

Acoustic Louvres Type LAAC 30 & LAAC 15

Usage

EMTEC LAAC 15 and LAAC 30 Acoustic Louvres are external weather louvres with acoustically absorbent blade elements specifically designed to reduce the level of noise passing through the opening into which the louvre is mounted.

The aerodynamic shape of the individual blades minimises the resistance to airflow and the incorporation of water traps ensures that rain ingress is effectively eliminated.



EMTEC LAAC 15 and LAAC 30 Acoustic Louvres can be installed as individual units or by bolting more than one unit together openings of any size can be accommodated. Each louvre has a robust outer framework which acts as vertical or horizontal mullions when several units are fixed together. If a continuous blade effect is preferred this can also be supplied.

The main uses of EMTEC Acoustic Louvres are in the control of mechanical fan noise when used as the termination of ducted air systems. Both exhaust air outlets and fresh air intakes can be fitted with EMTEC acoustic louvres. EMTEC Acoustic Louvres can also be used as plantroom ventilation louvres in order to attenuate general plant noise and as general purpose ventilation louvres in order to reduce external aircraft or traffic noise. In all these applications the louvres are normally built into structural openings and a number of alternative fixing arrangements can be supplied.

EMTEC Acoustic Louvres can be used as screens around equipment such as chillers, cooling towers or condensing units where an acoustic barrier is required and large volume airflows must be accommodated. In this application EMTEC Acoustic Louvres may be supplied complete with corner units, supporting steelwork, doors and dummy sections in order to form a complete self-contained structure. It is advisable that such applications be discussed with an EMTEC engineer who will be pleased to assist you in the formulation of a detailed design layout.

Construction

Standard EMTEC LAAC 15 and LAAC 30 Acoustic Louvres are manufactured from high quality galvanized sheet steel. The louvre frame and the upper surface of the blades are formed from plain sheet and the under side of the blades from perforated sheet. The acoustic media contained within the louvre blades is inert, non-flammable mineral wool and where a birdscreen is fitted to the rear face of the louvre this is made from galvanized steel wire mesh having 12mm spacings.

EMTEC LAAC 15 and LAAC 30 Acoustic Louvres can be supplied in aluminium, stainless steel, plastic coated steel or galvanized steel polyester powder coated to compliment the architectural design of the final installation.

External or internal angle flanges can be supplied to fix louvres into structural openings and are normally manufactured from the same material as the louvre itself. Both types of acoustic louvre can be supplied with such flanges which can be pre-drilled to allow fixing to the adjacent structure. The louvre casing can alternatively be pre-drilled through the sides of the unit to allow louvres to be bolted together or when units are to be fixed into a timber frame. Fixing details of individual louvres are normally supplied at the time of order but can be furnished on request.

The height of the smallest EMTEC LAAC 15 Acoustic Louvre is 300mm and larger sizes increase in height multiples of 105mm (i.e: 405, 510, 615mm etc.). The height of the smallest EMTEC LAAC 30 Acoustic Louvre is 650mm and larger sizes increase in height by multiples of 225mm (i.e: 875, 1100, 1325mm etc.) up to a maximum height for a single louvre unit of 2450mm.

All EMTEC LAAC 15 Acoustic Louvres have a standard depth of 150mm. All EMTEC LAAC 30 Acoustic Louvres have a standard depth of 300mm. Widths are made to suit customers requirements up to a maximum width for a single louvre unit of 2400mm.

Typical Specification

Into Builderswork Opening:

EMTEC LAAC 15 Acoustic Louvres shall be installed in the positions indicated on the drawings to maintain the acoustic criteria shown in the specification. The acoustic louvres shall be constructed from galvanized steel and be supplied complete with external mounting flanges and birdscreens fixed to the rear face of the louvres. The louvres will be polyester powder coated to a standard, non-metallic, BS4800 or RAL colour.

As Acoustic Screen:

A screen of EMTEC LAAC 30 Acoustic Louvres shall be installed around the roof mounted chiller to a height of 2450mm. The screen shall be mounted on a pre-formed concrete plinth, 300mm high by 350mm wide, and supplied complete with dummy corner units, structural supports and a louvred access door. The louvres are to form a self-supporting structure and the external finish will be black plastic coated steel.

Acoustic Performance

Acoustic Louvre

Sound Reduction Index in dB at Octave band centre frequencies (Hz)

	63	125	250	500	1k	2k	4k	8k
LAAC 30 & LAAC 15	5	7	9	12	18	19	15	15

Aerodynamic Performance

It may be necessary to establish the correct size of acoustic louvre knowing that a certain pressure loss is required across the louvre for a given volume of air. In this case the face velocity of the louvre is read off the chart opposite and the louvre dimensions established from the formula:

$$\text{Airflow (Q)} = \text{Louvre Face Area (A}_l\text{)} \times \text{Louvre Face Velocity (V}_l\text{)}$$

Conversely, for a known opening size and airflow, the pressure loss across the louvre can be obtained from the chart opposite.

Selection Example:

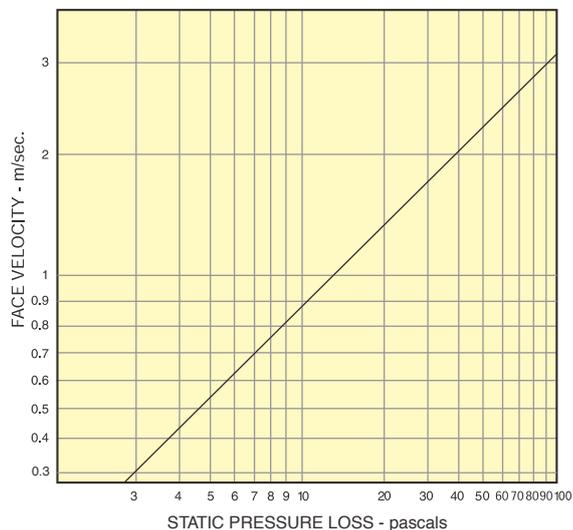
Assume the airflow is 5m³/sec and the structural opening is to be made approximately 2000mm wide by 1500mm high. From the formula above a louvre face velocity is established as

$$V_l = \frac{Q}{A_l} = \frac{5}{2 \times 1.5} = 1.666\text{m/sec.}$$

From the chart opposite this gives a pressure loss of 28 pascals. The exact louvre height nearest to 1500mm high is 1525mm which would give a final louvre selection as shown below.

LAAC 30 Acoustic Louvre - 2000mm wide x 1525mm high x 300mm deep.

PRESSURE LOSS CHART FOR EMTEC LAAC 30 & LAAC 15 ACOUSTIC LOUVRES



Physical Properties



LAAC 30 Acoustic Louvre.



LAAC 15 Acoustic Louvre.

TYPICAL BUILDERSWORK DETAILS

