SOUNDSTEEL™ MPM

constrained layer viscoelastic steel sandwich laminate

Soundsteel® MPM is a fully damped steel composite comprising two outer layers of steel, laminated together using a layer of a viscoelastic polymer, to form the laminate.

Using the "constrained layer" principle, the function of the viscoelastic interlayer is to damp disturbing structure borne sound.

Soundsteel MPM is free from resonance and coincidence phenomena which often detract from the performance of other acoustic insulation materials.

Soundsteel MPM can be used to fabricate acoustic doors, laundry and garbage chutes, ducts, enclosures, extraction hoods, and automotive components such as valve covers & oil sumps. Because of the steel base material, Soundsteel MPM can be used in severe environments where other damping materials cannot withstand.

The standard product is supplied with an electro-galvanised finish, and available in various metals and surface finishes. Using electro-galvanised, cold-rolled, low carbon steel allows the laminate to be used as a structural material in equipment construction.

Soundsteel MPM is also available with a choice 304 and 316 stainless steel grades, with surface finish of either polished, brushed or polyethylene (PE) coating for additional scratch resistance. When exposed to harsh environments, SS316 offers considerably high heat and corrosion resistance when compared to other grades of stainless steels.

Note: Powder-coated panels should not be bent. Bending should be completed on plain panels and painted on site. We recommend conducting trials on small sample pieces first.

SPECIFICATIONS

Available	Sheet size: 1220 mm x 2440 mm All dimensions are nominal.; Other sizes and shapes available on request.

applications

- Engine rooms for high speed craft/vessels
- Machinery and equipment, compressor and generator set enclosures
- Acoustic hoods and chutes
- Conveyor systems
- Crushers / Granulators
- Coin counters
- Air conditioner casings
- Automotive sumps and panels
- Acoustic wall panels and doors

features

- Maximum damping for minimum thickness
- Complies to IMO FTP 2010 - low spread of flame
- Can be used as part of the "main structure"
- Cut, form and join just like plain aluminium
- Insulates against air-borne sound, impact and vibration
- Able to be painted & powder coated - best results from the manufacturer for powder coating
- Effective "in-structure damping"
- No need for external damping materials
- Reduces or eliminates need for use of external isolators
- Lightweight damped structures
- Broad temperature range (-40ºC to 110ºC)
- Able to fabricate using conventional machine shop tools
- Available with a choice of polished, electro-galvanised, brushed or polyethylene (PE) coated surface finishes
- Able to be die formed into complex shapes
- Various configurations of metal thicknesses available from 1mm - 6mm.

PRODUCT SPECIFICATIONS

Viscoelastc layer	Transmission loss/ STC	Standard thickness (mm)	Sheet size (mm)	Recommended max service temp	Surface density (kg/m^2)
Acrylic	29*	1.2	1220 x 2440	110˚C	8.6
	30	1.6			11.7
	32*	2.0			14.0

All dimensions are nominal.; Other sizes and shapes available on request.
**Results shown have been calculated using transmission loss software. Base data was compiled from several years of acoustic testing. The software uses well known acoustic formula. Values given are within 1-2 dB of actual test data. Variation will always occur in test data and predictions. This is due to variations in material properties, different methods and standards.*

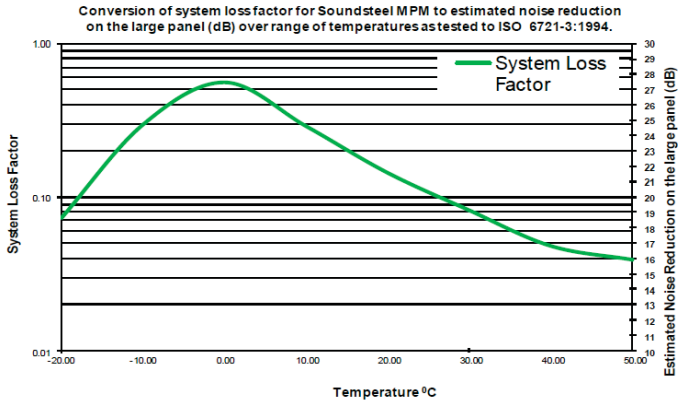
MATERIAL PROPERTIES

Test method	Index	Report no.	Results	Description
AS 1530.1 1994*	Combustible/Non-Combustible	Report No. FNC 291	Non combustible	Combustibility test for materials

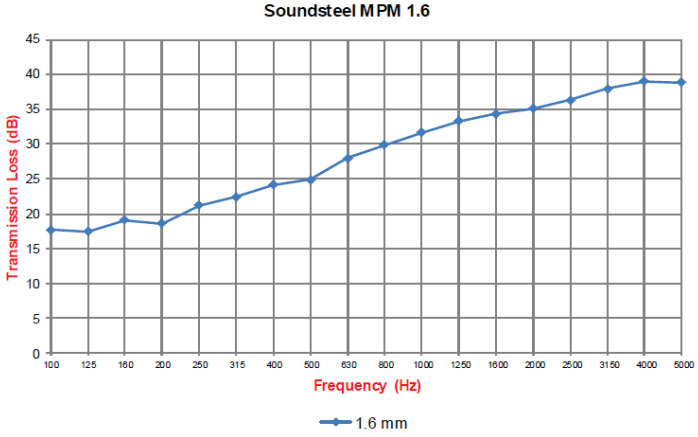
ACOUSTIC PERFORMANCE

Temperature ⁰C	System loss factor
-20	0.97
-10	0.30
0	0.56
10	0.29
20	0.14
30	0.08
40	0.05
50	0.04
Maximum estimated noise reduction (dB)	27.5

System loss factor is a dimensionless figure representing how well a particular system is damped. Standard ASTM E756-23/ISO 6721-3 is used to test for system loss factor. A system is a combination of the substrate, be it steel, aluminium or fibreglass and the damping material itself. System loss factor is system specific, hence the composition of the tested system needs to be provided.



System Loss Factor (Tested to ISO 6721-3:1994 - Report No. 25111 -Mk1)



Transmission Loss (Tested to AS1191 - NAL Report No. ATF-142)

Frequency (Hz)	1.6 mm
100	17.7
125	17.4
160	19.1
200	18.6
250	21.2
315	22.4
400	24.1
500	24.9
630	28.0
800	29.9
1000	31.7
1250	33.3
1600	34.4
2000	35.1
2500	36.3
3150	38.0
4000	39.0
5000	38.9
STC	30
R_w	30

For further information and contact details, please visit our website pyroteknc.com