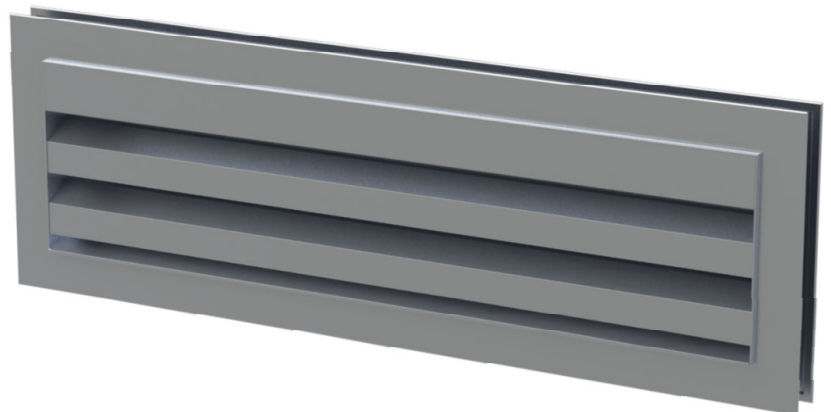




**COMPLETE AIR
SUPPLIES LTD.**

GL50

Glazing Louvres



- Specialist louvre series designed for installation into glazing systems
- Currently available to suit 24mm, 28mm, 32mm and 48mm depths
- BSRIA tested to EN 13030
- Polyester powder coating to the full range of RAL and BS colours

New for 2021, Series GL50 glazing louvres are a specialist louvre series designed to suit glazing systems in place of a pane of glass.

Brought to market in response to growing customer requests, the GL50 comprises new and proprietary to HVC aluminium extrusions, creating a louvre with a remarkably low normal maximum depth of just 41mm, but with performance levels usually only seen in much deeper units.

HVC are able to factory fit GL50's with a range of options, including rear mounted plates in either blanked or active configurations, or volume control dampers.

GL50's are currently available to suit four glazing depths, 24mm, 28mm, 32mm and 48mm.

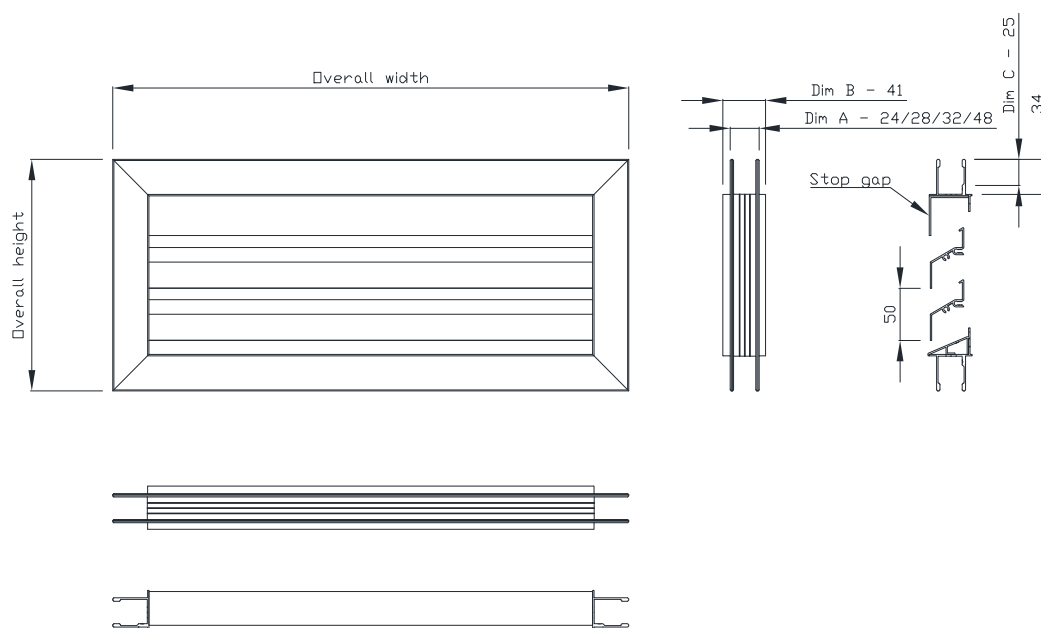
Please contact us if you have the requirement for a different thickness.

Design features

Material	Extruded aluminium BZP steel screws and aluminium pop rivets
Sizes	Minimum overall height - 192mm with two blades
Blade	142mm with one blade (not recommended) 50mm pitch
Core	Non-removable
Frame	To suit glazing frames of depths 24mm, 28mm, 32mm and 48mm None
Fixings	Standard: Mill aluminium
Finish	Optional: See page 8
Mass/m ² face area	10kg



Technical drawings



Notes:

Dim A = Glazing depth (28mm shown in above drawing)

Dim B = Overall depth, if Dim A is greater than Dim B the two will be equal

Dim C = Area of frame guaranteed to be flat, beyond this there will be welds in the corners

Technical notes

Stop gaps

GL50s are manufactured with the bottom blade in a fixed position, other blades are then fitted above it on a 50mm pitch.

Therefore most sizes of GL50 will require a stop gap, the size of which will vary depending on the height of louvre required.

The maximum size of stop gap is 2 ½ inches (63mm).



Overview of BS EN 13030:2001

Within Europe the generally applicable standard for the testing of weather louvres is:

BS EN 13030:2001
Ventilation for buildings - Terminals
Performance testing of louvres subject to simulated rain

This test evaluates weather louver designs based on two criteria:

- Resistance to the ingress of simulated rain
- Resistance to airflow in terms of pressure loss through the louver

Louver classifications are given as in the example below (or in a format to the same effect):

- A2 up to 2
m/s

Guide to classification

The grading system is as follows:

Resistance to ingress of simulated rain

- **Class A**
Excellent 99% effective and
above Up to 0.750 l/
hr/m²
- **Class B**
Good Between 95% and 98.9% effective
Between 3.750 l/hr/m² and 0.751
l/hr/m²
- **Class C**
Fair Between 80% and 94.9% effective
Between 15.000 l/hr/m² and 3.751
l/hr/m²
- **Class D**
Poor Less than 80%
effective Greater than
15.000 l/hr/m²

l/hr/m² - Litres of water per hour per square metre of louver

Resistance to airflow in terms of pressure loss

- **Class 1**
Excellent $C_{e/d}$ of between 0.4 and 1.0
- **Class 2**
Good $C_{e/d}$ of between 0.3 and 0.399
- **Class 3**
Fair $C_{e/d}$ of between 0.2 and 0.299
- **Class 4**
Poor $C_{e/d}$ of 0.199 and below

C_e - Coefficient of entry
 C_d - Coefficient of discharge

Important footnote

The way in which BS EN 13030:2001 grades weather louvres is very much open to misinterpretation and misuse:

Many louvres are advertised as simply 'Class A'; this is not giving the full picture and can mean that a louver only gives 'Class A' performance at 0 m/s draw velocity.

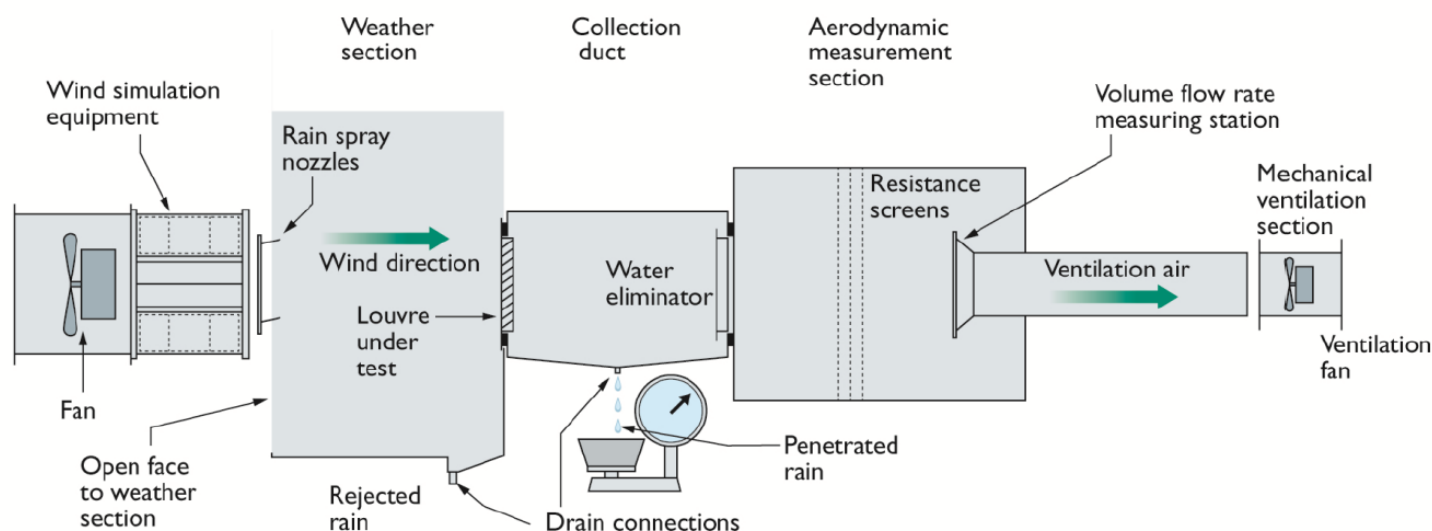
Once air actually begins to be drawn through the louver this rain rejection performance can rapidly drop, allowing a large quantity of water to enter the building.

The 'Class A' classification should always be accompanied by the draw velocity at which it was achieved.



Test method

A schematic representation of the rig used during testing.



The test comprises of two parts:

Water penetration

The weather louvre is subjected to fan driven wind at a speed of 13 m/s and water sprayed as rainfall at a rate of 75 l/h. In addition to the simulated wind and rain, air is drawn through the louvre at various set velocities (0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0 and 3.5 m/s).

Each test is preceded by a suitable 'pre-test' soak which is typically around 30 minutes. Each test is run until the results become stable, and in any case, for a minimum of 30 minutes.

The penetrated water is collected in the collection duct and is measured and recorded against time elapsed.

A range of measurements are taken to give the characteristic curve for the test louvre.

Pressure drop

For this test, the Aerodynamic Measuring Section (AMS) is separated from the main rig. The louvre is then mounted in the upstream opening of the AMS.

Pressure tappings in the plenum walls of the AMS allow measurement of the static pressure within the plenum during testing. The airflow volume is calculated from the differential pressure at the measuring cones. The plenum has a set of settling screens within to produce even flow through the cones and therefore gives an accurate reading of the total volume.

By adjusting the fan speed, the total airflow through the system varies and therefore changes the pressure on the louvre under test. A range of measurements are taken to give the characteristic curve for the test louvre.

Certification

GL50 glazing louvres fitted with both insect mesh and bird mesh have been tested against:

BS EN 13030:2001

The testing was carried out in autumn 2020 by BSRIA in Preston, England.

Copies of the test reports are available on request.

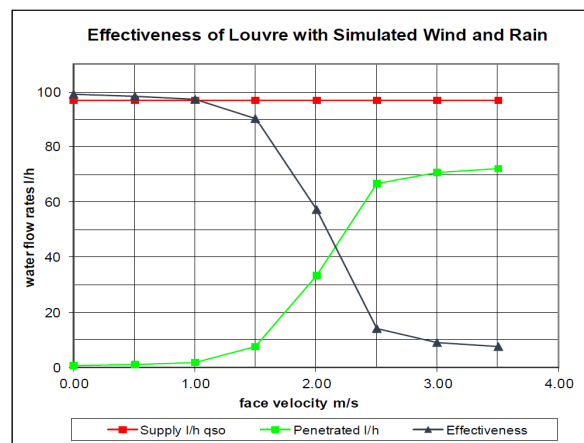
The units tested were of size 1060mm x 1060mm overall.

Please see results overleaf.

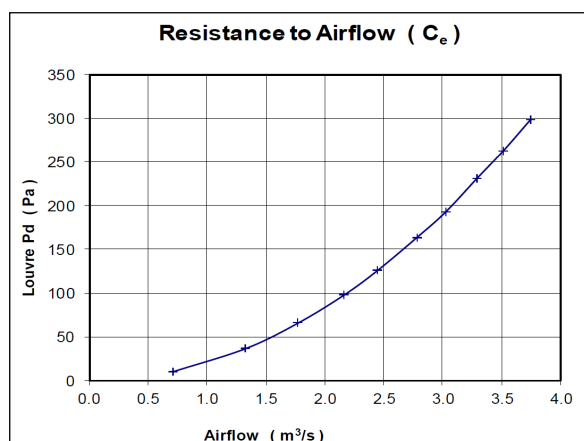


Test results - GL50 c/w insect mesh

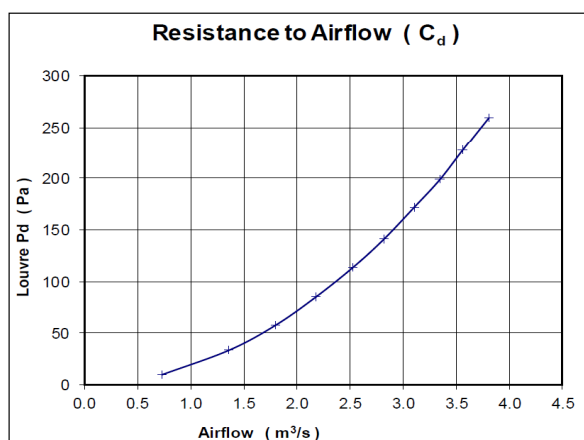
Rain rejection test results					
Ventilation rate		Water flow rates			
Volume (m ³ /s)	Velocity (m/s)	Supply (l/h)	Penetrated (l/h)	Effectiveness	Class
0.00	0.0	97.2	0.6	99.2%	A
0.48	0.50	97.2	1.2	98.5%	B
0.96	1.00	97.2	1.9	97.5%	B
1.43	1.50	97.2	7.5	90.3%	C
1.91	2.00	97.2	33.3	57.1%	D
2.39	2.50	97.2	66.8	14.0%	D
2.87	3.00	97.2	70.6	9.1%	D
3.34	3.50	97.2	72.1	7.5%	D



Airflow test results (coefficient of entry)				
Air flow rate				
Pressure drop (Pa)	Louvre face velocity (m/s)	Test (m ³ /s)	Theoretical (m ³ /s)	Coefficient C _e
10.20	0.74	0.712	3.959	0.180
36.80	1.39	1.329	7.484	0.178
66.00	1.86	1.773	10.022	0.177
97.90	2.2	2.162	12.206	0.177
126.00	2.56	2.446	13.848	0.118
164.00	2.91	2.783	15.799	0.176
193.00	3.17	3.025	17.139	0.176
231.00	3.44	3.287	18.750	0.176
263.00	3.68	3.512	20.007	0.176
299.00	3.92	3.745	21.332	0.176
Mean c _e				0.177
Class				4

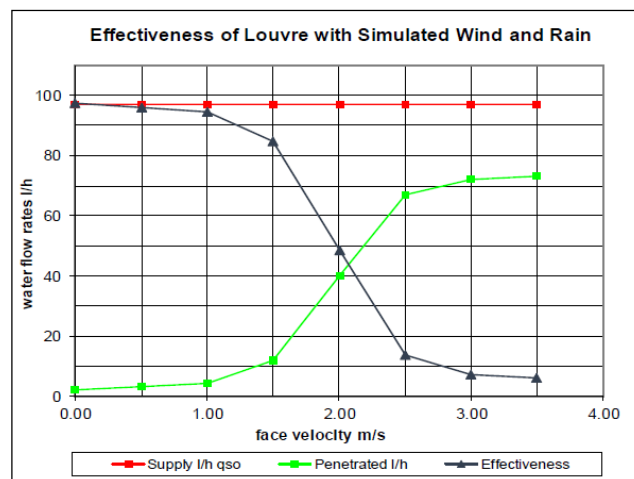


Airflow test results (coefficient of discharge)				
Air flow rate				
Pressure drop (Pa)	Louvre face velocity (m/s)	Test (m ³ /s)	Theoretical (m ³ /s)	Coefficient C _d
10.00	0.77	0.734	3.903	0.188
33.70	1.43	1.364	7.165	0.190
57.80	1.88	1.800	9.383	0.192
85.00	2.28	2.177	11.379	0.191
114.00	2.65	2.531	13.177	0.192
141.00	2.95	2.818	14.655	0.192
172.00	3.25	3.104	16.186	0.192
199.00	3.50	3.347	17.410	0.192
228.00	3.73	3.564	18.636	0.191
260.00	3.99	3.810	19.901	0.191
Mean c _d				0.191
Class				4

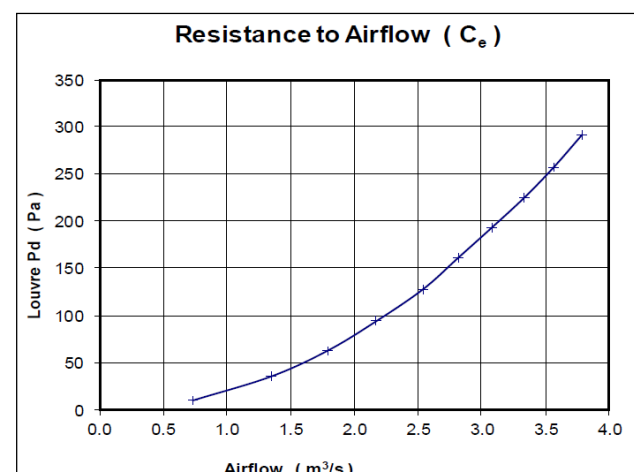


Test results - GL50 c/w bird mesh

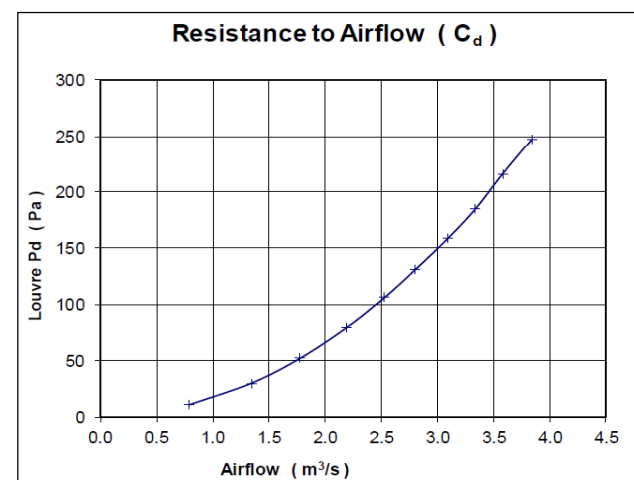
Rain rejection test results					
Ventilation rate		Water flow rates		Effectiveness	Class
Volume (m³/s)	Velocity (m/s)	Supply (l/h)	Penetrated (l/h)		
0.00	0.00	97.2	2.1	97.3%	B
0.48	0.50	97.2	3.1	96.0%	B
0.96	1.00	97.2	4.2	94.6%	C
1.43	1.50	97.2	11.8	84.8%	C
1.91	2.00	97.2	40.1	48.3%	D
2.39	2.50	97.2	67.1	13.6%	D
2.87	3.00	97.2	72.1	7.3%	D
3.34	3.50	97.2	73.3	6.0%	D



Airflow test results (coefficient of entry)				
Air flow rate				
Pressure drop (Pa)	Louvre face velocity (m/s)	Test (m³/s)	Theoretical (m³/s)	Coefficient C_e
10.50	0.77	0.731	3.994	0.183
35.70	1.41	1.343	7.365	0.182
63.00	1.87	1.789	9.784	0.183
93.80	2.27	2.167	11.939	0.182
128.00	2.66	2.540	13.946	0.182
161.00	2.95	2.815	15.641	0.180
193.00	3.22	3.080	17.125	0.180
225.00	3.49	3.338	18.491	0.181
257.00	3.73	3.568	19.762	0.181
291.00	3.97	3.789	21.028	0.180
Mean c_e				0.181
Class				4



Airflow test results (coefficient of discharge)				
Air flow rate				
Pressure drop (Pa)	Louvre face velocity (m/s)	Test (m³/s)	Theoretical (m³/s)	Coefficient C_d
10.60	0.83	0.789	4.015	0.197
29.90	1.41	1.344	6.743	0.199
51.90	1.86	1.775	8.884	0.200
79.70	2.30	2.197	11.009	0.200
106.00	2.65	2.528	12.696	0.199
131.00	2.94	2.804	14.114	0.199
159.00	3.24	3.096	15.549	0.199
185.00	3.49	3.339	16.772	0.199
216.00	3.75	3.578	18.123	0.197
248.00	4.02	3.844	19.419	0.198
Mean c_d				0.199
Class				4



NOTES





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