

Calculate Size of Ventilation Fan

Written by Administrator

Monday, 04 September 2017 04:49 - Last Updated Monday, 04 September 2017 05:00

Calculate Size of Ventilation Fan

§ Calculate Size of Ventilation Fan for Bathroom of 10 Foot Long, 15 Foot width and 10 foot height .

Calculation:

§ Area of the Room = Length x Width x Height

§ Area of the Room = $10 \times 15 \times 10 = 1500$ Cub. Foot

§ From the table Air Changing Rate (ACH) for Bathroom = 8 Times/Hour.

§ **Size of Ventilation Fan = (Area of Room x ACH) / 60**

§ Size of Ventilation Fan = $(1500 \times 8) / 60 = 200$ CFM

§ **Size of Ventilation Fan = 200 CFM**

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Recommended Air Change Rates For Room (ACH)

Type of Room

Air Change Rate /Hour

Consider

Shower Area

15 To 20

20

Bathroom & Shower Rooms

15 To 20

15

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Bathroom

6 To 10

8

Bedrooms

2 To 4

4

Halls & Landings

4 To 6

5

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Kitchens

10 To 20

15

Living & Other Domestic Rooms

4 To 6

5

Toilets – Domestic

6 To 10

8

Utility Rooms

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15 To 20

15

Cafés

10 To 15

15

Canteens

8 To 12

10

Cellars

3 To 10

6

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Changing Rooms with Showers

15 To 20

15

Conference Rooms

8 To 12

8

Garages

6 To 10

8

Hairdressing Salons

10 To 15

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Hospital Wards

6 To 8

7

Laundries & Launderettes

10 To 15

13

Meeting Rooms

6 To 12

7

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Offices

4 To 6

6

Restaurants & Bars

10 To 15

12

School Rooms

5 To 7

6

Shops

8 To 10

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Sports Facilities

4 To 6

6

Store Rooms

3 To 6

5

Workshops

6 To 10

8

Assembly rooms

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4 To 8

8

Bakeries

20 To 30

25

Banks/Building Societies

4 To 8

5

Billiard Rooms *

6 To 8

5

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Boiler Rooms

15 To 30

25

Canteens

8 To 12

10

Changing Rooms Main area

6 To 10

8

Changing Rooms Shower area

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15 To 20

17

Churches

1 To 3

3

Cinemas and theatres *

10 To 15

12

Club rooms

0.12

0.12

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Compressor rooms

10 To 15

15

Conference rooms

8 To 12

12

Dairies

8 To 10

10

Dance halls

0.12

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0.12

Dental surgeries

12 To 15

15

Dye works

20 – 30

30

Electroplating shops

10 To 12

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Engine rooms

15 To 30

30

Entrance halls & corridors

3 To 5

5

Factories and workshops

8 To 10

10

Foundries

15 To 30

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20

Glasshouses

25 To 60

50

Gymnasiums

0.6

0.6

Hospitals – Sterilizing

15 To 25

20

Kitchens – Domestic

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15 To 20

15

Kitchens – Commercial

0.3

0.3

Laboratories

6 To 15

12

Lavatories

6 To 15

12

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Lecture theatres

5 To 8

8

Libraries

3 To 5

4

Mushroom houses

6 To 10

8

Paint shops (not cellulose)

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10 To 20

15

Photo & X-ray darkrooms

10 To 15

12

Public house bars

0.12

0.12

Recording control rooms

15 To 25

20

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Recording studios

10 To 12

10

Shops and supermarkets

8 To 15

12

Squash courts

0.04

0.04

Swimming baths

10 To 15

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Welding shops

15 To 30

20

Courtesy : Jignesh Parmar, from the blog :

<https://electricalnotes.wordpress.com/2017/09/03/calculate-size-of-ventilation-fan/>