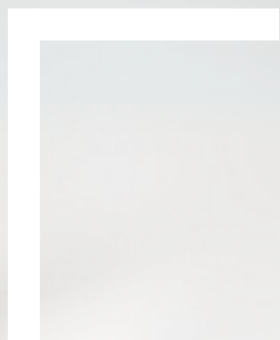




TWYER® LOUVERS
ARCHITECTURAL & PERFORMANCE



Storm Resistance

Airflow

Aesthetics

Free Area

Sound Insulation



TWYER[®] LOUVERS
NEVER COMPROMISE

What is Twyer?

with **Experience** over 26 years in design and manufacturing of architectural performance products, Twyer team works close with the architects and consultants to provide a lot of successful and highly effective solutions in the Asian market including Hong Kong, Macau, Taiwan and Singapore.

Innovation Due to keeping changing of the architectural industry, Twyer team firstly launched their own performance louver into the market in year 2016. Twyer Limited officially established in Sept, 2023 and got more than 30 models of performance louvers and expansion joint covers up to the end of year 2023 providing the excellent solutions to the market.

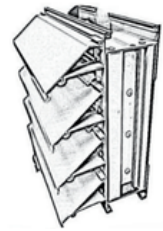
Twyer Limited will keep on the innovation and **NEVER COMPROMISE**



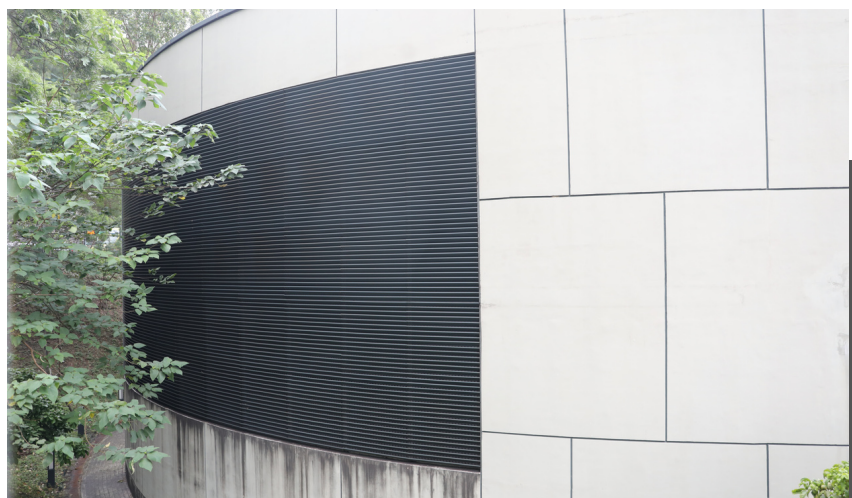
Storm Resistant Louver TWY-420

Available in perforated, horizontal, inverted & vertical configurations, they are ideal when you:

- Look for architectural line appearance
- Want 50% free area or above
- Require High Wind Driven Rain Defense
- Prefer AMCA 500L test standard
- Need a similar appearance louver for dummy area to provide a louver wall system with minimal projection allowance from the wall

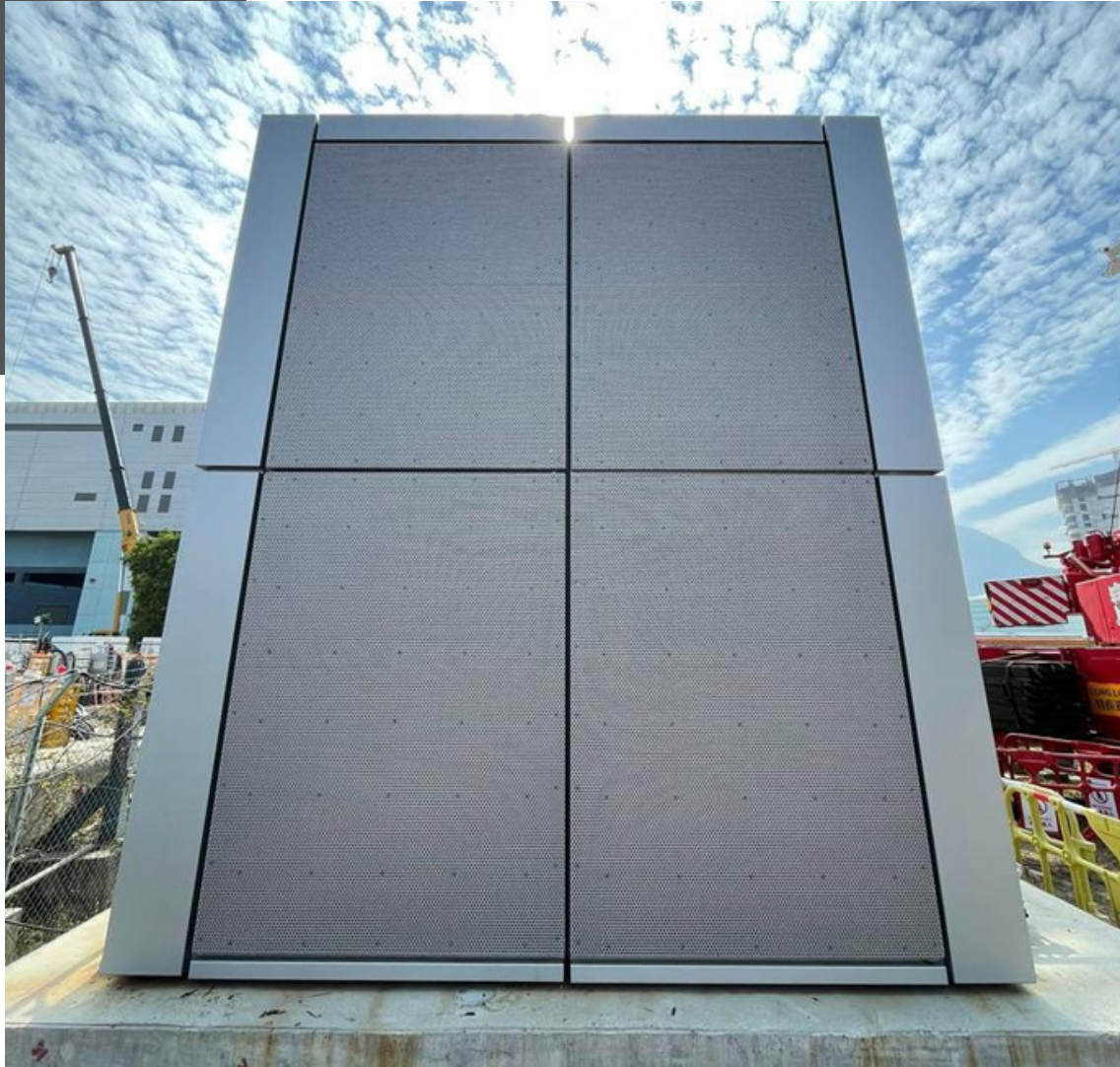


- **Class A2**
- **110mm deep**
- **50mm Pitch**

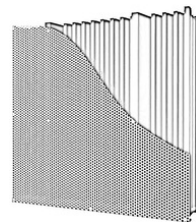


TWY - 420 with true curved blades

Perforated High Performance Louver TWY-420F



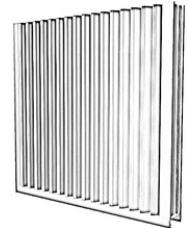
- Look for Flush surface louver in curtain wall
- Want 50% free area or above
- Require High Wind Driven Rain Defense
- Prefer AMCA 500L test standard



- **Class A3**
- **155mm deep**
- **Flush Surface**

Storm Resistant Vertical Louver TWY-420P

- Look for vertical architectural line appearance
- Want 50% free area or above
- Require High Wind Driven Rain Defense
- Prefer AMCA 500L test standard
- Need a similar appearance louver for dummy area to provide a louver wall system with minimal projection allowance from the wall

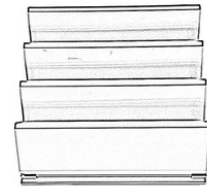


- **Class A2**
- **110mm deep**
- **50mm Pitch**



Storm Resistant Inverted Louver TWY-420V

- Look for inverted architectural line appearance
- Want 50% free area or above
- Require High Wind Driven Rain Defense
- Prefer AMCA 500L test standard
- Need a similar appearance louver for dummy area to provide a louver wall system with minimal projection allowance from the wall



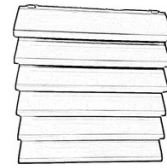
- **Class A2**
- **110mm deep**
- **50mm Pitch**



Stainless Steel Storm Resistant Louver TWY-420S

Available in horizontal, inverted and vertical configurations, they are ideal when you:

- Look for architectural line appearance
- Want 50% free area or above
- Require High Wind Driven Rain Defense
- Prefer AMCA 500L test standard
- Look for Stainless Steel material



- **Class A2**
- **110mm deep**
- **50mm Pitch**

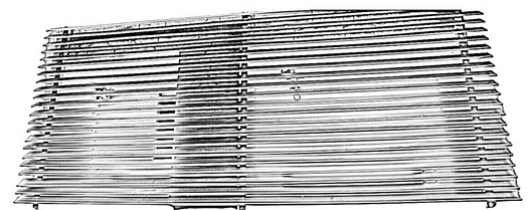


Storm Resistant Louver TWY-220

Available in horizontal, inverted and vertical configurations, they are ideal when you:



- Look for architectural line appearance
- Want 50% free area or above
- Require ordinary Wind Driven Rain Defense
- Prefer AMCA 500L test standard
- Need to match appearance of TWY-420

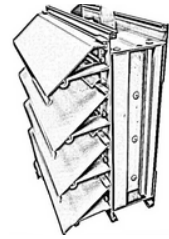


- **Class B1**
- **60mm deep**
- **50mm Pitch**

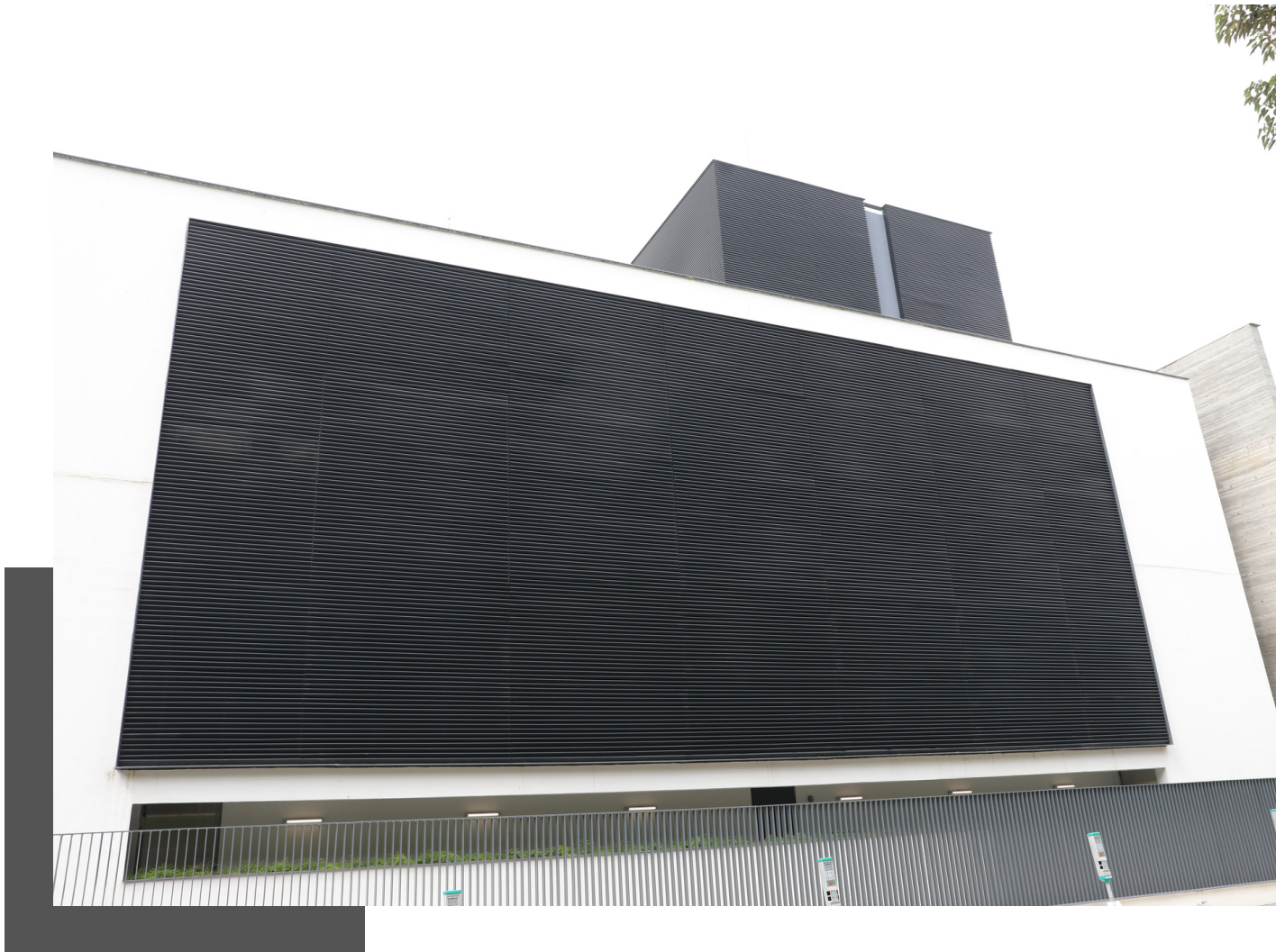
Storm Resistant Louver TWY-630

Available in horizontal, inverted and vertical configurations, they are ideal when you:

- Look for architectural line appearance
- Want 50% free area or above
- Require High Wind Driven Rain Defense
- Prefer AMCA 500L test standard
- Need a similar appearance louver for dummy area to provide a louver wall system with minimal projection allowance from the wall



- **Class A3**
- **155mm deep**
- **75mm Pitch**

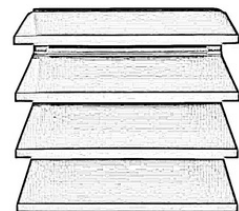


Storm Resistant Louver TWY-330

Available in horizontal, inverted and vertical configurations, they are ideal when you:



- Look for architectural line appearance
- Want 50% free area or above
- Require ordinary Wind Driven Rain Defense
- Prefer AMCA 500L test standard
- Need to match appearance of TWY-630

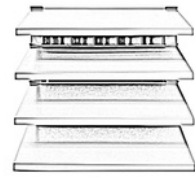


- **Class C1**
- **75mm deep blade**
- **75mm Pitch**

Storm Resistant Louver TWY-631

Available in horizontal, inverted and vertical configurations, they are ideal when you:

- Look for architectural line appearance
- Want 50% free area or above
- Require Excellent Wind Driven Rain Defense
- Prefer AMCA 500L test standard
- Need to match appearance of TWY-630



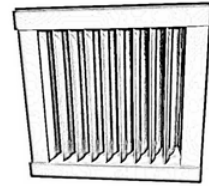
- **Class A3**
- **155mm deep**
- **75mm Pitch**



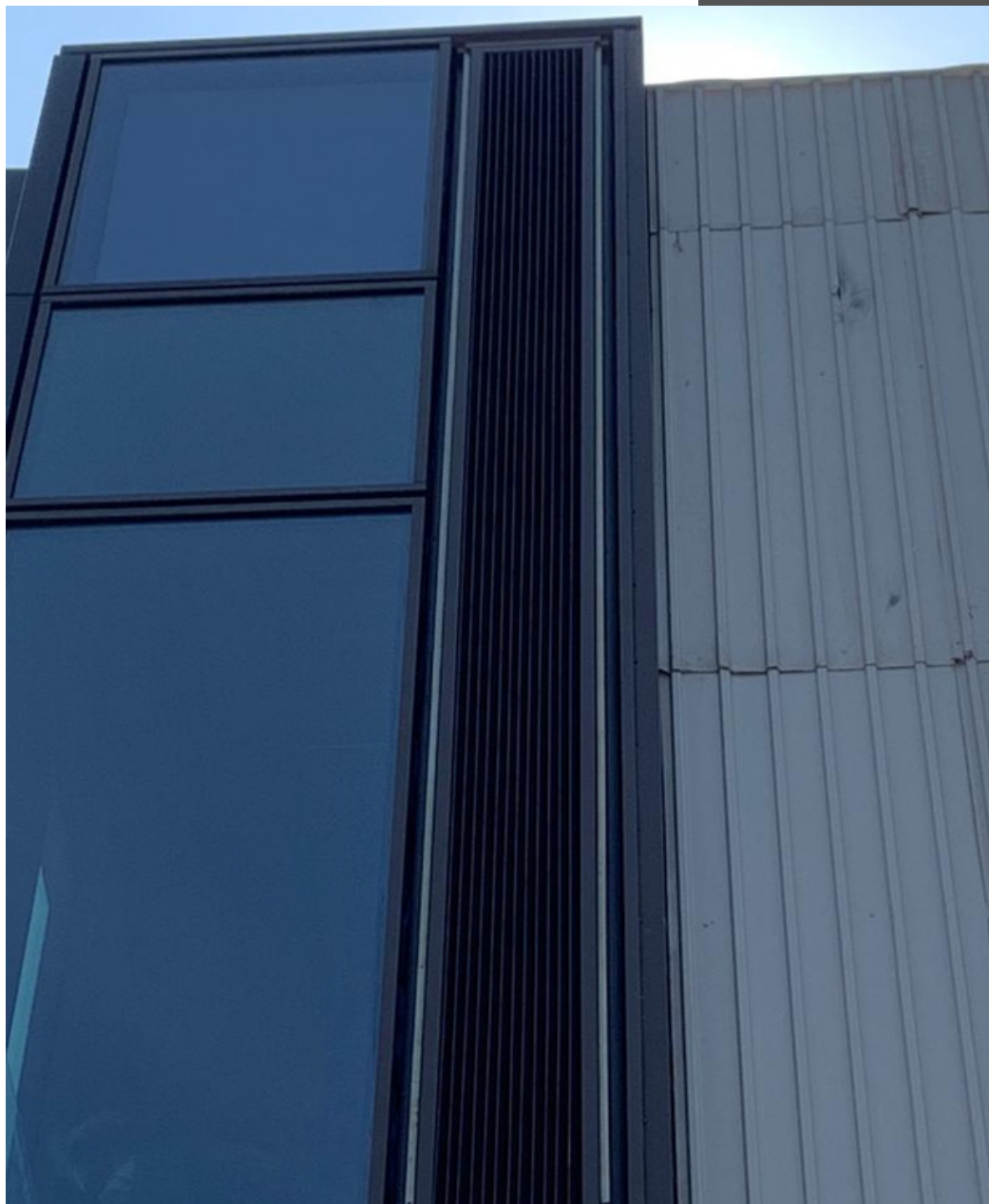
Storm Resistant Louver TWY-510P

Available in horizontal, inverted and vertical configurations, they are ideal when you:

- Look for vertical architectural line appearance
- Want high Free Area - 60%
- Require Excellent Wind Driven Rain Defense
- Prefer AMCA 500L test standard



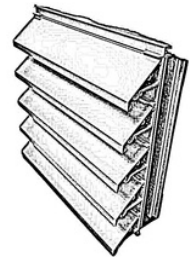
- **Class A1**
- **127.5mm deep**
- **25mm Pitch**



Storm Resistant Louver TWY-520

Available in horizontal, inverted and vertical configurations, they are ideal when you:

- Look for architectural line appearance
- Want 50% free area or above
- Require Excellent Wind Driven Rain Defense
- Prefer AMCA 500L test standard
- Look for traditional triple bank louver rain defense and require better airflow



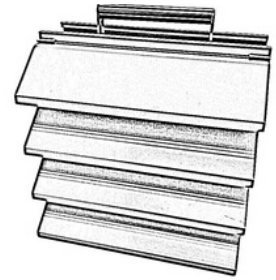
- **Class A2**
- **127.5mm deep**
- **50mm Pitch**



Storm Resistant Louver TWY-530S

Available in horizontal, inverted and vertical configurations, they are ideal when you:

- Look for architectural line appearance
- Want 50% free area or above
- Require Wind Driven Rain Defense
- Prefer AMCA 500L test standard
- Look for Stainless Steel material

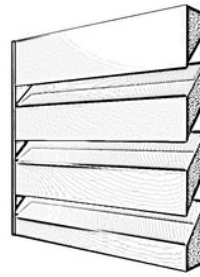


- **Class B3**
- **125mm deep**
- **75mm Pitch**

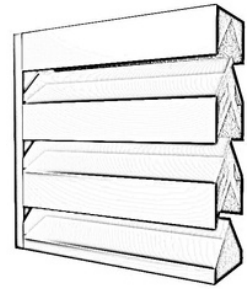


ACOUSTIC LOUVER TWY-660A/1260A

- Look for Acoustic performance
- Want 20% free area or above
- Require STC 13 to STC 19
- Prefer ASTM STANDARD E90-90

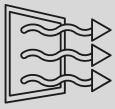


- **STC 13**
- **152mm deep**
- **254mm Pitch**



- **STC 19**
- **305mm deep**
- **308mm Pitch**





Specifying louvers on free area alone can cause serious problems.

MASTERSPEC® 2000

LOUVER SELECTION CONSIDERATION

Limiting the pressure drop is another consideration in louver selection. If the pressure drop for louvers exceeds 0.10 to 0.15-inch w.g. (25 to 37 Pa), fan power will need to be increased to maintain adequate airflow, and this will decrease the system's energy efficiency.

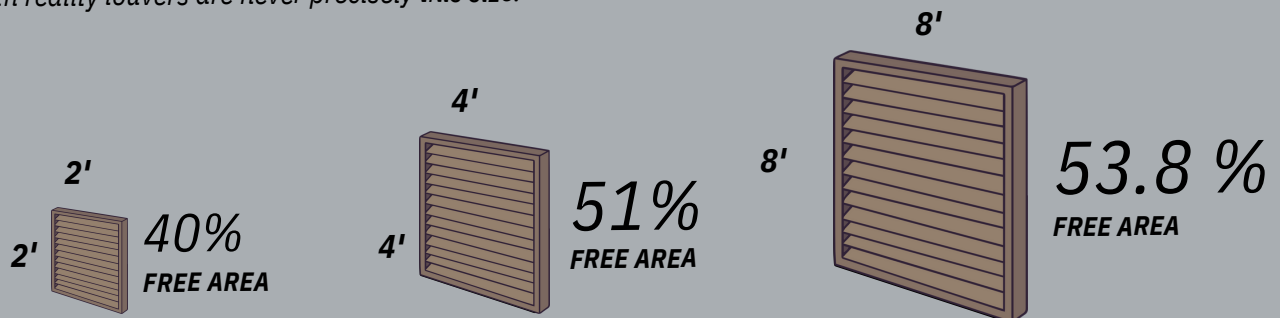
Within each category of blade design, slight changes in the profile may affect water penetration and air resistance. 6-inch- (150-mm-) deep louvers generally provide better performance with more free area than 4-inch- (100-mm-) deep louvers, but not always.

To prevent airflow problems specify louvers using both static pressure drop and free area.

The principle reason for using louvers is to move air. How do you know if the louver you specify will actually deliver the air volume the engineer called for? History has shown that sizing and specifying louvers based on free area alone can cause problems for architects and owners alike. The illustrations on these pages explain what to do to prevent under or over sizing louvers.

When You Specify a 50% Free Area Louver, What Are You Really Getting?

Free area is affected by the size of the louver. In the example below the louver design is identical, only the size has been varied. The industry typically quotes free area using a 4-foot-square louver. In reality louvers are never precisely this size.

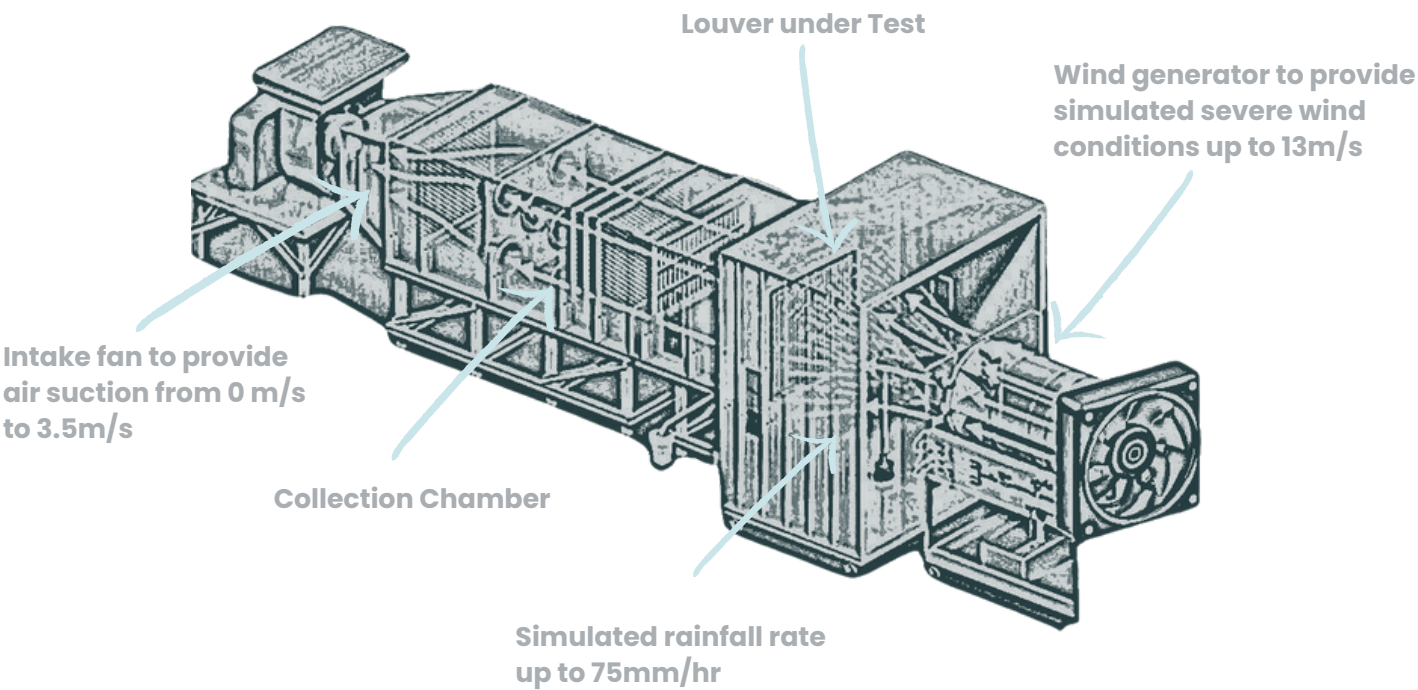


Other Factors Also Impact Airflow

Louver frames add resistance to airflow. Mullions, structural supports, bird screens and insect screens also reduce airflow.

TWYER® Louver Performance

AMCA 500L Wind Driven Rain Test Standards



Penetration classification

Louvers shall be classified by their ability to reject simulated rain. The following table shows different classifications based on the maximum simulated rain penetration per square meter (square feet) of louver. Water penetration rating at a given louver face velocity is determined by the water penetration while the louver is subjected to a selected simulated rainfall rate and wind velocity.

Class	Effectiveness	Maximum allowed penetration, l/h/m2 (SI)		Maximum allowed penetration, oz/h/ft2 (I-P)	
		75mm/hr rainfall 13m/s wind velocity	202.4 mm/hr rainfall 22 m/s wind velocity	3 in./hr rainfall 29 mph wind velocity	8 in./hr rainfall 50 mph wind velocity
A	99.9% to 99%	0.75	4.0	2.36	12.6
B	98.9% to 95%	3.75	20.0	11.8	67.8
C	94.9% to 80%	15.0	80.0	47.1	251.0
D	Below 80%	Greater than 15.0	Greater than 80.0	Greater than 47.1	Greater than 251.0

Note : These classifications apply at various core velocities

Discharge loss coefficient

The discharge loss coefficient given in the following table is determined in accordance with this standard.

Class	Discharge Loss Coefficient
1	0.4 and above
2	0.3 to 0.399
3	0.2 to 0.299
4	0.199 and below

TWYER® Louver List

Louver Model	Material	Configuration	Depth	Pitch	Rain Defense		Airflow	Free Area
					Low	High		
TWY330	Alum.	Horizontal Single	3"	3"	~~~~~		Class 1	53%
TWY330P	Alum.	Vertical Single	3"	3"	~~~~~		Class 1	53%
TWY330V	Alum.	Inverted Single	3"	3"	~~~~~		Class 1	53%
TWY630	Alum.	Horizontal Double	6"	3"	~~~~~		Class 3	51%
TWY631	Alum.	Horizontal Triple	6"	3"	~~~~~		Class 3	50%
TWY630P	Alum.	Vertical Double	6"	3"	~~~~~		Class 3	51%
TWY630V	Alum.	Inverted Double	6"	3"	~~~~~		Class 3	51%
TWY220	Alum.	Horizontal Single	2"	2"	~~~~~		Class 1	53%
TWY220P	Alum.	Vertical Single	2"	2"	~~~~~		Class 1	53%
TWY220V	Alum.	Inverted Single	2"	2"	~~~~~		Class 1	53%
TWY420	Alum.	Horizontal Double	4"	2"	~~~~~		Class 2	51%
TWY420P	Alum.	Vertical Double	4"	2"	~~~~~		Class 2	51%
TWY420V	Alum.	Inverted Double	4"	2"	~~~~~		Class 2	51%
TWY420F	Alum.	Perforated Double	6"	2"	~~~~~		Class 3	50%
TWY520	Alum.	Horizontal Double	5"	2"	~~~~~		Class 2	50%
TWY520P	Alum.	Vertical Double	5"	2"	~~~~~		Class 2	50%
TWY520V	Alum.	Inverted Double	5"	2"	~~~~~		Class 2	50%
TWY310	Alum.	Horizontal Single	3"	1"	~~~~~		Class 1	80%
TWY510	Alum.	Horizontal Double	5"	1"	~~~~~		Class 1	60%
TWY510P	Alum.	Vertical Double	5"	1"	~~~~~		Class 1	60%
TWY220S	SS316	Horizontal Single	2"	2"	~~~~~		Class 1	52%
TWY420S	SS316	Horizontal Double	4"	2"	~~~~~		Class 2	52%
TWY330S	SS316	Horizontal Single	3"	3"	~~~~~		Class 2	51%
TWY530S	SS316	Horizontal Double	5"	3"	~~~~~		Class 3	51%
Louver Model	Material	Configuration	Depth	Pitch	Acoustical Performance		Airflow	Free Area
					Low	High		
TWY660A	Alum.	Horizontal Single	6"	10"	~~~~~			21%
TWY1260A	Alum.	Horizontal Double	12"	12"	~~~~~			23%

Finishing Selection :

Polyvinylidene Fluoride (PVDF) Coating

Polyvinylidene fluoride (PVDF) coatings are a factory-applied, resin-based coating system, typically with embedded color pigment particles that support a wide range of matte-finish colors. They are most commonly used for architectural coating applications due to their superior resistance to weathering by sunlight, moisture, or temperature.

Powder Coating

Powder Coating is an Epoxy, Polyester or Polyurethane resin based dry powder that is applied onto metal surfaces through an electrostatic spraying system. Powder Coatings can provide high chemical and solvent resistance plus high corrosion and detergent resistance with high flow-out and glossy finishes. It is an environmentally friendly architectural coating. When applied, the powder is recycled through a ventilation system that collects the powder that does not stick to the substrate and is 99% recyclable. The coating process does not have any volatile organic compounds (VOC).

TWYER[®] LOUVERS

BUILD FOR THE FUTURE



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By Twyer Limited