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Specifications for

ALPHA*fon* MB

Metal Noise Barriers

ALPHA*fon*

Sound Absorption & Noise Insulation Acoustic Panels

ALPHA*fon*-MB

1. General

A. Acoustic metal wall panels shall be insulated, double-wall construction and shall be provided as indicated on drawings by a recognized manufacturer with published standards of construction and technical performance. The manufacturer shall provide a standard factory fabricated panel system and components for at least 10 years. Performance of the fabricated and installed system shall conform to all specifications listed herein.

B. Sound Absorbing acoustical panel for wall, ceiling or outdoor installation shall be accomplished by using ALPHAfon MB® Metal Acoustic panels. The manufacturer shall have a complete engineered system of components available including panels, mounting brackets and adequate accessories as required to construct a complete system as designed.

C. Panels and components shall be supplied in ready to use modules procured by ALPHA ACOUSTIKI S.A..

2. Design requirements

Acoustical panels shall be modular and demountable. All panel connections shall allow easy disassembly and reassembly with no degradation of acoustical or mechanical performance. Perfect acoustic sealing between panels should be achieved. Horizontal interlocking tongue-in-groove panel design available for use as outdoor noise barriers. Modules of like type are fully interchangeable providing the greatest degree of design flexibility.

3. Materials

A. All acoustic panels and their components shall be factory fabricated by a certified organization.

B: Steel: Metal panels shall be galvanized coated. Polyester baked powder coat finish must be applicable. The default color shall be RAL 9002 unless otherwise stated before hard for aesthetic reasons.

C: Metal Profiles: All metal profiles used in the panel's installation shall be galvanized coated unless other additional painting color is preferred for aesthetic reasons.

4. Construction

A. Panel Size: 1m standard panel width x 2 or 2.5m maximum length.

B. Module Thickness: 50mm standard thickness unless otherwise required.

C: Panel Body: Shall be one-piece formed industrially made construction. Spotwelded or otherwise assembled panel shells are not acceptable.

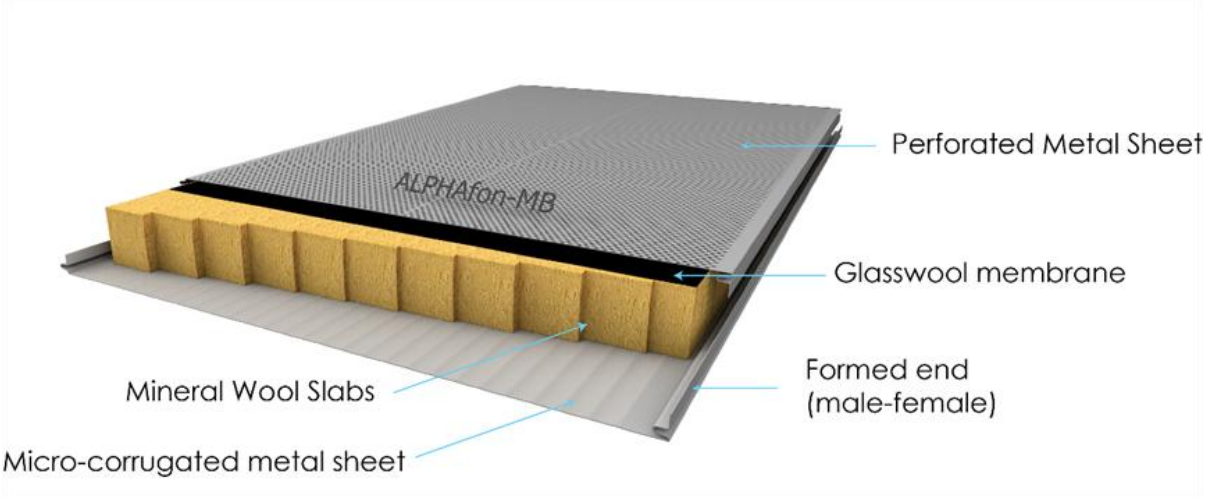
Acoustic panels must be made from a galvanized metal sheet at the external side and perforated metal sheet at the internal side with at least 0.5mm thickness.

The top and the bottom side of the metal barrier are properly formed (projection - cavity) in order to achieve perfect sound sealing but also to improve its bending strength.

Internally it is filled with sound-absorbing material, mineral wool, water repellent, with appropriate density, covered with thin glasswool cloth.

The metal noise barrier has great durability against time and ultraviolet radiation. It is water repellent, consists of incombustible materials and it can be easily replaced if needed.

The standard color in both sides is RAL 9002 but both sides can be painted in any RAL Color to match different project requirements.



5. Finish

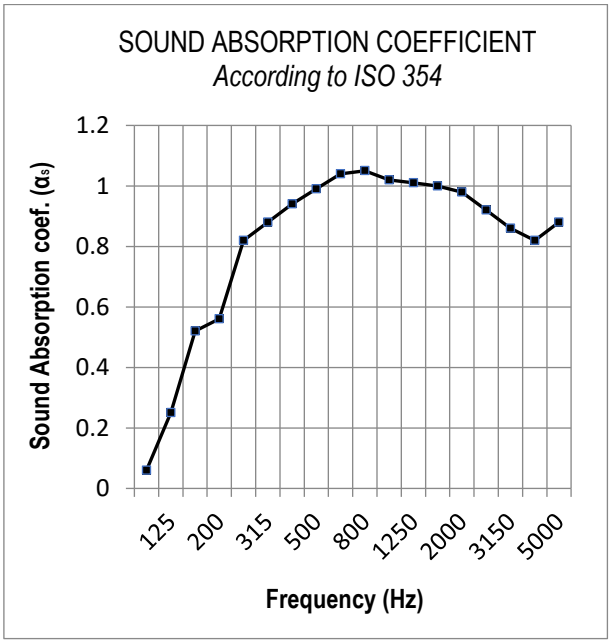
A. All components may be supplied either unpainted in EG or factory finished using manufacturer's standard paint coating systems.

B. When factory painting is required all components shall be properly cleaned and degreased, and be free of blemishes prior to applying the coating system.

C. Polyester baked powder coat finish is preferable.

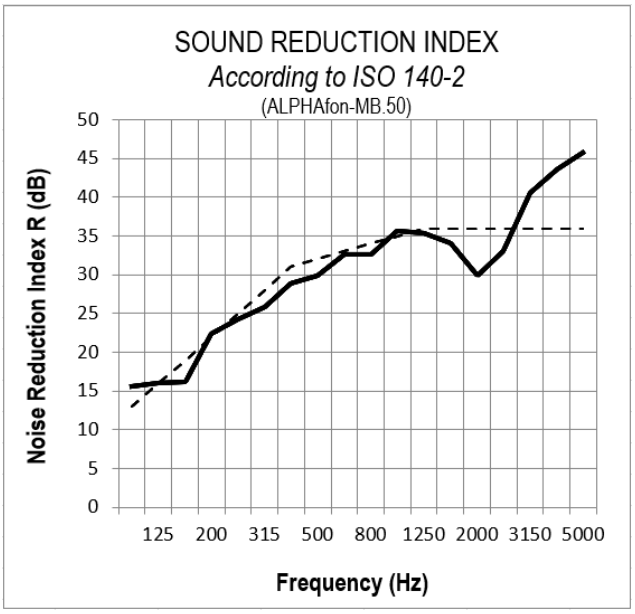
6. Panel Acoustical Performance

A. All metal faced acoustical panels shall have the following Sound absorption Characteristics as tested and documented according to ISO 354.



The Noise Insulation test data must be obtained in accordance to EN ISO 140.3 Acoustics – Measurement of Sound insulation in buildings and of building elements & rated the sound insulation in buildings elements according to EN ISO 717.1. The Sound Absorption coefficient should be measured in a reverberant chamber in accordance with ISO 354.

Panels shall exhibit a minimum of $R_w \geq 32$ dB



7. Structural Integrity

Metal Noise barriers Soundproofing Wall Panels components are designed to be structurally robust resulting in typically self-supporting structures that meet all normal use codes. For applications subject to increased load bearing capabilities such as outdoor structures subject to wind and snow loads, seismic applications, or for very large expanse or unusual structures an integrated structural support system compatible with the project requirements approved by a structural engineer.

Column and base plates shall be supplied as factory welded assemblies by the barrier wall system manufacturer.

Under the indicated loading conditions, the entire barrier panel system shall be self-supporting and /or will be supported as per the specifications. The installer shall erect all structural members in strict accordance with the manufacturer's piece-marked installation drawings details.

MAXIMUM UNIFORMLY DISTRIBUTED LOAD (daN/m^2) –DEFLECTION ≤1/100 L										
Thickness	Supports	Pitch "L" in meters between the supports								
		1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00
50	0.5+0.6	149	106	68	47	35	27	21	17	14	12
60	0.5+0.6	150	102	65	45	33	26	20	16	14	11
80	0.5+0.6	231	137	87	61	45	34	27	22	18	15
100	0.5+0.6	250	183	117	81	60	46	36	29	24	20

8. <u>Manufacturer experience and certifications</u>

A. The manufacturer shall have designed and produced a standard pre-engineered system meeting the specifications stated herein for a minimum of 10 years.
B. The contractor that will undertake the installation should have experience in at least 3 similar projects.
C. The manufacturer warrants that when the panels and components are assembled in strict accordance with its specifications and instructions, that the resulting completed structure shall meet the intended mechanical and acoustical performance specified for the project.
D. The company should have ISO 9001:2008 quality assurance certification.

9. Fire performance

The panels manufacturer shall provide certified reaction to fire of A2s1d0 or higher, according to BS EN 13501.

10. Insulation

The barrier manufacturer shall provide test data for insulation properties. The panels must have at least thermal conductivity coefficient $\lambda = 0.038$ W / mK.

12. Submittals

The barrier wall system manufacturer shall provide complete piece marked installation drawings corresponding to all factory piece-marked barrier wall system components.

13. Manufacturer

All items shall be provided by ALPHA Acoustiki S.A., Athens Greece with the trade name ALPHA*fon*-MB or authorized distributor.

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