



Stafford Bridge

High Performance Security Ventilation Louvres



Security, Ballistic and Blast Solutions

High Security Ventilation Louvres

Our range of high security louvres allow the maximum free air flow without compromising security.

APPLICATIONS

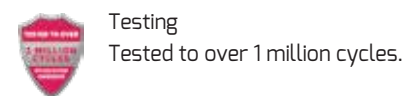
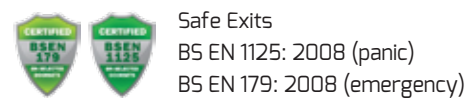
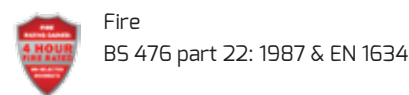
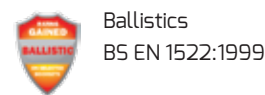
These heavy duty steel louvres are ideal for a wide range of applications including server rooms, generator housings, air conditioning systems, sub stations and so on. They can be made to almost any size to suit a wide range of ventilation requirements.

Intensive research and development, together with the embracing of new technologies and materials as they evolve, means that our products provide the most robust and sophisticated security available.

TESTING AND CERTIFICATION

Our products are tested for their resistance to many forms of threat (for example, security, fire, blast, ballistic attack). They are also designed, tested and certified for the health and safety duty of care that is required today.

The development of new products has been integrated with our regime of testing and approvals to maintain the supply of products with certification to important UK and European standards throughout the process.



ANTI-LIGATURE FEATURES

The unique anti-ligature louvre range is used in areas such as seclusion rooms within secure hospitals and prisons.

FINISHES

A full range of finishes are available to suit the customers' requirements.

HOSTILE ENVIRONMENTS

These products are widely used on offshore oil platforms and generally in the petrochemical industry. This is due, in part, to their resistance to the privations of such environments. The same considerations and their inherent resilience also lead to their use in securing remote stations used by police response units and the armed forces.

TOTAL COMMITMENT, COMPREHENSIVE SERVICE

Stafford Bridge offers a comprehensive service to ensure integrity and security:

- * Operational analysis and technical advice
- * Site survey and scheduling
- * Product manufacture and supply
- * Bespoke design systems
- * Installation
- * Planned maintenance
- * On-going support
- * Standard packages

CUSTOMER CARE

Our customer care is second to none. That is why we can boast an exceptional level of customer loyalty. Solid business relationships have been built on the trust earned by our dedication to providing the best security solution for every challenge that our customers confront us with.

QUALITY STATEMENT

Our continued commitment to product excellence and accreditation to ISO 9001:2000 throughout the group ensures unequalled customer satisfaction and is our 'Seal of Excellence'.



Stafford Bridge Doors Limited, Bedford Road, Pavenham, Bedfordshire, MK43 7PS, United Kingdom

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BLACKWATCH

Security Ventilation Louvre

Independently tested and certificated to LPS 1175 Security Rating 4

Typical Applications:

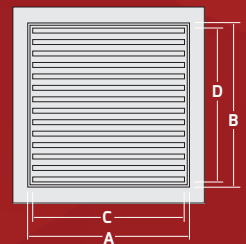
- Server Rooms
- Generator Rooms
- Air Conditioning Systems
- Sub Stations
- Chemical Storage
- Nuclear Power Stations

Technical information:

- Construction - Heavy duty steel.
- Tested Size - 1,000mm x 1,000mm.
- Finish - as standard powder coated Grey/White leatherette or alternatively in a colour of your choice.

Panel sizes:

| Width (mm) 'A' | Height (mm) 'B' | Louvre Width (mm) 'C' | Louvre Height (mm) 'D' | Air Flow % |
|----------------|-----------------|-----------------------|------------------------|------------|
| 300 | 300 | 244 | 220 | 30% |
| 600 | 600 | 544 | 540 | 31% |
| 1000 | 1000 | 944 | 900 | 32% |



Air flow percentages are rounded down to the nearest whole number. Airflow calculations should be considered as a guide only.

600mm x 600mm (0.6m x 0.6m) unit:

Louvre area: 544mm x 540mm = 0.544m x 0.540m = 0.29376m²

Gaps between blades: 13 of 0.544 x 0.01326 = 13 of 0.0072134 = 0.0937742m²

Free air flow percentage: $\frac{0.0937742}{0.2937600} \times 100 = 31\%$ (rounded down to nearest whole number)

Note: The value on the examples is based on air figure constant and does not include any type of mesh.

Pressure drop across louvre as a function of approaching flow velocity (high flow velocities).

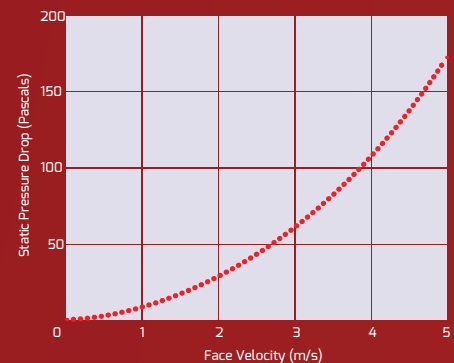
Using Bernoulli's equation, it can be shown that for a parallel duct system that exhausts into, or takes air from the atmosphere, $\Delta p/q = 1 + \Delta P/q$.

Total non-dimensional static pressure drop for 0.2m/s flow rate, $\Delta p/q = 1 + \Delta P/q = 1 + 6.71 + 3.02 = 10.73$

Louvre | Slotted plate

Hence the static pressure drop $\Delta p = 10.73 \times (\frac{1}{2} \times 1.2 \times 0.2^2) = 0.26 \text{ Pa}$.

AIR FLOW DYNAMIC CALCULATIONS AVAILABLE ON REQUEST



Optional enhancements:

- Accelerant Protection - Internal stainless steel mesh shield with bevelled run out.
- Vibration Alarm - sensor connected to louvre blade.

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Security Ventilation Louvre

High performance ventilation louvre



Typical Applications:

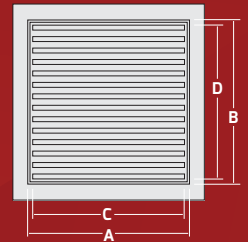
- Server Rooms
- Generator Rooms
- Air Conditioning Systems
- Sub Stations
- Chemical Storage
- Nuclear Power Stations

Technical information:

- Construction - Heavy duty steel or stainless steel.
- With anti drill and anti cutting back plate detail.
- Sandwich style fixing detail.
- Tested Size - 1,000mm x 1,000mm.
- Finish - as standard powder coated Grey/White leatherette or alternatively in a colour of your choice.

Panel sizes:

| Width (mm) 'A' | Height (mm) 'B' | Louvre Width (mm) 'C' | Louvre Height (mm) 'D' | Air Flow % |
|----------------|-----------------|-----------------------|------------------------|------------|
| 300 | 300 | 244 | 220 | 20% |
| 600 | 600 | 544 | 540 | 30% |
| 1000 | 1000 | 944 | 900 | 32% |



Air flow percentages are rounded down to the nearest whole number.
Airflow calculations should be considered as a guide only.

600mm x 600mm (0.6m x 0.6m) unit:

Louvre area: 544mm x 540mm = 0.544m x 0.540m = 0.29376m²

Gaps between blades: 11 of 0.544 x 0.01476 = 11 of 0.0080294 = 0.0883234m²

Free air flow percentage: $\frac{0.0883234}{0.2937600} \times 100$

=30% (rounded down to nearest whole number)

Note: The value on the examples is based on air figure constant and does not include any type of mesh.

**AIR FLOW DYNAMIC CALCULATIONS
AVAILABLE ON REQUEST**

Optional enhancements:

- Accelerant Protection - Internal stainless steel mesh shield with bevelled run out.
- Vibration Alarm - sensor connected to louvre blade.
- Covert fixings.

COLDSTREAM

CPNI

Centre for the Protection
of National Infrastructure

Approved by UK Government and, for single contract CPNI

Security Level Louvre High performance ventilation louvre

Typical Applications:

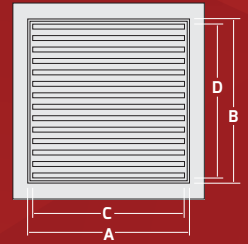
- Server Rooms
- Generator Rooms
- Air Conditioning Systems
- Sub Stations
- Chemical Storage
- Nuclear Power Stations

Technical information:

- Construction - Heavy duty steel or stainless steel.
- Tested Size - 1,000mm x 1,000mm.
- Finish - as standard powder coated Grey/White leatherette or alternatively in a colour of your choice.

Panel sizes:

| Width (mm) 'A' | Height (mm) 'B' | Louvre Width (mm) 'C' | Louvre Height (mm) 'D' | Air Flow % |
|----------------|-----------------|-----------------------|------------------------|------------|
| 300 | 300 | 244 | 220 | 29% |
| 600 | 600 | 544 | 540 | 30% |
| 1000 | 1000 | 944 | 900 | 31% |



Air flow percentages are rounded down to the nearest whole number.
Airflow calculations should be considered as a guide only.

600mm x 600mm (0.6m x 0.6m) unit:

Louvre area: 544mm x 540mm = 0.544m x 0.540m = 0.29376m²

Gaps between blades:
 32 of 0.168 x 0.01326 = 32 of 0.0022276 = 0.0712832m²
 14 of 0.074 x 0.01326 = 14 of 0.0009812 = 0.0137368m²
 03 of 0.168 x 0.00791 = 03 of 0.0013288 = 0.0039864m²
 0.0712832m² + 0.0137368m² + 0.0039864m² = 0.0890064m²

Free air flow percentage: $\frac{0.0937742}{0.2937600} \times 100$
 = 31% (rounded down to nearest whole number)

Note: The value on the examples is based on air figure constant and does not include any type of mesh.

**AIR FLOW DYNAMIC CALCULATIONS
AVAILABLE ON REQUEST**

Optional enhancements:

- Accelerant Protection - Internal stainless steel mesh shield with bevelled run out.
- Vibration Alarm - sensor connected to louvre blade.
- Covert fixings.

SECURE ROOM

Anti-ligature Ventilation Louvre

High performance ventilation louvre designed and approved for use in Special Hospitals where there is a ligature risk.

Typical Applications:

- Special hospitals
- Seclusion rooms
- Prisons

Technical information:

- Heavy duty steel construction.
- Vanes fully welded top and bottom.
- Flange fixing plate securely fitted to wall fabric.
- Pin-torx security screw fixing of the louvre to the flange fixing plate.
- Wall aperture size 380mm x 380mm.
- Finish - powder coated cream gloss as standard, other colours available, by request.

Panel sizes:

| Louvre Width (mm) 'A' | Louvre Width (mm) 'B' | Louvre Height (mm) 'C' | Air Flow % |
|-----------------------|-----------------------|------------------------|------------|
| 300 | 300 | 244 | 20% |

Air flow percentages are rounded down to the nearest whole number. Airflow calculations should be considered as a guide only.

380mm x 380mm (0.38m x 0.38m) unit:

Louvre area: Area of a trapezium = $\frac{1}{2} \times h \times (a + b) = 0.5 \times 0.340m \times (0.280m + 0.352598m) = 0.1075417m^2$

Area covered: Centre column area = $0.040m \times 0.340m = 0.0136m^2$

Blades area = 14 of $0.003m \times 0.340m = 0.01428m^2$

Angled shelf area = 2 of $0.016823m \times 0.156299m = 0.0052588m^2$

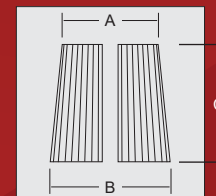
Total area covered = $0.0331388m^2$

Louvre area - Total area covered = Gaps between blades. $0.1075417m^2 - 0.0331388m^2 = 0.0744029m^2$

Free air flow percentage: $\frac{0.0883234}{0.2937600} \times 100$

=69% (rounded down to nearest whole number)

Note: The value on the examples is based on air figure constant and does not include any type of mesh.



AIR FLOW DYNAMIC CALCULATIONS AVAILABLE ON REQUEST

Optional enhancements:

- Accelerant Protection - Internal stainless steel mesh shield with bevelled run out.
- Vibration Alarm - sensor connected to louvre blade.
- Covert fixings.