

19 years
21+ models
13000 customers
153000 installations



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Since 2000, Mitzvah has been manufacturing electrical appliances and engineered sheet metal fabrications for various industries.



Mitzvah appliances are made and tested as per specification listed by AMCA and NSA guidelines.



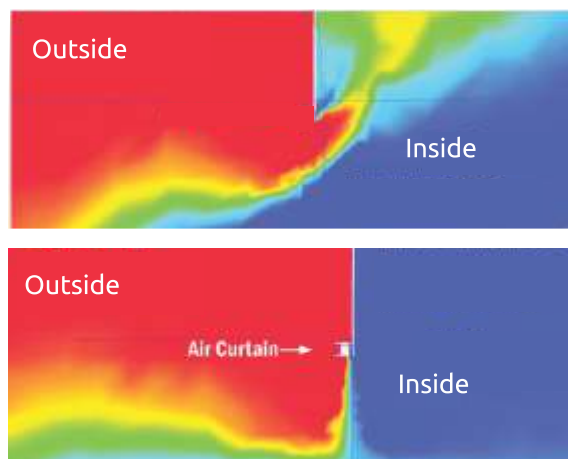
Availing collaborations with IIT and regional Indian colleges we study innovation and efficient products.

Attentive to the environment, we meticulously evaluate the effect of our products in saving the environment and energy. We are even very attentive on packaging and components on basis of durability and recyclability.

The ISO 9001 and CE Certification attest the high quality standards reached by Mitzvah.



Standards and Certifications



Why Mitzvah



Global Presence

We have a strong network of 800+ resellers and agents spread in 11 countries with over 153000 installations



Indigenous Manufacturing

Each component of our product is engineered to highest precision and meticulously designed.



Excellent Service

We have a strong service network and various warranties available on every product



R&D

Our engineers are constantly innovating products to positively impact industry and work towards saving environment and energy

Clients Segments



Hospitals



Retail



Restaurants Chains



Automobiles



Pharmaceutical Industry



Hotels



Electronics and IT



Clients Segments

Banking Sector



Food Industry



Corporates



Government Projects



Biscuits & Bread



Meat Processing



Institutions



Others





mitzvah
air curtains

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Benefits

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Model Nomenclature

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Air Curtain .. a cash cow

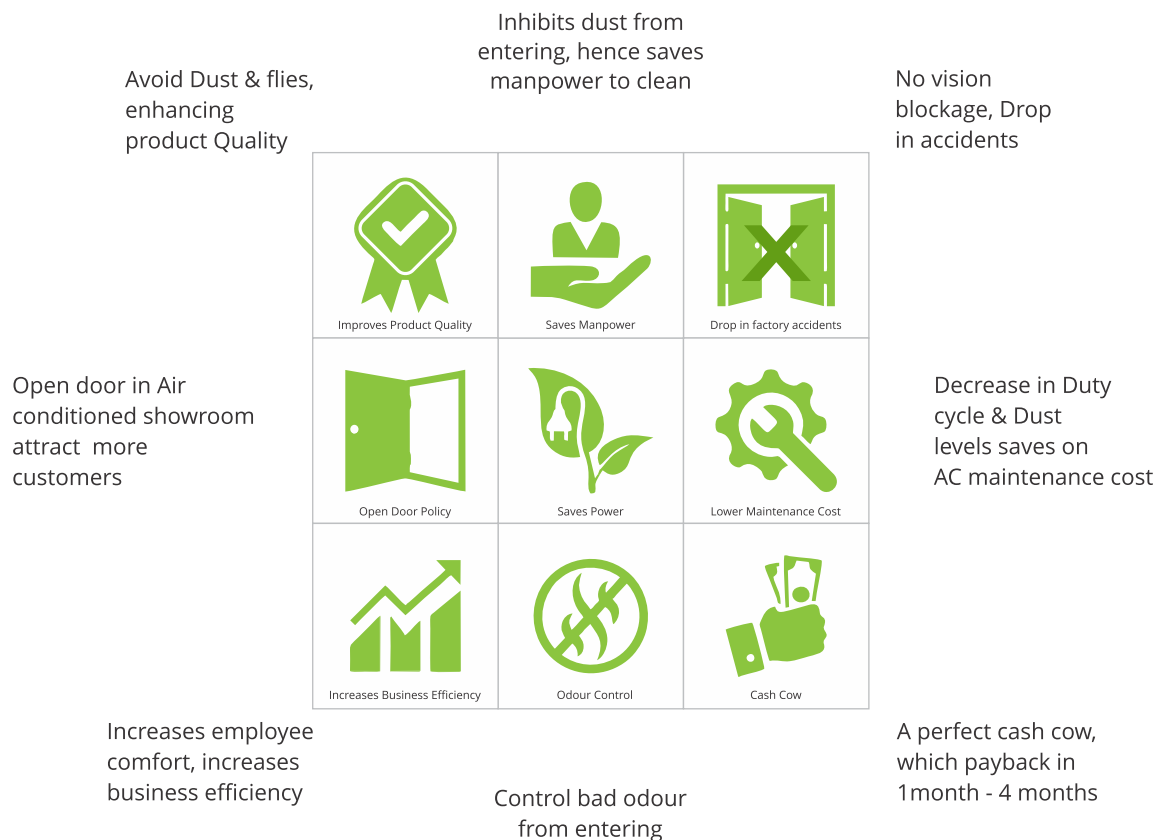


Air Curtain





9 Advantages of Air Curtain



How to take sizes for an Air Curtain?

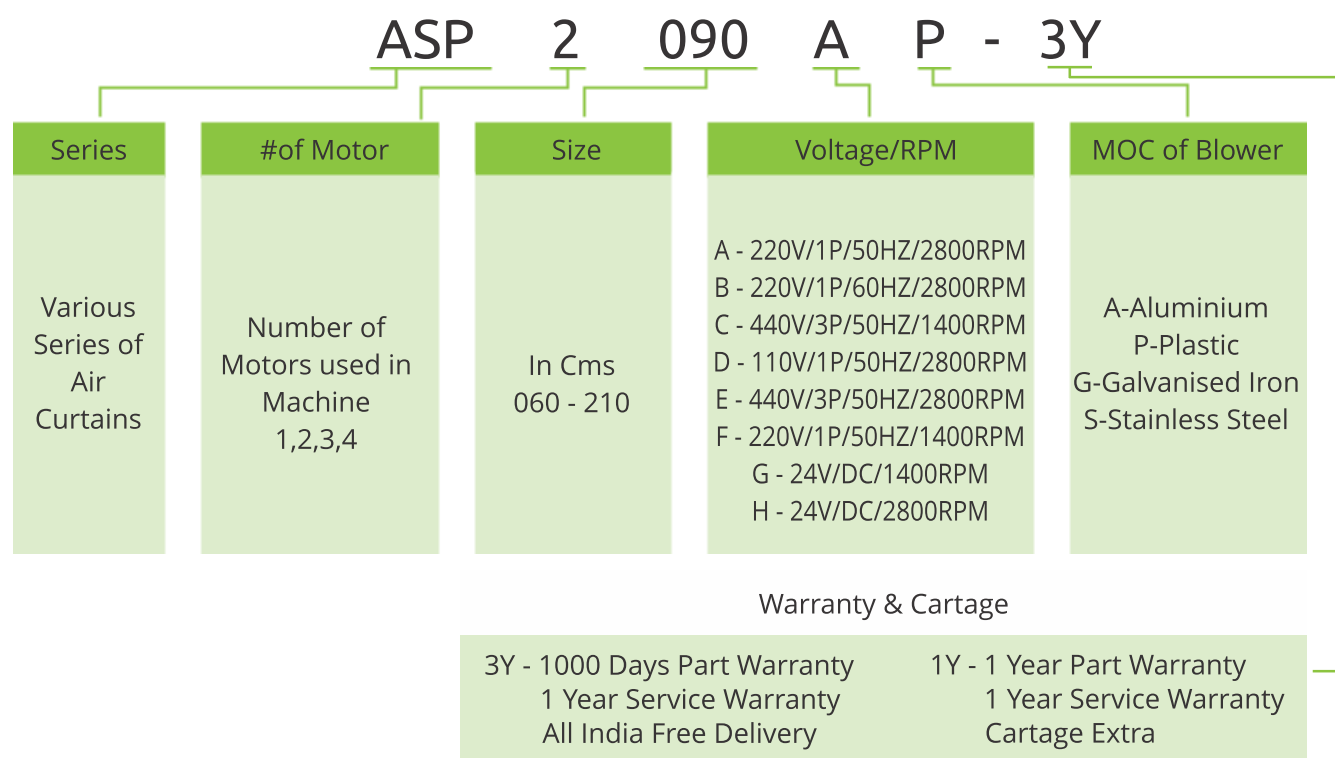
Contrary to the common belief, taking measurement is actually a child's play. With only single equipment, i.e. a measuring tape, this job can be done easily. It is important to know just three basic pointers:

1. Width of the door
2. Height of the door
3. Space available above the door Checklist/Selection Guide

You can even go to the link to watch the video- https://youtu.be/JcrGHe_NE04



How to read model of Air Curtains



Technical Specification for various Series

FEATURES		ARP	ARS	ASP	ASS
Height Catered		10 ft	10 ft	10ft	10 ft
Max Vel. @ Nozz		23 m/s	23 m/s	23 m/s	23 m/s
Blower Diameter		ø 5 in	ø 5 in	ø 5 in	ø 5 in
RPM		2800 RPM	2800 RPM	2800 RPM	2800 RPM
Sizes Available		2ft, 3ft, 1 Mts, 4ft, 5ft, 6ft	2ft, 3ft, 1 Mts, 4ft, 5ft, 6ft	2ft, 3ft, 1 Mts, 4ft, 5ft, 6ft, 7ft	2ft, 3ft, 1 Mts, 4ft, 5ft, 6ft, 7ft
Aesthetic Look		Elegant Sleek	Elegant Sleek	Elegant Sleek	Elegant Sleek
Operation		Remote	Remote	2 Switch Speed	2 Switch Speed
Suction Side		Top	Top	Top	Top
Flow Type		Non Recirculating	Non Recirculating	Non Recirculating	Non Recirculating
Fan Type		Centrifugal	Centrifugal	Centrifugal	Centrifugal
MOC	Front Chassis	Aluminium Profile	Aluminium Profile	Aluminium Profile	Aluminium Profile
	Main & Back Plate	Metal Powder Coated	SS Grade 304	Metal Powder Coated	SS Grade 304
	Suction Grils	Plastic	Plastic	Plastic	Plastic
	Blower	Plastic	Plastic	Plastic	Plastic
Voltage Options		220V / 1P / 50Hz 220V / 1P / 60Hz 440V / 3P	220V / 1P / 50Hz 220V / 1P / 60Hz 440V / 3P	220V / 1P / 50Hz 220V / 1P / 60Hz 440V / 3P	220V / 1P / 50Hz 220V / 1P / 60Hz 440V / 3P
Motor		Squirrel Cage Induction Type	Squirrel Cage Induction Type	Squirrel Cage Induction Type	Squirrel Cage Induction Type
Mounting		Horizontal / Vertical	Horizontal / Vertical	Horizontal / Vertical	Horizontal / Vertical
Detailed Technical , Dimensional & Tender Specifications		www.mitzvah.in/spec/arp	www.mitzvah.in/spec/ars	www.mitzvah.in/spec/asp	www.mitzvah.in/spec/ass



Technical & Dimensional Specification

FEATURES		RSP	RSS	RSL	SSP
Height Catered		10 ft	10 ft	10 ft	10 ft
Max Vel. @ Nozz		23 m/s	23 m/s	23 m/s	23 m/s
Blower Diameter		ø 5 in	ø 5 in	ø 5 in	ø 5 in
RPM		2800 RPM	2800 RPM	2800 RPM	2800 RPM
Sizes Available		2ft, 3ft, 1 Mts, 4ft, 5ft, 6ft, 7ft	2ft, 3ft, 1 Mts, 4ft, 5ft, 6ft, 7ft	2ft, 3ft, 1 Mts, 4ft, 5ft, 6ft, 7ft	2ft, 3ft, 1 Mts, 4ft, 5ft, 6ft, 7ft
Aesthetic Look		Round Sleek	Round Sleek	Round Sleek	Slotted Sleek
Operation		2 Switch Speed	2 Switch Speed	2 Switch Speed	2 Switch Speed
Suction Side		Top	Top	Top	Front
Flow Type		Non Recirculating	Non Recirculating	Non Recirculating	Non Recirculating
Fan Type		Centrifugal	Centrifugal	Centrifugal	Centrifugal
MOC	Front Chassis	Metal Powder Coated	SS Grade 304	SS Grade 304	Aluminium Profile
	Main & Back Plate	Metal Powder Coated	SS Grade 304	Metal Powder Coated	Metal Powder Coated
	Suction Grills	Metal Powder Coated	Metal Powder Coated	Metal Powder Coated	Metal Powder Coated
	Blower	Plastic	Plastic	Plastic	Plastic
Voltage Options		220V / 1P / 50Hz 220V / 1P / 60Hz 415V / 3P	220V / 1P / 50Hz 220V / 1P / 60Hz 415V / 3P	220V / 1P / 50Hz 220V / 1P / 60Hz 415V / 3P	220V / 1P / 50Hz 220V / 1P / 60Hz 415V / 3P
Motor		Squirrel Cage Induction Type	Squirrel Cage Induction Type	Squirrel Cage Induction Type	Squirrel Cage Induction Type
Mounting		Horizontal / Vertical	Horizontal / Vertical	Horizontal / Vertical	Horizontal / Vertical
Detailed Technical , Dimensional & Tender Specifications		www.mitzvah.in/spec/rsp	www.mitzvah.in/spec/rss	www.mitzvah.in/spec/rsl	www.mitzvah.in/spec/ssp

FEATURES		SSS	SSL	DPP	DPS
Height Catered		10 ft	10 ft	9 ft	10 ft
Max Vel. @ Nozz		23 m/s	23 m/s	21m/s	21m/s
Blower Diameter		ø 5 in	ø 5 in	ø 8 in	ø 8 in
RPM		2800 RPM	2800 RPM	1400 RPM	1400 RPM
Sizes Available		2ft, 3ft, 1 Mts, 4ft, 5ft, 6ft, 7ft	2ft, 3ft, 1 Mts, 4ft, 5ft, 6ft, 7ft	3ft, 3ft 6in, 4ft, 5ft, 6ft, 7ft	3ft, 3ft 6in, 4ft, 5ft, 6ft, 7ft
Aesthetic Look		Slotted Sleek	Slotted Sleek	Sturdy Compact	Sturdy Compact
Operation		2 Switch Speed	2 Switch Speed	On / Off	On / Off
Suction Side		Front	Front	Front & Side / Top	Front & Side / Top
Flow Type		Non Recirculating	Non Recirculating	Non Recirculating	Non Recirculating
Fan Type		Centrifugal	Centrifugal	Centrifugal	Centrifugal
MOC	Front Chassis	SS Grade 304	SS Grade 304	Metal Powder Coated	SS Grade 304
	Main & Back Plate	Metal Powder Coated	SS Grade 304	Metal Powder Coated	SS Grade 304
	Suction Grills	Metal Powder Coated	Metal Powder Coated	Metal Powder Coated	SS Grade 304
	Blower	Plastic	Plastic	Plastic / Galvanised Iron / Stainless Steel/Aluminium	Plastic / Galvanised Iron/ Stainless Steel/Aluminium
Voltage Options		220V / 1P / 50Hz 220V / 1P / 60Hz 415V / 3P	220V / 1P / 50Hz 220V / 1P / 60Hz 415V / 3P	220V / 1P / 50Hz 220V / 1P / 60Hz 415V / 3P	220V / 1P / 50Hz 220V / 1P / 60Hz 415V / 3P
Motor		Squirrel Cage Induction Type	Squirrel Cage Induction Type	Squirrel Cage Induction Type	Squirrel Cage Induction Type
Mounting		Horizontal / Vertical	Horizontal / Vertical	Horizontal / Vertical	Horizontal / Vertical
Detailed Technical , Dimensional & Tender Specifications		www.mitzvah.in/spec/sss	www.mitzvah.in/spec/ssl	www.mitzvah.in/spec/dpp	www.mitzvah.in/spec/dps

Technical & Dimensional Specification



FEATURES		CPP	CPS	IPP	IPS
Height Catered		15 ft	15 ft	24 ft	24 ft
Max Vel. @ Nozz		24 m/s	24 m/s	29 m/s	29 m/s
Blower Diameter		ø 8 in	ø 8 in	ø 8 in	ø 8 in
RPM		1400 RPM	1400 RPM	1400 RPM	1400 RPM
Sizes Available		3ft, 3ft 6in, 4ft, 5ft, 6ft, 7ft	3ft, 3ft 6in, 4ft, 5ft, 6ft, 7ft	3ft, 3ft 6in, 4ft	3ft, 3ft 6in, 4ft
Aesthetic Look		Sturdy Compact	Sturdy Compact	Heavy Large	Heavy Large
Operation		On / Off	On / Off	On / Off	On / Off
Suction Side		Front & Side / Top	Front & Side / Top	Front & Side	Front & Side
Flow Type		Non Recirculating	Non Recirculating	Non Recirculating	Non Recirculating
Fan Type		Centrifugal	Centrifugal	Centrifugal	Centrifugal
MOC	Front Chassis	Metal Powder Coated	SS Grade 304	Metal Powder Coated	SS Grade 304
	Main & Back Plate	Metal Powder Coated	SS Grade 304	Metal Powder Coated	SS Grade 304
	Suction Grills	Metal Powder Coated	SS Grade 304	Metal Powder Coated	SS Grade 304
	Blower	Aluminium	Aluminium	Plastic / Aluminium	Plastic / Aluminium
Voltage Options		220V / 1P / 50Hz 220V / 1P / 60Hz 415V / 3P	220V / 1P / 50Hz 220V / 1P / 60Hz 415V / 3P	220V / 1P / 50Hz 220V / 1P / 60Hz 415V / 3P	220V / 1P / 50Hz 220V / 1P / 60Hz 415V / 3P
Motor		Squirrel Cage Induction Type	Squirrel Cage Induction Type	Squirrel Cage Induction Type	Squirrel Cage Induction Type
Mounting		Horizontal / Vertical	Horizontal / Vertical	Horizontal	Horizontal
Detailed Technical , Dimensional & Tender Specifications		www.mitzvah.in/spec/cpp	www.mitzvah.in/spec/cps	www.mitzvah.in/spec/ipp	www.mitzvah.in/spec/ips

FEATURES		BPP	BPS	FPP	FPS	QPP
Height Catered		7 ft	7 ft	9 ft	10 ft	6 ft
Max Vel. @ Nozz		11 m/s	11 m/s	22 m/s	22 m/s	8 m/s
Blower Diameter		ø 4 in	ø 4 in	ø 8 in	ø 8 in	ø 8 in
RPM		2000 RPM	2000 RPM	1400 RPM	1400 RPM	2600 RPM
Sizes Available		800 mm, 1000 mm, 1200 mm	800 mm, 1000 mm, 1200 mm	3ft, 3ft 6in, 4ft, 5ft, 6ft, 7ft	3ft, 3ft 6in, 4ft, 5ft, 6ft, 7ft	3ft, 4ft, 5ft, 6ft, 7ft
Aesthetic Look		Slim	Slim	Sturdy Compact	Sturdy Compact	Silent Slim
Operation		On / Off	On / Off	On / Off	On / Off	On / Off
Suction Side		Front	Front	Front & Side / Top	Front & Side / Top	Top
Flow Type		Non Recirculating	Non Recirculating	Non Recirculating	Non Recirculating	Non Recirculating
Fan Type		Crossflow	Crossflow	Centrifugal	Centrifugal	Axial
MOC	Front Chassis	Metal Powder Coated	SS Grade 304	Metal Powder Coated	SS Grade 304	Metal Powder Coated
	Main & Back Plate	Metal Powder Coated	SS Grade 304	Metal Powder Coated	SS Grade 304	Metal Powder Coated
	Suction Grills	Metal Powder Coated	SS Grade 304	Metal Powder Coated	SS Grade 304	Metal Powder Coated
	Blower	Plastic / Aluminium	Plastic / Aluminium	Plastic / Galvanised Iron / Stainless Steel	Plastic / Galvanised Iron / Stainless Steel	Plastic
Voltage Options		24 V DC	24 V DC	220V / 1P / 50Hz 220V / 1P / 60Hz 415V / 3P	220V / 1P / 50Hz 220V / 1P / 60Hz 415V / 3P	220V / 1P / 50Hz
Motor		DC Motor	DC Motor	Squirrel Cage Induction Flame Proof Type	Squirrel Cage Induction Flame Proof Type	External Rotor Motor
Mounting		Horizontal	Horizontal	Horizontal / Vertical	Horizontal / Vertical	Horizontal
Detailed Technical , Dimensional & Tender Specifications		www.mitzvah.in/spec/bpp	www.mitzvah.in/spec/bps	www.mitzvah.in/spec/fpp	www.mitzvah.in/spec/fps	www.mitzvah.in/spec/qpp



air curtain a cash cow !

Saving per minute : **Rs. 7 /-**

Saving per hour : **Rs. 420 /-** (Rs. 7 X 60 min)

Saving per month : **Rs. 12,600 /-** (Rs. 420 X 30 days)

ROI - 1 month ~ 4 months

Assumption for ROI Calculation

Door size : 8 ft (H) X 4 ft (W)

Temp. Difference : 15 C

Door opening / Day : 60 mins

Using simple mathematics, let's verify;

Here's how-

Energy Calculation

$$E = m C \Delta T$$

m : Mass of Air

C : Specific heat of Air at given Temperature

ΔT : Temperature Difference

m = Density X Volume

Density of Air at 40°C = 1.127 Kg/cu. meter

C = Specific Heat = 1.005 KJ / (Kg °C)

ΔT = Temperature Difference = 15°C

(assuming outside temperature is 40°C and inside is 25°C)

Volume = Area X Velocity of Air from Door X Time of Opening

Say :-

Door Size = 8ft X 4ft

Velocity = 1 m/s = 200 fpm

Time of Opening = 1 min

Volume = 32 X 200 X 1 = 6400 cu. ft. = 181.22 cu. Meter ----- A

m = Density X Volume

(from Above A)

= 1.127 Kg/cu. meter X 181.22 cu. Meter

= 204 Kgs

$$E = m C \Delta T$$

= 204 kgs X 1.005 KJ / (Kg °C) X 15°C

= 3075.3 KJ = 0.85425 Kwh

Thus :-

In India if Per KWH cost of Power is **Rs 8.10**

Cost of Opening the Door of Size **8ft X 4ft for 1 min is = Rs 6.92**

Cost of Running an Air Curtain of 4 ft = 400W (Input Power) for 1 minute = 6 paise

Rate per Kwh X Time X Power Input

8.10 X 1/60 X 0.4 = 5.4 paisa

Net Saving = Rs 6.92 - 0.06 = Rs 6.86 ~ Rs 7





mitzvah
strip curtains

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How to design the strip door

How to cut

How to form holes

How to assemble

How to pack to deliver
to the Job site

How to install

Cleaning and maintenance

How to calculate the cost
of Strip Curtain



Strip Curtain





1 How to design the strip door

- **Strip quality**

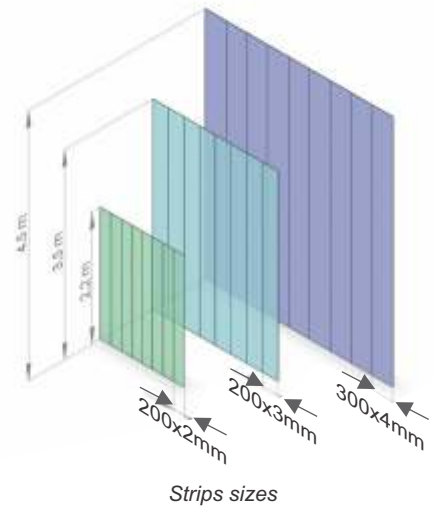
Choose from a wide range of PVC strips, select the right strips according to your application: The various options available are as follows"

The main components for Strip Curtain are :-

- a) Hook On Hardware
- b) PVC

Different Grades of each component available are :

- a) HOOK ON Hardware
 - i) CRC Powder Coated
 - ii) SS 304
- b) PVC
 - i) DINP ROHS
 - ii) DOP
 - iii) Paraffin
- c) Type
 - i) Normal
 - ii) Polar
- d) Surface
 - i) Plain
 - ii) Ribbed



They can be selected in any permutation and combination

- **Strip sizes-**

Depending on your opening size, choose a suitable width and thickness of strip.

- **Strip overlapping**

In order to get a better performance from your doors, a certain percentages of strip overlapping is recommended depending on their use; we recommend 50% overlapping, though 100% overlapping is also possible depending on:

- a) Type of Isolation
- b) Opening (Inside / Outside)

- **Hardware**

Use standard Hook-on-track for all applications.

They can be fabricated in CRC Metal powder coated or Stainless Steel Grade 304.



Strips overlapping



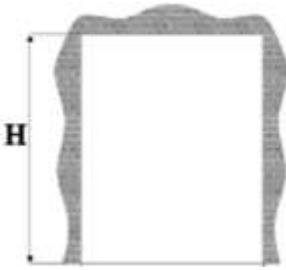
Standard Hook-on-track



2 How to cut Strips

- **Strip quality**

Cut strips according to the opening height and the hook-on-track configuration as follow :

		standard hook-on-track	
		Under lintel	Face fix
	Heavy duty Hook-on-track		
Strip length	H - 30 mm	H - 20 mm	H - 40 mm

Note: The length of strips is cut to the height of the opening. It is recommended that you cut the strips in the workshop 10mm longer and trim them when fitted.

Note 2: It is recommended that the Standard Hook-on-track is face fixed as it is easier to install and is stronger.

- **Manually cutting**

Use a long square to determine the centerline of the strip when pressed against one of the edges.

For thick strips, cut several times with the cutter without pressing too hard, maintaining the square pressed firmly on the working surface so that it does not slide.

It is recommended that a glove is worn when cutting.



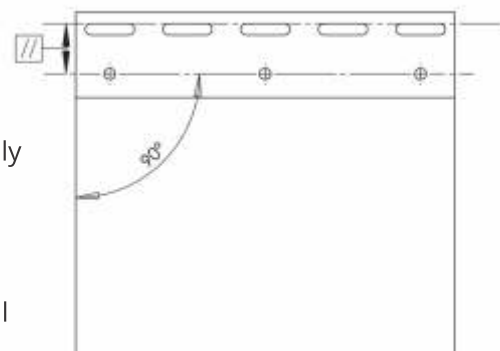
3 How to form holes in strips

- **Manually using a punch**

Mark the positions of all holes accurately, precisely and horizontally (rule and square). The holes centerline must be absolutely perpendicular with the edge of the strip.

Remove the center using a punch (Ø 5mm)

Do not use cutting tools (drills, sharp objects) to avoid tears that will eventually result in the PVC ripping.



Holes position



4 How to assemble Strips with hanger

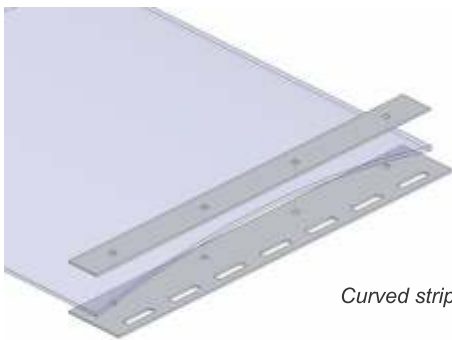
- Strip quality

Use Nut & Bolt of 5 mm to fix the strip between the front plate and the back plate.
Put the flat part of the bolt on the front plate side.



Assembly

PVC strips are designed to have a slight curve across the width in order to provide a good seal. The internal face of the strip must be placed face down to the front plate to provide a better sealing and aspect when the curtain is installed.



Curved strip between plates



Curtain sealing

5 How to pack to deliver to the Job site

Never roll the strips into small diameters. (Ø 150 mm minimum)
Pack the strips in the box using packing paper, foam or bubble wrap.

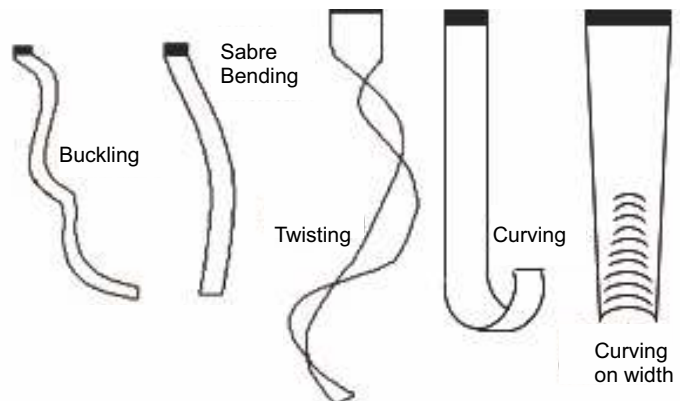


Recommended



wrong

Packaging requirement



Defects caused by wrong packing



6 How to install Strip Curtains

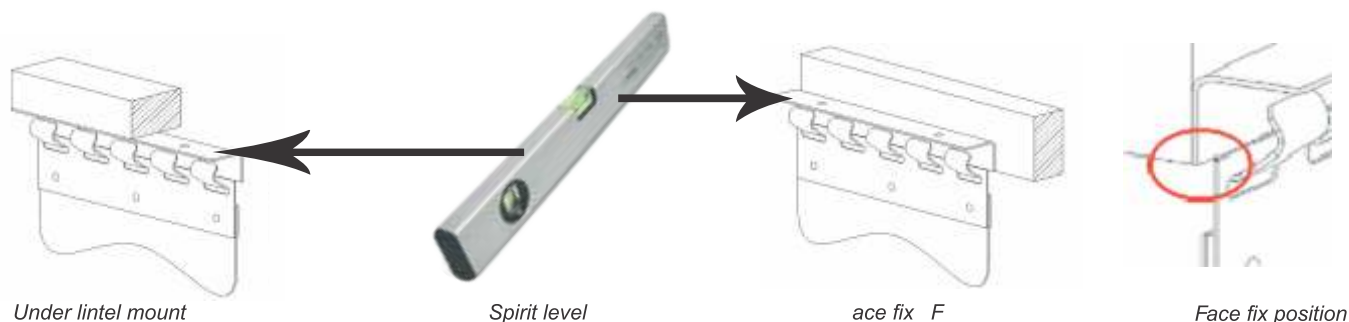
Make sure that support is in good condition.

The hook-on-track must be secured firmly and in a level position:

1) Position the hook-on-track to the opening (face fix or under lintel)

Note that for the face fix beginning of the hook needs to match the opening.

For under lintel mount configuration make sure that the edge of the end strips will be able to swing freely.



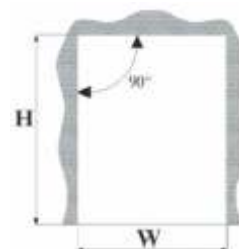
2) Fix the Hook-on-track with a first screw in its middle.

3) Use a spirit level to position and mark fixing holes.

(For under lintel mount use wedges to correct the position)

4) Then install.

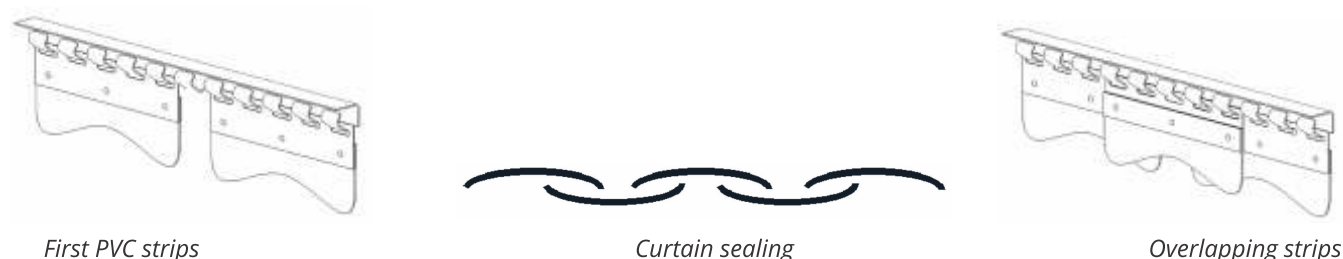
For under lintel, the hook-on-track has to be cut to fit the opening and the strips width.



For face fix, the curtains have to be wider than the opening to cover the gap between the door edge and the wall in order to provide a better sealing. Longer edges can be used to stock strips if the door is removed during hot periods.

Place the first PVC strips on the hook-on-track with the required number of free hooks between the strips according to the overlap. Then place remaining strips.

Front plates have to be placed in the middle of the curtain between the back plates to avoid any unnecessary gap and to have the curved strip sides face to face.



7 Cleaning and maintenance of Strips

Wash with soapy water or alcohol solution.

Avoid any contact with solvents

No particular maintenance is required except for periodic checking (twice annually) to ensure the attachment systems are

Remember: secure (strips/hooks, hook-on-track/lintel) and to replace any worn strips that no longer offer the necessary transparency. Strips are not costly don't hesitate to change them.



8 How to do costing for Strip Curtains

Calculations on area basis

There are various ways we can calculate the price for Strip Curtains

Width = Opening (in) + 6" = W

Height = Opening (in) + 6 " = H

Area = (W X H) / 144 = Total Sq Ft = A

Example 1:

Width = 9 ft 6 in

Height = 9 ft 6 in

W = 9 ft 6 in + 6 in = 10 ft

H = 9 ft 6 in + 6 in = 10 ft

A = Area = 100 Sq ft

Say Rate = Rs 150 per sq. ft

Total Cost = Rs 150 psf X 100 sq. ft = **Rs 15000/-**



Calculations on Bill of Material

W = Width = 9 ft 6 in = 114 in = 2895 mm ~ 2.9 meter

H = Height = 9 ft 6 in = 114 in = 2895 mm ~ 2.9 meter

No of Hardware = (W/500) 2900 / 500 mm = 6 Nos.

No of Strips = (W/6) 114 / 6 = 19

PVC Requirement : 19 X 2.9 meter = 55.1 meter ~ 56 meter

Rates :

Hardware (CRC Powder Coated) = Rs. 300 per Piece

PVC (3mm Normal Premium) @ Rs. 250 per Meter

PVC (3mm Normal Cheap) @ Rs. 150 per Meter

Cost

Hook On = 6 Nos X Rs. 300 = Rs.1800

PVC (3mm Normal Premium)= 56 meter X @250 = Rs. 14000

PVC (3mm Normal Cheap)= 56 meter X @150 = Rs. 8400

Total Cost (Premium) = 1800+14000 = Rs. 15800 =Rs 158 psf

Total Cost (Cheap) = 1800 + 8400 =Rs. 10200 = Rs. 102 psf

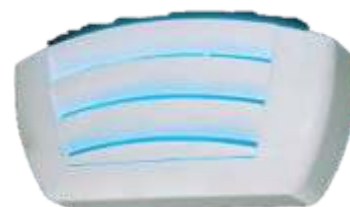
Other Products





Other Products

Fly Trapper Glue-pad Series



Features

- Aluminum Chassis
- Plastic Side Covers
- High Voltage Metal Grid
- BLB Lights (Long Life)
- Efficient Step Up Transformer
- Removable Tray

Model : IK GP 3X15
Material : ABS
Type : Glue Pad
Mounting : Wall
Effective Area : 500 Sq ft

Model : IK GP 2X15
Material : ABS
Type : Glue Pad
Mounting : Wall
Effective Area : 400 Sq ft

Hand Dryers SS Steel & Plastic Series



Model : HD16K75
Material : Stainless Steel
Power : 2300 W
Drying Time : 5-8 Sec
Detection Dist : 50-150 mm
Wind Speed : 60 m/s
Motor Speed : 25000 RPM
Auto Stop : 15 Sec

Model : HD ABS4K12
Material : ABS
Power : 2000 W
Drying Time : 10-15 Sec
Detection Dist : 50-200 mm
Wind Speed : 12 m/s
Motor Speed : 7500 RPM
Auto Stop : 20 Sec

Model : HD JET ABS
Material : ABS
Power : 1650 W
Drying Time : 5-10 Sec
Detection Dist : 50-200 mm
Wind Speed : 90 m/s
Motor Speed : 16000 RPM
Auto Stop : 15 Sec



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