A New Way of Determining the Total Absorption of Gypsum Board Wall Structures
Introduction

- Applicable Standards.
- ASTM C-423 and ISO-354
- Mounting Standards
- ASTM E-795-05
Topics of Discussion

- Material vs Wall Construction
- Frictional Absorption vs Diaphragmatic
- ASTM mounting Methods
- Wall Structure Placement
- Lack of data measured in recent time periods
Energy is lost by air “rubbing” on the filaments of glass. The rubbing slows the movement of air and turns into heat.
Diaphragm

Pressure moves the panel, like a drumhead

Pressure wave moves through the airspace

Pressure moves the panel, like a drumhead
Reverberation Room

A Type Mount
Proposed TL Mount

T Type Mount
Fill Wall
A mount vs TL Mount

1/2 inch Gypboard, 1 Layer, no fill, Comparison
A mount vs TL Mount

1/2 inch Gypsumboard, 1 Layer, filled, Comparison
A mount vs TL Mount

1/2 inch Gypboard, 2 Layer, non-filled, Comparison
A mount vs TL Mount

1/2 inch Gypsumboard, 2 Layer, filled, Comparison

- Blue line: 1/2 inch, 2+2, filled, TL mount
- Red line: 1/2 Inch, 2 layer, filled, A mount
A mount vs TL Mount

5/8 inch Gypsum, 1 Layer, no-fill, Comparison
A mount vs TL Mount

5/8 inch Gypsumboard, 1 Layer, filled, Comparison
A mount vs TL Mount

5/8 inch Gypboard, 2 Layer, no-fill, Comparison
A mount vs TL Mount

5/8 inch Gypsumboard, 2 Layer, filled, Comparison
Conclusions

- A Mount simulates a wall built over an exterior wall only
- Interior wall adjoining another room should be measured using the TL mount
- Modeling programs should include both types of data
Thank You For Your Attention