

ARCHITECTURAL BROCHURE

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Asia, Africa and Pacific

TOTAL SOLUTION TO BUILDING'S THERMAL, NOISE AND VIBRATION

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OTAL SOLUTION TO BUILDING'S THERMAL, NOISE AND VIBRATION

ARCHITECTURAL BROCHURE

Featuring All Green Product





HIGH PERFORMANCE MULTI FUNCTION INSULATION SYSTEM



WALL & ATTIC - SOUND TRANSMISSION & THERMAL CONTROL ROAD & PAVING BINDER AND INDUSTRIAL GRADE BINDER



FINE FINISH & HIGH NRC - ACOUSTIC CEILINGS



HIGH PERFORMANCE ROOFING TREATMENT SYSTEM ACOUSTIC ULTRA LINE INSULATION WALL-LINER HIGH-TENSION SYSTEM



ARCHITECTURAL & STRUCTURAL ISOLATION SYSTEM ADVANCED FLOOR, WALL & CEILING LAYER

HIGH - TENSION FABRIC WALL MOUNTING SYSTEM



EASY TO INSTAUL-HIGH PERFORMANCES-INTERIOR FINISHES

WALL INSULATION - ACOUSTIC PANEL - HANGING BAFFLES

SPECTRUM ACOUSTIC WALL PANIEL"



- * Please contact us for further information on products installation, various system performances including Floor's Impact Noise Treatment.
- ** Our unparallel Technical Support team capable of providing design and proposal of alternative design to mitigate any of your building's thermal and noise problem.

World's largest and most advanced Fiber Processing Plant utilizing "State of the Art" process technology and R & D facility. Producing and developing advanced fiber product for Acoustical and Thermal buildings treatment, and Industrial grade Fiber for Road construction, Structural Steel Fireproofing, Roof coating, Waterproofing, Sealant, Mastics and many more applications.





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HIGH PERFORMANCE
MULTI FUNCTION INSULATION SYSTEM



Theaters at this innovative and prestigious Hotel, Resort and Casino project were treated with Cell-Spray to provide pleasant indoor sound environment.

Uniform – Multifunction Spray System

Our product is designed as a high-performance multifunctional, self-supporting, uniform spray-applied treatment system tailored to your project's requirements: acoustical/sound control treatment (to greatly reduce or eliminate sound reverberation, sound transmission, and impact noise) and thermal control treatment (to provide high efficiency thermal conductivity and condensation control) with durable — aesthetic interior texture finishes and choice of color with no additional finishing is required.

Our premier R&D and excellent engineering team, combined for over 50 years of field experience, has the capability to support projects and recommend suitable designs for applications to meet and exceed your requirements at an economical cost.

We utilize advanced fiber technology in production to ensure the highest-grade finished product with unmatched efficiency and performance. When compared with other products, Cell-Spray is finer and more resilient, forming a stronger and permanent applied surface treatment with at least 20% better performances. Our product offers superior performance at an economical value with fast-track application compared to other products offered in the market. Caution: Other products may look similar but it is inferior in terms of overall performance and its resiliency against weathering; they will deform and delaminate overtime.

Our product is designed for compatible, versatile, and economical applications with optimum multifunction-performance and can be applied to virtually any surface configuration: concrete, steel, wood, aluminum, all kinds of board, glass, and other construction materials. It can be applied of up to 125mm thick without mechanical support. It also serves as an exposed ceiling finish. Note: Certain type of surfaces requires sealing to prevent migratory staining from leak plumbing or roofing.

Total Building Treatment System: High Performance, Durable, and Self-Supporting System

Our product is a total system of Light and Pure Natural Strong Resilient Fiber (treated and reinforced during production process) applied with special compatible binder which utilizes specially designed equipment with guided application methods to form a self-supporting treatment system that produces unequaled performance.

Cell-Spray is manufactured under strict quality control through the most modern process that utilizes state-of-the-art technology to form high-quality fiber resistant to fire, mold, mildew, and insecticide. It should be applied by licensed/authorized applicators only. They are properly trained and capable of preparing and applying the product mixing as well as controlling proper fiber and binder mixes with our proprietary equipment for various types of applications. During application, our genuine fiber is mixed with our patented compound binder CP-2002™ series. Note: We have an established network of local applicators many with over 30 years field experience guaranteeing proper local applications and warranty performance.

CP-2002[™] series is specially formulated compound binder, designed to mix and match components in our fiber. It forms a truly unique and high performance system with unequaled bond strength allowing applications of up to 125mm thick overhead without mechanical support (bond strength over 210 times its weight; Average Force exerted during test >73 LBF refer to page - 16 and 17: Technical Specifications Guideline).

The finished product is a strong, durable, high-performance monolithic layer of high performance and multifunctional insulation system with a hard-flexible layer at the bottom of predetermined thickness of this system layer. This bottom layer greatly enhances its STC & IIC performance.

Naturally Tough and Attractive

With its carpet-like texture and wide variety of colors, our product is attractive as a surface finish on ceilings in new construction as well as renovation projects. For wall and ceiling application in intense noise and tough environments, special method of application is utilized.

Available in five standard colors (specially matched custom color is also available):



*Color selection will affect price. Chart shows as closed color appearance.

Special Features

Our product forms a monolithic layer with dead air spaces between and within its hollow fibers. Because of the specially designed and controlled application system, it fills cracks, voids and seams forming a monolithic carpet like layer over the substrate, which virtually eliminates air infiltration. Unlike conventional and prefabricated insulation, which tends to be compressed during handling and shipment, cracks and creates voids during installations, as well as settling and sagging after installation, our product has no voids or compressed areas that will reduce thermal efficiency and acoustical properties.



Google Office @ Alexandra Terrace, Singapore.

ENERGY STAR AWARD 2019 PARTNER OF THE YEAR Sustained Excellence

TOTAL SOLUTION TO BUILDING'S THERMAL, NOISE AND VIBRATION

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Thermal Performance and Condensation Control

As a result of the special features above, Cell-Spray is more efficient in-place and uniform building's treatment, with exceptionally low heat transfer characteristics. This features greatly saves the building's energy consumption, especially with today's increasing energy costs.

For areas such as indoor pools, ice arenas, air plenums, mechanical rooms, and 24-hour air-conditioned rooms; our product aids in condensation occurs in building's environment and greatly helps to maintain indoor temperature in spaces with or without an air conditioner.

Proper combination of our product and ventilation prevents condensation on metal, concrete, and other surfaces. Thus, our installed product significantly saves your building's energy consumption and actually reduces ventilation requirement, saving both on ventilation equipment and the building's energy operating costs.

Thermal Conductivity per ASTM C-518: 0.0378 W/mK (R=3.807).

- * Thermal Resistivity value is tested / measured at ambient temperature.

 Our product performs even more efficient at lower and higher than ambient temperature.
- * Unlike most competitors who tested with/include backing layer, our product was tested without backing layer, thus result show much more efficient conductivity.

Acoustical Performance

Our resilient fibers absorb energy instead of reflecting it, reduce reverberation time, Sound Transmission and Impact Noise thus making speech and music performance more intelligible. Excessive unwanted noise is eliminated with the application of our product which greatly improves ambient sound quality in a wide variety of building projects including: recording studios, auditoriums, convention and exhibition centers, churches and other religious/worship facilities, discotheques and entertainment centers, factories and industrial facilities, meeting rooms, music halls, offices, parking garages, power/mechanical rooms, retail spaces, schools and universities, sports facilities, television and movie production studios, and many others.

Test Results of Our Sprayed Thermal & Acoustical in Accordance With ASTM C-423 Applied on Solid Backing*

Thickness (Inch)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	NRC
1.00	0.17	0.39	0.83	0.93	0.95	0.96	0.80
1.00 1)	0.47	0.90	1.10	1.03	1.05	1.03	1.00
1.50	0.30	0.70	0.96	0.94	0.78	0.62	0.85
2.00	0.26	0.68	1.05	1.10	1.03	0.98	0.95
2.00 2)	0.38	1.02	0.96	0.90	0.93	0.94	0.95
2.50	0.41	0.84	1.05	1.07	1.02	0.99	1.00
3.00	0.57	0.99	1.04	1.03	1.00	1.00	1.00
3.00 3)	1.15	1.07	1.30	1.35	1.41	1.22	1.30

Applied on Corrugated Metal Deck*

Thickness (Inch)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	NRC
1.50	0.36	0.89	1.26	1.07	1.01	1.00	1.05
2.00	0.56	0.94	1.22	1.04	0.99	0.99	1.05
2.50	0.77	0.99	1.17	1.02	0.97	0.99	1.05
3.00	0.97	1.04	1.13	0.99	0.95	0.98	1.05

*Some values interpolated 1) = on lath 2) = on panel 3) = Profile backing, SAA=1.29

NOTE: For product's Approvals and Ratings, Technical Specifications and Standards

Compliance - Please refer to Page - 16 and 17.

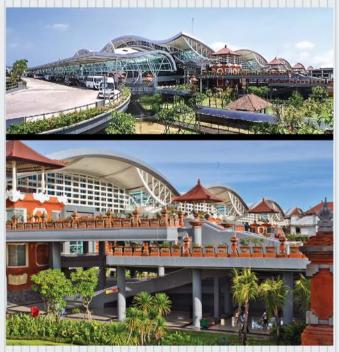
Other Performance

- Cohesion & Adhesion Bond Strength (ASTM E-736):
 Min. >210 times its weight (Force exerted during test >73 LBF,
 Max. Force exerted 84.5 LBF) Cohesion/Adhesion >775 psf.
- 2. Test results per ASTM C-1149-02:
 - a. Smoldering Combustion: Less than 1% weight loss (maximum permissible 15%)
 - b. Fungi Resistance: No growth
 - c. Moisture Vapor Absorption: % weight gain = 1.25% (maximum permissible 15%)
 - d. Odor Emission: No perceptible
 - e. Corrosion: Steel = No perforations,
 - Aluminum = No perforations and Copper = No perforations
- 3. Air Erosion:

Found = 0.017 gm/ft² (Allowable limit = 0.025 gm/ ft²)



Balai Kartini - Hall and Convention, Jakarta, Indonesia.



New Bali International Airport - Achitectural View, Denpasar, Indonesia





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FINE FINISH & HIGH NRC - ACOUSTIC CEILINGS



FC Acoustic Finish applied to reduce reverberation in this lecture hall and auditorium while greatly enhances its interior lighting, making it excellent space environment for lecturing and music performance.

Product Description

Our FC Acoustic Finish product line is an excellent spray-applied acoustical texture finishes for a wide variety of low exposed ceiling projects.

It provides high performance solutions to acoustical and lighting objectives while conserving energy in new construction and renovation projects with attractive finishes as well as providing excellent light reflectance.

Its fine finish provides aesthetics suitable for ceiling application at executive offices, churches, mosques, banks, automobile showrooms, auditoriums, classrooms, airport terminals, libraries, hotels, and luxury apartments.

Available in arctic white, white, and specially matched custom colors. (Contact us for pricing.)

Acoustical Performance

As tested by the NVLAP accredited acoustical laboratory in compliance with ASTM C-423, our product provides an exceptionally high Noise Reduction Coefficient (NRC). Typical application of 25mm thick on solid backing has an unequaled NRC of 0.95.

NRC Values - ASTM C-423

Thickness (Inch)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	NRC
On Solid Ba	cking						
0.50"	0.08	0.16	0.46	0.87	1.07	1.12	0.65
0.75"	0.18	0.27	0.67	1.02	1.11	1.12	0.75
1.00"	0.15	0.56	0.91	1.15	1.17	1.17	0.95

NOTE: For product's Approvals and Ratings, Technical Specifications and Standards Compliance - Please refer to Page - 16 and 17.

Substrate Compatibility

Our product conforms to any surface configuration such as barrel vaults, concrete "T", corrugated decking, and other complex surfaces such as perforated sheet. Combined with our patented compound binder CP-2002™ series, our product bonds to virtually all construction substrates including concrete, board, plaster, wood and oxidized metal. Some surfaces such as water stained ceilings, wood and oxidized metal require sealing to prevent migratory staining from plumbing and/or roof leaks.

Durability and Maintenance

CP-2002[™] series is our 'proprietary' strong, resilient bonding system; which combined with our proprietary components in our fine fiber forms acoustic finish product, with unequaled acoustic properties, that provide a remarkably durable surface.

It resists impact and abrasion with no cracks or spalls, which is typical to many cement/plaster-based materials and duplicate products in the market.

In areas where high abrasion resistance may be desirable, our enhanced application with Special Durability may be specified. This product provides even greater bond and compressive strength without reducing its acoustical performance.



Singapore Environment Building Lobby.



Nespresso Boutique - Bangkok, Thailand.

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WALL & ATTIC - SOUND TRANSMISSION & THERMAL CONTROL ROAD & PAVING BINDER AND INDUSTRIAL GRADE BINDER

Building's Construction Grade:

Thermal & Sound Transmission Control for Wall & Attic

- 1. High STC Rating with Fire Endurance
- 2. High Efficiency Thermal Insulation
- 3. Energy Saving Treatment System
- 4. Environmental Friendly Product

Road's Construction Grade:

1. Asphalt and Paving Mix Binder (OGFC & SMA)

Industrial Grade:

- Board Binder
- 2. Concrete Mix Binder
- 3. Fire Proofing & Other Cementitious Mix Binder



Senayan City - Mall and Apartement block.

Product Description

Cell-Star is specially prepared and is a blend of pure natural cellulose fiber manufactured using advanced technological processes to meet comprehensive standards demanded by related industries.

Building Construction Grade product is properly treated to meet a variety of applications. When Cell-Star is sprayed in place, the interlocking fibers result in a mass that produces excellent sound transmission control with highly efficient thermal properties. It forms a monolithic layer to seal cracks and tightly seal attic thus eliminate voids, and tightly insulates around plumbing and electrical outlets, vent ducts, and other irregularities. *Test shows 36% higher efficiency in thermal conductivity over generic products.

Once Cell-Star is applied, there will be no voids or compressed areas; it eliminates sound transmissions leaks and air flow that reduce thermal conductivity efficiency of the wall, attic, and ceiling floor systems. Our product is environmentally friendly and saves energy. It has been tested by various internationally recognized independent laboratories and research proves that Cell-Star saves over 32% of KWH usage in typical homes compared with other insulation products.

Road Construction Grade product is processed with high precision to comply with US-FHA (US Federal Highway Administration) grade

and suitable for use in OGFC and SMA technology utilized for new road and paving constructions or improvement works. *Please contact us for specifications and pricing.

Industrial Grade product is processed with high precision processes to comply with various standards as implemented by building code authorities from appropriate industries. This includes fine fiber for phenolic, roof coating, and brake pad industries. *Please contact us for specifications and pricing.

Unequaled Sound Transmission Control Performance

Our product provides superior sound transmission control to satisfy building designers, developers, and occupants. Site application tests prove that our treatment system achieves higher STC and IIC ratings when compared with other products and other similarly constructed wall systems.

Below is a comparison between different wall systems:

2" Metal Studs with 12 mm Gypsum Board - Both Sides

Insulation Layer	Test Result
A. No Sound Control Material Used	STC 31
B. 2.5" Wool Sound Barrier Batt	STC 33
C. With Just 2.5" Cell -Star	STC 49

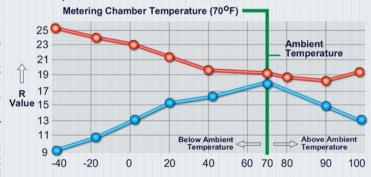
Performance

Cell-Star has been tested in accordance with ASTM E-119 (Fire endurance and hose stream test), and approved for one hour fire rated wall assemblies.

STC Rating	Wall Assemblies Construction Detail
62	2 layers 15 mm calcium silicate board and 1 layer of metal decking on opposite side: 50 mm standard density, 25 mm rigid application and 30 mm medium application of our Cell-Star.
55	$2^1\!/2"$ metal studs, 2 layers $^5\!/e"$ gypsum board on one side, 1 layer gypsum board on the opposite side: $2^1\!/z"$ our sprayed Cell-Star.
53	$3^5\!/\!8"$ metal studs, 1 layer $^5\!/\!8"$ gypsum board on each side: 2" of our sprayed Cell-Star.
58	2"x4" stud on 2"x6" plate spaced 16" O.C. and staggered on opposite sides, faced on both sides with 5/8" gypsum board: 11/2" our sprayed Cell-Star.

Thermal Performance

Comparison - Thermal Performance of Installed Insulation



Test And Study By :

- US Dept. of Energy
- Oak Ridge National Laboratory
- Canada
- Brook Haven National Laboratory • University of Colorado, Denver
- School of Architects and Planning
- Out Side Temperature = ^OF

 Side Temperature = ^OF

 Side Temperature = ^OF

 Side Temperature = ^OF
- = 5" thick Fiberglass Insulation at 60 Kg/M³

NOTE: For product's Approvals and Ratings, Technical Specifications and Standards Compliance - Please refer to Page - 16 and 17.





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SPECTIRUM ACOUSTIC WAILL PANIEL"

Energy Saving & Environmental Friendly
High Efficiency - Thermal Control
Fire Endurance Rating
Excellent NRC Rating
Beautiful Finishes
Easy Installation



TV Studio & News Room fully treated with our special wall panel and Cell-Spray unto ceilings.

Product Highlights

Prefabricated from Cell-Spray fiber base with special components, it is non-combustible and forms an interlocking high performance acoustic layer for excellent sound absorption. It can also be installed on site for better and tighter acoustical performance.

Our product is specially designed for those who demand superior acoustic performance with beautiful finishes. Our standard lining is tackable, durable, and washable for easy maintenance.

With an R value of 9.08 and a one hour fire endurance rating, our acoustic wall panel has become standard for many new exhibition centers, auditoriums, schools, music halls, conference rooms, and executive offices. They come in standard dimensions of 600mm x1200mm x 50mm (width x length x thickness). Special designs and dimensions are available. Special designs with perforated metal/aluminum lining are also available upon request.

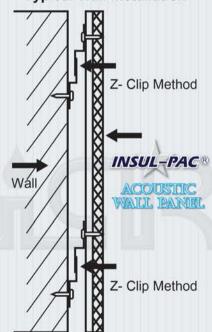
Special Order and Design

Special design shapes and finishes are available upon request. (Call us for recommendation and pricing.)

Sound Absorption Coefficient per ASTM C-423

Thickness (Inch)	Backing					2000 Hz		NRC
50 MM	No Air Space	0.17	0.74	1.18	0.91	0.87	0.90	0.93
50 MM	50 MM Air Space	0.38	1.02	0.96	0.90	0.93	0.94	0.95

Typical Wall Installation



^{*} Special Insul-Pac Wall System is available. Please request for Insul-Pac Special Wall System profile.

NOTE: For product's Approvals and Ratings, Technical Specifications and Standards Compliance - Please refer to Page - 16 and 17.



Metro Live TV Studio, Jakarta, Indonesia.



TOTAL SOLUTION TO BUILDING'S THERMAL, NOISE AND VIBRATION

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HIGH PERFORMANCE ROOFING TREATMENT SYSTEM

Product Highlights

Prefabricated or on-site installation with our custom design, our highly resilient Cell-Spray specially-made fiber base combined with CP-2002™ series and our other patented components.

Insul-Pac is truly an innovative product made from processed materials and components that result in an unsurpassed lightweight treatment system with the highest STC and IIC ratings in the construction industry today.

It is truly lightweight with an effective acoustic and thermal control treatment custom design that enables more flexible

building design, which significantly reduces project structural costs, typically by 25% or more.

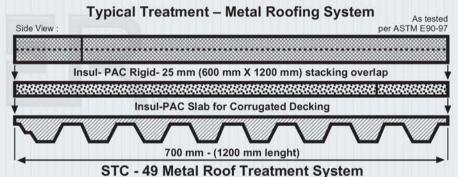
In addition to high STC and IIC performance, it has highly efficient thermal conductivity that significantly prevents condensation while reducing building energy consumption costs.

Insul-Pac has one hour fire endurance rating. Unlike conventional insulation or other similar products, Insul-Pac is noncorrosive and contains no corrosive binder so it prolongs the lifespan of metal roofing systems.

Insul-Pac awarded: Most Innovative Building Product of 2002.



This new Theaters with titanium roofing system treated with our product to eliminate impact noise and for high efficiency thermal conductivity.



NOTE: For product's Approvals and Ratings, Technical Specifications and Standards Compliance - Please refer to

PONDC

Page - 16 and 17.

Our product (on site application) provides ideal treatment (Thermal and Impact Noise) of this New Shopping Mall while providing pleasant indoor's sound environment.







11/

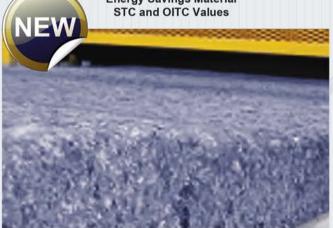
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EASY TO INSTAUL - HIGH PERFORMANCES - INVERTOR FINISHES

ACOUSTIC ULTRA LINE TO WALL INSULATION - ACOUSTIC PANEL - HANGING BAFFLES

High Efficiency - Sound Absorption (NRC Rating)
Easy Installation, Durable and Attractive Finishes
Natural Base - Environment Friendly Product
High Efficiency - Thermal Insulation
Energy Savings Material



Above Ceiling (Attic) Application - Thermal Insulation and Noise damping.

Product Information

Made of strong reinforced natural fiber, high performance, aesthetic finishes, and ease of installation are always our goals when developing new products. This Ultra Line acoustical product is a testimonial to that. After going through rigorous tests with stringent standards and gaining reputation with an excellent track record in North America and Asia, our product is now a highly demanded building product. This product, when combined with applications of Cell-Spray under metal roofs and ceilings, helps saving the building's energy consumption while preserving a safe and pleasant building's environment. All items can be supplied with pure aluminum foil or poly liner at any thickness and dimension customizable to your needs. Our products are recommended by the American Institute of Architects-Sustainable Design, US Green Building Council, and many US builders. Featured in the Green Buildings Campaign through broadcasts by ABC, CBS, Fox, House and Garden TV, and the Discovery Channel.

This is a truly innovative, do-it-yourself, environmentally friendly product with great performance, durability, and attractive finish. Used by OEM Industries for various applications i.e. HVAC, home theaters, engine heat covers, seals, pump housing, refrigeration compartments, etc. Test results, approvals, and partial project references are presented in this publication.

Type W-Insulation

Type W comes in basic marble blue and is 2" or 3.5" thick (24"width x 94" length). Special orders up to 5.5" thick and custom dimensions are also available. This no-itch insulation is easy to handle and install and compliant with US-EPA standards. Passed ASTM C739 test. Wall panel fitting accessories and lining are available. (See picture and illustrations on page 12 and wall liner on page 14)

Fibers are treated with US-EPA registered fungal inhibitors that offer excellent protection against mold, mildew, fungi, and pests. It is fire resistant, non-corrosive, emits no odor, contains no formaldehyde, and does not irritate skin or itch. Resistant to microbial growth with excellent thermal value that saves building energy consumption. This product is pre-scored at the plant for easy tear-off to meet site dimensions. No tools required for size adjustments at pre-scored dimensions; R value = 3.85 @1" thick.

Acoustical Performance NRC Type W (Wall Insulation)

*As Tested in Accordance with ASTM C423 using Type A Mounting per ASTM E795

Thickness (Inch)					2000 Hz		NRC
2"	0.35	0.94	1.32	1.22	1.06	1.03	1.15
3.5"	0.95	1.30	1.19	1.08	1.02	1.00	1.15

Sound Transmission Class **STC 55** for 50 mm Thick Type W Based on Wall System With 2 X15 mm Gypsum Board and 50 mm Air Gap *As Tested in Accordance with ASTM E90-04



Type W Suitable for Walls, Roofs and Ceilings.





Wall Treatment Application.





EASY TO INSTAUL-HIGH PERFORMANCES-INTERIOR FINISHES

WALL INSULATION - ACOUSTIC PANEL - HANGING BAFFLES

Acoustical Panel Type A

This truly do-it-yourself acoustical panel is made of 100% reinforced pure natural fiber, produces high acoustical performance, and is durable with aesthetic finish. There is no additional wrapping or lining necessary. Available in standard 2' x 4' in basic marble blue, special custom matching and sizes are available.

It saves labor time and costs greatly with simple applications which results in faster project completion. No shelf life, tested in compliance with various stringent ASTM standards and performance charts below illustrate some essential uses of this product on your next project, whether it is an improvement or newly developed projects. Homes and commercial projects need this product.



Hanging Baffles Indoor Sports Arena.



Gymnasium and Multipurpose Room - Hanging Baffles.



Acoustic Wall Panel - TV Studio.

Sound Absorption on Hanging Baffles - Type A - Panel

*As tested in accordance with ASTM C423-99a - Results shown at NRC Frequencies

Thickness (Inch)	Baffles	Method of Installation S	abins/Baffle Average
1"	3	1 Layer - 3 specimens suspended on one cable, 16" between baffles.	10.30
1"	3	1 Layer - 3 specimens suspended between 2 cables, 36" between baffles.	23.25
1"	3	1 Layer - 3 specimens suspended between 2 cables, 36" between baffles (Baffles suspended at an angle - between cables to maintain uniform height)	9.55
1"	6	Two 1" Layers - 3 specimens suspended on 2 cables, 16" between specimens 41" from floor to specimens and 45" between cables.	s. 9.85
1"	6	Two 1" Layers - 3 specimens suspended on 2 cables, 16" between specimens 41" from floor to specimens, 45" between cables. (Type U - Panel)	s. 13.85
1"	9	1 Layers - 3 specimens each suspended on 2 cables, 24" apart and 3 specimens perpendicular across the 2 cables in between the longitudinal baffles.	9.25
1"	12	1 Layer - 6 specimens suspended on 2 cables with 9" spacing, 6 specimens between the cables. Cables spaced 45" apart.	8.40



Ratings, Technical Specifications and Standards Compliance - Please refer to Page - 16 and 17.





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INSUL-PAC®

ACOUSTIC UILTRA LINE

WALL INSULATION - ACOUSTIC PANEL - HANGING BAFFLES



Sports Arena becomes Concert Hall. This Arena hosted multi events from Basket Ball Games to Academy Awards and Grand Musical Shows.

Acoustical Performance NRC Type A - Acoustical Panel *As tested in accordance with ASTM C423

*As tested in accordance with ASTM C423 using Type A mounting per ASTM E795

Thickness (Inch)							NRC
1"	0.08	0.31	0.79	1.01	1.00	0.99	0.80
2"	0.35	0.94	1.32	1.22	1.06	1.03	1.15



Motor Vehicle Industry.



WPP Marguette Detroit, MI-Video Editing Room.



AHU and Mechanical Room - Ford, Singapore.



Motor Vehicle Improvement.



TOTAL SOLUTION TO BUILDING'S THERMAL, NOISE AND VIBRATION

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EASY TO INSTAUL HIGH PERFORMANCES INTERIOR FINISHES

ACOUSTIC ULTRA LINE TO WALL INSULATION - ACOUSTIC PANEL - HANGING BAFFLES

Acoustical Panel Type U-Ultra Line

This top-of-the-line product has higher durability and performance and is more rigid and durable. There is no additional lining or finishes necessary. It is ready to be installed as a finished product. It greatly speeds up the project's schedule while providing more flexible design to architects and interior designers. In addition to general standard ASTM requirements, this product has been tested in accordance with ASTM C423, E90, and E413 as well as ASTM E1332.



Indoor Swimming Pools.



Office Wall Panel.

Acoustical Performance - NRC Type U - Acoustical Panel

*As tested in accordance with ASTM C423 - using Type A mounting per ASTM E795

Thickness (Inch)	Backing	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	NRC
1"	No Air Space	0.07	0.30	0.86	1.10	1.05	1.03	0.85
50 MM	No Air Space	0.17	0.74	1.18	0.91	0.87	0.90	0.93
50 MM	50 MM Air Space	0.38	1.02	0.96	0.90	0.93	0.94	0.95

Sound Transmission Class - STC 17 - ⁷/8" (min) thick - Type U Out-door in-door Transmission Class - OITC 14 - ⁷/8" (min) thick - Type U **As tested in accordance with ASTM E90, ASTM E413 and E1332

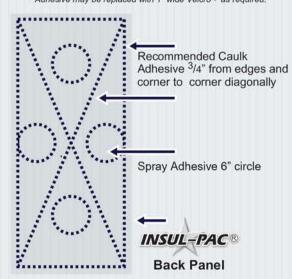


OEM Industries.



Fellowship Hall Acoustics - Ceiling Clouds.

Typical Wall Panel Installation



Color Chart



Pure Blue



Charcoal



Burgundy



Beige



Green



Light Grey



Navy Blue



White



Basic Marble Blue

NOTE

For product's Approvals and Ratings, Technical Specifications and Standards Compliance - Please refer to Page - 16 and 17.





OEDICATION-KNOWLEDGE-EXPERIENCE A DOUBLE TECTION A DOUBLE TO THE PROPERTY OF T



HIGH - TENSION FABRIC WALL MOUNTING SYSTEM

WALLLINER SYSTEM



Aesthetic and Durable Wall Lining System



Cecil B. Deville Screening Room, Sony Pictures Studio.



100,000 SqM The Staples Center - Los Angeles. Sports Indoor Arena, Musical Concerts and Academy Awards Venues.

Product Description

Installation of durable and effective acoustical substrates is very essential in today's use of digital surround sound technology.

Wall Liner is made of 100% high quality ABS resins that form strong and durable wall frame systems and highly resilient against loosening its grip of the fabric wall covering materials. Most competitors' products are made of PVC with conventional design systems that are easily worn, loosening the fabric, or cannot be unlocked or reused over time.

This patented reusable wall mounting system is designed for high-tensioned wall mounting system with easy installation.

The Wall Liner's Stretch-Tension Lock features wall covering with great strength and rigidity.

Its Lock-on and Lock-off system enable users to adjust, remove, and replace fabric coverings at any time.

Combined with installation of either our Cell-Spray or Insul-Pac, this excellent high-tensioned system is specifically designed for effective in-room noise reduction with a beautiful appearance and high resiliency.

Performance

This system passed ASTM E-48 Class A Fire Rating and passes a wide range of stringent toxicity UPIT tests to meet with EU countries and other building authorities' standards.

Its high-tensioned system makes it reliable for building's acoustical design while providing a beautiful appearance.

The Sony Pictures Screening Room, Enterprise Recording Studio, and the 100,000 square meter Staple's Center in Los Angeles are among our satisfied customers. The Staple's Center, known for its premier sports arena and concert venue, has 4 million people go through the facility each year. The traffic is next to fabric covering that stays tight and cannot be pulled out or loosened.

Special Features

Its positive locking and unlocking capability is a new invention in the industry. This feature is second to none in the market. The strong ABS material base produces a reusable system and easy installation makes it possible for self-installation by our home and commercial clients.

We provide very accurate and detailed installation instructions to our clients ensuring easy and proper installation of this great system.





HIGH - TENSION FABRIC WALL MOUNTING SYSTEM



Main Ball Room, Century Plaza Hotel - Los Angeles.



The Famous Enterprise Recording Studio - Hollywood.

Wall Liner System Profile



1¹/₁₆ inch Bevel



11/16 inch Radius



11/16 inch Square



9/16 inch Bevel



9/16 inch Radius

Design



9/16 inch Square

Fabric Application



removed from



positioned to follow threadline or pattern.



Outer profile rotating toward closed position the "Tense" intention. will stretch fabric.



Repeat if needed.

Two piece system creates easy acces for mounting



Outer profile snaps into place forminga working hinge.



Rotation to lock position creates greatstrenght and rigidity.

NOTE: For product's Approvals and Ratings, Technical Specifications and Standards Compliance - Please refer to Page - 16 and 17.



Deerfield Academy Auditorium, Boston.



Moot Court Room at University of Nevada Las Vegas (UNLV) - Las Vegas.







11

ARCHITECTURAL BROCHURE

FOR ARCHITECTS, CONSULTANTS AND DESIGNERS

TECHNICAL SPECIFICATIONS GUIDELINE

General Specifications

Acoustical Performances of materials ("Materials") shall be proven with physical Test Reports (conducted and) issued by Accredited independent Acoustic Laboratory (accredited independent acoustic laboratories) with international recognition and approval, and having facility and instrumentation in compliance with the highest relevant ASTM standards.

Materials applied on any part of Ceiling and Metal ceiling or metal decking shall be non-combustible construction materials in compliance with British Standard (BS) 476 Part 4:1970 and shall be non-toxic and non-asbestos in compliance with US Green Building Council and with certification from local/regional Building Authority as 'Green Product'.

Manufacturer of the Materials shall be certified/registered to have in place Quality Control System in conformance to ISO 9002:1994 and Quality Management System in conformance to ISO 9001:2000.

Provides a proven track record (project reference of no less than 20 years of equivalent jobs) with no less than 10 years installation experience of local Applicator. This will ensure project of local warranty performance and quality installed product.

Noise Reduction Coefficient test reports shall meet and in compliance with ASTM C-423 with Standard Practices for Mounting Test Specimens during Sound Absorption Test in compliance with ASTM E-795 and Thermal Conductivity value maximum of 0.0378 W/m°K in compliance with ASTM C-518.

Bond strength (Adhesion/Cohesion) Laboratory Test: Force exerted shall be equal or greater than 73 LBF (average during test) as tested in compliance to ASTM or > 21 times of materials weight. Cohesion / Adhesion > 775 psf.

The materials shall be non-corrosive in conformance with UMB-80 with base materials shall not contain any phenol agents or resins used for binders. Sound Transmission Class (STC) tests shall be conducted in compliance with ASTM E-90 & E-413 with Impact Isolation Class (IIC) tested in compliance with ASTM E-492 & E989. Compliance of non-corrosion shall be tested in accordance with ASTM C-739a, which must demonstrate no perforations for all kinds of metal surfaces.

Materials shall be fungi resistant (with no fungi growth) as tested in compliance with ASTM C-739 with moisture vapor absorption shall not exceed 1.25% weight gain, with no perceptible odor emission.

Materials should be a self-supporting system with allowable lightweight burden to the surface to be applied on. For exposed areas, Materials shall have choice a selection of uniform and homogenous color for aesthetic values.

Materials and installations shall be warranted by Pacific American Company, which shall be submitted together with a certificate of Genuine Product by Microfiber Technology Corporation.

Target Performance

A. Ceilings - Sound Absorption High Exposed Ceiling (Above 5 M Height)

Thickness (Inch)		Octave	Band Ce	nter Freq	uency		NRC
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
1.5"	0.30	0.70	0.96	0.94	0.78	0.62	0.85
2"	0.26	0.68	1.05	1.10	1.03	0.98	0.95
3"	0.57	0.99	1.04	1.03	1.00	1.00	1.00
3"1)	1.15	1.07	1.31	1.43	1.43	1.22	1.31

1) = Profile Backing, SAA = 1.30

Low Exposed Ceiling

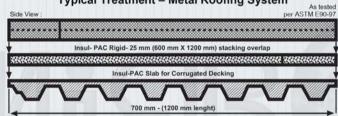
Thickness (Inch)	Octave Band Center Frequency						
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
1.00"	0.15	0.56	0.91	1.15	1.17	1.17	0.95

B. Roof and Wall Partitions - Acoustic Barrier

1. STC Target Performance For Wall Partitions (Dry Wall) System

Designed System should achieve minimum STC 55 when 2.5" thick layer is applied and sandwiched with 2 layers of ⁵/8" wall board on one side and 1 layer of ⁵/8" wall board on the opposite site. And the System should achieve minimum of STC 62 when a thin layer of advanced Acousti-Max LP (that has achieved △IIC minimum of 19) is installed in between the 2 layers of ⁵/8" wall board.

2. STC Target Performance for Roofing System Typical Treatment – Metal Roofing System



STC - 49 Metal Roof Treatment System

C. Acoustic - Wall Panel

Acoustical Performance - NRC Type U - Acoustical Panel

*As tested in accordance with ASTM C423 - using Type A mounting per ASTM E795

ess Backing)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	NRC
No Air Space	0.07	0.30	0.86	1.10	1.05	1.03	0.85
No Air Space	0.17	0.74	1.18	0.91	0.87	0.90	0.93
50 MM Air Space	0.38	1.02	0.96	0.90	0.93	0.94	0.95
	No Air Space No Air Space	No Air Space 0.07	No Air Space 0.07 0.30 No Air Space 0.17 0.74	No Air Space 0.07 0.30 0.86 No Air Space 0.17 0.74 1.18	Hz Hz Hz Hz Hz No Air Space 0.07 0.30 0.86 1.10 No Air Space 0.17 0.74 1.18 0.91	Hz Nz Hz Hz<	Hz Hz<

Sound Transmission Class - STC 17 - 7/8" (min) thick - Type U
Out-door in-door Transmission Class - OITC 14 - 7/8" (min) thick - Type U
**As tested in accordance with ASTM E90, ASTM E413 and E1332

D. Acoustic - Hanging Baffles

Sound Absorption on Hanging Baffles - Type A - Panel

As tested in accordance with ASTM C123-90a - Results shown at NRC Fraguenci

Thickness (Inch)	Baffles	Method of Installation	Sabins/Baffle Average
1"	3	Layer - 3 specimens suspended on one cable, 16" between baffles.	10.30
1"	3	1 Layer - 3 specimens suspended between 2 cables, 36" between baffles.	23.25
1"	3	Layer - 3 specimens suspended between 2 cables, 36" between baffles. (Baffles suspended at an angle - between cables to maintain uniform height)	9.55
1"	6	Two 1" Layers - 3 specimens suspended on 2 cables, 16" between specimens. 41" from floor to specimens and 45" between cables.	9.85
1"	6	Two 1" Layers - 3 specimens suspended on 2 cables, 16" between specimens. 41" from floor to specimens, 45" between cables. (Type U - Pan	13.85
1"	9	Layers - 3 specimens each suspended on 2 cables, 24" apart and 3 specimens perpendicular across the 2 cables in between the longitudinal baffles.	9.25
1"	12	1 Layer - 6 specimens suspended on 2 cables with 9" spacing 6 specimens between the cables. Cables spaced 45° apart.	



TOTAL SOLUTION TO BUILDING'S THERMAL, NOISE AND WIBRATION

FOR CONSULTANTS

E. Floors Impact Noise Treatment

Minimum Floor system layer performance of IIC 57 (with our floor underlayment treatment). Floating Floor performance may achieve of up to F-STC 71.

Caution: Do not accept product without proper certification, certified packaging label and minimum 20 years proven installed product at equivalent jobs for durability and safety in buildings environment.



Commuter Station - Train and Subway.



TV News Studio fully treated with our products.

APPROVALS AND RATINGS

Fire Ratings

- 1. Enhanced Application (Applicable for certain Countries) Non-combustible in accordance with BS 476 Part 4:1970.
- 2. Standard Application

Classified as Class 1 Building's material, Class 'A' rating per ASTM E-84, NFPA-255 and FTC.

Thermal Conductivity

Thermal Conductivity per ASTM C-518: 0.0378 W/mK (R=3.807).

* Thermal Resistivity value is tested / measured at ambient temperature. Our product performs even more efficient at lower and higher than ambient temperature.

* Unlike most competitors who tested with/include backing layer, our product was tested without backing layer, thus result show much more efficient conductivity.

Other Tests Result

- 1. Cohesion & Adhesion Bond Strength (ASTM E-736): Min. >210 times its weight (Force exerted during test >73 LBF, Max. Force exerted 84.5 LBF) Cohesion/Adhesion >775 psf.
- 2. Test results per ASTM C-1149-02:
 - a. Smoldering Combustion: Less than 1% weight loss (maximum permissible 15%)
 - b. Fungi Resistance: No growth
 - c. Moisture Vapor Absorption: % weight gain = 1.25% (maximum permissible 15%)
 - d. Odor Emission: No perceptible

- e. Corrosion: Steel = No perforations. Aluminum = No perforations and Copper = No perforations
- 3. Air Erosion:

Found = 0.017 gm/ft² (Allowable limit = 0.025 gm/ ft²)

Standards Compliance

- ASTM C-1149 Standard Specifications for Self-Supported Spray Applied Cellulosic Insulation
- ASTM C-739 Moisture Absorption, Odor Emission, Corrosiveness and Smoldering Combustion
- ASTM C-518 Test Method for Steady-State Thermal Transmissions properties by means of Heat Flow Meter Apparatus (Thermal Conductivity)
- ASTM E-859 Air Erosion
- 5. BS 476 Part 4:1970 Fire test on Building materials and structures - Non combustibility test for Building materials
- ASTM E-84 Surface Burning Characteristics of Building Materials
- 7. ASTM E-736 Bond Strength
- 8. ASTM E-761 Compression Strength 9. ASTM C-423 Standard Test Methods for Sound Absorption and Sound Absorption Coefficient by the Reverberation Method
- 10. ASTM E-795 Standard Practices for Mounting Test Specimens during Sound Absorption Tests
- 11. ASTM E-90 Standard Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
- 12. ASTM E-413 Classification for Sound Insulation Rating (Airborne Sound Transmission)
- ASTM E-492 Standard Test method for laboratory measurement of Impact Sound Transmission through Floor - Ceiling assemblies using tapping machine.
- 14. ASTM E-989 Standard classification Impact Isolation Class (IIC) rating
- 15. ASTM E-1332 Classification for Determination of Outdoor-Indoor Transmission Class
- 16. ISO 240-3:1995 (E) Laboratory Measurements of Airborne Sound Insulation in Buildings and Buildings Elements
- 17. ISO 717-1:1996 (E) Rating of Sound Insulation in Buildings and Buildings Elements
- 18. Green Product Certification

Meet Other Standards and Approvals

- US EPA (Environmental Protection Agency)
 Consumer Product Safety Commission (CPSC) 16 CFR Part 1209
- OSHA (Occupational Safety and Health Administration)
 International Code Council (ICC)
 International Building Code (IBC)
 International Residential Code (IRC)

- 7. International Energy Conservation Code (IECC) 8. US Federal Specifications

- 9. Office of Noise Control 10. TUV SUD PSB, Singapore
- 11. Bomba, Malaysia
- 12. LIPI, Indonesia
- 13. SGS China Approvals:
 Thermal: GB/T 10294-2008, Fire: GB/T 20284 & GB/T 8626
 Acoustic: GB/T 20247-2006 & GB/T 16731-1997
- 14. Singapore Environment Council (# 035-053)
- 15. UL (Underwriters Laboratories)
 16. US Department of NAVY Guide Specifications
 17. Corps of Engineers Guide Specifications
- 18. US Federal Defense Logistics Agency
- 19. IARC (International Agency for Research on Cancer)
- 20. NTP (National Toxicology Program)
- * CSI Product's Specification sheet is available upon request.











MicroVibrant_® Noise & Vibration Product

ARCHITECTURAL & STRUCTURAL ISOLATION SYSTEM ADVANCED FLOOR, WALL & CEILING LAYER

Architectural and Structural Noise Control Vacuum Glass Doors and Windows HVAC Isolation Systems

Architectural and Structural Isolation System









Product Description

Our Architectural and Structural Noise Control Systems include the solutions for floor, wall, and ceiling isolation systems, building isolations, and sound control floor underlayments.

We also design and supply pre-engineered **Vibration Isolation for HVAC equipment** for various requirements and sizes.

In addition, we complement our product range with a wide variety of sizes and performance via our Sound and Condensation Control (Vacuum) Glass Doors and Windows.

All our products are pre-engineered and customizable for each individual project, thus every item is designed to perfectly meet each individual's needs. Thus, there will be no oversized product installed in your project which minimizes your project's costs and maximizes your project's performance on every level.

Our premier engineering team will propose and design according to your project's requirements with appropriate performance guarantees that provide every project with performance assurances while minimizing project costs and faster completion.

Durability and Maintenance

Because each product is pre-engineered with precision for your project, it provides high quality assurances for our clients and virtually maintenance free products.

Our engineering team has the capability to undertake design and build scope of work for easy and simple project coordination with fast track schedule at economical cost. *Please contact us for further details.



TOTAL SOLUTION TO BUILDING'S TH

Partial Projects Reference

North America

We have a very extensive project reference in North America with proven track record over 50 years. This includes: Schools and Universities, Retail Stores, Hotel and Resorts (includes Casinos), Theme Parks, Strategic and Technology Industries, Convention and Exhibition Centers, Churches and Religious Centers, Hospitals, Entertainment Places, Sports' Centers, Plants and Warehouse Facilities, Airports and Cargo's Buildings, Water treatment Plants, Oil and Energy Industry, Offices and Commercial Buildings, Homes and other special projects. For specific project reference, please contact us. Here are some highlights:



Waiting Room treated with Ultra Line Type A.



Sports Arena.



New Terminal Airport.



Deerfield Academy Auditorium, Boston.





Staples Center Sports Arena and Concert Hall.



Hotel, Casino and Resort with Theme Park and Convention facility.



South America

Our products have been installed at wide variety of projects, for various applications, in South American Countries. This includes prestigious projects and important Government building's (Specific project reference is available upon request).



Moot Court Room at University of Nevada Las

Vegas (UNLV) - Las Vegas.

International Convention Center.



International Video Game Fair.



Rio de Olympico - Maracanāzinho-Gymnasium, Brazil.





(Continuation from Page 19)

Partial Projects Reference

Europe

A wide variety of projects had been treated with our products, this covers Convention & Exhibition Centers, Offices, Government Building's and various industries. The following are partial:



This Expo Hall and its facility treated with our product to significantly reduce noise reverberation (include traffic noise through large opening) and for interior finishes.





The entire ceilings of this multipurpose building treated with our "FC" for much needed acoustic performance and enhance its interior lighting to save building's energy. This building is renovated and transformed into 2012 Olympic's main gymnasium and indoor stadium.



The Graz Discotheque and Entertainment Center.



Priestfields Stadium Entertainment.



Theme Park and Entertainment.

Asia, Africa and Pacific



Presbyterian Church, Jakarta - Indonesia.



Singapore Airlines - Silver Kris Lounge, Changi Airport.



GBI Medan, Indonesia



Mercure Hotel - Setiabudi Ballroom, Bandung, Indonesia.



iFly Indoor Sky Dive, Singapore



Jerudong Mosque Project, Bandar Seri Begawan, Brunei Darussalam.

(To be continued to Page 21)



TOTAL SOLUTION TO BUILDING'S THERMAL, NOISE AND VIBRATION

ARCHITECTURAL BROCHURE

(Continuation from Page 20)

Partial Projects Reference



Buddha Tooth Temple - Auditorium, Singapore.



American School Gymnasium, Singapore.



Red Scarlet Hotel, Singapore.



Kindergarten School, Singapore.



National University Hospital Sports Hall, Singapore.



Trans Studio Bandung, Indonesia



Pasir Ris Sports Complex - Singapore



La Salle - SIA Arts College, Singapore - Auditorius



Hard Rock Hotel, Singapore.



Club House, Singapore.



Divine Mercy Church, Singapore.



Paya Lebar Methodist Church, Singapore.



Philips Factory - Cafeteria, Singapore.



Bugis Plus Shopping Mall, Singapore.



National Assembly Building at Dodoma, Tanzania. (To be continued to Page 22)





DEDICATION ANDWEIGHT EXPENS

ARCHITECTURAL BROCHURE

(Continuation from Page 21)

Partial Projects Reference



CREATE - N.U.S. University Town, Singapore.



Nan Yang Arts Poly Podium, Singapore.



Gardens by the Bay - Singapore



St. Regis Spa - Cotai Central. Macau.



MRT Station, Singapore.



NUS Town (Khaya and Angsana), Singapore.



ITE West College, Singapore.



Nan Yang Technological University - Foyer, Singapol



Equarius Hotel, Singapore.



MNC Plenary Hall, Jakarta, Indonesia.



NUS Eusoff Hall, Singapore.



ITE - AMK, Singapore - Wall Liner.



ACS Multi Purpose Hall, Singapore.



Temasek Library, Singapore.



Renovation – Changi Airport Terminal 2003. (To be continued to Page 23)



(Continuation from Page 22)

Partial Projects Reference

Asia, Africa and Pacific



Indonesia International Motor Show, PRJ (Jakarta Expo) - Jakarta, Indonesia.





Hospital (Green Mark Award Building), Singapore.



DNV Technology Centre, Singapore (Green Mark Award 2013).



Bank Central Asia Tower and Hotel Indonesia, Jakarta.



New Westin Hotel, Singapore - Ballroom and Restaurant.



Singapore Heritage Museum and Exhibition.



Resort World Sentosa Casino, Singapore.



United World College - East Campus, Singapore



Victoria Park Residential Building, Singapore.



Vivo City, World Trade Center, Singapore.



AutoDesk @ Solaris, Singapore.



St George Church, Singapore - Impact-Pro Floor



University Auditorium.



Singapore Polytechnic.

(To be continued to Page 24)





(Continuation from Page 23)

Partial Projects Reference



Resort World, Resort and Casino Sentosa Festive Walk, Singapore.





The entire ceilings of Orchard Central Mall treated with our product line.



MNC Movie Theater, Jakarta, Indonesia.



Queenstown Secondary School-Library, Singapore.



Presbyterian Church, Pondok Indah, Indonesia.



Working Capitol, Singapore.



Terminal 3 - Sukarno-Hatta International Airport, Jakarta, Indonesia.



Main Ball Room, Grand Indonesia, Jakarta, Indonesia.



Resort World Sentosa Hard Rock Cafe, Singapore.



National Art Gallery, Singapore - Entire Floor Isolation treatment.



National Art Gallery, Singapore - Cell-Spray acoustical and thermal treatment.



(Continuation from Page 24)

Partial Projects Reference

Asia, Africa and Pacific



Tampines Hub, Singapore.



Tampines Hub-Sport Complex, Singapore.



Fusionopolis - Singapore.



Taruma Negara University, Jakarta, Indonesia.

KPK Building, Jakarta, Indonesia.







Shangri-La Hotel, Jakarta, Indonesia.



Bandung Super Mall, Indonesia.



Balai Kartini - Hall and Convention, Jakarta, Indonesia.



Recording Studio, Jakarta, Indonesia.



Jakarta International Exhibition Center, Hall B - Extension, Kemayoran, Indonesia.







(Continuation from Page 25

Partial Projects Reference



Marina Bay Sands - Casino Resort and Convention Center - Theater 1 and 2, Singapore.



Sports and Recreation Centre - Nan Yang Technological University, Singapore - Building Treatment.



JW Marriott Main Hall, Singapore.



Former Ford Factory Interior, Singapore.



MNC News Center, Jakarta, Indonesia.



Waterway Point Cinema, Singapore.



Auditorium and Main Lecture Hall - University of Malaysia Sabah.



Art Institute of Indonesia, Jogyakarta, Indonesia. (To be continued to Page 27)



TOTAL SOLUTION TO BUILDING'S THERMAL, NOISE AND VIBRATION

ARCHITECTURAL BROCHURE

(Continuation from Page 26)

Partial Projects Reference

Asia, Africa and Pacific



Indoor Tennis Stadium, Semarang, Indonesia.



Four Seasons (Regent) Luxurious Apartment, Jakarta, Indonesia.



Singapore Environment Building - Cafe treated with various special matching colors of FC Acoustic.



MRT Circle Line Station, Singapore.



Jakarta International Basket Ball Indoor Stadium,



Pixel Office, Singapore.



MNC Live TV Studio and Production, Jakarta, Indonesia



This largest Theme Park in East Indonesia were treated with our product to eliminate impact noise through its metal roofing while reducing indoor sound reverberation to provide pleasant indoor environment for its visitors.



Lycee Francais de Singapore Indoor Sports Hall, Capital Theater.



University Town, Singapore.



United World College - Sports Hall, Singapore.

(To be continued to Page 28)





ARCHITECTURAL BROCHURE

(Continuation from Page 27)

Partial Projects Reference



Studio Learning Hub, Singapore.



Food Court application - providing pleasant indoor environment



Global TV, Jakarta, Indonesia.



Yong An Park Condo, Singapore.



NJIS (New Jakarta International School), Kelapa Gading, Jakarta, Indonesia.



Global TV Studio, Jakarta, Indonesia.



New RCTI Television Studio, Jakarta, Indonesia.



Universal Studio Tour, Sentosa Island, Singapore were treated with Cell-Spray.



Shaw Theater @ Seletar Mall, Singapore.



Grand Hyatt, Jakarta, Indonesia.



Multipurpose Hall, Police Academy, Semarang, Indonesia.





5 Star - Hotel Tentrem & Convention Center by Sido Muncul, Yogyakarta, Indonesia. All rooms, Walls & Ceilings, treated with Cell-Spray.



TOTAL SOLUTION TO BUILDING'S THERMAL, NOISE AND VIBRATION

ARCHITECTURAL BROCHURE

(Continuation from Page 28)

Partial Projects Reference



Indosiar TV Studio and Production, Jakarta, Indonesia.



Shiseido Asia-Pacific Innovation Centre, Singapore.



Thamrin City, Jakarta, Indonesia.



Samsung Corporate HQ, Seoul, Korea.



Zouk at Clark Quay, Singapore.



Ocean Ecopark - Taman Impian Jaya Ancol, Jakarta.



Eclesia Presbyterian Church, Jakarta, Indonesia.



Golden Tulip Hotel and Convention, Bandung, Indonesia.



New ANTV Studio, Jakarta, Indonesia.



Yale - NUS Campus, Singapore.



Yio Chu Kang Indoor Stadium, Singapore.



Chandra Kusuma International School, Jakarta, Indonesia.



Lee Kong Chian School Of Medicine @Novena, Singapore



Dulwich College, Singapore - Cell-Spray and Acousti-Mat.





Green Product Award

(Continuation from Page 29

Partial Projects Reference



1TyrWhitt Bar and Bistro, Singapore.



New Jesus Christ Church, Singapore.



Myko Hotel and Convention Center - Makassar, Indonesia.



Novotel Ballroom, Jakarta, Indonesia.



Mediacorp Complex at Mediapolis @ One-North -Singapore.



United World College at Dover, Singapore (Best and Most exclusive Schools and Colleges in the World).



Dulwich College - Cafe and Restaurant, Singapore.



Sengkang General and Community Hospital, Singapore.



Suntec City International Convention and Exhibition Center, Singapore.



Myko Hotel - Ballroom, Makassar, Indonesia. (To be continued to Page 31)



(Continuation from Page 30)

Partial Projects Reference



Google Office @ Alexandra Terrace, Singapore.



F&B-Black Swan, Singapore.



Metro TV Production Studio, Jakarta, Indonesia.



Google, Jakarta, Indonesia.



Library Singapore University of Technology and



Church-Punggol Interior, Singapore



Microsoft Office, Singapore.



Home Team Academy - Wall Liner, Singapore.



Church-Gospel Light @ Punggol, Singapore.



THE PROPERTY OF THE PARTY OF LABOUR. Jurong Gateway-Canopy, Singapore.



Church-Penang, Malaysia.



New StarHub Full Service @ Mediapolis, Singapore.



Home Theater, Jakarta, Indonesia.



Singapore General Hospital - Academia.





ARCHITECTURAL BROCHURE

(Continuation from Page 31)

Partial Projects Reference

Asia, Africa and Pacific



Shell Bukom, Singapore.



JW Marriott Cafe, Singapore.



MasterCard International, Singapore.



Library-Temasek Polytechnic, Singapore.



Indoor Swimming Complex - National University of Singapore



TV News Studio and Talk Shows set design fully treated with our product.



JW Marriott - Ball Room, Singapore.



Standard Chartered Bank, Singapore.



Lee Kong Chian School Of Medicine @ NTU, Singapore.



JW Marriott - Restaurant, Singapore.



Benoi NTUC Bus Interchange, Singapore



Main Auditorium - Nan Yang Technological University, Singapore.

(To be continued to Page 33)



(Continuation from Page 32)

Partial Projects Reference

Asia, Africa and Pacific



Jurong Gateway CapitaMall, Singapore.



Academy Auditorium, Singapore - Wall Liner.



MBS Theater, Singapore.



Holy Innocents' School, Singapore.



Apple's Regional Hub and R&D Facility @ Fusionopolis, Singapore.



Tsu Chi Center - Auditorium, Jakarta, Indonesia



BHP Biliton Asia, Singapore.



Tsu Chi Center - Main Hall, Jakarta, Indonesia.



Tsu Chi Center, Jakarta, Indonesia.



Visa Worldwide Office @ Robinson Road, Singapore.



Hotel Tentrem - Semarang, Indonesia



Nespresso Vivo - Singapore.



Nespresso Boutique - Kuala Lumpur, Malaysia.



Nespresso Boutique - Bangkok, Thailand.

(To be continued to Page 34)





ARCHITECTURAL BROCHURE

Continuation from Page 33

Partial Projects Reference



Facebook Office @ South Beach, Singapore.



Police Division HQ @ Woodlands, Singapore.



Raffles Girls' School's New Campus, Singapore.



Grace Assembly of God Church, Singapore.



Netflix Asia HQ, Singapore.



Philips Electronics Office Facility, Singapore.



New Bali International Airport - Achitectural View, Denpasar, Indonesia



Facebook - Office and Training Facility, Jakarta,



Jerudong Arts School-Auditorium, Brunei Darussalam. (To be continued to Page 35)



(Continuation from Page 34)

Partial Projects Reference



CBRE - Coldwell Banker Richard Ellis, Singapore.



Serangoon Garden Secondary School, Singapore.



NTU Innovation Centre, Singapore.



Shaw Theatres @ Jewel - Changi, Singapore.



New State Courts, Singapore.



Oracle Digital Hub @ Mapple Tree, Singapore.



New German European School, Singapore.



Pizza Express @ Jewel Changi, Singapore.



Outram Community Hospital, Singapore.



Hotel-Okura at Resort World Manila, Philippines.



De Tjolomadoe, Solo, Indonesia



BCA - Buildings and Construction Authority Academy, Singapore.



Sports Indoor Stadium, Balikpapan, Indonesia.



Trans Studio Cibubur, Indonesia.





ARCHITECTURAL BROCHURE

TOTAL SOLUTION TO BUILDING'S THERMAL, NOISE AND VIBRATION

General Information

Our advanced fiber product is simply and truly the most innovative fiber (and its derivative) product in the world. Our continuous research and development in fiber technology leads to the invention of new high-end fiber products and components that form a proprietary system.

Our range of products includes various fibers with excellent acoustical and thermal treatment that comes with one hour fire endurance for home, commercial, and industrial buildings. It is an economical and efficient multi-function building treatment system with fast-track application to achieve quiet and pleasant indoor environment while saving building's energy consumption thus providing healthy and safety building's environment.

Our proprietary treatment systems provide architects, designers, and builders with an infinite range of options in controlling sound, energy, and lighting on walls and ceilings. Utilizing state-of-the-art technology in production, we present the finest fiber products. When combined with our proprietary components, our product becomes an installed product with excellent and unmatched acoustical and thermal performance. The use of our proprietary components make it possible to create exceptional performance in various types of applications, such as sound transmission and impact noise treatment, as well as noise reverberation treatment and building thermal control with the highest ratings and approval in the industry.

Our products have been rigorously tested by various internationally recognized independent laboratories in comprehensive fields and obtain various certifications and approvals from international institutions. Our product has been tested extensively and rigorously in North America, Europe, and Asia. Our engineering team and advanced facilities allow us to continuously develop and test new products and treatment systems. These factors enable us to perform design and build scopes of work with proven performance that reduce project costs, accelerate project completion, and provide performance surety to our clients. * The information presented herein and the product showcased in this brochure will be updated from time to time at www.AcousticProduct.Net

Product Limitations

As with most building materials, our product should not be used in areas where there is prolonged exposure to water and it should not be applied or installed in areas with excessive exposure to extreme heat or fire and where combustible materials (such as heavy dust, oil mist/drip, resins or dusts, wood, metal sanding and grinding particles, kraft paper outer layer of gypsum board (dry wall) or other flammable substance) exist, which may create fire hazards and will burn if set on fire from an ignition source (such as spillover from hot works) as well as prolonged accumulated extreme heat from over capacity/short circuit at electrical circuits, junction boxes, and fixtures. If ignited, these contaminants will burn until consumed and it can spread fire to other building materials. Strict building industrial maintenance procedure to control this from happening must be employed for building safety during construction and after completion as basic building maintenance. This is especially important during execution of hot works, such as steel cutting or grinding, whereby extreme heat and molten metal exceeding 1200°F will spill over. Building materials, including thermal and acoustical insulation, should be protected by a wainscoting or blankets (as recommended and approved per ASTM and NFPA standards) in areas where potential severe or direct contact with an ignition source (such as hot works) and presence of combustible materials (as described above) are reasonably anticipated. All these conditions may be detrimental to the surrounding building materials and deform the installed product. While accumulation of unwanted contaminants may become hazardous and flammable; our product may deter the spread of fire caused by the above events.

Our product is solely intended for the building's thermal and acoustical treatment; its fire ratings provided are supplemental benefits to users. Our spray applied product requires a curing process of 4-6 weeks with proper ventilation.

Special Precautions

Application of product on certain types of surfaces may need preparation (sealing and priming) prior to application. This publication supersedes the content of any previous publications issued through December 31, 2020. *For detailed information on limitations and precautions, please refer to our warning bulletins or contact our local applicator.

Warranty and Other Terms

Microfiber Technology Corporation (MTC) and Pacific American Company (PAC) warrant its products to be free from defects in materials and workmanship at time of shipment. Installation/application warranty is provided by our local sales offices and/or authorized applicators.

Supply and installation to end users are provided through our local sales offices and authorized distributors and applicators only. All installations and applications shall only utilize our special licensed equipment. Some handy installation products may be self-installed by end users at their own risk. It is the sole responsibility of the end user (customer) to determine compliance of the product with local building codes and other regulatory bodies. Installation and application and worker's compensation insurance are the responsibilities of the local installer.

MTC and PAC herein publish information and data based on generic tests and

MTC and PAC herein publish information and data based on generic tests and information available in selective public domains. MTC and PAC believe these data are as reliable as present state-of-the-art data in fire, thermal, and acoustics, and can be used only as a guide for design. Test results are in compliance with the highest degree of appropriate standards and are conducted by internationally recognized independent laboratory utilizing state-of-the-art facilities, techniques, and instrumentations. In any event, MTC and PAC are not responsible for building design, appearance, and/or workmanship and make no guarantee of performance of the building's integrated system, either partially or wholly. The integrity of backing layer and/or substrate, where our product(s) is applied and/or installed, is not covered by our warranty in any way.

MTC and PAC specifically disclaim any warranty of merchantability or fitness for any particular purpose. In no event shall MTC and PAC and their management and

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*Limitations, warranty, and other terms and conditions are updated from time to time. Terms and limitations are subject to change without notice. Please check our website regularly for updates.

To see and hear how we can help to improve your projects through multimedia presentation and to obtain additional information, please visit our website or contact us via email for product presentation. Design assistance, specification sheet and technical data are available upon request through our applicator, or directly contact us via email. This brochure is updated from time to time at our website.









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