Acoustical Fleece | CEILINGS & WALLS

SOUND ABSORPTION TEST RAL™-A10-066

This test was performed on Norton Industries, Inc. Acoustiline Tongue & Groove Linear Planks with SoundTex acoustical fleece, on April 20th, 2010.

The test method conformed explicitly with the requirements of the ASTM Standard Test Method ASTM C423-08a and E795-05. Riverbank Acoustical Labortories has been accredited by the U.S Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Labratory Accreditation Program (NVLAP) for this test procedure (NVLAP Lab Code: 100227-0). A description of the measuring proceedure and room qualifications is available separately.

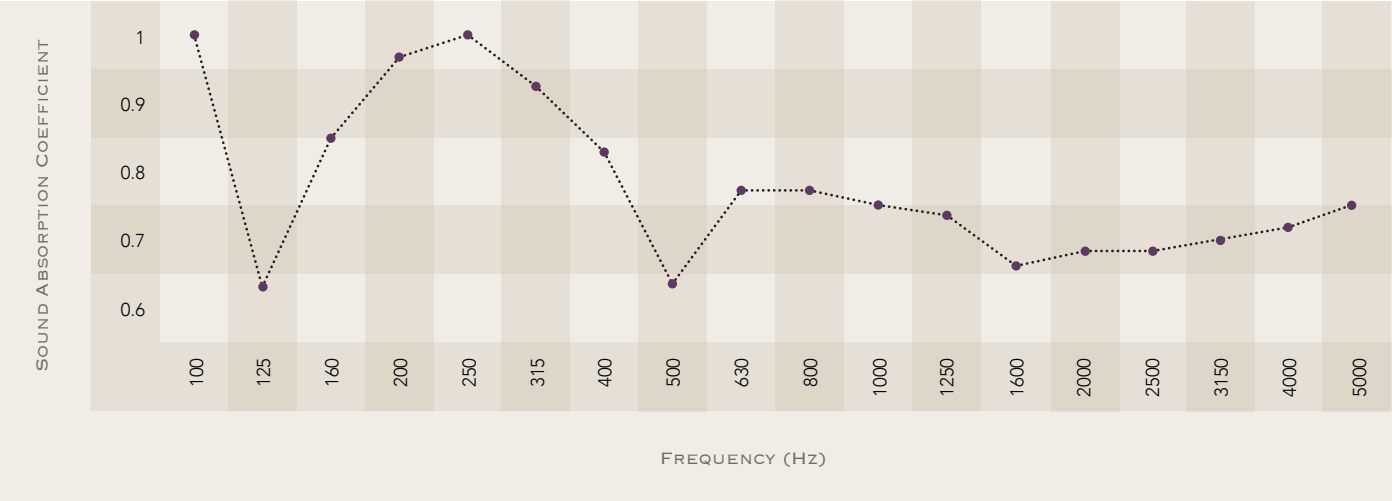
MOUNTING E-400 - CEILING

The test specimem was mounted with an airspace behind it. The number designates the distance in mm from the exposed face of the test specimen to the test surface. The perimeter was sealed using metal framing.

TEST RESULTS

1/3 Octave Center Frequency	Absorption Coefficient	Total Absorption in Sabins
100	0.97	68.46
** 125	0.67	47.55
160	0.85	59.90
200	0.93	65.61
** 250	0.66	67.85
315	0.87	61.47
400	0.79	55.45
** 500	0.69	48.39
630	0.74	52.30
800	0.74	52.35
** 1000	0.73	51.39
1250	0.72	50.74
1600	0.66	46.66
** 2000	0.67	47.58
2500	0.68	47.59
3150	0.69	48.72
** 4000	0.73	51.79
5000	0.76	53.23

SAA = 0.77 NRC = 0.75



It Takes More Than Talent to Deliver a Great Performance

When it comes to architectural solutions for perforated ceilings, the qualities that count most are appearance, performance and price. In order to have a great product, you need all three. That's why we developed SoundTex.

SoundTex is a thin acoustic nonwoven material that permits perforated ceiling tiles to absorb sound, while offering a number of economic and environmental advantages over competitive solutions. It is made of cellulose and glass fibers and is highly homogeneous in terms of weight and thickness. SoundTex bonds directly to suspended perforated panels made of wood, metal or plaster board. The product is available in black or white, with or without an adhesive binder.

SoundTex was developed by Freudenberg to meet the growing aesthetic and performance requirements of perforated ceiling panels. Like every nonwoven product, SoundTex is engineered to conform with the exact requirements of the application. As a result, the SoundTex material is light in weight and ultra-thin, yet dense enough to provide the necessary dampening of the transmitted sound.

As a result of these qualities we were able to give SoundTex performance characteristics that afford architects and designers advantages that are not available with other products in the market. Advantages that have made a major difference in terms of appearance performance and cost.

SoundTex is being used extensively in a number of applications where acoustics is a prime consideration for either artistic or purely functional reasons. Typical examples include office buildings, municipal halls, airports, theaters, convention centers, subway stations, hotels and restaurants.

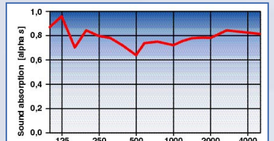
SoundTex has been tested in accordance with all major international acoustic standards and has met or exceeded them all.

Complete test data is available upon request.

SoundTex® Performance Criteria

SoundTex Meets all Major International Performance Standards.

SoundTex has been tested in accordance with the performance criteria prevailing in the United States, Germany, England and China. The results of these tests are demonstrated in the following charts and other accompanying information. The curves in these charts are based on reverberation room measurements per ASTM C423-90a and E795-93, DIN EN 20354 and BS EN 20354. The sound absorption coefficients (alpha-s) within a frequency range of 125 and 4000 Hz vary between 0.6 and 0.8.



[Hz]	125	250	500	1000	2000	4000
alpha s	0,97	0,80	0,64	0,73	0,79	0,83

AMERICAN STANDARD

Specification – American Society for Testing Materials (ASTM) C423-90a and ASTM E795-93
Material – Acoustic ceiling made with aluminum sheet **Open Area** – 20 %
Hole Size – .11811" (3 mm) **Cavity** – 15.748" (400 mm) **(NRC* 0.75)**

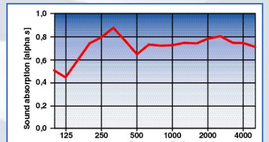
Test Criteria Test conducted according to ASTM E84 Flame Spread and Smoke Development and achieved Class A Status. SoundTex fulfilled the requirements of the Department of Buildings of the City of New York, according to the New York State Uniform Building Code 1120/15 and is registered under No. MEA290-93-M as an accepted material for interior finish usage. Based on test results, SoundTex was found to have an excellent sound absorption in accordance with ASTM C423-90a and ASTM E795-93.

***NRC=Noise Reduction Coefficient**

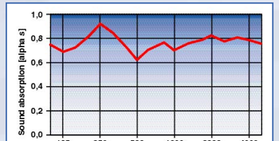
GERMAN STANDARD

Specification – DIN EN 20354
Material – Acoustical ceiling made of sheet steel. **Open Area** – 16%
Hole Size – .070866" (1.8 mm) **Cavity** – 15.748" (400 mm)

SoundTex satisfied flame retardant requirements as specified in DIN 4102 B1. SoundTex was found to be non combustible when used in combination with galvanized steel according to DIN 4102 A2. Test showed no emission of flue gas when conducted in accordance with DIN 4102 A1. Test showed no airborne fiber or dust. SoundTex exhibited excellent sound absorption according to DIN EN 20354.



[Hz]	125	250	500	1000	2000	4000
alpha s	0,45	0,80	0,65	0,72	0,78	0,74



[Hz]	125	250	500	1000	2000	4000
alpha s	0,70	0,93	0,61	0,72	0,82	0,79

BRITISH STANDARD

Specification – BS EN 20354
Material – Acoustic ceiling made of sheet steel **Open Area** – 20 %
Hole Size – .070866" (1.8 mm) **Cavity** – 15.748" (400 mm)

When tested in accordance with Fire Propagation Test as specified in BS 476 Part 6 in combination with perforated and powder coated ceilings, SoundTex satisfied all requirements without restriction. When tested in accordance with the Test of Surface Spread of Flames, as specified in BS 476 Part 7, in combination with perforated, powder coated metal ceilings, SoundTex satisfied all requirements without restriction and was rated Class 1. When tested in accordance with the requirements of UK Building Regulations 1991, as specified in BS 476, Parts 6 and 7, SoundTex fulfilled all requirements and was given a Class 0 rating. SoundTex was given an Excellent Sound Absorption Rating in accordance with BS EN 20354.

CHINESE STANDARD

SoundTex has been granted an Excellent Sound Absorption Rating according to Chinese Standard GBJ 75-84.

Reg No. 67034-01
Freudenberg Technical Nonwovens Division
Weinheim/Germany

SoundTex®

The Sound of Silence

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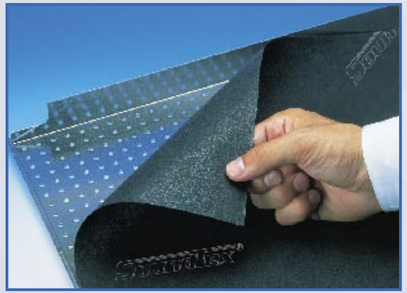
Freudenberg

SoundTex® Exceeds All Design and Functional Requirements for Today's Acoustical Ceilings!

Works Great – Installs Easy!

SoundTex modifies the sound impedance of perforated tiles to a level that is equivalent to the impedance of air. Sound waves are forced through the product's nonwoven structure, generating heat friction. This friction produces a loss of kinetic energy, thus reducing the magnitude of the sound wave. SoundTex's ultra-thin profile (0.008"/0.2 mm thick) makes handling and installation easy. It can be laminated to the ceiling panel at the factory, lowering shipping cost and reducing workload at the job site.



Ultra-thin SoundTex material adheres directly to ceiling panel.

Ultra-thin, flat shape lowers shipping and storage costs associated with Fiberglass matting.

American Museum of Natural History, New York

SoundTex Installation – Citicorp Center, New York

SoundTex Installation – First Alliance, Los Angeles

SoundTex Installation – Lamborghini Dealership, Zaventem, Belgium

SoundTex Installation – JFK Airport, New York

SoundTex is Economical and Cost Effective

Because of its ultra-thin flat shape and negligible bulk, SoundTex lowers the high storage and shipping costs associated with bulky fiberglass matting.

SoundTex Increases Manufacturing Yield

SoundTex can be supplied in sheet form or in desired widths, eliminating the need for manual cutting and fitting. This feature also allows greater use of automated production processes.

SoundTex Increases Design Options

SoundTex is air permeable, so it doesn't interfere with the ventilation process. This feature gives architects and designers greater flexibility in positioning air inlets and vents.

SoundTex Reduces Maintenance

The air permeability of SoundTex reduces the risk of water condensation behind the panels, because there is a permanent exchange of air in the room. Panels can be easily removed for quick maintenance.

SoundTex Reduces Health Hazards

SoundTex fibers are bonded securely, eliminating the respiratory risks that are commonly associated with fine loosely assembled fibers. During ceiling replacement, the product's negligible bulk reduces waste.

SoundTex Makes Sense in Today's Construction Market. It Meets or Exceeds All Design and Functional Requirements for Contemporary Acoustic Ceilings.

Major References

Office & Administration Buildings
- Daimler Chrysler, Bremen (Germany)
- Infineon, Dresden (Germany)
- Euro Plaza Wienerberg, Vienna (Austria)
- St. Jakobspark, Basel (Switzerland)
- North Galaxy, Brussels (Belgium)
- La Finca, Madrid (Spain)
- Novartis, Istanbul (Turkey)
- World Trade Center, Dubai (UAE)
- Emarat Headquarters, Dubai (UAE)
- BMW Showroom, Kuwait
- Changi Prison, Singapore
- Two Int'l Finance Center, Hong Kong

Convention, Leisure & Sports Facilities
- American Museum of Natural History, New York (USA)
- Convention Center, Boston (USA)
- Nou Camp Stadium, FC Barcelona (Spain)
- Theater, Beijing (China)

Public Transports
- Subway Station, Istanbul (Turkey)
- MRT Stations Woodland, Labrador, Dover, Singapore
- MRT Bangkok (Thailand)
- MTR and KCRC Stations Kowloon Tong, Po Lam, HK
- MRT, Shanghai (China)
- MRT, Beijing (China)
- MRT Station, Guangzhou (China)
- Magnetic Train Station, Shanghai (China)

Airports
- Int'l Airport, Philadelphia (USA)
- Logan Int'l Airport, Boston (USA)
- Int'l Airport, Toronto (Canada)
- Int'l Airport Terminal 2, Frankfurt (Germany)
- F.J.-Strauss Airport Terminal 2, Munich (Germany)
- Arlanda Int'l Airport, Stockholm (Sweden)
- Barajas Airport, Madrid (Spain)
- Linate Int'l Airport, Milano (Italy)
- Int'l Airport, Abu Dhabi (UAE)
- Int'l Airport, Beirut (Lebanon)
- Int'l Airport, Luxor (Egypt)
- Int'l Airport, Lahore (Pakistan)
- Inch'on Int'l Airport, Seoul (Korea)
- Pudong Int'l Airport, Shanghai (China)
- Int'l Airport, Beijing (China)
- Int'l Airport, Guangzhou (China)