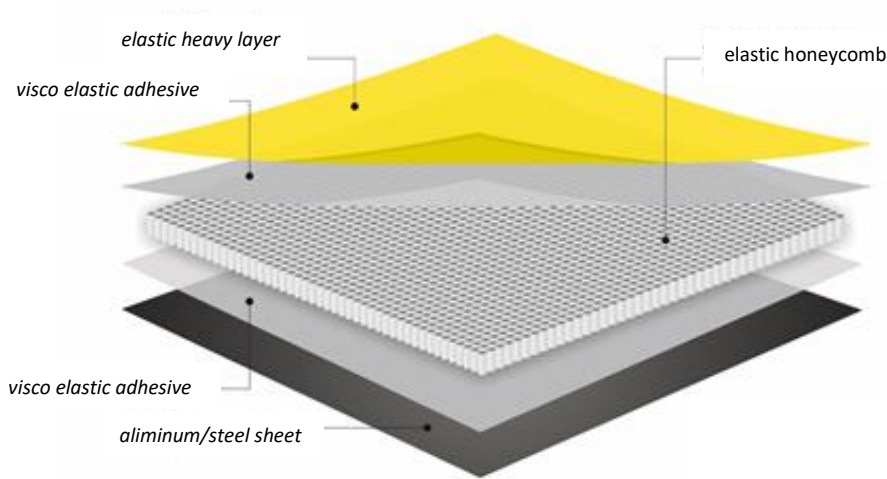


Doküman Nu. : TDS-02  
Yayın Tarihi : 1.06.2023  
Revizyon Nu. : 00  
Revizyon Tarihi : -

## Multi-Layer Damping Tile (MDT<sup>®</sup>) STEEL & ALUMINUM

### Description

MDT<sup>®</sup> is a multi-layer air borne and structure borne noise damping material which significantly reduces the vibrations and noise levels in steel, aluminum, fiber-reinforced plastics and carbon composite surfaces. MDT<sup>®</sup> is specifically designed to provide excellent and secure damping, flexibility, lightweight and very quick installation.



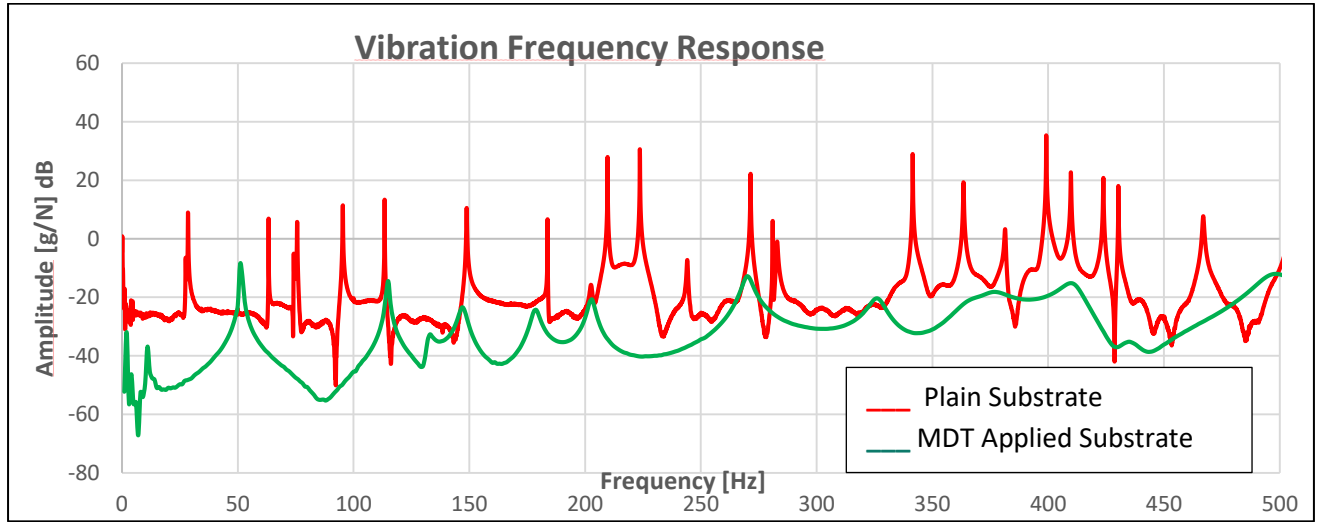
MDT<sup>®</sup> consists of a combination of a honeycomb attached to a thin layer of aluminum or steel with a viscoelastic adhesive and a self-adhesive high density polymer-based heavy layer on top. MDT<sup>®</sup> is designed as self-adhesive for easy and fast application.

MDT<sup>®</sup> is ideal for damping low frequency noise and vibrations. It should be applied to at least 85% of the surface to significantly reduce vibrations and noise levels.

Doküman Nu. : TDS-02  
 Yayın Tarihi : 1.06.2023  
 Revizyon Nu. : 00  
 Revizyon Tarihi : -

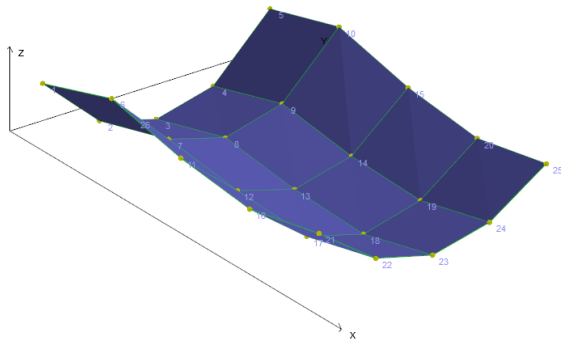
## Acoustic Properties

When examined Vibration Frequency Response of plain surface versus MDT applied surface, the vibrations are much more damped on the panel with MDT applied at all frequencies.



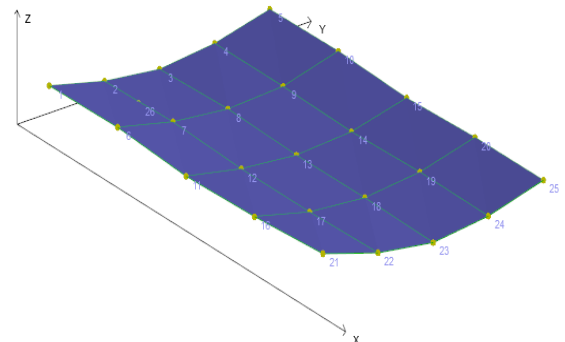
### PLAIN SURFACE

Natural Frequency : 75,6 Hz.  
 Critical Damping Ratio % : 0,03



### MDT LAYERED SURFACE

Natural Frequency : 73,1 Hz.  
 Critical Damping Ratio % : 1,07



Doküman Nu. : TDS-02  
 Yayın Tarihi : 1.06.2023  
 Revizyon Nu. : 00  
 Revizyon Tarihi : -

The damping ratio difference between the plain panel and the MDT layered panel in the first 10 natural frequencies is shown in the table below;

#### PLAIN SURFACE

Mode Nu.	Natural Frequency [Hz]	Critical Damping Ratio(%)
1	63.3	0.020
2	75.6	0.030
3	95.3	0.030
4	113.4	0.013
5	138.5	0.165
6	148.8	0.056
7	209.7	0.010
8	223.7	0.009
9	244.2	0.101
10	271.5	0.009

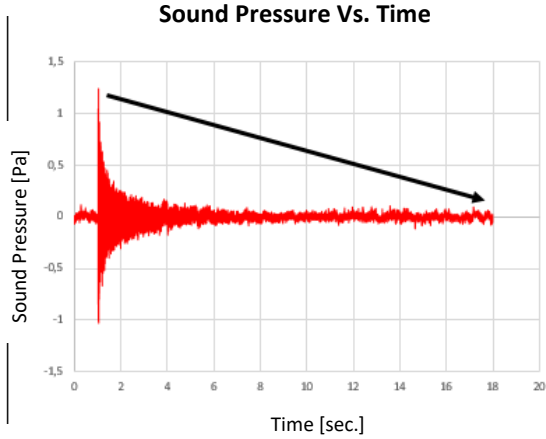
#### MDT LAYERED SURFACE

Mode Nu.	Natural Frequency [Hz]	Critical Damping Ratio(%)
1	56.9	0.432
2	73.1	1.073
3	88.7	0.975
4	100.9	0.696
5	134.5	0.783
6	162.6	1.049
7	187.6	1.754
8	204.9	1.154
9	216.7	1.510
10	247.2	1.501

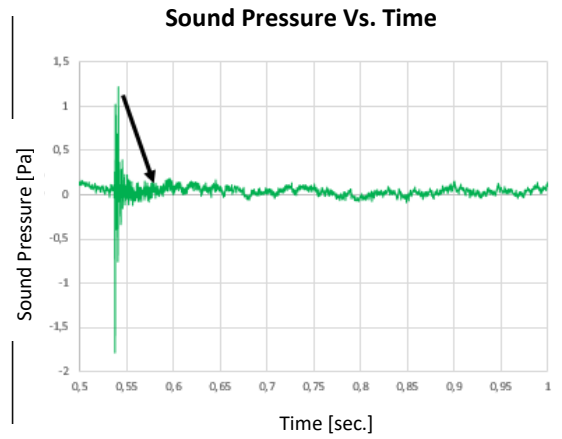
The graphs below show damping characteristic of the sound pressure signal between plain surfaces and MDT applied surfaces. It is seen that the airborne noise is damped more quickly on MDT applied surfaces than plain surfaces.

Doküman Nu. : TDS-02  
 Yayın Tarihi : 1.06.2023  
 Revizyon Nu. : 00  
 Revizyon Tarihi : -

### PLAIN SURFACE



### MDT LAYERED



## Technical Data

### MDT Properties

Material	Aluminum EN AW 1050 Steel Coated Steel
Dimensions	200 x 300 mm (+/- 5) Other dimensions are available on request
Thickness	6,3 mm (steel) (0.5mm. Steel+3.6 Honeycomb+1.7 Polymer Layer+0.5 Viscoelastic Layer) 6,8 mm (aluminum) (1mm. Aluminum+3.6 Honeycomb+1.7 Polymer Layer+0.5 Viscoelastic Layer) (+/- %2)
Coating/Color	Plain
Weight	9,6 kg/m <sup>2</sup> (Steel) 8,5 kg/m <sup>2</sup> (Aluminum)

## Applications and Features

- ✚ Low frequency vibration damping of any steel, aluminum carbon composite substrate surface
- ✚ Insulates against air-borne and structural sound, impact and vibration
- ✚ A good solution for weight and thickness sensitive applications
- ✚ Can be used for vibration damping of hull, bulkhead and deck of ships
- ✚ Easy installation due to its self-adhesive feature
- ✚ Can be cut and shaped easily.
- ✚ Can also be applied on rough surfaces due to its elastic feature

İstim Sanayi Sitesi / İstasyon Mah.  
 Yarış Çıkmazı Sk. No : 3 İç Kapı : 3  
 Tuzla / İstanbul / TÜRKİYE

Tel : +90 216 766 0620  
[sevket.s@noisedampingsolution.com](mailto:sevket.s@noisedampingsolution.com)  
[www.noisedampingsolution.com](http://www.noisedampingsolution.com)