Acoustic Cladding Systems WCAC 40 & WCAC 30

Usage

The noise level measured at any given point within a plant enclosure or plantroom will be made up of the direct noise level from the enclosed machinery and the reverberant noise level which reflects off the walls of the enclosure. If the enclosure is hard faced, concrete or of brick or blockwork construction, then the reflected reverberant noise level can make a considerable additional contribution to the final overall noise level in the plant area. By fitting sufficient EMTEC WCAC Acoustic Cladding to plant space enclosures it is possible to reduce the reverberant element of the sound pressure level to close to that of the direct component only, thus reducing the final noise level within the plant room.

The EMTEC WCAC Acoustic Cladding System is therefore used to introduce acoustic absorption into reverberant spaces in order to reduce the reverberation time of the contained volume. The EMTEC WCAC Acoustic Cladding Systems are mechanically robust as they are fabricated from either galvanised steel or aluminium components and therefore offer hard wearing protection to the mineral wool absorptive media.

The EMTEC WCAC Acoustic Cladding Systems are used where large items of plant are contained within a plantroom or open topped plant area and the enclosing structure is of hard faced material such as brick, blockwork or plastered walls. The EMTEC WCAC Acoustic Cladding System can be fixed to these surfaces to form an absorbent finish to the walls of the enclosure.

For further information or to discuss your particular requirements it is advisable to consult an EMTEC engineer who will assist in the development of a cost effective design that meets the acoustic criteria.

Construction & Physical Properties

Two types of EMTEC WCAC Acoustic Cladding Systems are available:

WCAC 40 - The EMTEC WCAC 40 Acoustic Cladding System is made up of 100mm deep mineral wool slabs retained behind a framework of channels, Z-section rails and perforated metal trays.

WCAC 30 - The EMTEC WCAC 30 Acoustic Cladding System is made up of 50mm deep mineral wool slabs retained behind a framework of channels, Z-section rails and perforated metal trays.

Standard EMTEC WCAC 40 and WCAC 30 Acoustic Cladding Systems are fabricated from 1.2mm pre-galvanised sheet steel or 1.6mm aluminium extrusions and the punched perforated protection can either be supplied in 0.7mm thick, 3mm hole 32% free-area galvanised steel or 1.2mm thick, 3mm hole 40% free-area aluminium.

The acoustic media contained in the panels is inert, water repellent, non-hygroscopic and non-combustible. The acoustic media is protected with a non-woven mineral tissue behind the perforated inner face to prevent particle migration occurring.

EMTEC WCAC 40 and WCAC 30 Acoustic Cladding Systems can be supplied with external surfaces self-colour or the external surfaces can be polyester powder coated to a standard RAL colour.

EMTEC PAC.30 & PAC.40 Acoustic Panel properties:

WCAC 40 standard depth (thickness)	- 100mm
WCAC 30 standard depth (thickness)	- 50mm
WCAC 40 typical mass per unit area	- 15kg/m^2
WCAC 30 typical mass per unit area	- 12kg/m^2

EMTEC WCAC Acoustic Cladding Systems can be used inside or outside but if external use is envisaged then drain holes need to be incorporated into the rails to ensure any moisture that enters the cladding panels is allowed to dissipate.

Typical Specification Examples

In order to lower the reverberant field within the plant enclosure the walls and roof shall be covered in EMTEC WCAC 40 Acoustic Cladding Panels. The panels shall be arranged so as to cover at least 75% of the total surface area of the walls and roof of the plant enclosure. The panels shall be finished externally in a polyester powder coating to a standard RAL colour.

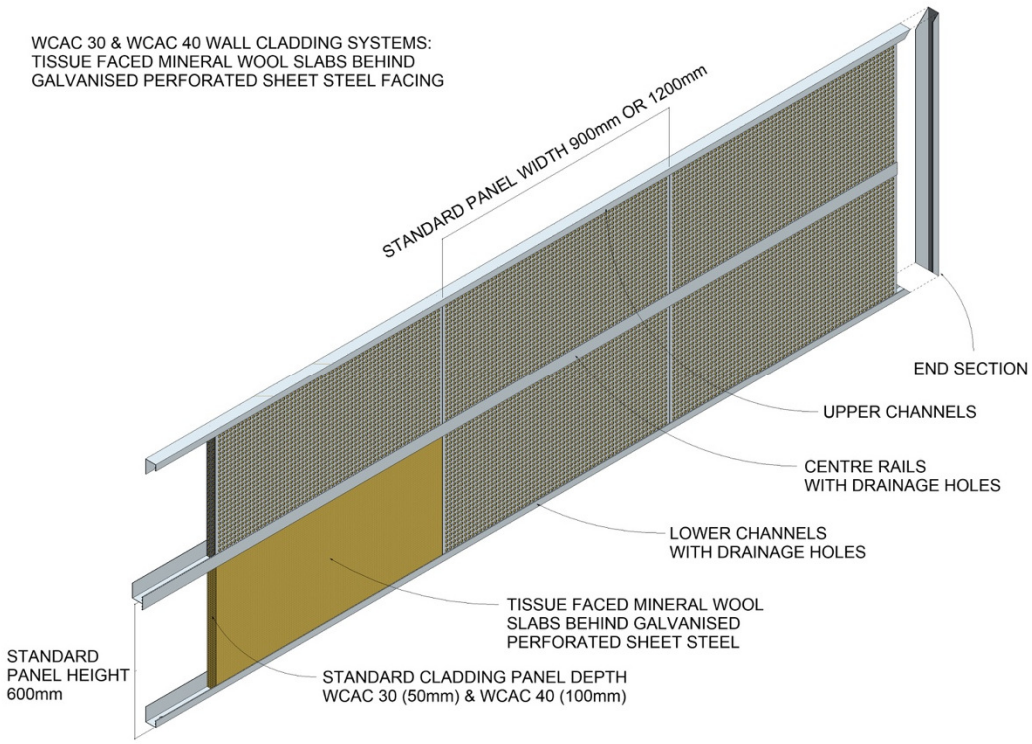
Acoustic Performance – Acoustic Absorption

Emtec's type WCAC Acoustic Cladding Systems incorporate 45kg/m^3 mineral fibre slabs manufactured from long stranded mineral fibres that are bonded into slabs. Emtec do not manufacture this acoustic media, but use products from reputable manufacturers of mineral wool products. The following figures have been extrapolated from manufacturers' published literature and are issued for design guidance.

Acoustic Panel Type	**Absorption Coefficient of Panel's Internal Surface at Octave Band Centre Frequencies (Hz)**								
	63	125	250	500	1k	2k	4k	8k	SAA
WCAC 40	0.25	0.55	0.90	0.95	0.95	0.95	0.85	0.80	0.97
WCAC 30	0.15	0.20	0.55	0.85	0.90	0.90	0.80	0.70	0.87

Design, Manufacture and Installation

Emtec Products Ltd. offer a comprehensive design service and it is advisable to contact us at an early stage in the Plan of Work so we can collaborate in the development of a design that meets your particular acoustic criteria. It is usual for WCAC Acoustic Cladding to be installed after the walls and ceilings have been built but before any other wall or ceiling mounted equipment has been fitted. Attention to detail is paramount, especially when considering all the usual items that might need to be mounted to the walls and ceiling such as lighting, switches, plugs, fire alarms, cables, conduit, pipe supports etc. Complete Acoustic Wall Cladding Systems can be designed, manufactured and installed by Emtec Products Ltd. If items will need to be fixed to the Acoustic Cladding then point loads or uniformly distributed loads can be considered and any necessary structural enhancements incorporated in the design. Our site management and installation teams are experienced in delivering projects in all sectors, working on developments that include tall buildings, airports, railway systems, hotels, hospitals and schools, as well as domestic projects for private clients.



Emtec Products Ltd., Unit L, Turnpike Way, High Wycombe, HP12 3TF
Tel: 020 8848 3031 www.emtecproducts.co.uk