Size, inches			
	Stack Duct	4-inch depth	5-inch depth	6-inch depth
3	3 x 6	2 x 4	-----	-----
4	3 x 10	3 x 4	3 x 5	3 x 6
5	3 x 10	5 x 4	4 x 5	4 x 6
6	3 x 12	8 x 4	6 x 5	5 x 6
7	3 x 14	11 x 4	8 x 5	7 x 6
>7	Design to 9.33.4.			

Prepared By: _____	HRAI #: _____	Location: _____
Signature: _____	Date: _____	Official Use: _____

