





Silence must be heard

## DATA SHEET FOR SOUND TIGHT - STI SERIES

### **Test Component**

Sound Tight STI-306 & Sound Tight STI-612

### Test Requirement & Standards

Thickness, Specific Gravity, Hardness, Tensile Strength, Elongation, Compression, & Temperature Stability. As per ASTM D792, ISO 1183, ASTM D412, ISO 37, ASTM D395, ASTM D575, ASTM D2000 standards.

### **Observed Results**

Sr.No.	Description	Observed Value
01.	Polymer Content	NR/SBR
02.	Specific Gravity	1.9 ± 0.10 gm/cc
03.	Hardness	70 ± 5 Shore A
04.	Thickness	3mm & 6mm ± 0.30
05.	Tensile	18.5 kg/cm <sup>2</sup>
06.	Elongation	150%
07.	Temperature Stability	Up to 70 <sup>0</sup> Celsius
08.	Compression Set	82%
09.	Surface Finish	One Side Fabric Finish
		One Side Smooth
		Finish

<sup>\*</sup> These tests are carried out under laboratory conditions in the manufacturing facility, and are true to the best of our knowledge



## **INSTALLATION**

- Sound insulation for light constructions with sheet metal, plasterboard, bricks, plastic sheets, wood, HVAC ducting, pipes etc.
- Sound insulation for Applications like doors, floating floors, partition walls, machine enclosures, vehicle floors, etc.
- Vibration damping of metal sheets, plastic sheets, HVAC ducting, drain pipes, vehicle walls and floors, etc.
- Absorption of Low Frequency Sound Waves for specialised application as limp membranes / Bass Traps in Recording Studios, Cinema Halls, Home Theatres etc.

- Applied on any surface either flat or curved.
  - No special tools for handling & installation. •
- Can be cut in any size and shape with utility knife or scissor. •
- Can be applied with synthetic rubber adhesive or mechanical fixing. •



### **ADDITIONAL INFORMATION**

- This soundproofing material is produced from high-density elastomeric viscoelastic Natural / Neoprene / Blended Recycled Rubber
- Custom made premium fire resistant material with flame retardants can be requested on order. (Minimum Order Quantities will be applicable)
- Custom made premium fabric reinforced material can be requested on order. (Minimum Order Quantities will be applicable)
- Custom made premium sizes can be requested on order. (Minimum Order Quantities will be applicable)
- The material has minimum one sided matte finish surface to ensure strong adhesion using synthetic rubber adhesive on various application surfaces.

Sound Tight STI Series is purely an isolation & damping material.

Sound Tight STI series is not an absorptive material and hence is not rated for NRC.

Sound Tight STI Series should be used only where airborne isolation, impact isolation and vibration damping is required.

Sound Tight STI series is not a surface finish material; and hence should be used only as layers behind any finishing material in wall panelling or partitions.

### **Storage Norms:**

- Store in a cool dry place away from all sort of oils, acids & Alkalis, water and other liquids.
- Do not expose to direct sunlight. Store in a cool dry place.
- Use the material with FIFO (Fist In First Out) method.
- Store rolls in Vertical Orientation.
- Do not pile up rolls in horizontal state.
- Store between temperature 20°c & 40°c.

**Available in:** 1220mm x 2440mm Sheets.



#### The Automotive Research Association of India

(Research Institute of the Automotive Industry with Ministry of Heavy Industries & Public Enterprises, Govt. of India)

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#### **TEST REPORT ON** DETERMINATION OF AIRBORNE SOUND TRANSMISSION LOSS OF **SOUND TIGHT - STI 306 ELASTOMER MEMBRANE**

ULR-TC508521050000015F NVH/3100010965/2021-22/0015

1st October 2021

Sound & Acoustic Designs CUSTOMER NAME Ground Floor, Shop No 1-4,

Shikhar Apartment, Behind Sahakari Hat.,

Near Daxinamurti School, Bhavnagar - 364 002, Gujarat.

E-mail dated 15th September 2021 2.0 LETTER REF.

Test sample details given by customer is as TEST COMPONENT

Sound Tight 3.1 Brand Name

STI 306 Elastomer Membrane 3.2 Product name

2000 kg/m<sup>3</sup> Density 3.3 3 mm



Thickness

Sound & Acoustic Designs.

Sound Tight -STI 306 Elastomer Membrane



Measurement of sound transmission loss of above mentioned test sample as per ISO 10140-2 / ASTM E-90 and determination of sound transmission class (STC) as per ASTM E-413 and weighted sound reduction index Rw (C; Ctr) with spectrum adaptation terms as per ISO 717-1.

TEST PROCEDURE

The above mentioned test sample of size 1.2 m x 1 m was installed in the wall between two reverberation chambers and sealed all around at edges. Please refer figure 1 for test set up and mounting of system. The airborne sound transmission loss test was carried out three times on same system in a reverberation chambers as per ISO 10140-2 / ASTM E-90 standard and average value is reported at one-third octave frequency bands. These measurements were carried out at room temperature 25°C ± 1°C, humidity 65% and barometric pressure 935 mbar.

Page 1 of 4

An ISO 9001, ISO 14001, ISO 45001, ISO/IEC 27001 Certified and ISO/IEC 17025 Accredited Organization

Regd. Office: S. No. 102, Vetal Hill, Off Paud Road, | Tel.: +91-20-6762 1111, 3023 1111 Kothrud, Pune - 411 038 (India). P. B. No. 832, Pune - 411 004 (India

Fax: +91-20-6762 1104, 3023 1104

E-mail : director@araiindia.com, Website : www.araiindia.com | ARAI Regional Centre South (ARAI-RCS), Chennai

ARAI Homologation & Technology Centre (ARAI-HTC), Chakan ARAI Forging Industry Division (ARAI-FID), Chakan

ULR-TC508521050000015F NVH/3100010965/2021-22/0015

1st October 2021

#### 6.0 DATE OF EVALUATION

Test was carried out on above mentioned test sample on 30th September 2021 at NVH laboratory, ARAI-Pune.

#### INSTRUMENTATION

Sr. No.	Instrument Name	Type / Model No	Make	Calibrated on	Calibration due on
1	Multi-channel Data Acquisition System	3560 D	Bruel & Kjaer, Denmark	3-Aug-21	3-Aug-22
2	½" Random Incidence Microphone	378C20	PCB, USA	3-Aug-21	3-Aug-22
3	Power Amplifier	2716	Bruel & Kjaer, Denmark	Does not require separa calibration as it is driver by data acquisition syste	
4	Omni directional Sound source	Omni power 4296	Bruel & Kjaer, Denmark		
5	Reverberation Chambers	80 m³ and 110 m³	-	-	-

#### TEST RESULTS

Table 1 and Figure 2 shows the values and plot of airborne sound transmission loss of Sound Tight - STI 306 Elastomer Membrane of 2000 kg/m³ density and 3 mm thickness in the one-third octave frequency bands of 100 Hz to 8000 Hz, STC (sound transmission class) and Rw (C100-5000; Ctr100-5000) (weighted sound reduction index and spectrum adaptation terms).

#### CONCLUSIONS

The sound transmission class (STC) is calculated as per ASTM E- 413 and weighted sound reduction index with spectrum adaptation terms Rw (C100-5000; Ctr100-5000) is calculated as per ISO 717-1 for Sound Tight -STI 306 Elastomer Membrane of 2000 kg/m<sup>3</sup> density and 3 mm thickness 29 dB Sound transmission class (STC) Weighted sound reduction index with spectrum 29(0:-5) dB

Report Prepared By:

Reviewed By:

adaptation terms Rw (C100-5000; Ctr100-5000)

Approved By:

P. P. Kamble

Engineer

M. P. Joshi Dy. General Manager

General Manager

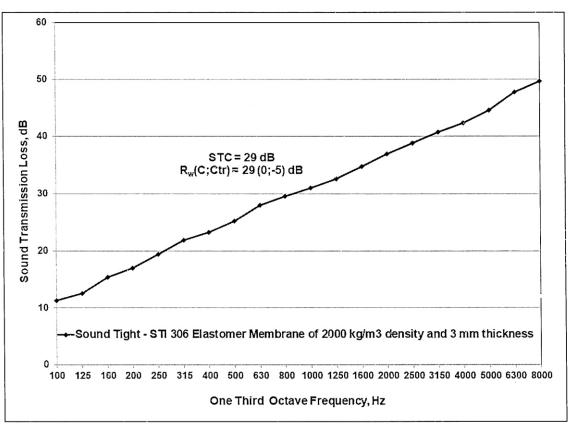
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Table 1 and Figure 2: Values and plot for sound transmission loss of Sound Tight - STI 306 Elastomer Membrane of 2000 kg/m³ density and 3 mm thickness at one third octave frequencies

One Third Octave Frequency, Hz	Sound Transmission Loss, dB	STDEV
100	11.3	0.5
125	12.6	0.6
160	15.5	0.9
200	17.0	0.4
250	19.5	0.1
315	21.9	0.2
400	23.3	0.2
500	25.3	0.5
630	28.0	0.6
800	29.6	0.5
1000	31.1	0.4
1250	32.6	0.3
1600	34.8	0.3
2000	36.9	0.5
2500	38.9	0.3
3150	40.7	0.3
4000	42.4	0.4
5000	44.6	0.7
6300	47.7	0.5
8000	49.6	0.8







3.1

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#### **TEST REPORT ON** DETERMINATION OF AIRBORNE SOUND TRANSMISSION LOSS OF **SOUND TIGHT - STI 612 ELASTOMER MEMBRANE**

ULR-TC508521050000014F NVH/3100010965/2021-22/0014

1st October 2021

CUSTOMER NAME Sound & Acoustic Designs

Ground Floor, Shop No 1-4,

Shikhar Apartment, Behind Sahakari Hat.,

Near Daxinamurti School, Bhaynagar - 364 002, Guiarat,

E-mail dated 15th September 2021 LETTER REF.

**TEST COMPONENT** Test sample details given by customer is as 3.0

follows.

**Brand Name** Sound Tight

STI 612 Elastomer Membrane 3.2 Product name

2000 kg/m<sup>3</sup> 3.3 Density Thickness 6 mm 3.4



Sound & Acoustic Designs.

Sound Tight -STI 612 Elastomer Membrane

#### TEST REQUIREMENTS

Measurement of sound transmission loss of above mentioned test sample as per ISO 10140-2 / ASTM E-90 and determination of sound transmission class (STC) as per ASTM E-413 and weighted sound reduction index Rw (C; Ctr) with spectrum adaptation terms as per ISO 717-1.

#### TEST PROCEDURE

The above mentioned test sample of size 1.2 m x 1 m was installed in the wall between two reverberation chambers and sealed all around at edges. Please refer figure 1 for test set up and mounting of system. The airborne sound transmission loss test was carried out three times on same system in a reverberation chambers as per ISO 10140-2 / ASTM E-90 standard and average value is reported at one-third octave frequency bands. These measurements were carried out at room temperature 25°C ± 1°C, humidity 65% and barometric pressure 935 mbar.

Page 1 of 4

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ARAI Regional Centre South (ARAI-RCS), Chennai Kothrud, Pune - 411 038 (India). P. B. No. 832, Pune - 411 004 (India)

ARAI Homologation & Technology Centre (ARAI-HTC), Chakan

ULR-TC508521050000014F NVH/3100010965/2021-22/0014

1st October 2021

#### 6.0 DATE OF EVALUATION

Test was carried out on above mentioned test sample on 30th September 2021 at NVH laboratory, ARAI-Pune.

#### INSTRUMENTATION

Sr. No.	Instrument Name	Type / Model No	Make	Calibrated on	Calibration due on
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3	Power Amplifier	2716	Bruel & Kjaer, Denmark	Does not require separat calibration as it is driver by data acquisition system	
4	Omni directional Sound source	Omni power 4296	Bruel & Kjaer, Denmark		
5	Reverberation Chambers	80 m³ and 110 m³	-	-	

#### TEST RESULTS

Table 1 and Figure 2 shows the values and plot of airborne sound transmission loss of Sound Tight - STI 612 Elastomer Membrane of 2000 kg/m3 density and 6 mm thickness in the one-third octave frequency bands of 100 Hz to 8000 Hz, STC (sound transmission class) and Rw (C100-5000; Ctr100-5000) (weighted sound reduction index and spectrum adaptation terms).

#### 9.0 CONCLUSIONS

The sound transmission class (STC) is calculated as per ASTM E- 413 and weighted sound reduction index with spectrum adaptation terms Rw (C100-5000; Ctr100-5000) is calculated as per ISO 717-1 for Sound Tight - STI 612 Flastomer Membrane of 2000 kg/m<sup>3</sup> density and 6 mm thickness

Liastoffer Wellibrane of 2000 kg/m den	ioney and o mini amoranoco	
Sound transmission class (STC)	35 dB	
Weighted sound reduction index with spectrum adaptation terms R <sub>w</sub> (C <sub>100-5000</sub> ; C <sub>tr100-5000</sub> )	35(0;-5) dB	

Report Prepared By:

Reviewed By:

Approved By:

P. P. Kamble

Engineer

Dy. General Manager

General Manager

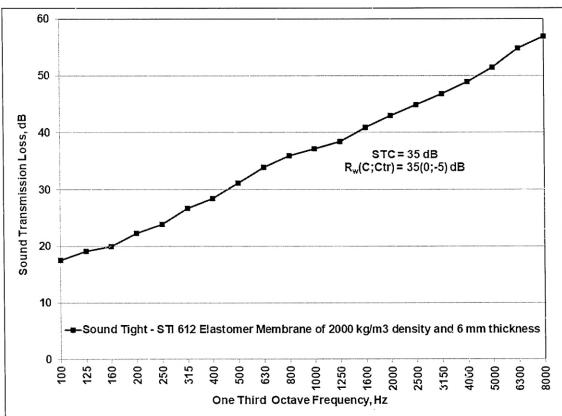
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Page 2 of 4

Table 1 and Figure 2: Values and plot for sound transmission loss of Sound Tight - STI 612 Elastomer Membrane of 2000 kg/m³ density and 6 mm thickness at one third octave frequencies

One Third Octave Frequency, Hz	Sound Transmission Loss, dB	STDEV
100	17.6	0.9
125	19.1	0.1
160	19.9	0.3
200	22.3	0.2
250	23.9	0.5
315	26.7	0.7
400	28.4	0.3
500	31.1	0.2
630	33.9	0.1
800	35.9	0.9
1000	37.2	0.8
1250	38.4	0.3
1600	40.9	0.9
2000	42.9	0.7
2500	44.9	0.7
3150	46.8	0.7
4000	49.0	0.3
5000	51.5	0.1
6300	54.8	0.1
8000	56.9	0.4







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#### TEST REPORT

	Page: 1 of 2
: ERL/2022-23/3000023615	Date: 12/07/2022
: ULR-TC508522300000135F	
: Chemical	
: Polymer	
	: ULR-TC508522300000135F : Chemical

1.	SO No.	: 3000023615
2.	Customer's Name	: SOUND & ACOUSTIC DESIGNS
3.	Customer's Address	: GROUND FLOOR, SHOP NO 1-4, SHIKHAR APPARTMENT BEHIND SAHAKARI HAT., NEAR DAXINAMURTI SCHOOL, BHAVNAGAR GUJARAT-364002
4.	Letter reference No. and date	: E-mail dated:15-JUN-2022 and 12/07/2022
5.	Kind Attention	: Mr. Fenil Mehta
6.	Service requirements	: Testing for Flammability of Interior Materials as per FMVSS 302.
7.	No. of Samples	: 01.
8.	No. of pages	: 02.
9.	Test Report Prepared By	. //20

10. Test Report Verified By

Progress through Research THE AUTOMOTIVE RESEARCH ASSOCIATION OF INDIA

11. Test Report Approved By

GENERAL MANAGER Date of Issue: July 12, 2022

Place of Issue: PUNE

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ARAI will preserve the tested samples for a period of ONE month from the date of issue of the test report. Queries, if any, regarding the sample or the test report, will be entertained / attended to in this stipulated period of ONE month only. Further, all the related test standards, drawings supplied by customer, letters, e mails etc. exchanged with respect to this test work will be preserved in our custody for a span of only THREE years from the date of the test report.



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ERL/2022-23/3000023615 SO. No 3000023615 ULR No. ULR-TC508522300000135F



Page: 2 of 2 12/07/2022

#### TEST REPORT

Customer's Name	: SOUND & ACOUSTIC DESIGNS	
Service requirement	: Testing for Flammability of Interior Materials as per FMVSS 302.	
Sample Received date	: 08/07/2022	
Condition of Sample	: Prepared Sample received in good condition	
Sampling	: Sampling done by party	
Date Sampled	: Not provided	

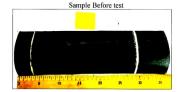
1.0 Sample Details as submitted by customer:				
Material Manufacturer's Name : Sound Tight - Sound & Acoustic Designs				
Material Grade	:	FR Grade		
Material Type	:	NR / SBR - Sound Proofing Sheet		
Component Part No. and Batch No.	:	Sound Tight - Impact & Underlay Series		
Identification Code	- :	STI 204 / STI 306 / STI 408 / STI 510 / STI 612 / STU 200/		
		STU 300 / STU 400 / STU 500 / STU 600		
Other information	:	Material of same formulation-2mm, 3mm, 4mm, 5mm, 6mm		

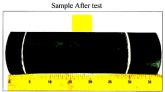
2.0 OBSERVATION TABLE: The sample under test is isotropic

	Temperature (°C) Max to Min	Relative humidity (%) Max to Min	Soak duration (hrs) Date of test
Soaked condition	21	50	24 hrs 12/07/2022
Test condition	27 to 25	82 to 80	
Wire attached frame	No	Test specimen Dimension	Average: 354 X 102 X 4.5 mm

Sr. No	Test Description	Acceptance Criteria	Observation			
1.	Flammability of Interior Materials	The material shall not burn, nor transmit     a flame front across its surface, at a rate	Test Piece	Time, Seconds	Burnt Distance, mm	Burning Rate (mm/min)
	as per FMVSS	of more than 102 mm per minute or	1	-	-	0
	302	b) The material stops burning before it	2	-	-	0
		has burned for 60 seconds from the	3	-	-	0
		start of timing, and has not burned more than 51 mm from the point	4	-	-	0
		where the timing was started, it shall	5	-	-	0
		be considered to meet the burn-rate requirement of a)	(Refer Typical Photograph below)			ow)
2	Conclusion	Sample under test meets the acceptance criteria	(a) when to	ested as per; FM	VSS 302	

#### TYPICAL PHOTOGRAPH





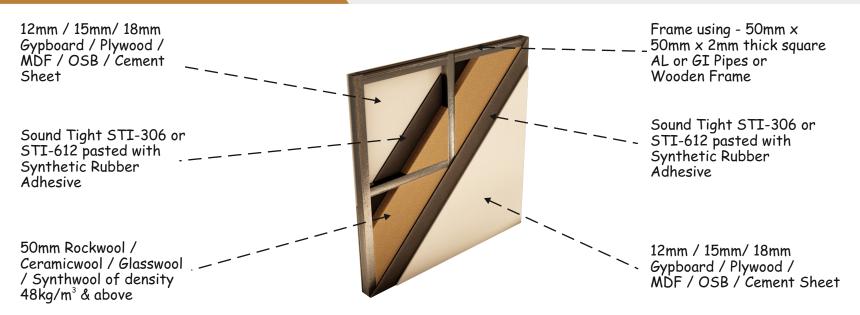
Test Report Verified By

H. L. KHANDASKAR

L:\DeptData\FRL\ERL\_Data\APR2022\_MAR2023\Flammability\SO 23615\_Sound & Aco ----End of Test Report---







### all

\* STC OF 42dB to 52dB DEPENDING ON MATERIAL SELECTION

# Double Stud Partition / Dry Wall

CAN BE USED WHERE HIGHER LEVEL OF ISOLATION IS REQUIRED IN A PARTITION.

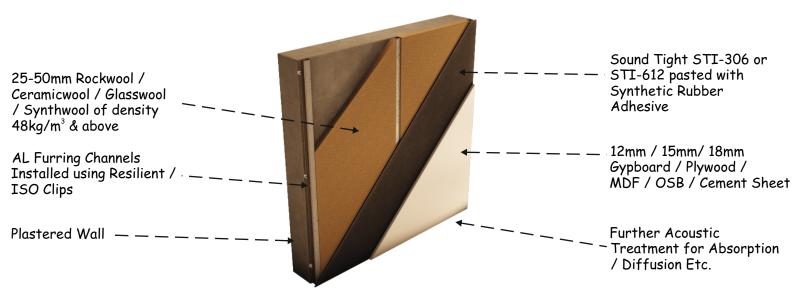
12mm / 15mm/ 18mm Frame using -  $50 \text{mm} \times 50 \text{mm} \times 2 \text{mm}$  thick Gypboard / Plywood / square AL or GI Pipes or Wooden Frame -MDF / OSB / Cement Fixed on Floor & Ceiling with 25mm to 50mm airgap in between the frame Sheet 50mm Rockwool / Sound Tight STI-306 or Ceramicwool / Glasswool STI-612 pasted with / Synthwool of density Synthetic Rubber 48kg/m<sup>3</sup> & above Adhesive Sound Tight STI-306 or 50mm Rockwool / STI-612 pasted with Ceramicwool / Glasswool Synthetic Rubber / Synthwool of density Adhesive 48kg/m³ & above 12mm / 15mm/ 18mm 25mm to 50mm Air Gap Gypboard / Plywood / between both frames MDF / OSB / Cement Sheet

\* STC OF 52dB to 62dB DEPENDING ON MATERIAL SELECTION & AIRGAP

\* The images shown are just a few examples for effective isolation.

## Simple Isolation Layer on Masonary Walls

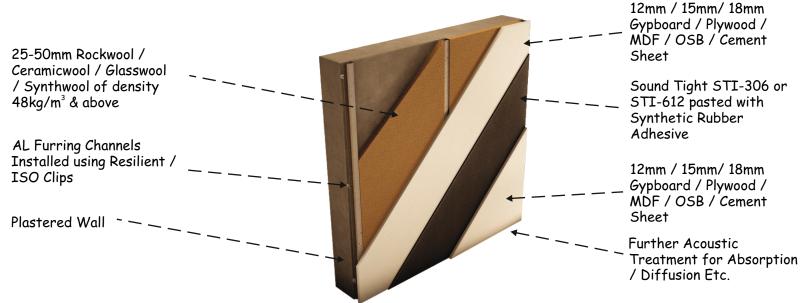
FURTHER TREATMENT WITH ABSORPTION, DIFFUSION ETC CAN BE DONE ABOVE THESE LAYERS FOR HOME CINEMA ROOMS & OTHER SPACES WITH AV INSTALLATIONS.



\* STC WILL DEPEND ON WALL THICKNESS AND MATERIAL SELECTION

## **Advanced Isolation Layer**

CAN BE USED FOR SPACES WHERE HIGHER LEVEL OF ISOLATION IS REQUIRED.



\* STC WILL DEPEND ON WALL THICKNESS AND MATERIAL SELECTION

\*Leaving unchecked and untreated flanking paths ( for example – HVAC Ducts, Electric conduits, door & window seals etc ) will affect the overall STC / NCB rating of the treated surface / room.

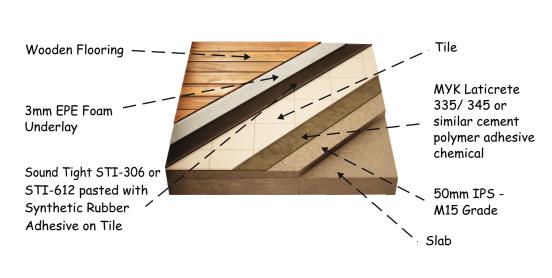
It is advisable to consult your acoustic designer / consultant for treatment of flanking paths.

## **Isolation & Damping for Ceilings**

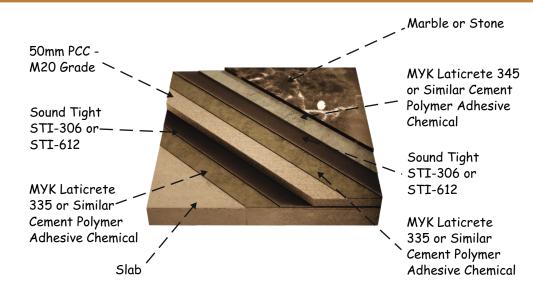


## **Isolation & Damping for Wooden Flooring**

## Isolation & Damping for Stone / Marble Flooring



\* IIC & STC WILL DEPEND ON SLAB THICKNESS, DENSITY AND MATERIAL SELECTION



\* IIC & STC WILL DEPEND ON SLAB THICKNESS, DENSITY AND MATERIAL SELECTION













Ground Floor, Shikhar Appt, Waghawadi Road, Bhavnagar - 364002 Mo. +91 96872 26677, info@soundtight.in, www.soundtight.in