<u>RSIC</u> THE REVOLUTION IN NOISE CONTROL

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RSIC ARCHITECTUAL CATALOG THE RSIC SOUND ISOLATION CLIPS

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PAC International, Inc. Tel: (866) 774-2100 Fax: (866) 649-2710 Web	Site: <u>www.pac-intl.com</u>

COMPANY PROFILE

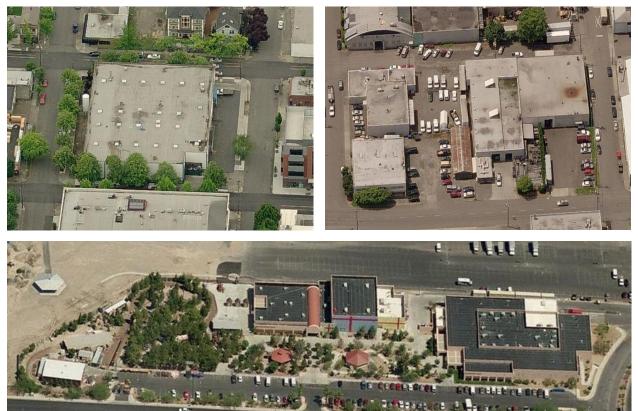


PAC International, Inc. Corporate Headquarters

PAC International, Inc. Warehouse



PAC International, Inc. Manufacturing Facilities



PAC International, Inc. Customer Care Resilient (Rubber) Sound Isolation Clip (RSIC) Products (Toll Free) 866-774-2100 (Toll Free Fax) 866-649-2710

PAC International, Inc. A socially responsible company supports the local community.



PAC International, Inc. A socially responsible company supports the local community.

Opportunity Village Saves Time and Money for Manufacturers Nationwide by John Sprovieri Posted: February 29, 2008

It wasn't all that long ago that people with intellectual disabilities were institutionalized—isolated from their families and communities. Education, vocational training, employment and integration into society simply weren't done. These days, thankfully, attitudes are much different. A number of organizations are



Cara McCririck assembles sound isolation clips at Opportunity Village in Las Vegas.

providing win-win situations: enabling people with intellectual disabilities to obtain training and fulfilling employment, while helping manufacturers assemble their products for pennies on the dollar.

One such organization is Opportunity Village (Las Vegas), a nonprofit employing people who have intellectual disabilities, enhancing their lives and the lives of their family. A facility of the Association for Retarded Citizens, Opportunity Village was founded in 1954 by a small group of local families seeking to improve the lives of their children with intellectual disabilities. Since then, Opportunity Village has grown to become Nevada's largest private, nonprofit community rehabilitation program, serving more than 350 people annually through vocational training, community job placement, advocacy, and social recreation programs.

Employees of Opportunity Village help businesses from coast-to-coast assemble their products, saving them money and freeing up valuable time. For example, PAC International Inc. (Las Vegas) makes sound isolation clips for building construction. The clips are placed between drywall and studs or joists to prevent noise-producing vibrations from traveling room to room. Each device consists of a clip, a fastener, a washer and rubber vibration-dampening component. Originally, the company assembled the clips out of the country—until they found Opportunity Village.

"Opportunity Village has delivered consistent production results, allowing us to focus on the most important part of our business—our customers," says Elzo Gernhart, vice president of PAC International."Opportunity Village is reliable and cost-effective." Viracon Inc. (Owatonna, MN), a window and glass manufacturer, was assembling its product at a plant in the Midwest even though its distribution was headquartered in Utah. According to Viracon's senior buyer Rabecca Shamblen, having Opportunity Village complete the work was a logical choice because the freight charge was cheaper.

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Opportunity Village Saves Time and Money for Manufacturers Continued:

"Not many people know we can offer valuable services to businesses nationwide," says Laura D'Amore, sales and marketing manager for Opportunity Village. "We can handle most assembly and packaging jobs; people just need to give us a chance." Although it's a nonprofit, Opportunity Village operates like a for-profit business. It has a large warehouse and loading area where contracts come in, are inventoried, assembled, packaged and then distributed. A three-step quality assurance process ensures customers' products are being checked at the assembly tables, on the pallet, and lastly, in the warehouse prior to shipment. According to D'Amore, quality is a crucial step to providing assembly services.

"Why pay a \$10- to \$15-per-hour employee to assemble your product when we can provide the same quality for a fraction of the price?" asks D'Amore. "We are competent, able and willing to do what is needed to get more contracts in our Work Center. We have many of the same services for-profit manufacturing plants have; we just have the added benefit of helping people in the community."

Opportunity Village also builds adaptive devices to help employees complete contracts accurately and quickly. For example, project supervisors constructed a jig for the Sound Isolation Clip. The jig helped workers assembled the clip correctly, allowed them to quickly count the units, and expedited processing time.

Opportunity Village handles a wide array of contracts, from stuffing small bags to assembling large components and kits. Satisfied Opportunity Village customers include Cox Communications, the Las Vegas Convention and Visitors Authority, Harrah's Entertainment, MGM/Mirage, Nevada Power, Southwest Gas, and the Las Vegas Valley Water District.

For more information on Opportunity Village's business-to-business services, call 702-880-4022, send an e-mail to damorel@opportunityvillage.org,

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We appreciate **feedback** of all kinds. Comments, questions and suggestions may be sent to PAC International, Inc. Customer Care at <u>info@pac-intl.com</u>.

Product Specifications/Testing Data

If you need detailed product information, performance testing, UL Fire Resistive Design Assemblies, etc. to specify RSICTM products in your project, please contact us at <u>support@pac-intl.com</u>

News Media

Are you a member of the news media looking for information on PAC International, Inc.? Email your questions to Elzo Gernhart, at <u>elzo@pac-intl.com.</u>

Sponsorships

Are you interested in discussing media events, a partnership opportunity, or sponsorships with us? Email your proposal to <u>sponsorships@pac-intl.com</u>, and be sure to include your contact information and details about the opportunity.

Investor Relations

Interested in investment information about PAC International, Inc.? Email your questions to PAC International, Inc. Investor Relations at <u>info@pac-intl.com</u>.

Jobs

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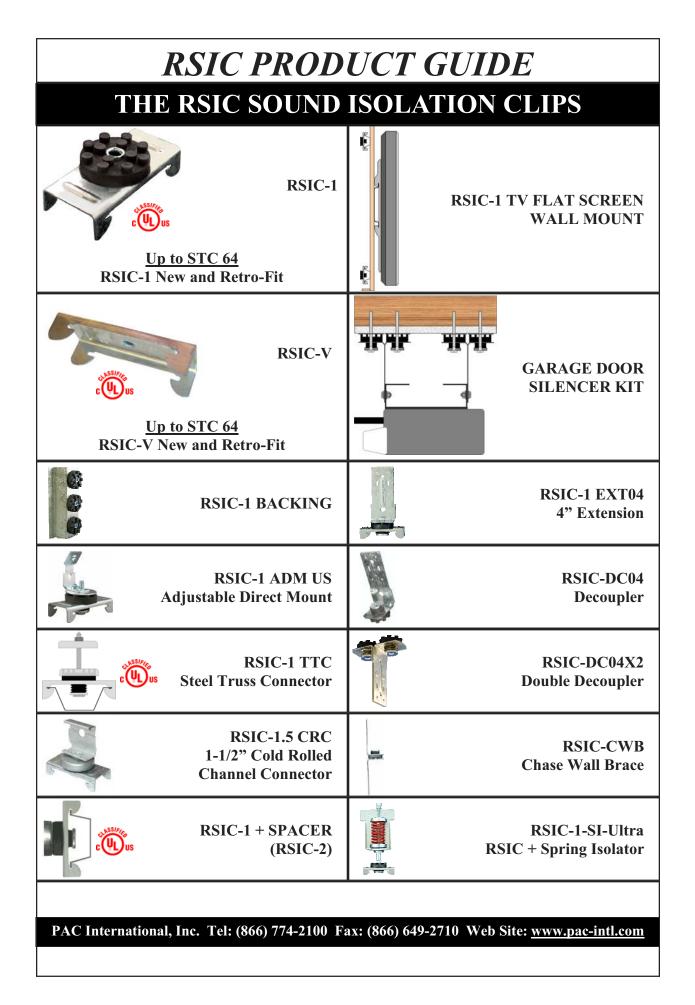
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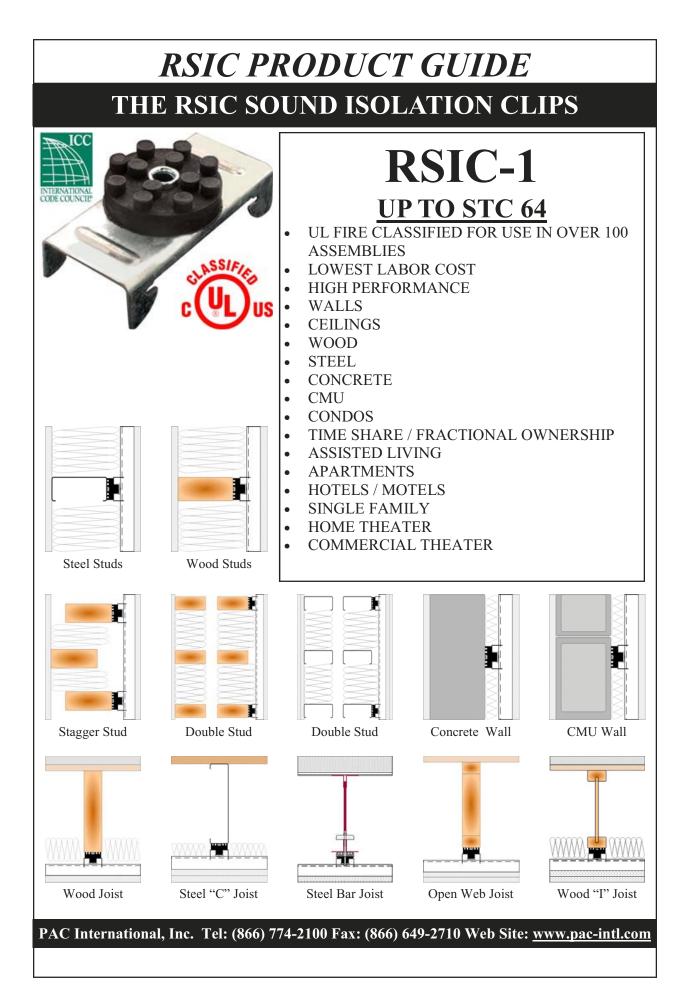
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Office hours - 8am to 4:30pm Pacific Time

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RSIC PRODUCTS







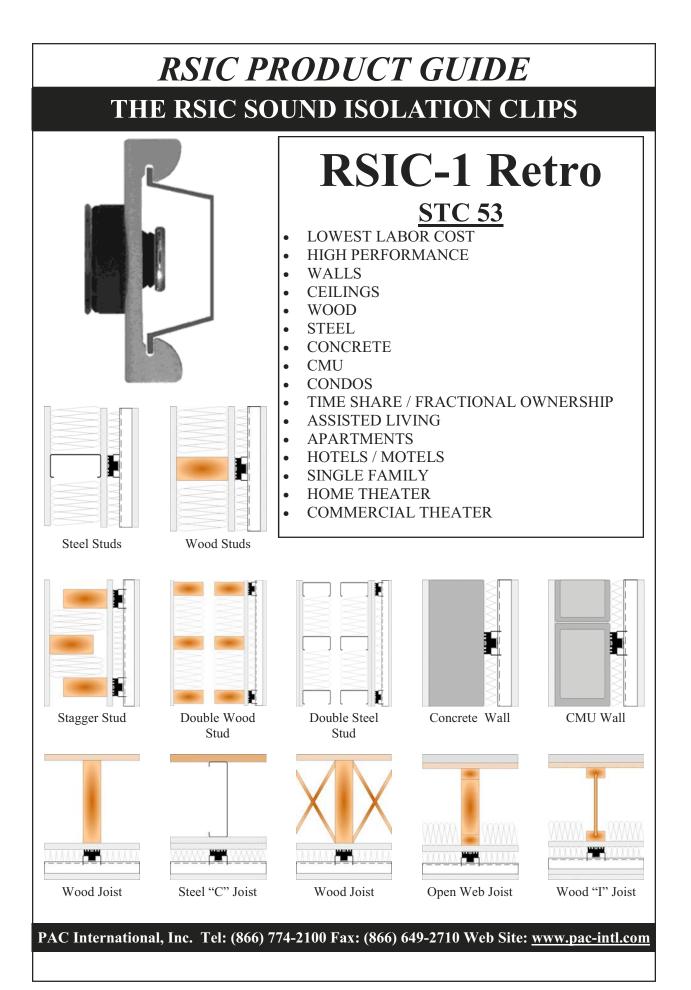
- **RSIC-1** <u>UP TO STC 64</u>
- UL FIRE CLASSIFIED FOR USE IN OVER 100 ASSEMBLIES
- LOWEST LABOR COST
- HIGH PERFORMANCE
- WALLS
 - CEILINGS
 - WOOD
- STEEL
- CONCRETE
- CMU
- CONDOS
- TIME SHARE / FRACTIONAL OWNERSHIP
- ASSISTED LIVING
- APARTMENTS
- HOTELS / MOTELS
- SINGLE FAMILY
- HOME THEATER
- COMMERCIAL THEATER

RSIC-1

The **RSIC-1** is designed for use with various wall or floor-ceiling designs and applications. The RSIC-1 decouples the gypsum board from the structure in wall or floor-ceiling assemblies. The RSIC-1 has been acoustically tested, and adds 15 to 20 STC points and 15 to 20 IIC points to your existing assemblies, reducing the noise transfer by 75 to 100%.

When designed into the wall or floor-ceiling assembly, there can be a substantial cost savings. Wall systems have shown savings of up to \$1.00/sq ft. Floor-ceiling systems have shown savings of up to \$1.71/sq ft. In both circumstances the RSIC-1 clip increased the acoustical performance. The RSIC-1 can reduce the width of a wall assembly while delivering high acoustical performance.

RSIC-1, the Low Cost, High Performance, Noise Control Solution





RSIC-1 Retro

The **RSIC-1 Retro** clip is designed for use with various framing designs and applications. The RSIC-1 Retro clip will attach to wood, metal, brick, CMU, concrete, or over existing gypsum board. The only change that needs to be made is the type of fastener. The RSIC-1 Retro decouples the gypsum board from the framing in wall and floor-ceiling assemblies. The RSIC-1 Retro has been acoustically tested, and adds 10 to 15 STC pts to your existing assemblies, reducing the noise transfer by 50 to 75%. The RSIC-1 Retro clip consists of a RSIC-1 clip, and a 1-1/2" steel flat washer to bridge any un-solid substrate such as gypsum board.

The biggest advantage (other than the acoustical improvement) is the ability to cover the existing gypsum board, reducing the labor expense of removing the original gypsum board, and additional waste fees incurred with the disposal of construction materials.

RSIC-1 Retro, the Low Cost, High Performance, Noise Control Solution



The RSIC-V (Value) is up to 70% less expensive than the RSIC-1 clip, and has 50% higher STC than old fashioned RC-Channel.

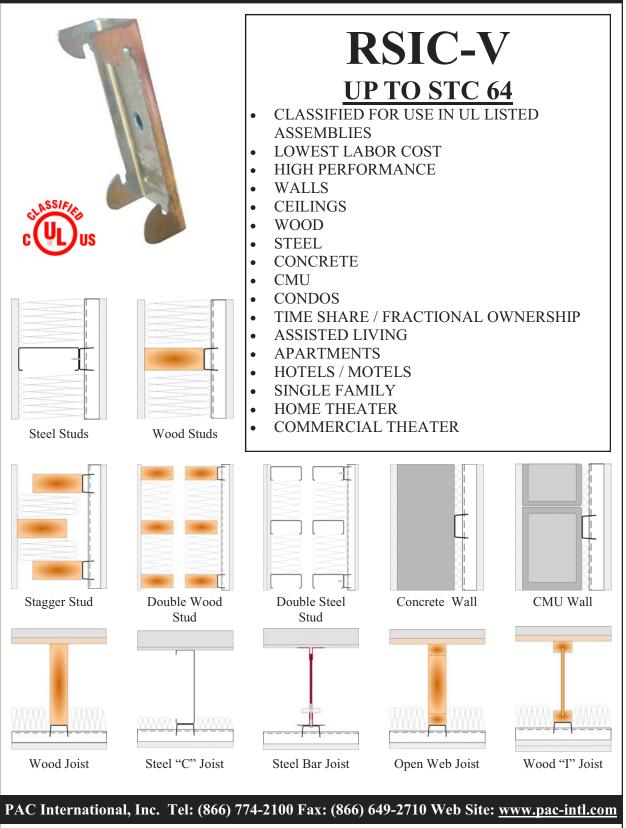
- **RSIC-V** UP TO STC 64 CLASSIFIED FOR USE IN UL LISTED ASSEMBLIES LOWEST LABOR COST HIGH PERFORMANCE WALLS CEILINGS WOOD STEEL **CONCRETE** CMU **CONDOS** TIME SHARE / FRACTIONAL OWNERSHIP ASSISTED LIVING • **APARTMENTS** HOTELS / MOTELS SINGLE FAMILY • HOME THEATER
 - COMMERCIAL THEATER

RSIC-V

The **RSIC-V** is designed for use with various wall or floor-ceiling designs and applications. The RSIC-V decouples the gypsum board from the structure in wall or floor-ceiling assemblies. The RSIC-V has been acoustically tested, and adds 8 to 12 STC points to your existing assemblies, reducing the noise transfer by 50 to 75%. The RSIC-V is installer proof. It cannot be installed upside down, and cannot be short circuited.

When designed into the wall or floor-ceiling assembly, there can be a substantial cost savings. The RSIC-V systems have shown savings of up to \$1.60/sq ft. when used to replace antiquated methods of installation.

RSIC-V, the Low Cost, Noise Control Solution



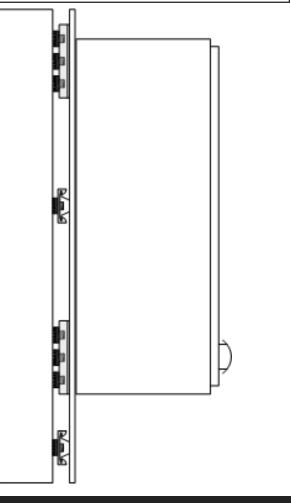


RSIC-1 Backer

- LOW LABOR COST
- SUPPORTS HEAVY LOADS
- HIGH STC RSIC-1 PERFORMANCE
- HIGH ACOUSTICAL PERFORMANCE
- WOOD / STEEL
- CONCRETE / CMU
- CONDOS / TIME SHARE / FRACTIONAL OWN-ERSHIP / APARTMENTS
- HOTELS / MOTELS
- SINGLE FAMILY

RSIC-1 Backer

The **RSIC-1 Backer** when installed with the RSIC-1 combines to make the only resilient noise control system engineered to support heavy loads. Not even the 50 year old RC Channel can do this. The RSIC-Backer is designed to support cabinets, shelving, lockers, white boards, chalk boards, grab bars and hand rails. The RSIC-1 Backer has been acoustically tested with the RSIC-1 wall, and allows for heavy objects to be hung from the wall with no change in the STC provided by the stand alone RSIC-1 wall system.





RSIC-1 ADM US (Adjustable)

The **RSIC-1 ADM US** is intended for use under a concrete slab or steel deck floor system for dropped drywall ceilings. The RSIC-1 ADM is fastened directly to the underside of the concrete using a shoot in connector clip with 1/4 - 20 US threads for a fully adjustable ceiling. A threaded cup washer, or a flat washer and lock nut is installed to the pin, or threaded rod. The RSIC-1 ADM is threaded onto the drive pin, or threaded rod and set to height. The RSIC-1 ADM will boost the Impact Isolation Class (IIC) of the assembly up to 20 IIC pts and 10 STC pts. The RSIC-1 ADM available as single RSIC clip, or a complete system with RSIC-ADM clip, nuts, washer, bolt, and 1/4 - 20 threaded clip for a shoot in application to your specs.

RSIC-1 ADM, the Low Cost, High Performance, Noise Control Solution

RSIC PRODUCT GUIDE



The **RSIC-1.5 CRC** is designed for use with any joist or concrete application where a dropped drywall ceiling is required. This assembly decouples the gypsum board from the floor structure above, giving the assembly enhanced acoustical performance, while allowing for a chase to hide mechanical ducts and plumbing lines. The RSIC-1.5 CRC clip snaps onto 1.5" cold rolled channel, allowing for all of the wires supporting the cold rolled channel to be hard connected to the structure above, including the vertical strut. The RSIC-1.5 CRC decouples the gypsum board below the cold rolled channel to ensure a complete decoupling of the gypsum board for optimum noise control.

RSIC-1.5 CRC, the Low Cost, High Performance, Noise control Solution

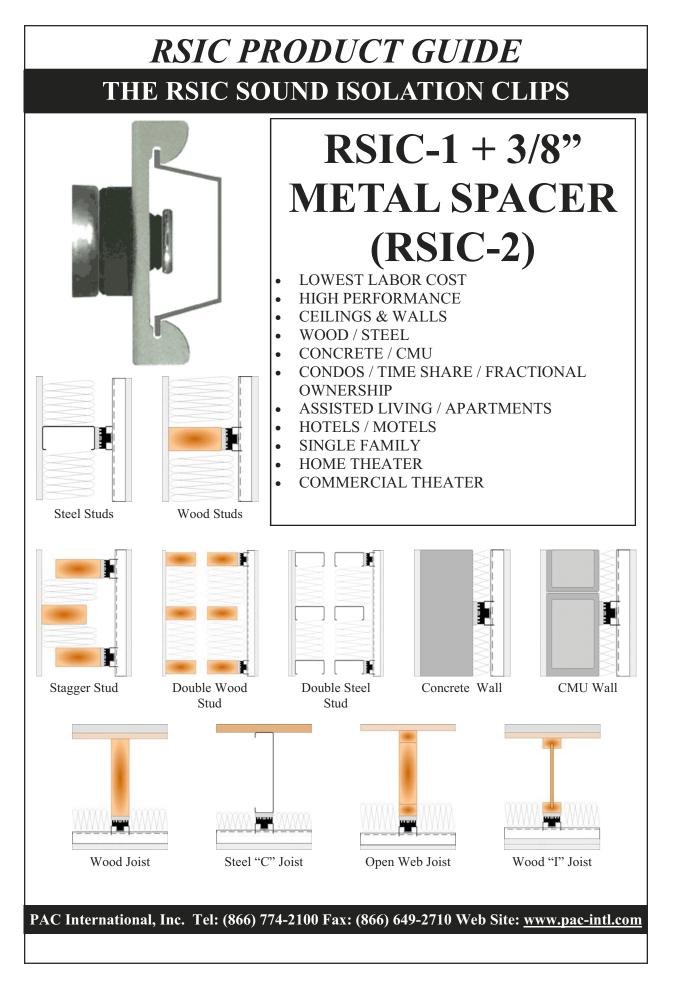
RSIC PRODUCT GUIDETHE RSIC SOUND ISOLATION CLIPSRSIC-1 + 3/8"METAL SPACER(RSIC-2)

- LOWEST LABOR COST
- HIGH PERFORMANCE
- CEILINGS & WALLS
- WOOD / STEEL
- CONCRETE / CMU
- CONDOS / TIME SHARE / FRACTIONAL OWNERSHIP
- ASSISTED LIVING / APARTMENTS
- HOTELS / MOTELS
- SINGLE FAMILY
- HOME THEATER
- COMMERCIAL THEATER

RSIC-1 WITH SPACER

The **RSIC-2** provides a cost effective alternative for wall assemblies where door frames may occur. By using the RSIC-2 the finish wall over all thickness remains an "INDUSTRY STANDARD" thickness. Therefore, NO custom made to order components are required. The RSIC-2 has an overall thickness of 2". When added to a conventional 2" x 4" wall framing the new over all thickness of the framing becomes 5-1/2", the standard thickness of a 2" x 6" wood stud wall. The RSIC-2 also works well when attached to a 4" steel stud to create a 6" framed width wall, an industry standard width. This allows for the use of standard off the shelf door frames and window casings. Thereby STANDARDIZING the components in the assembly and controlling associated costs related to the wall thickness.

RSIC-2, the Low Cost, High Performance, Noise Control Solution





RSIC-1R + 3/8" METAL SPACER (RSIC-2R)

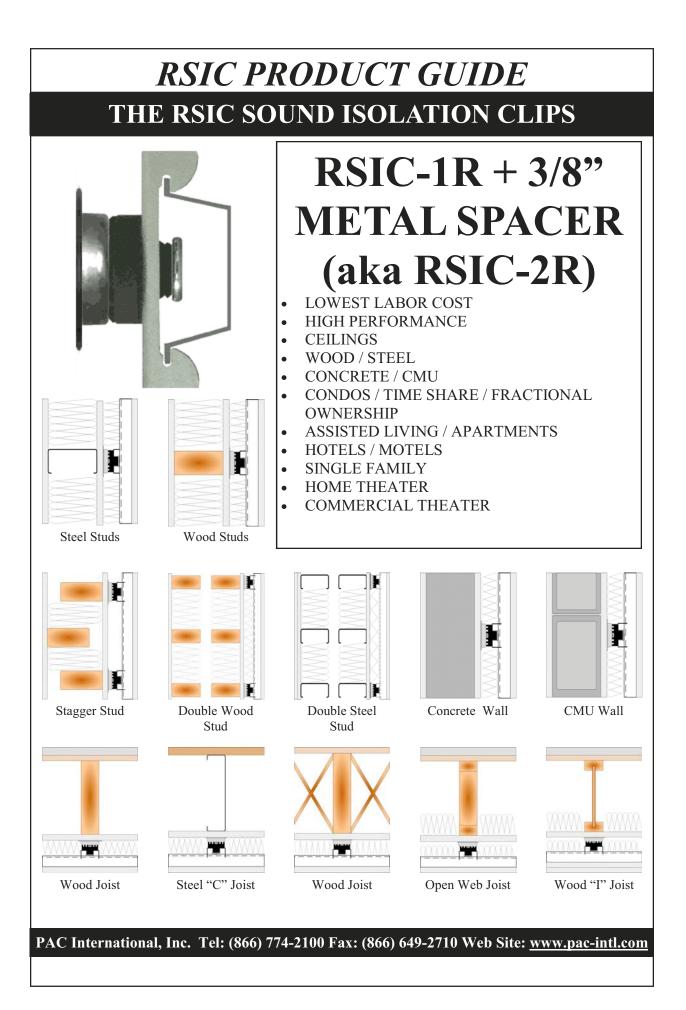
- LOWEST LABOR COST
- HIGH PERFORMANCE
- CEILINGS & WALLS
- WOOD / STEEL
- CONCRETE / CMU
- CONDOS / TIME SHARE / FRACTIONAL OWNERSHIP
- ASSISTED LIVING / APARTMENTS
- HOTELS / MOTELS
- SINGLE FAMILY
- HOME THEATER
- COMMERCIAL THEATER

RSIC-2 Retro

The **RSIC-2 Retro** clip is designed for use with various framing designs and applications. The RSIC-2 Retro clip will attach to wood, metal, brick, CMU, concrete, or over existing gypsum board. The only change that needs to be made is the type of fastener. The RSIC-2 Retro clip decouples the gypsum board from the structure in wall and floor-ceiling assemblies. The RSIC-2 Retro adds 10 to 15 STC pts to your existing assemblies, reducing the noise transfer by 50 to 75%. The RSIC-2 Retro clip consists of a RSIC-1 clip, a 3/8" cup washer (spacer) and a 2" steel flat washer to bridge any un-solid substrate such as gypsum board.

The biggest advantage (other than the acoustical improvement) is the ability to cover the existing gypsum board, reducing the labor expense of removing the original gypsum board, and additional waste fees incurred with the disposal of construction materials. The RSIC-2 Retro will add a 2" cavity to your noise control assembly and allow for a mechanical chase for new electrical wires or data wires, all while retaining the superior acoustical performance of the RSIC clips.

RSIC-2 Retro, the Low Cost, High Performance, Noise Control Solution





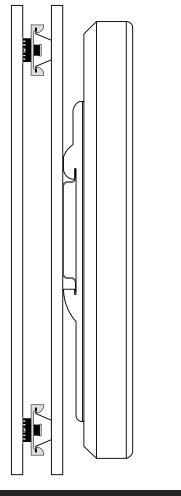
RSIC-1 Flat Screen TV Mount

- LOWEST LABOR COST
- HIGH PERFORMANCE
- WOOD / STEEL
- CONCRETE / CMU
- CONDOS / TIME SHARE / FRACTIONAL OWN-ERSHIP / APARTMENTS
- HOTELS / MOTELS
- SINGLE FAMILY

<u>RSIC-1 Flat Screen</u> <u>Mount With</u> <u>RSIC Security Strap</u>

The **Flat Screen Mount** is required to prevent a wall mounted TV from resonating the sound wave vibrations caused by the speakers, and the TV itself through the wall into the adjacent space. The RSIC-1 Flat Screen Mount originally designed for the Hotel industry is now available for homeowners and builders that desire the best. The RSIC-1 Flat Screen Mount is the only system acoustically tested to eliminate noise transfer from room to room, caused by a wall mounted flat screen TV.

Independent laboratory testing shows mounting a flat screen TV directly to a wall using any of the available wall mounts increases the noise passing through the wall more than 200%. <u>The RSIC-1 Flat</u> <u>Screen Mount resets the wall to it's pre-Flat screen</u> mount noise control level.

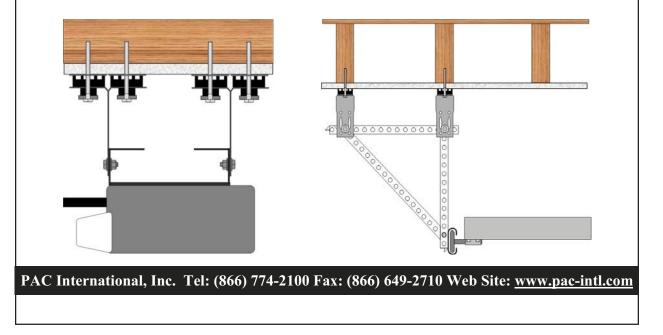


Garage Door Silencer Kit

- LOWEST LABOR COST
- HIGH PERFORMANCE
- WOOD
- STEEL
- CONCRETE
- CMU
- CONDOS
- TIME SHARE / FRACTIONAL OWNERSHIP
- ASSISTED LIVING
- APARTMENTS
- HOTELS / MOTELS
- SINGLE FAMILY

Garage Door Silencer Kit

The **Garage Door Silencer Kit** decouples the garage door opener from the structure. This eliminates noise caused by the mechanical vibrations when the garage door openers motor is running. This same kit can be used to isolate the rails of the garage door decreasing the amount of noise that is allowed into the adjacent rooms.





RSIC-1 EXT04

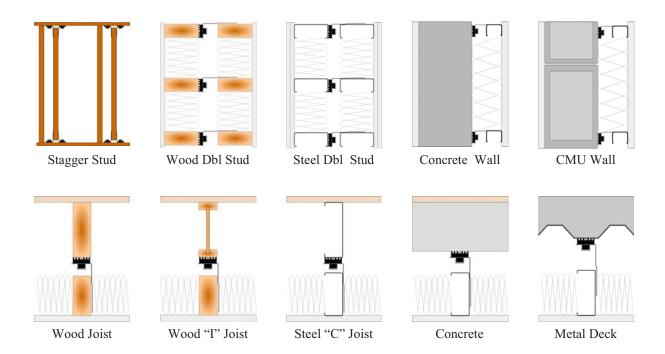
The **RSIC-1 EXT04** is designed for use where an additional drop for HVAC, plumbing or electrical chases are needed. This clip gives you the flexibility to drop a ceiling as much as 4" from its original height. The RSIC-1 EXT04 is also used to level out uneven ceiling joists. This clip has proven to be very popular with the Home Theater industry and Historical Buildings. It creates a dropped ceiling, allowing an open chase for new electrical wires, plumbing or HVAC, all while retaining the superior acoustical performance of the RSIC clips.

RSIC-1 EXT04 The Low Cost, High Performance, Noise Control Solution



RSIC-DC04

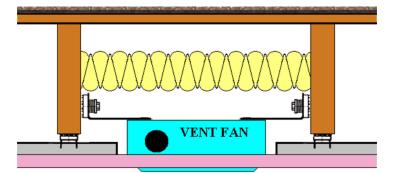
- LOWEST LABOR COST
- HIGH PERFORMANCE
- WALLS, CEILINGS
- WOOD, STEEL
- CONCRETE, CMU
- HEAD OF WALL
- WALL DECOUPLER
- CONDOS
- TIME SHARE / FRACTIONAL OWNERSHIP
 - ASSISTED LIVING
- APARTMENTS
- HOTELS / MOTELS
- SINGLE FAMILY
- HOME THEATER
- COMMERCIAL THEATER

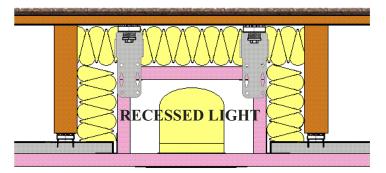




RSIC-DC04

- LOWEST LABOR COST
- HIGH PERFORMANCE
- WALLS, CEILINGS
- WOOD, STEEL
- CONCRETE, CMU
- HEAD OF WALL
- WALL DECOUPLER
- CONDOS
- TIME SHARE / FRACTIONAL OWNERSHIP
 - ASSISTED LIVING
- APARTMENTS
- HOTELS / MOTELS
- SINGLE FAMILY
- HOME THEATER
- COMMERCIAL THEATER







RSIC-DC04

- LOWEST LABOR COST
- HIGH PERFORMANCE
- WALLS, CEILINGS
- WOOD, STEEL
- CONCRETE, CMU
- HEAD OF WALL
- WALL DECOUPLER
- CONDOS
- TIME SHARE / FRACTIONAL OWNERSHIP
- ASSISTED LIVING
- APARTMENTS
- HOTELS / MOTELS
- SINGLE FAMILY
- HOME THEATER
- COMMERCIAL THEATER

RSIC-DC04

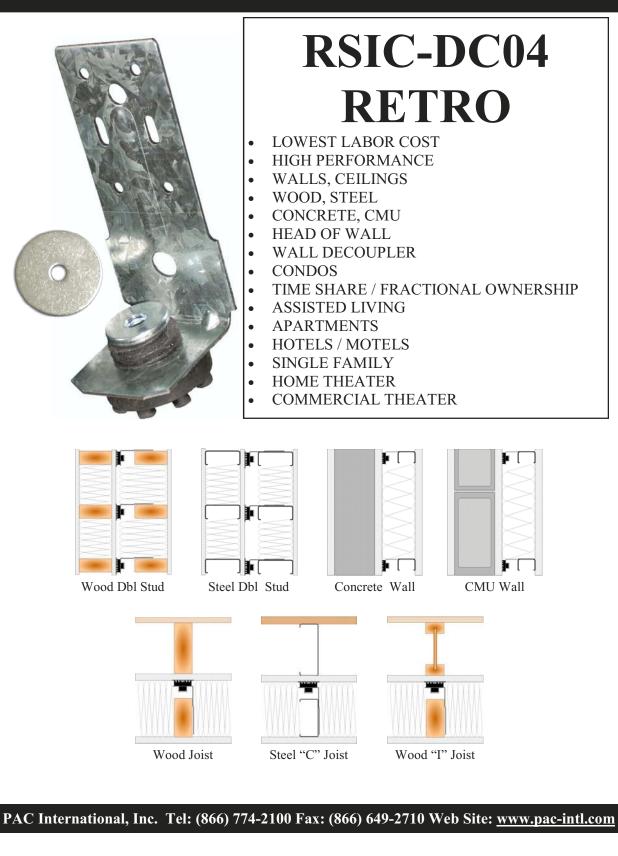
The **RSIC-DC04** is a universal and versatile product. The most common use is decoupling wall systems. The design of the RSIC-DC04 can be used in new construction or retrofit. The RSIC-DC04 should be used when heavy items need to be acoustically decoupled for noise isolation.

A few examples of the possible uses for the RSIC-DC04:

Dropped ceiling, decoupled brace or resilient connector for isolating walls, speaker mount isolators, exhaust/vent fan isolators, recessed lighting cover box isolators, projector mount isolators, electrical box, ceiling fan isolators, garage door motor isolation, and garage door rail isolation just to name a few.

RSIC-DC04 is the universal isolator.

RSIC-DC04, the Low Cost, High Performance, Noise Control Solution





RSIC-DC04 RETRO

- LOWEST LABOR COST
- HIGH PERFORMANCE
- WALLS, CEILINGS
- WOOD, STEEL
 - CONCRETE, CMU
- HEAD OF WALL
- WALL DECOUPLER
- CONDOS
- TIME SHARE / FRACTIONAL OWNERSHIP
- ASSISTED LIVING
- APARTMENTS
- HOTELS / MOTELS
- SINGLE FAMILY
- HOME THEATER
- COMMERCIAL THEATER

RSIC-DC04 Retro

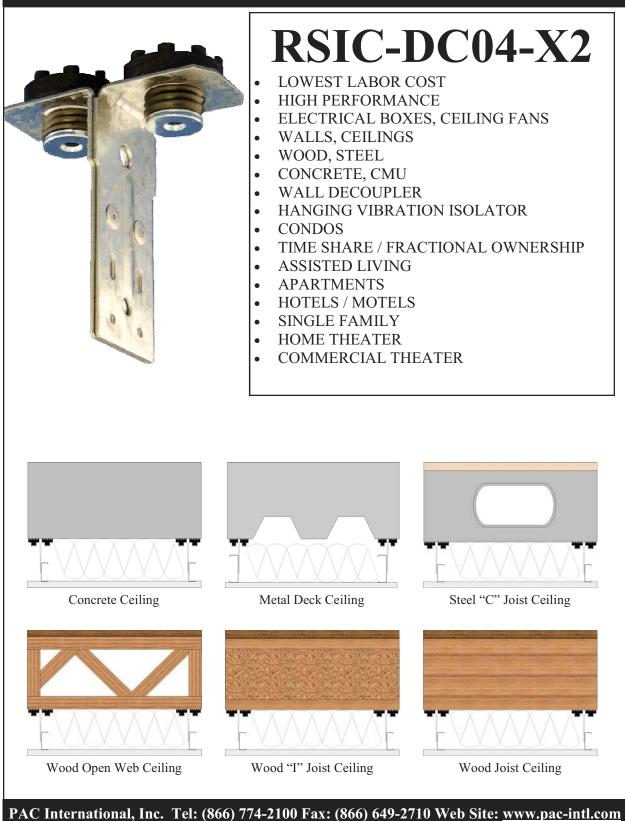
The **RSIC-DC04 Retro** is a universal and versatile product. One common use is the decoupling of wall assemblies. The design of the RSIC-DC04 Retro can be used in new construction or retrofit. The RSIC-DC04 Retro is a strong acoustical decouple system for noise isolation.

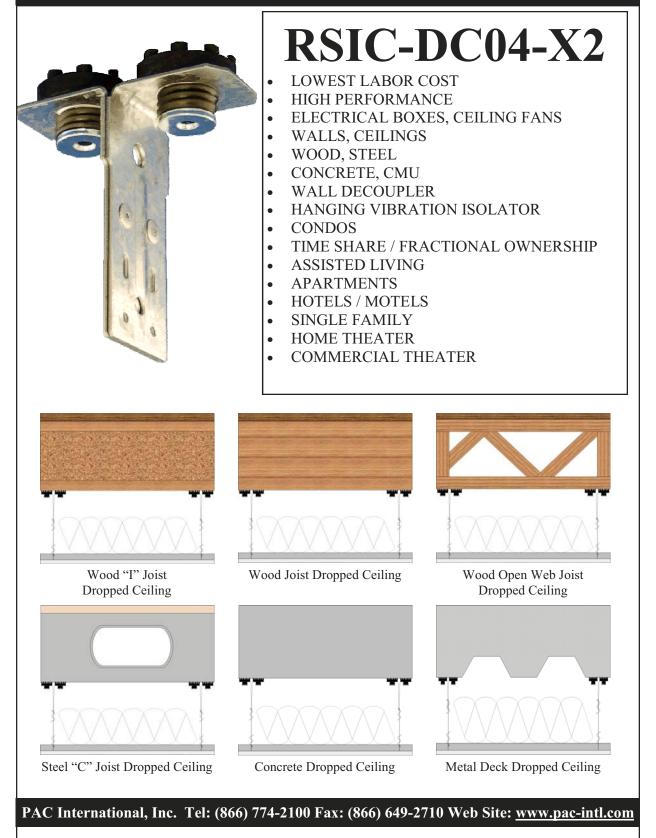
A few examples of the possible uses for the RSIC-DC04 Retro:

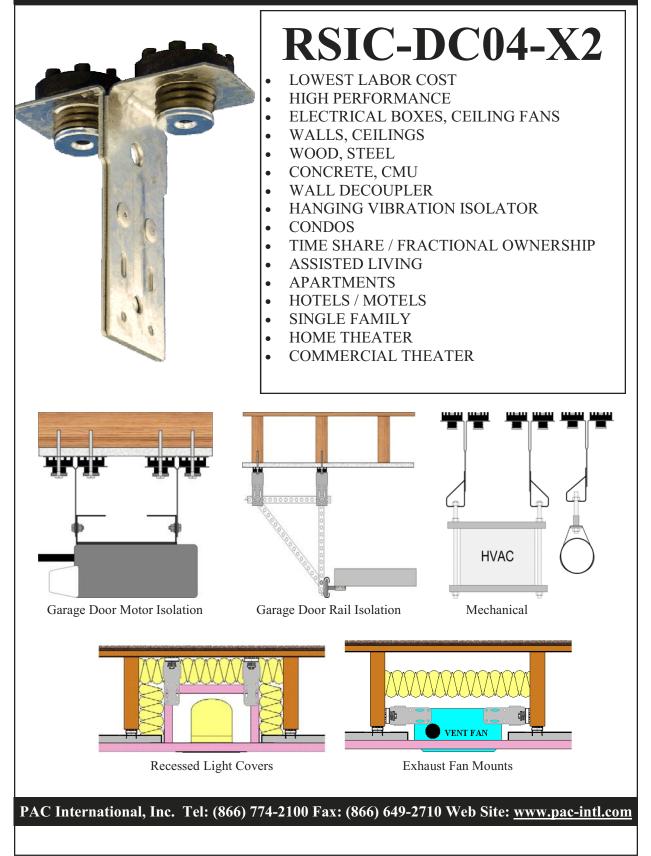
Dropped ceiling, decoupled brace or resilient connector for isolating walls, speaker mount isolators, exhaust/vent fan isolators, recessed lighting cover box isolators, projector mount isolators, electrical box, ceiling fan isolators, garage door motor isolation, and garage door rail isolation just to name a few.

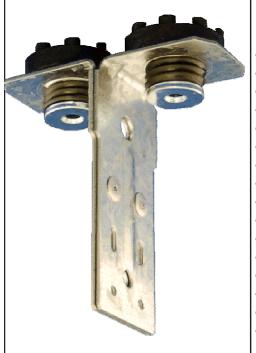
RSIC-DC04 Retro is the universal isolator.

RSIC-DC04 Retro, the Low Cost, High Performance, Noise Control Solution









RSIC-DC04-X2

- LOWEST LABOR COST
- HIGH PERFORMANCE
- ELECTRICAL BOXES, CEILING FANS
- WALLS, CEILINGS
- WOOD, STEEL
- CONCRETE, CMU
- WALL DECOUPLER
- HANGING VIBRATION ISOLATOR
- CONDOS
- TIME SHARE / FRACTIONAL OWNERSHIP
- ASSISTED LIVING
- APARTMENTS
- HOTELS / MOTELS
- SINGLE FAMILY
- HOME THEATER
- COMMERCIAL THEATER

RSIC-DC04X2

The **RSIC-DC04X2** is a heavy duty universal and versatile product. One common use is to decouple wall systems. The design of the RSIC-DC04X2 can be used in new construction or retrofit. The RSIC-DC04X2 is very strong for use when heavier items need to be acoustically decoupled for noise isolation.

A few examples of the possible uses for the RSIC-DC04X2:

Dropped ceiling, decoupled brace or resilient connector for isolating walls, speaker mount isolators, exhaust/vent fan isolators, recessed lighting cover box isolators, projector mount isolators, electrical box, ceiling fan isolators, garage door motor isolation, and garage door rail isolation just to name a few.

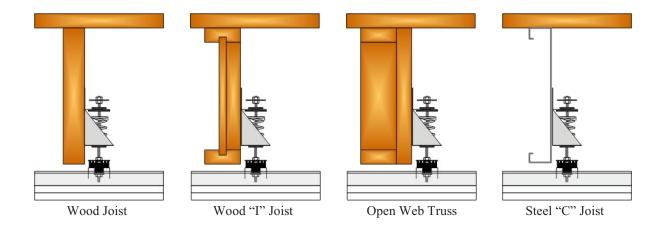
RSIC-DC04X2 is the universal isolator.

RSIC-DC04X2, the Low Cost, High Performance, Noise Control Solution



RSIC-1-SI-ULTRA

RSIC-1-SI-ULTRA High Performance, Noise Control Solution. RSIC-1 technology combined with traditional spring technology.





Wood Joist

Wood "I" Joist

Wood Dbl Stud

Steel Dbl Stud

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Steel "C" Joist

RSIC PRODUCT GUIDE THE RSIC SOUND ISOLATION CLIPS

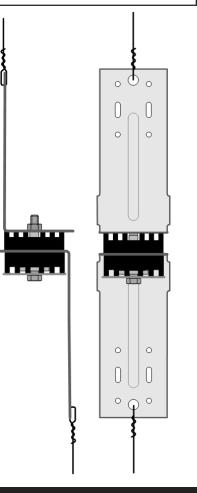
RSIC-HWI-HD

- LOWEST LABOR COST
- HIGH PERFORMANCE
- CEILINGS
- WOOD
- STEEL
- CONDOS
- TIME SHARE / FRACTIONAL OWNERSHIP
- ASSISTED LIVING
- APARTMENTS
- HOTELS / MOTELS
- SINGLE FAMILY
- HOME THEATER
- COMMERCIAL THEATER

RSIC-HWI-HD Hanger Wire Isolator

The **RSIC-HWI-HD** is designed to Isolate the ceiling from the structure when it is hung from a wire. With the increased use of drywall grid ceilings there has been a need for acoustically isolated options. The RSIC-HWI has an acoustical design load of 80 lbs. The RSIC-HWI is designed to support gypsum board ceilings, or mechanical items hung from a wire using RSIC technology to decouple the ceiling from noises above.

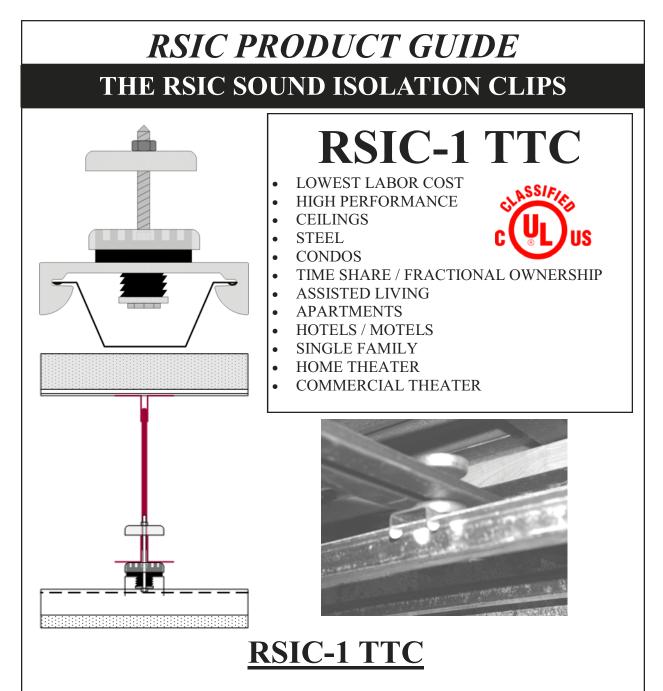
RSIC-CWB the Low Cost, High Performance, Noise Control Solution



PAC International, Inc. Tel: (866) 774-2100 Fax: (866) 649-2710 Web Site: www.pac-intl.com

WOOD FRAMED WALLS



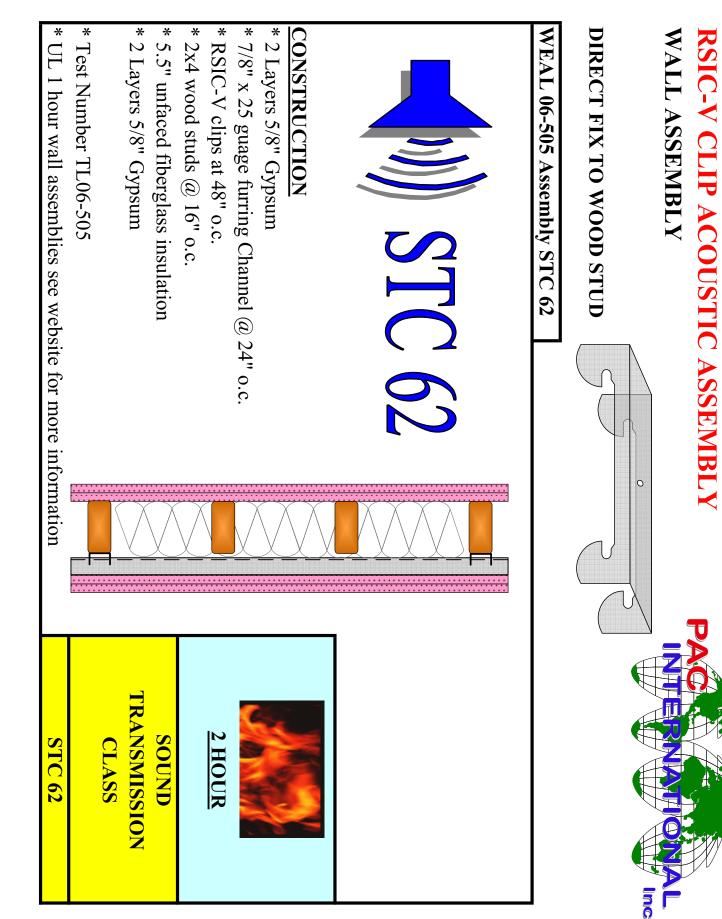


The **RSIC-1 TTC** is designed for use with steel web truss joists. The RSIC-1 TTC attaches directly to the bottom cord of the steel joist. This assembly decouples the gypsum board from the steel joist, giving the assembly enhanced acoustical performance, while maintaining the UL fire resistive design. The RSIC-1 TTC is classified for use in G500 series by UL. The RSIC-1 TTC uses a RSIC-1 clip, 2 cup washers, a 3" to 5" bolt and a nylock nut. The RSIC-1 TTC clip is as remarkable as the original RSIC-1 clip.

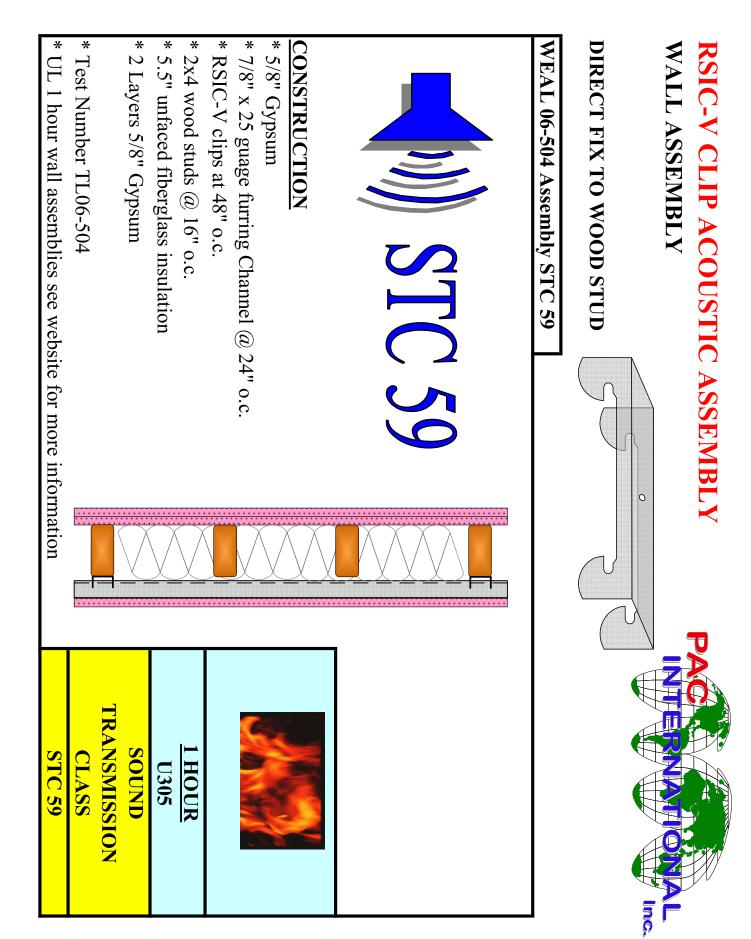
RSIC-1 TTC, the Low Cost, High Performance, Noise Control Solution

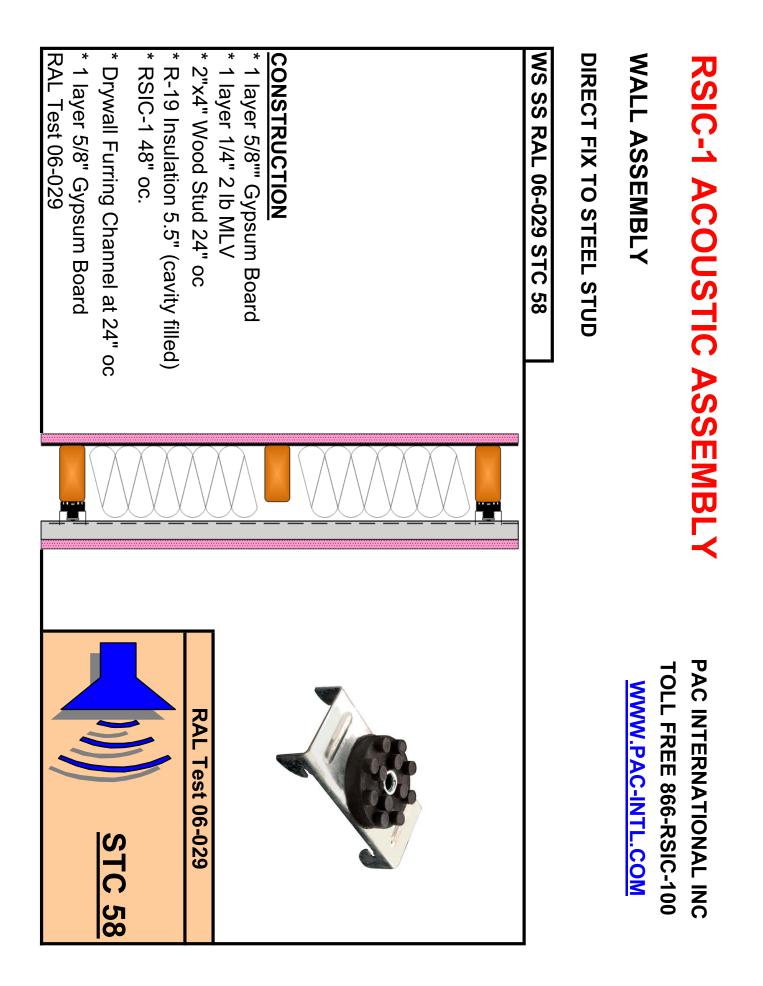
PAC International, Inc. Tel: (866) 774-2100 Fax: (866) 649-2710 Web Site: www.pac-intl.com







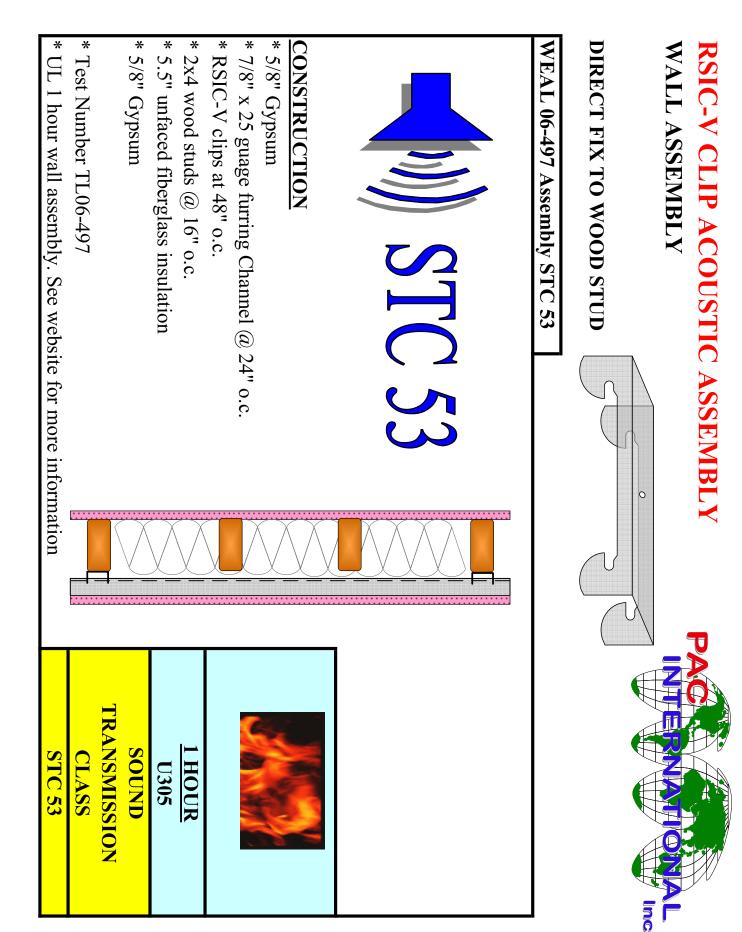




UL U305		
		STC 57
1 hour fire rating		RAL Test 06-028
	Loaded Vinyl	CONSTRUCTION * 1 layer 5/8"" Gypsum Board * 1 layer 1/8" 1 lb (UL Listed) Mass Loaded Vinyl * 2"x4" Wood Stud 24" oc * R-19 Insulation 5.5" (cavity filled) * RSIC-1 48" oc. * Drywall Furring Channel at 24" oc * 1 layer 5/8" Gypsum Board
		WS SS RAL 06-028 STC 57
		DIRECT FIX TO STEEL STUD
WWW.PAC-INTL.COM		WALL ASSEMBLY
PAC INTERNATIONAL INC	ASSEMBLY	RSIC-1 ACOUSTIC ASSEMBLY



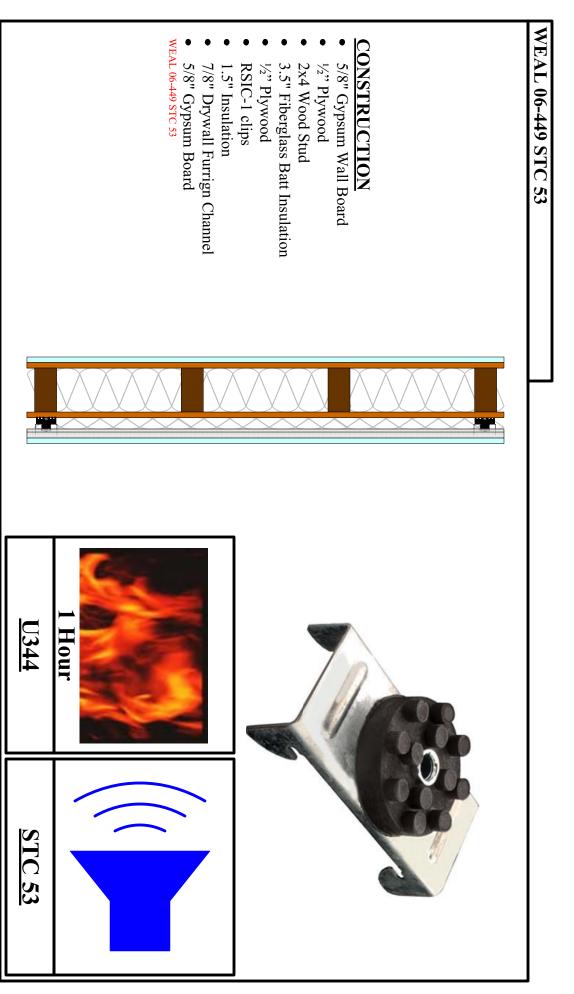




RSIC ACOUSTIC ASSEMBLY

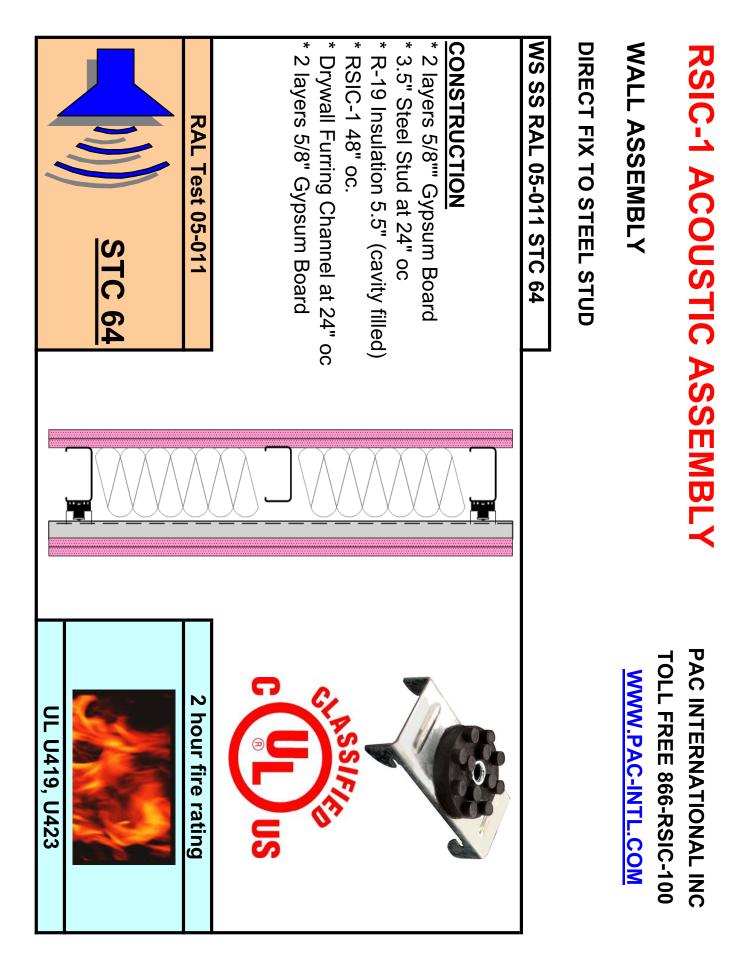
NOISE CONTROL WALL ASSEMBLY

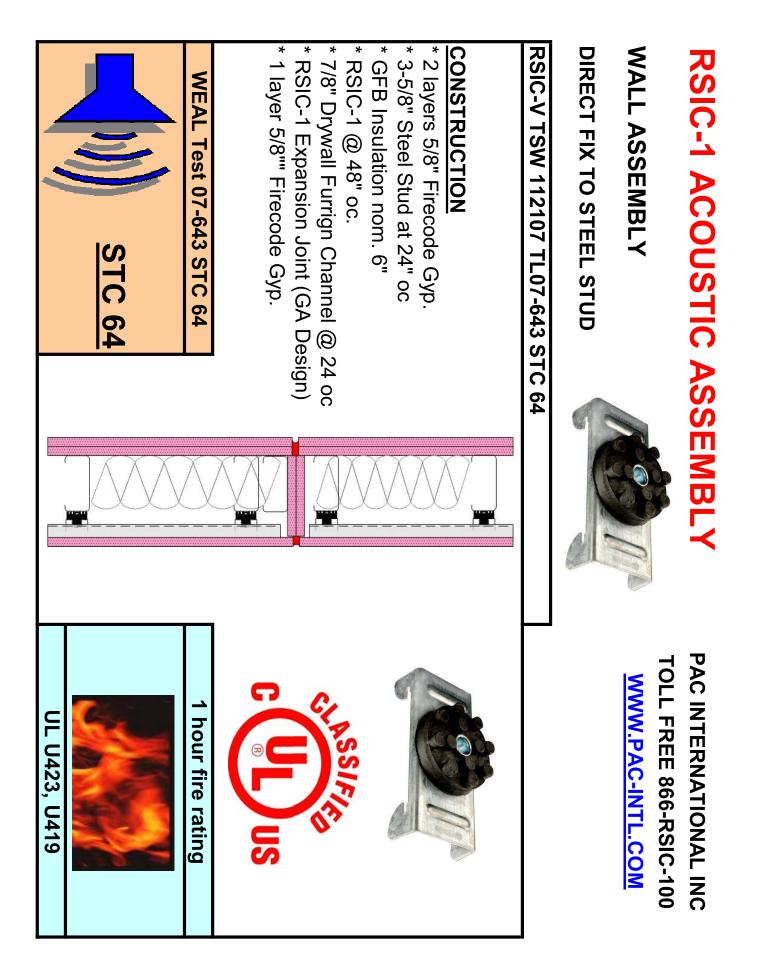
DIRECT FIX TO WOOD

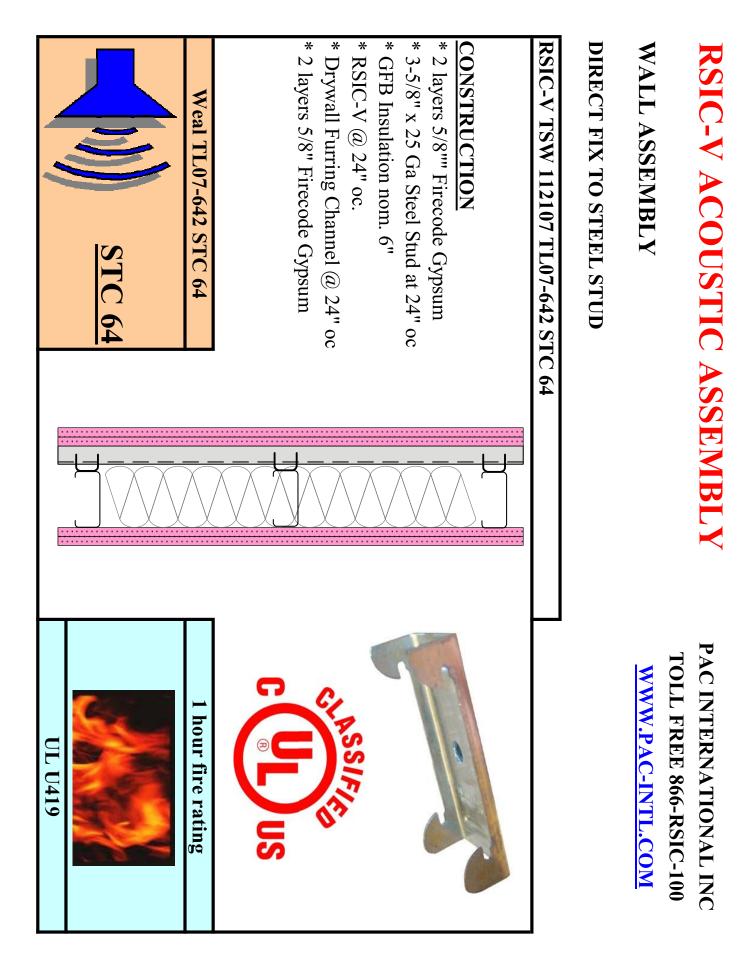


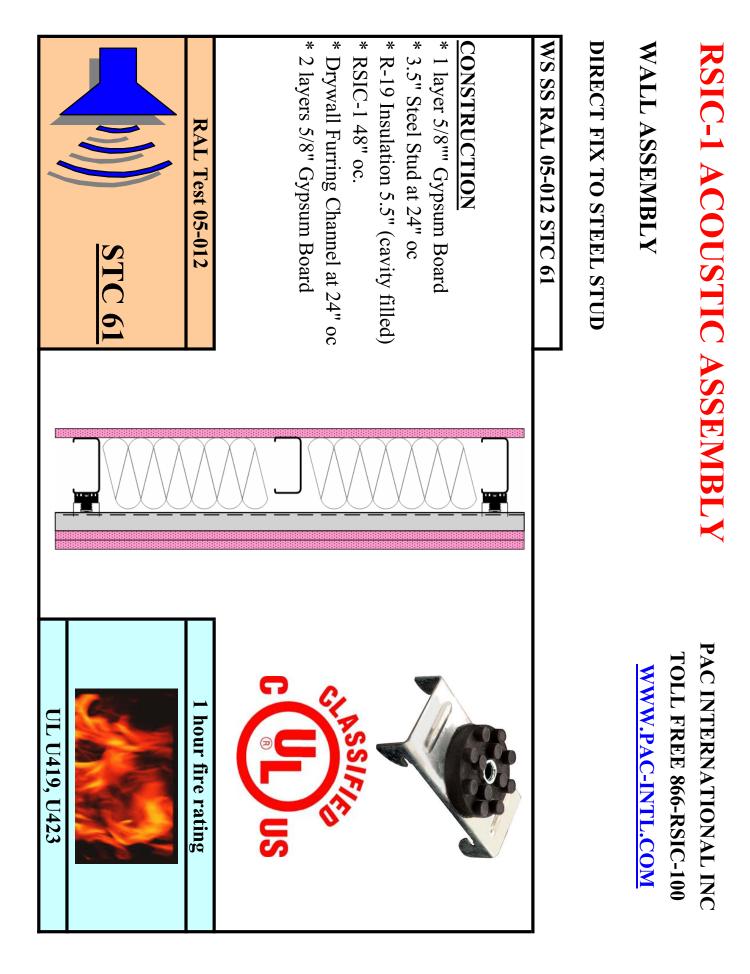


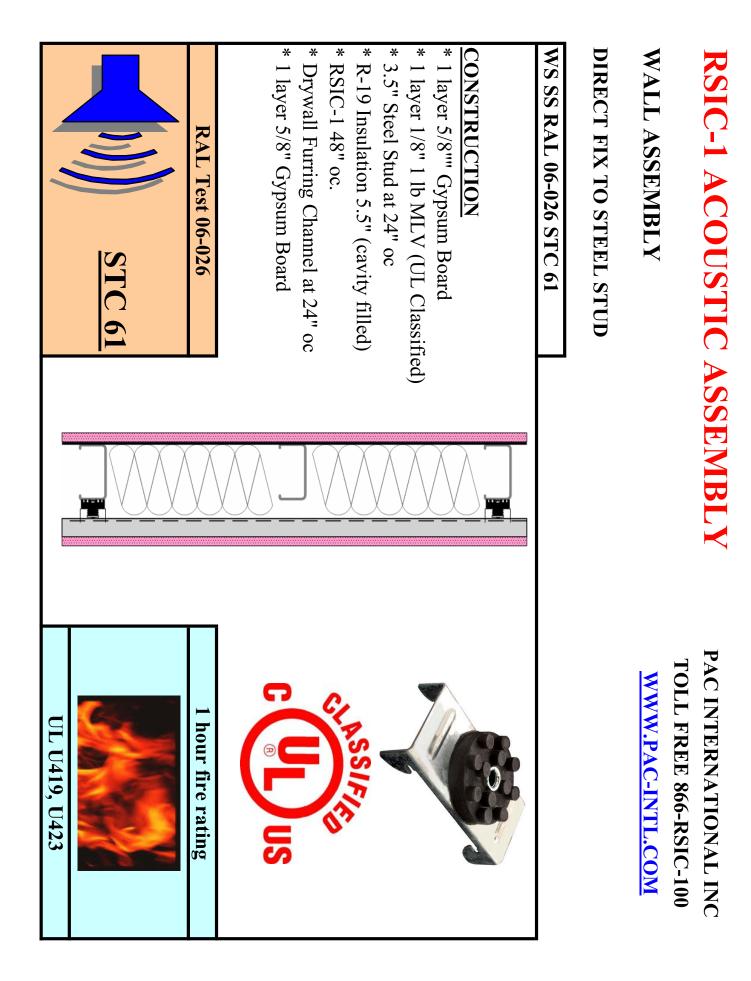
STEEL FRAMED WALLS

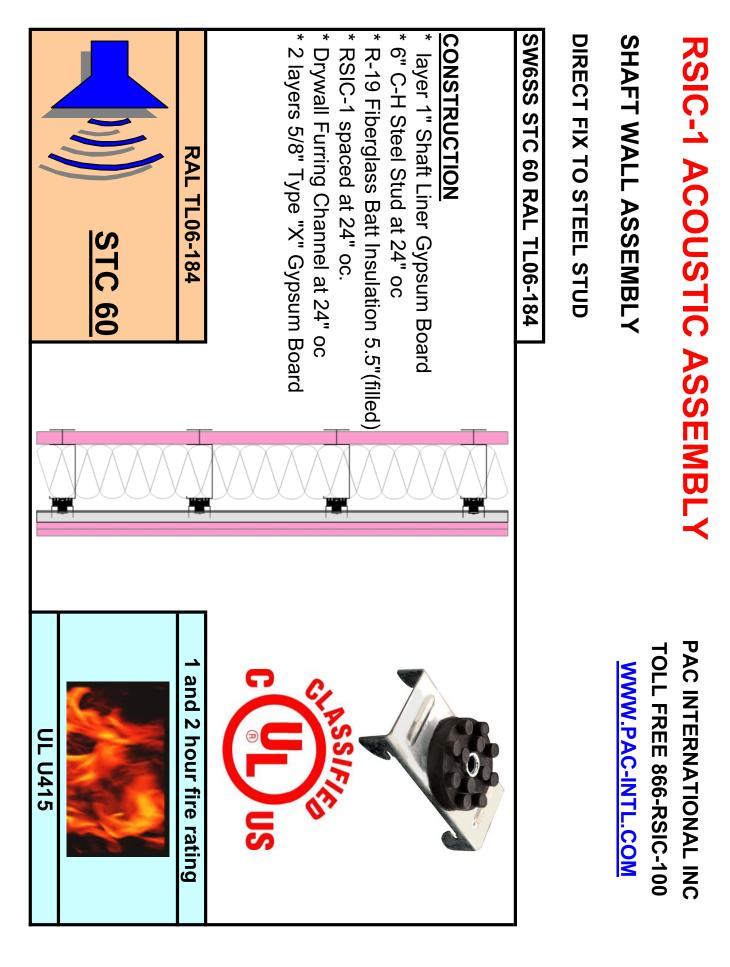


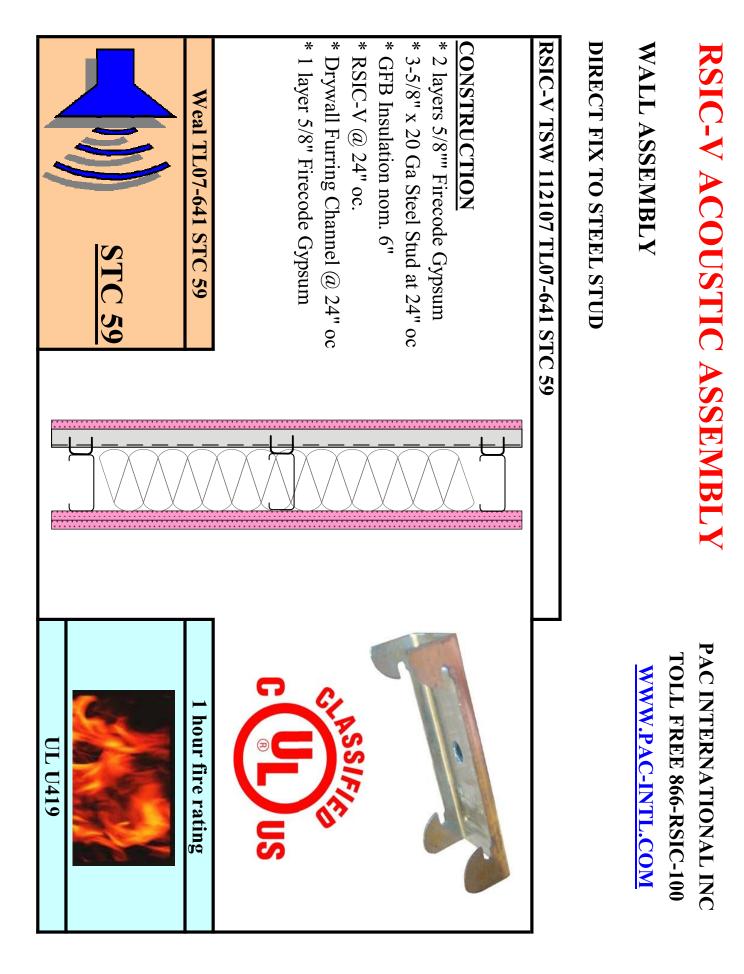


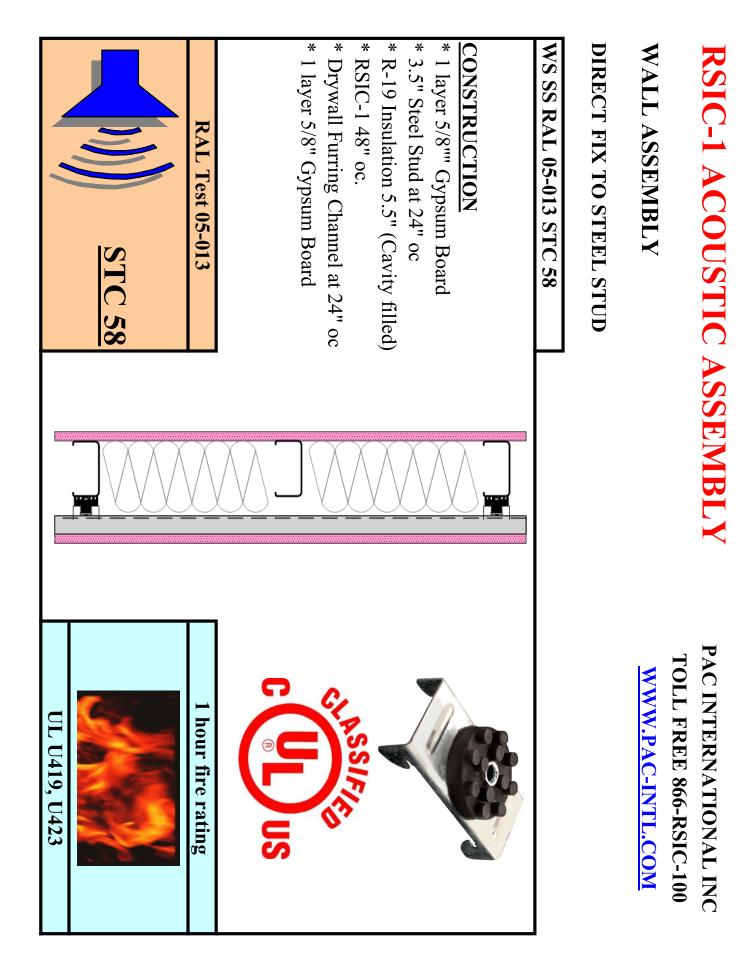




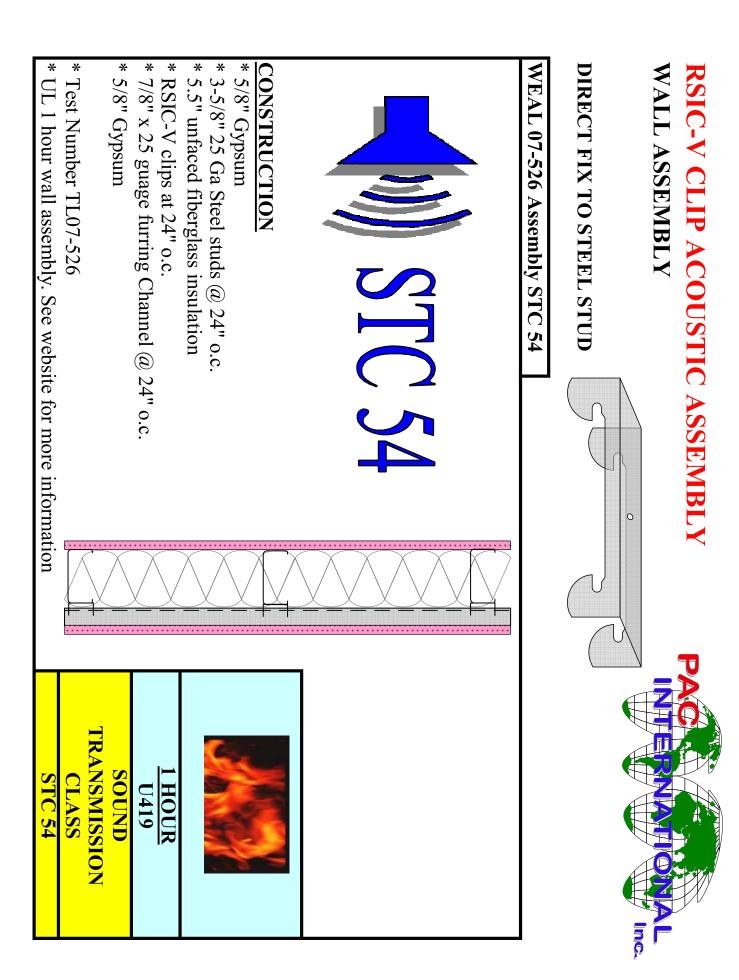




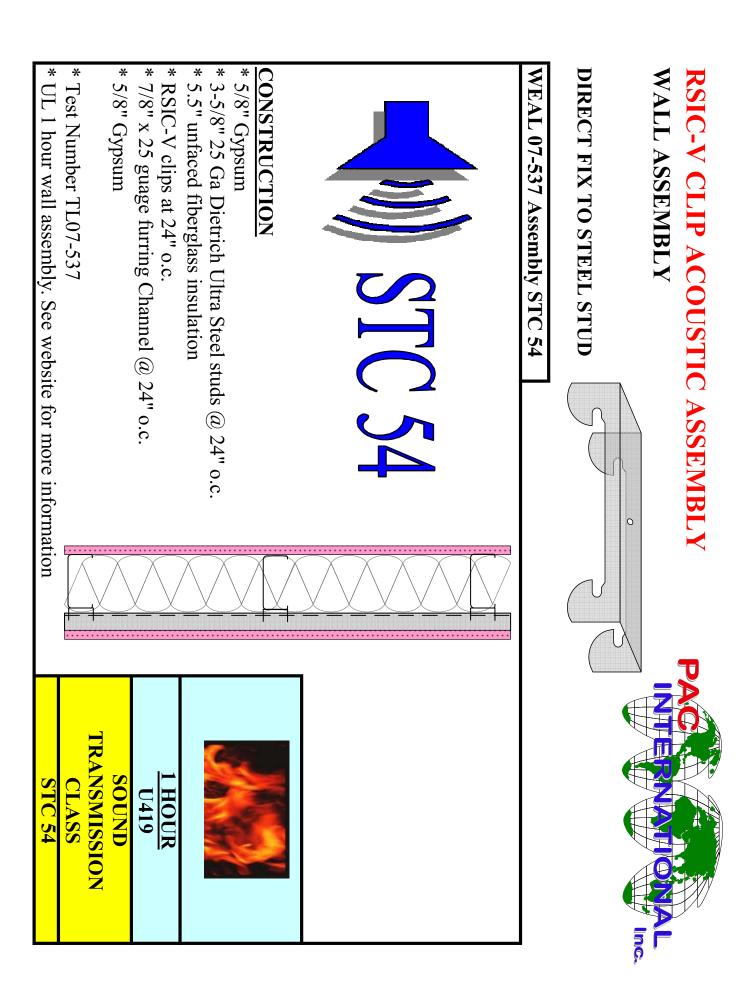




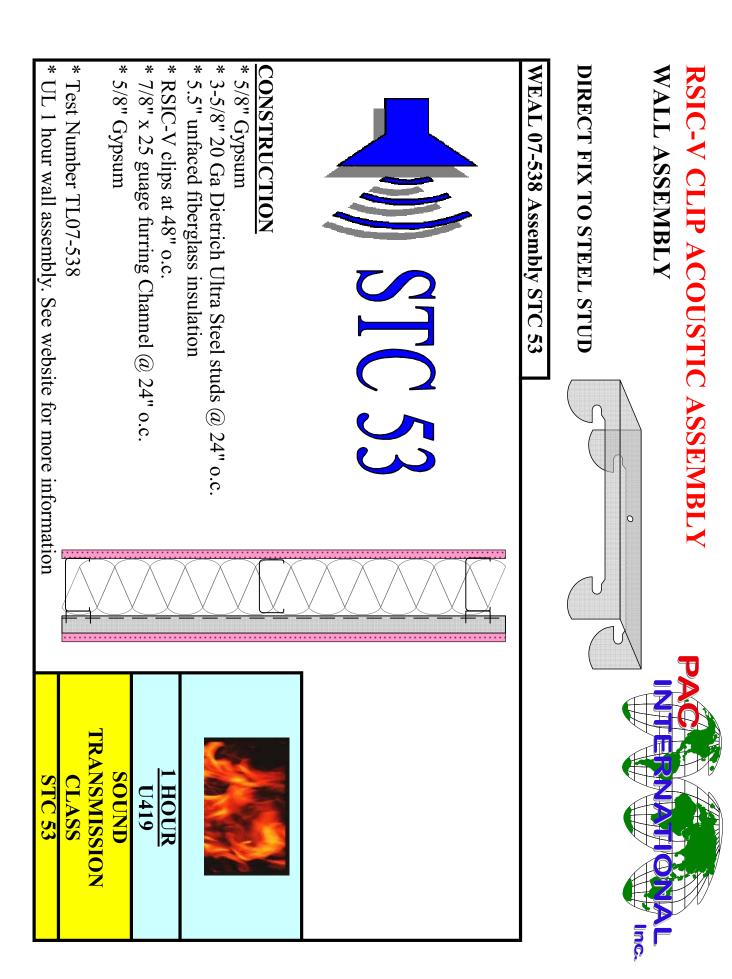




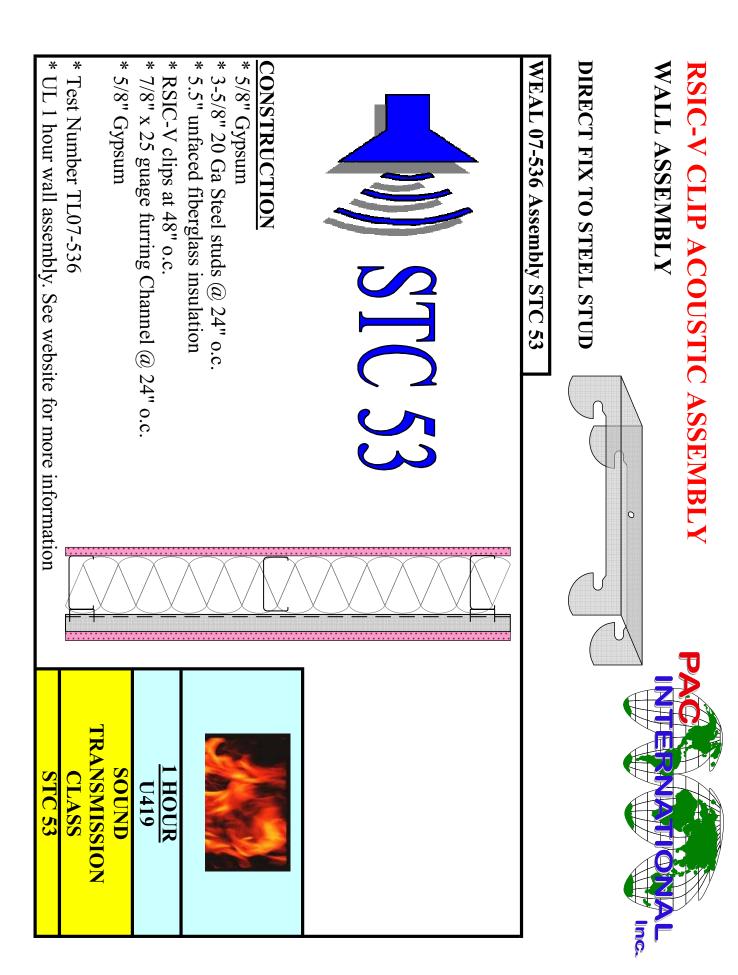


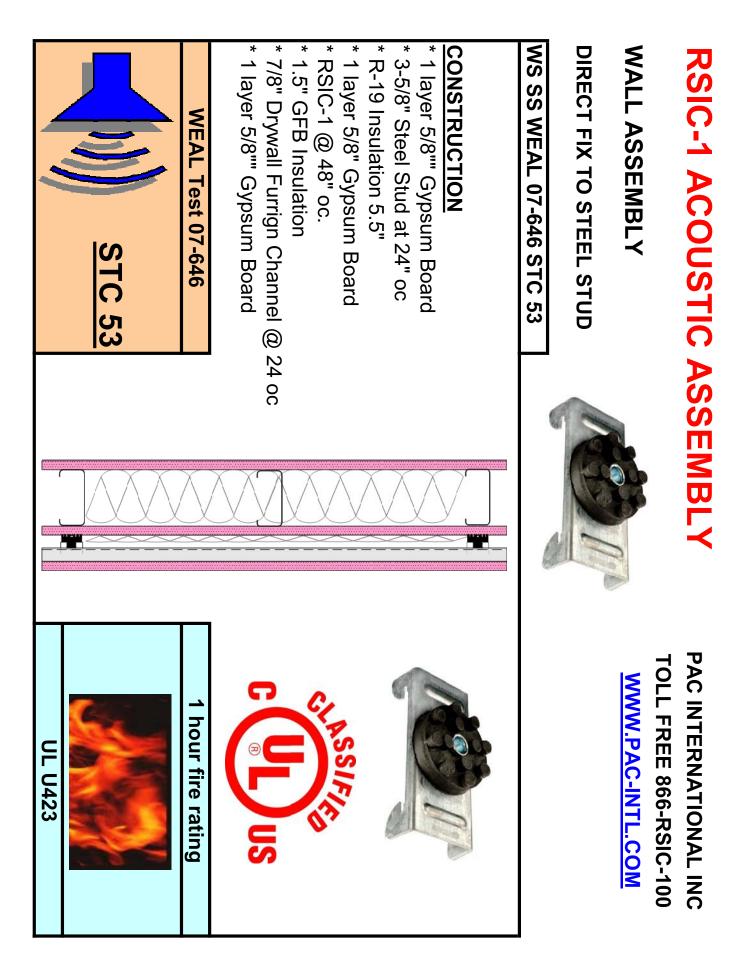






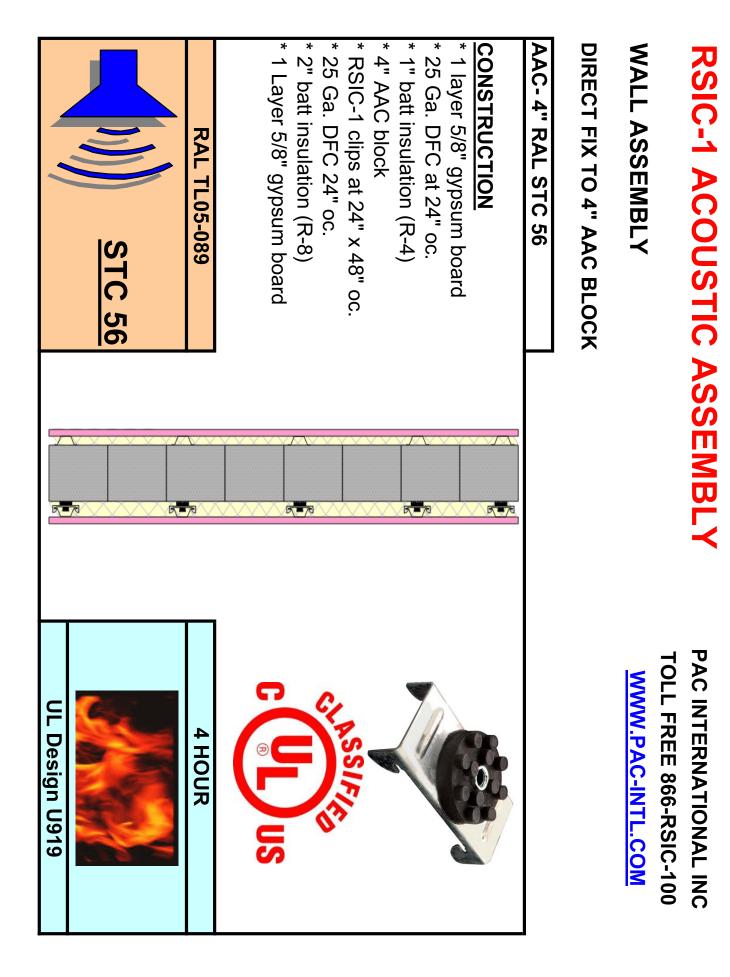


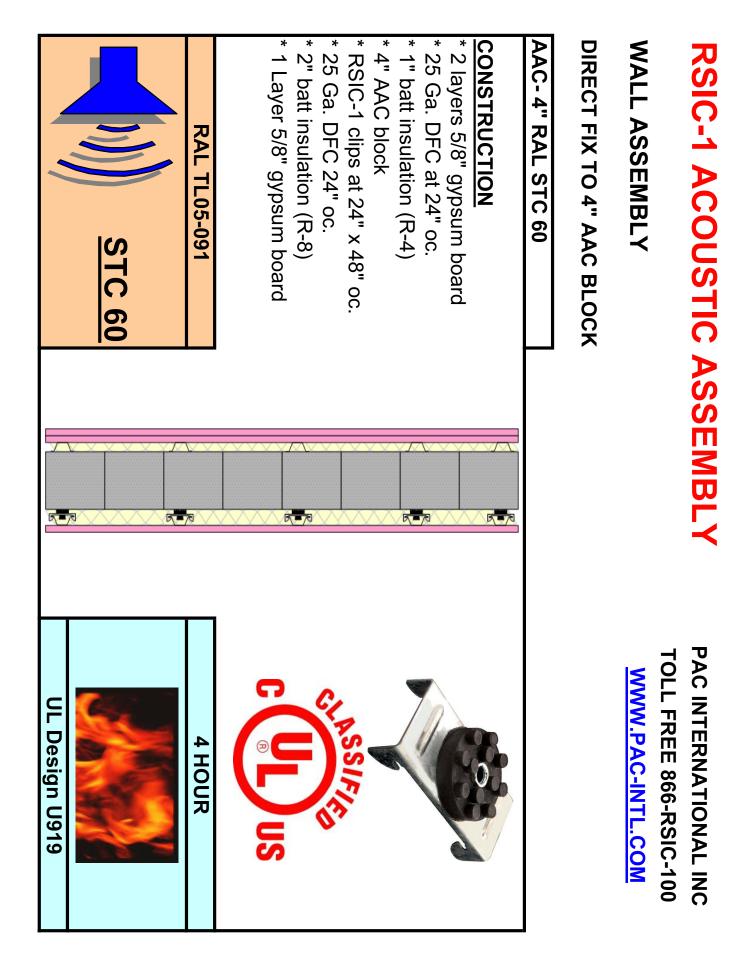


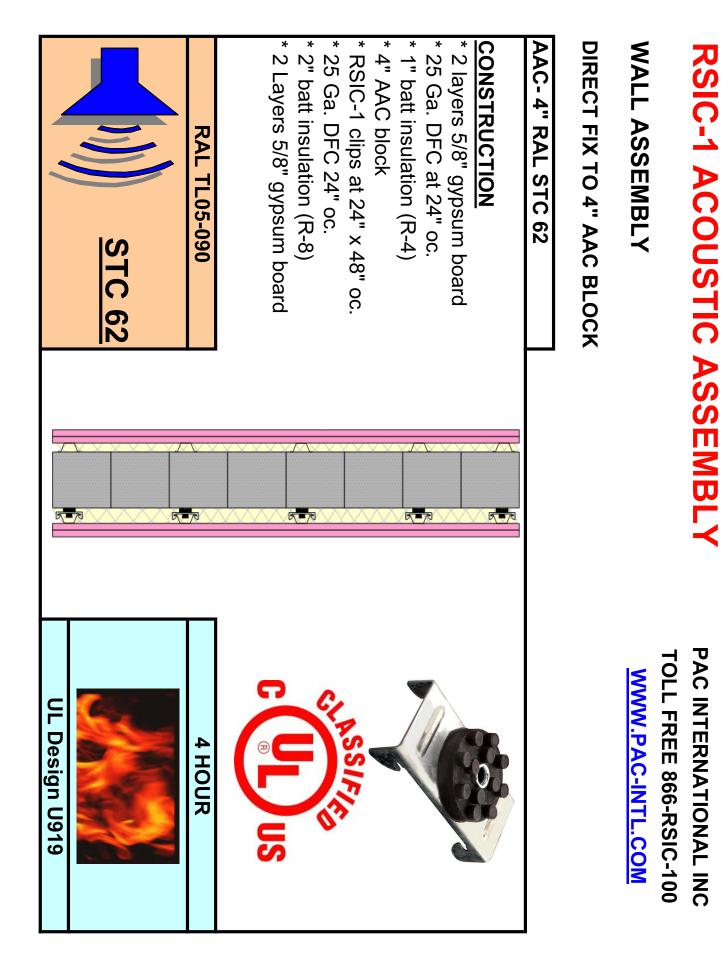


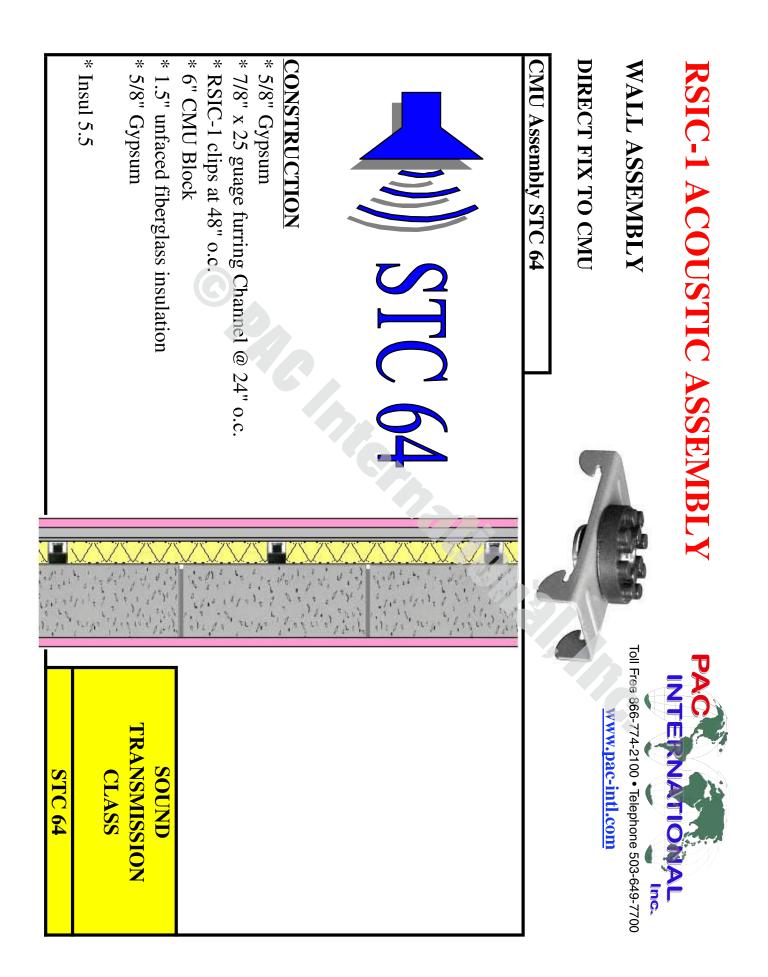


CONCRETE AND CMU WALLS



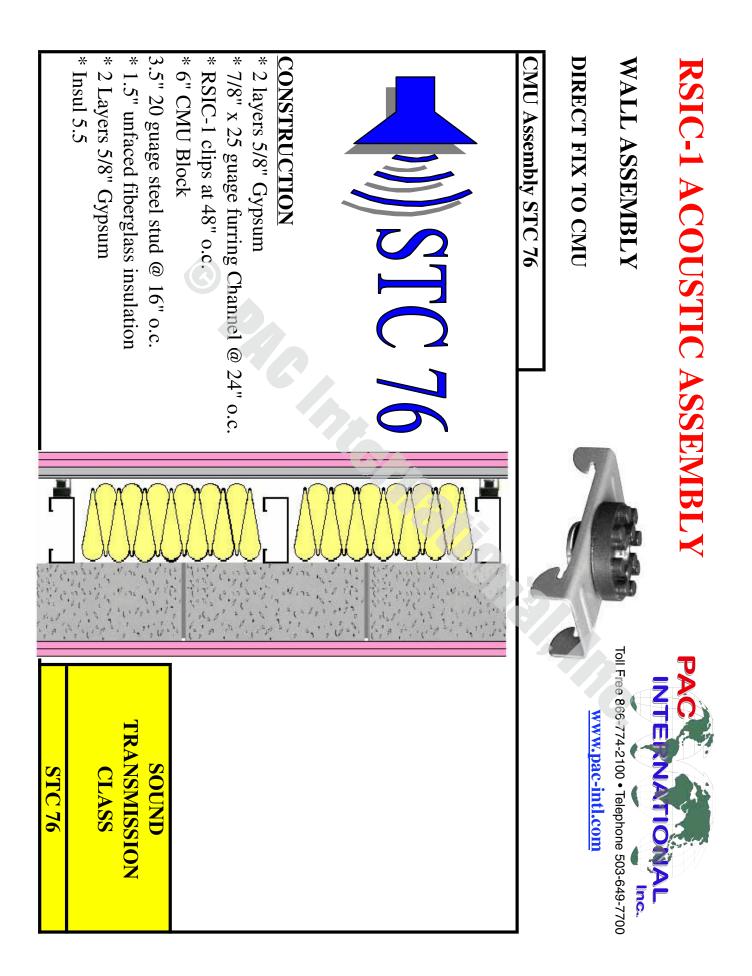




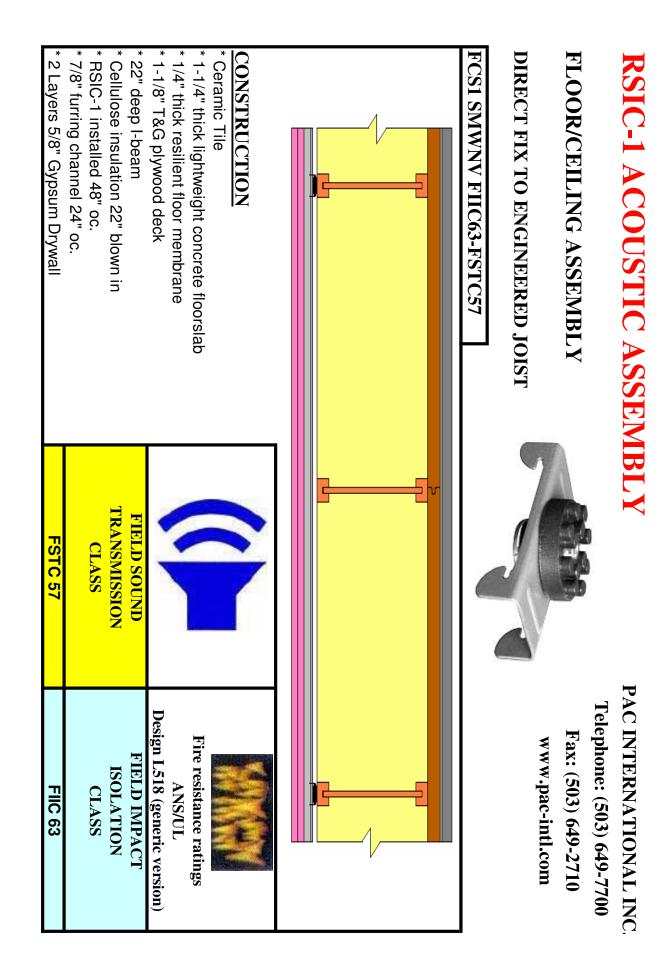




STC 70		
CLADO		* Insul 5.5
SOUND TRANSMISSION		* 1.5" unfaced fiberglass insulation* 2 Layers 5/8" Gypsum
		* RSIC-1 clips at 48" o.c. * 6" CMU Block
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	* 2 layers 5/8" Gypsum * 7/8" x 25 guage furring Channel @ 24" o.c.
	West of the	CONSTRUCTION
	2 - 6 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7	
	is here	
		CMU Assembly STC 70
		DIRECT FIX TO CMU
Toll Free 866-774-2100 • Telephone 503-649-7700	RES	WALL ASSEMBLY
PAC	MBLY	RSIC-1 ACOUSTIC ASSEMBLY



WOOD FLOOR/ CEILING



RSIC-1 ACOUSTIC ASSEMBLY

FLOOR/CEILING ASSEMBLY

DIRECT FIX TO TJI





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PAC INTERNATIONAL INC. Telephone: (503) 649-7700 Fax: (503) 649-2710

CONSTRUCTION

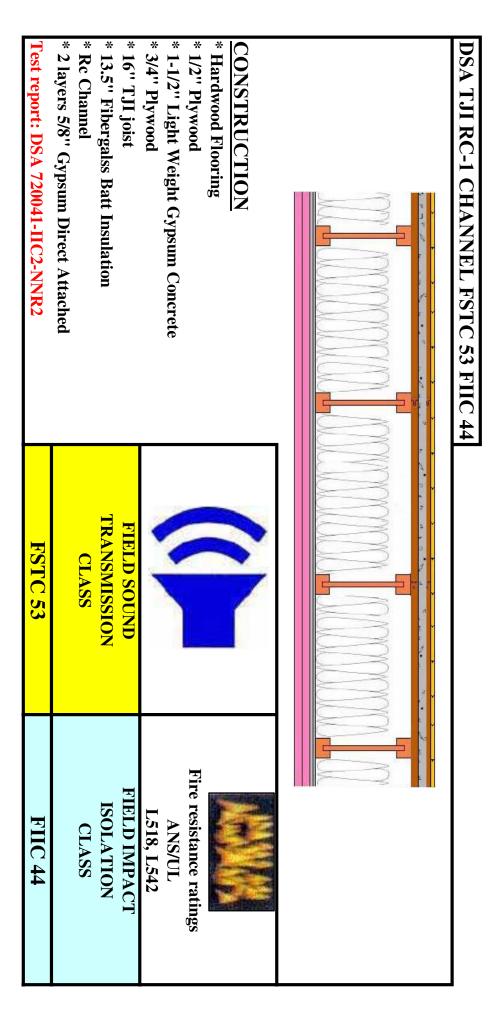
- * Hardwood Flooring
- * 1/2" Plywood
- * 1-1/2" Light Weight Gypsum Concrete
- * 3/4" Plywood
- * 16" TJI joist
- * 12" Mineral wool 3.5" Fibergalss Batt Insulation
- * RSIC-1 Clips at 48" o.c.
- * 7/8" Drywall Furring Channel 24" o.c.
- * 2 layers 5/8" Gypsum Direct Attached
- Fest report: DSA 720041-IIC2-NNR2

FSTC 55	FIELD SOUND TRANSMISSION CLASS	
FIIC 60	FIELD IMPACT ISOLATION CLASS	Fire resistance ratings ANS/UL L518, L542

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FLOOR/CEILING ASSEMBLY DIRECT FIX TO TJI



DIRECT CONNECT ACOUSTIC ASSEMBLY

FLOOR/CEILING ASSEMBLY

DIRECT FIX TO TJI



PAC INTERNATIONAL INC.

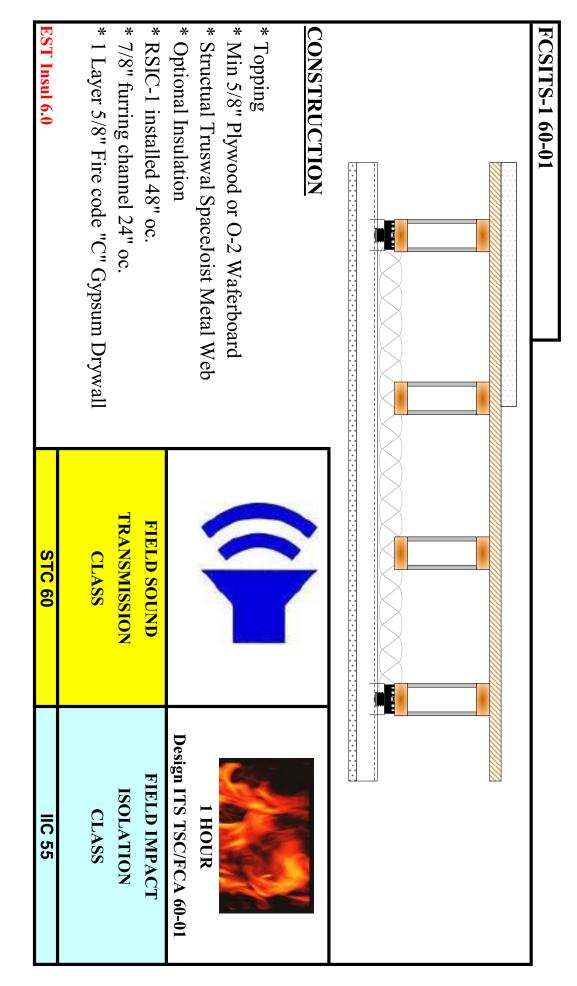
Telephone: (503) 649-7700 Fax: (503) 649-2710 <u>www.pac-intl.com</u>

* 16" TJI joist |* 1/2" Plywood * Hardwood Flooring * 2 layers 5/8" Gypsum Direct Attached * 3.5" Fibergalss Batt Insulation * 3/4" Plywood * 1-1/2" Light Weight Gypsum Concrete CONSTRUCTION DSA TJI no resilient FSTC 40 FIIC 32 [est report: DSA 187003-1 Test report: DSA 187003-2 TRANSMISSION FIELD SOUND FSTC 40 CLASS Fire resistance ratings FIELD IMPACT ISOLATION L518, L542 **FIIC 32** ANS/UL CLASS

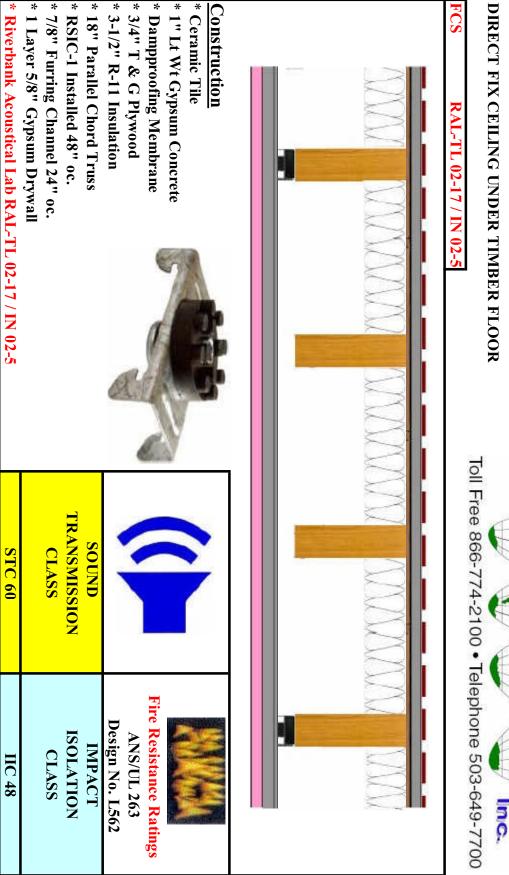
RSIC-1 ACOUSTIC ASSEMBLY FLOOR/CEILING ASSEMBLY



DIRECT FIX TO OPEN WEB FLOOR TRUSS

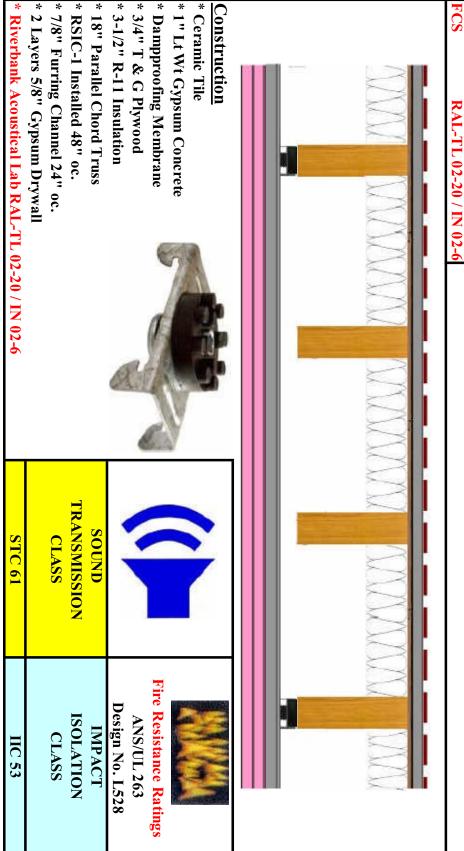


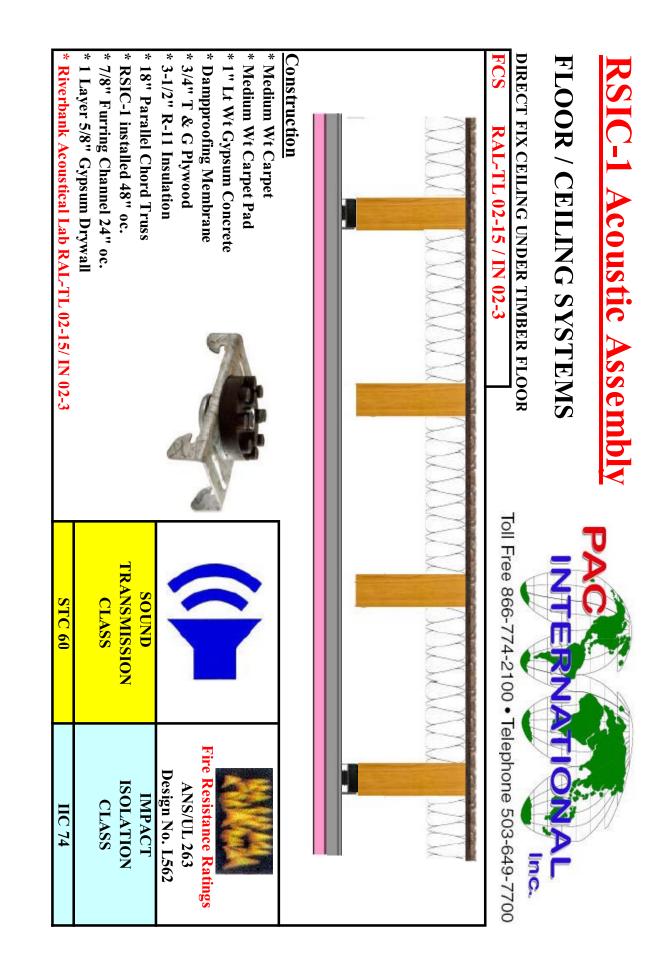
FLOOR / CEILING SYSTEMS **RSIC-1** Acoustic Assembly



FLOOR / CEILING SYSTEMS

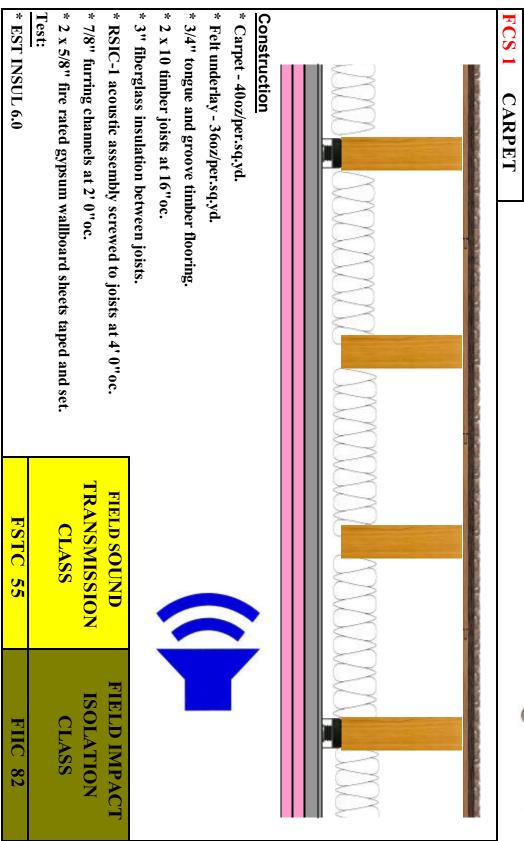






FLOOR / CEILING SYSTEMS





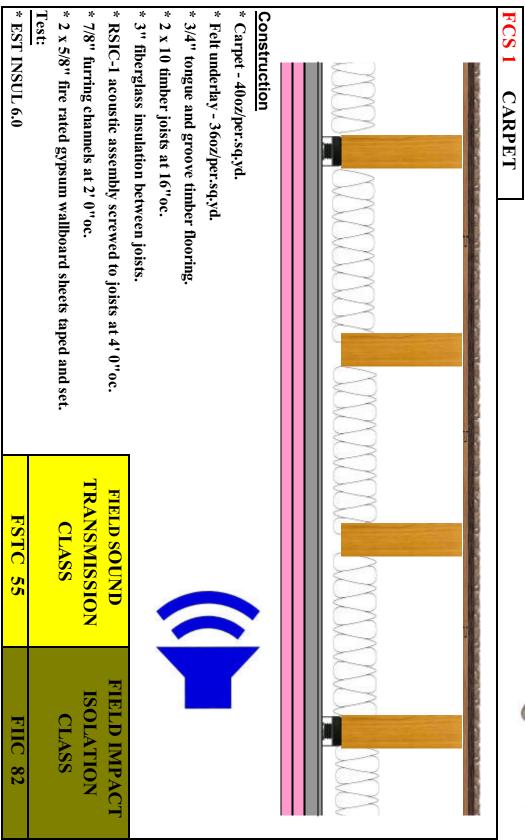
FLOOR / CEILING SYSTEMS



FCS 5 CARPET		6
CLUR LUCUCUCUL LUCU	NULUU UUUU	NUN NUN
Construction		
* Carpet - 40oz/per.sq.yd. * Felt underlay - 36oz/per.sq.yd.		
 * 3/4" tongue and groove timber flooring. * 2 x 10 timber joists at 16"oc. * 3" fiberglass insulation between joists. 		
 * 1 x 5/8" fire rated gypsum wallboard sheet to joist. * RSIC-1 acoustic assembly screwed to joists at 4' 0"oc. 	SOUND TRANSMISSION	IMPACT ISOLATION
 * 7/8" furring channels at 2' 0" oc. * 1 x 5/8" fire rated gypsum wallboard sheet taped and set. 	CLASS	CLASS
* EST INSUL6.0	STC 57	IIC 82

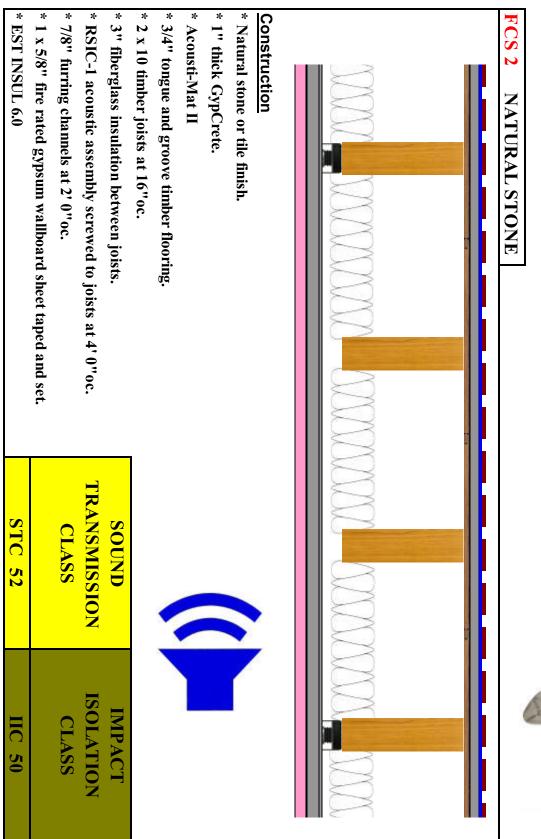
FLOOR / CEILING SYSTEMS



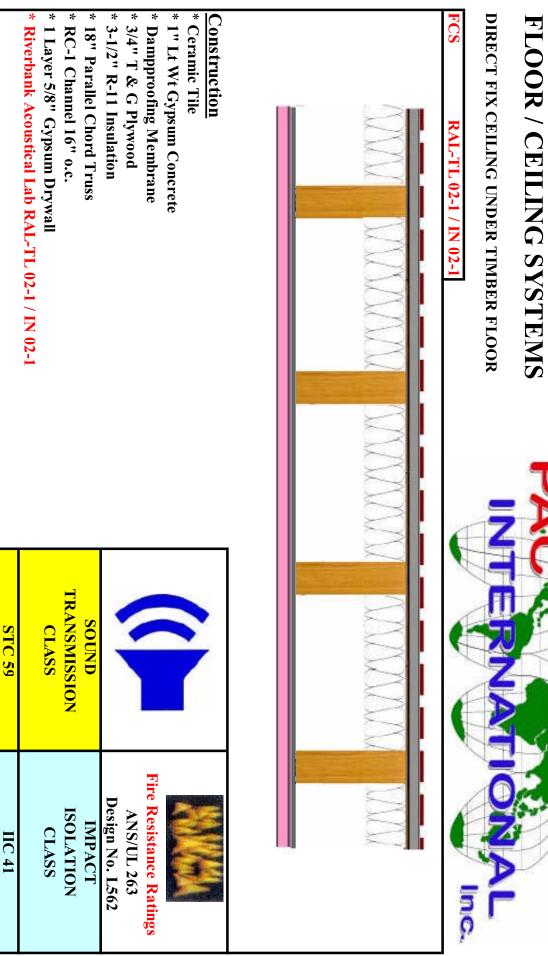


FLOOR / CEILING SYSTEMS





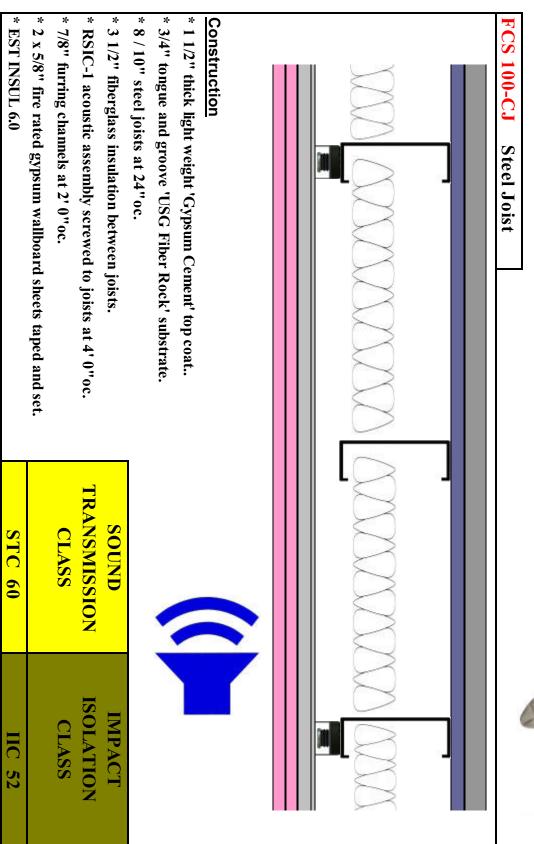




STEEL FLOOR/ CEILING

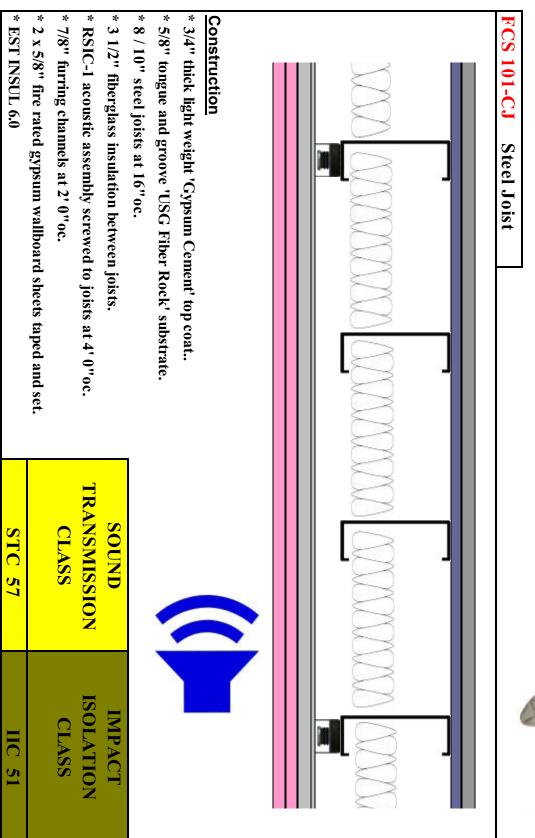
FLOOR / CEILING SYSTEMS





FLOOR / CEILING SYSTEMS





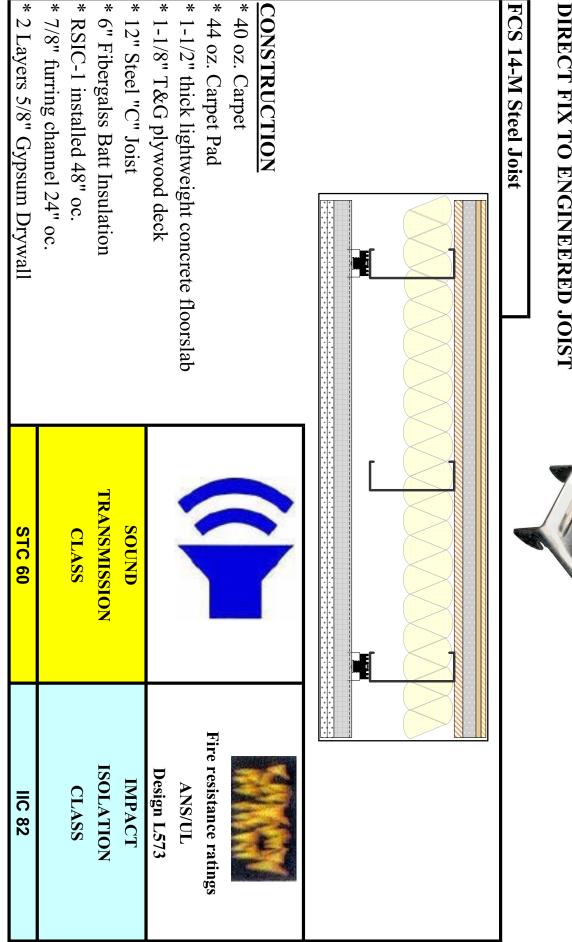
RSIC-1 ACOUSTIC ASSEMBLY

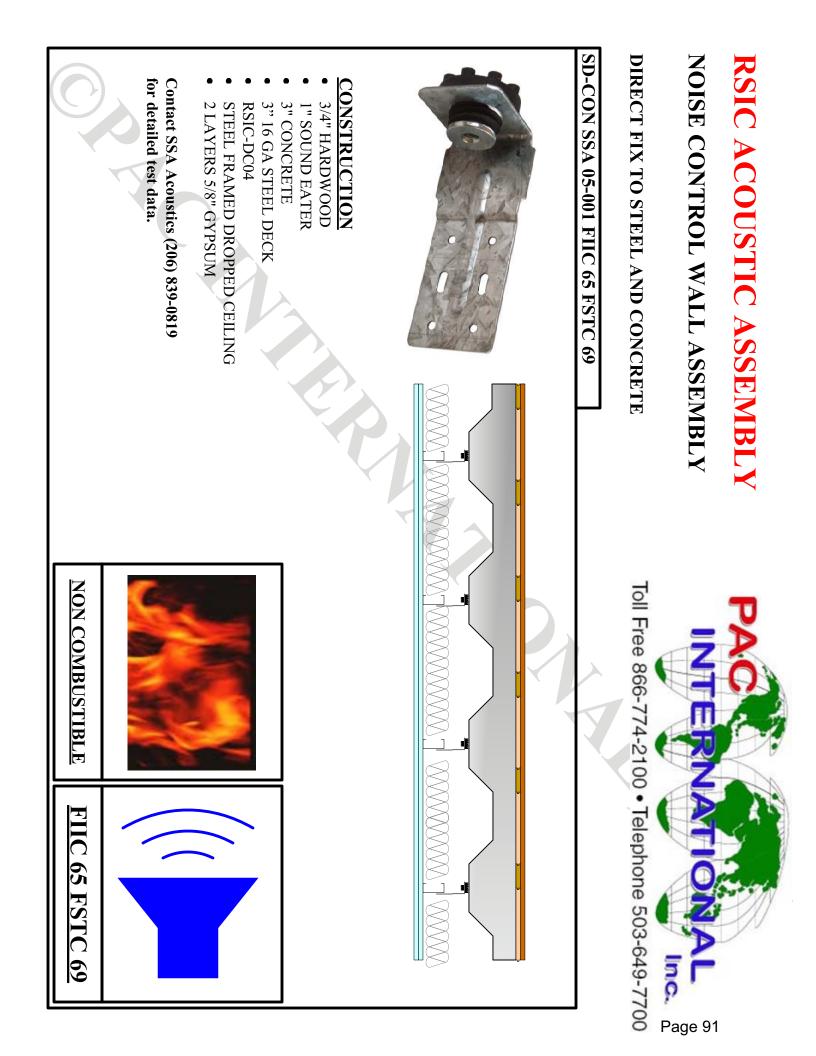
FLOOR/CEILING ASSEMBLY

DIRECT FIX TO ENGINEERED JOIST



PAC INTERNATIONAL INC TOLL FREE 866-RSIC-100 WWW.PAC-INTL.COM

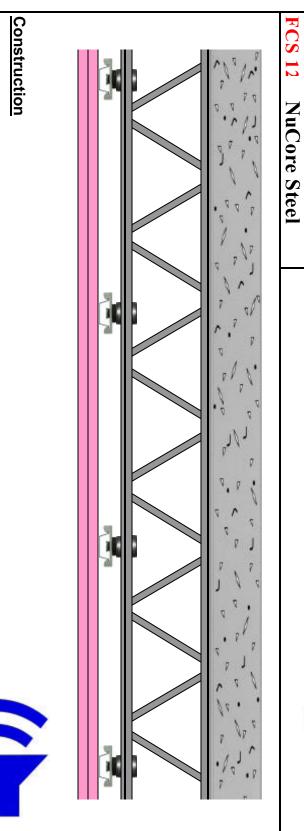




FLOOR / CEILING SYSTEMS

SUSPENDED CEILING UNDER CONCRETE FLOOR





IIC 40	STC 60	Assembly - G505
		Test number - TL01 - 220 / IN01 - 10
CLASS	CLASS	Riverbank Acoustical Laboratories.
ISOLATION	TRANSMISSION	* Test:
IMPACT	SOUND	* 2 x 5/8" fire rated gypsum wallboard sheet taped and set.
		* 7/8" furring channel to RSIC-1 TTC. at 24" oc.
		* RSIC-1 TTC. assembly attached to the bottom cord at 48" oc.
		mechanically fastened to K10 steel web trusses at 24" oc.
		* 3.5" - 3,500 psi concrete over 3/4" corrugated metal pans

* Test: * 3.5" - 3,500 psi concrete over 3/4" corrugated metal pans * 7/8" furring channel to RSIC-1 TTC. at 24" oc. * RSIC-1 TTC. assembly attached to the bottom cord at 48" oc. * 1 x 5/8" fire rated gypsum wallboard sheet taped and set. Construction FCS 11 mechanically fastened to K10 steel web trusses at 24" oc. SUSPENDED CEILING UNDER CONCRETE FLOOR FLOOR / CEILING SYSTEMS **Riverbank Acoustical Laboratories.** NuCore Steel 17 TRANSMISSION SOUND CLASS ISOLATION IMPACT CLASS

Assembly - G505

STC 60

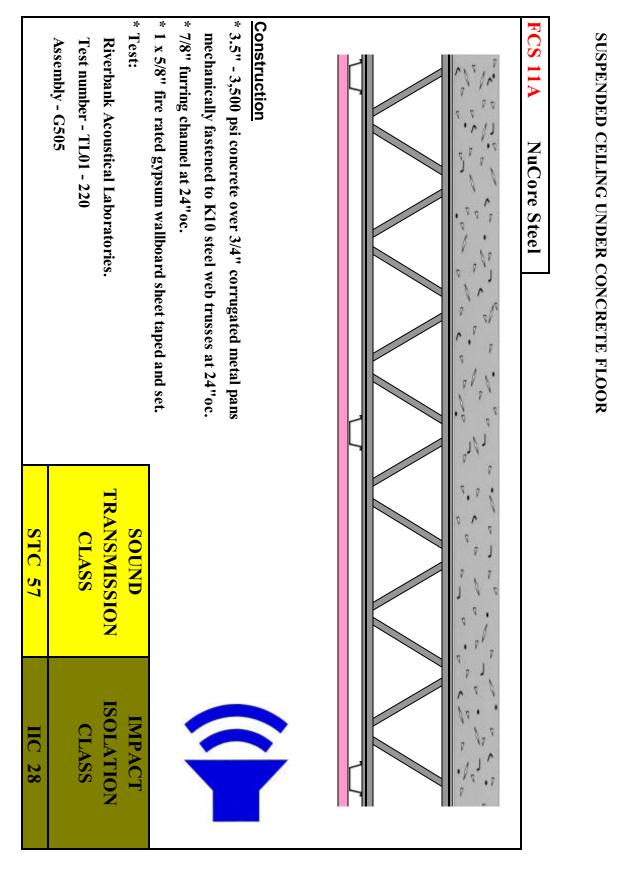
IIC 35

Test number - TL01 - 220

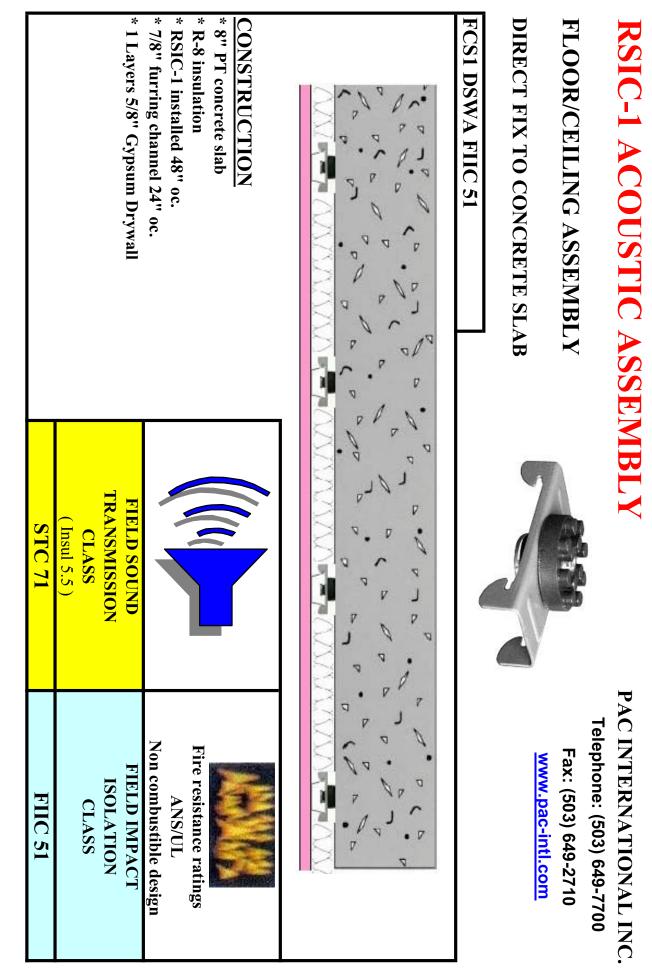
RSIC-1 Acoustic Assembly

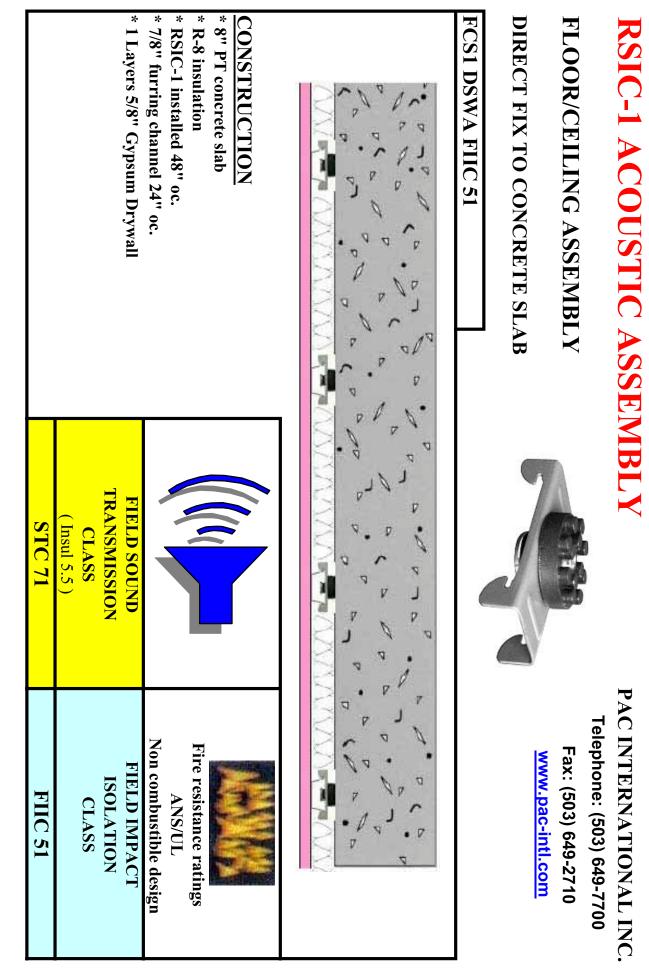
Acoustic Test Assembly

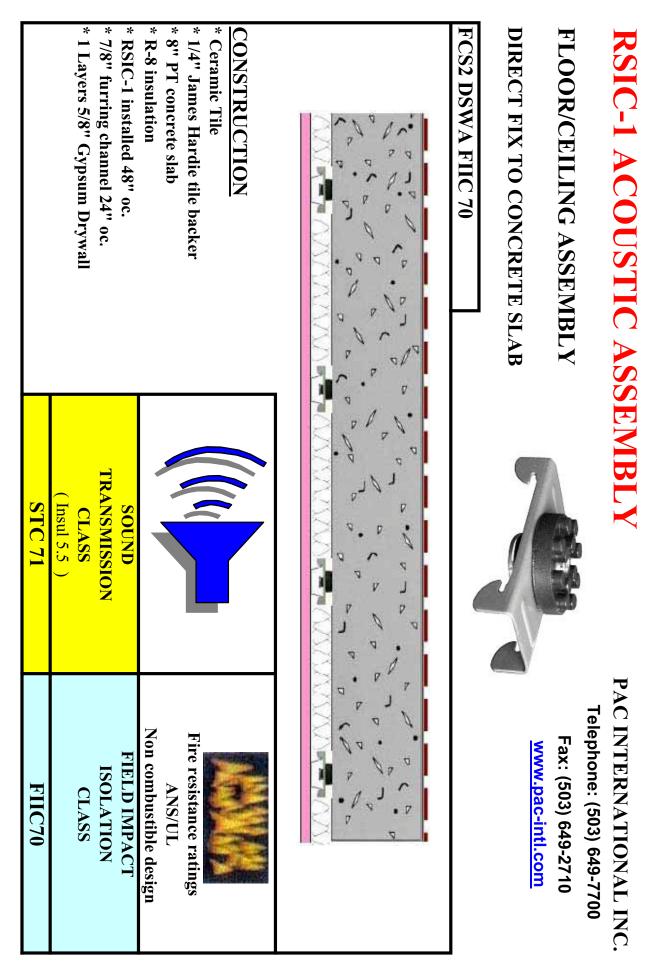
FLOOR / CEILING SYSTEMS

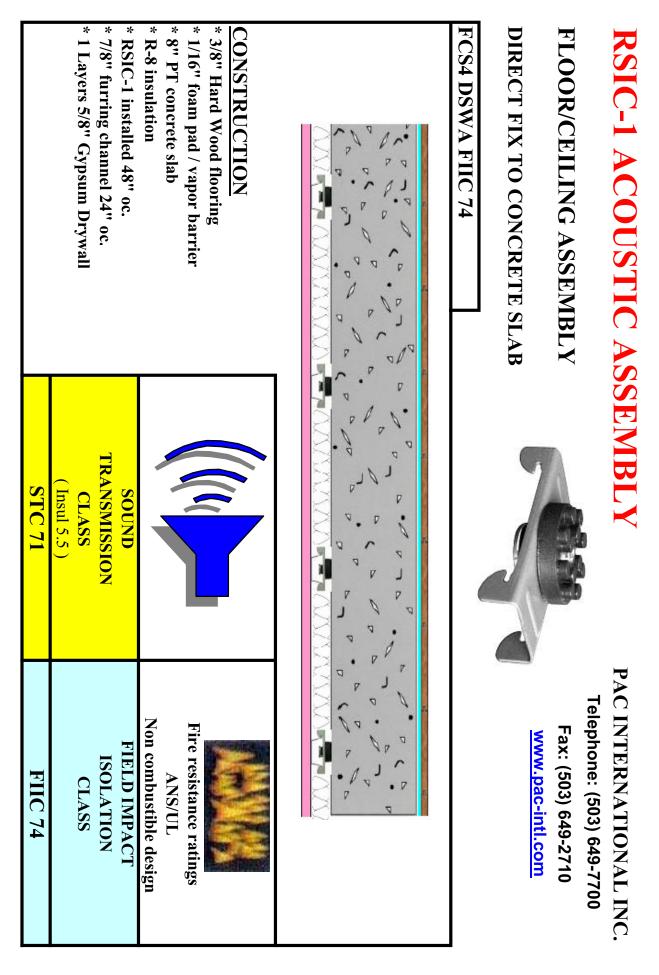


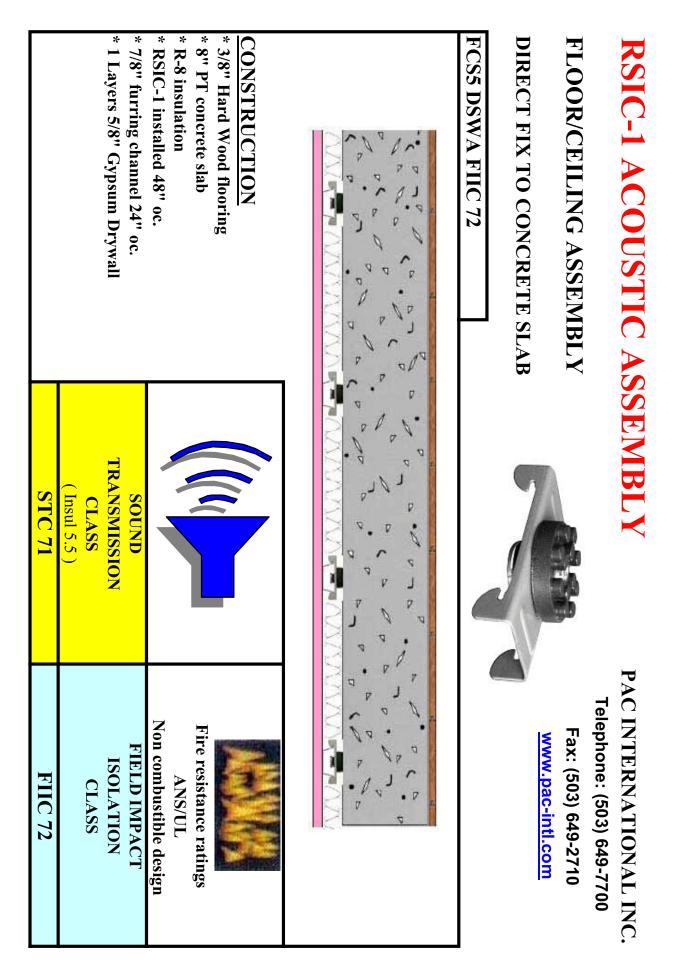
CONCRETE FLOOR/ CEILING

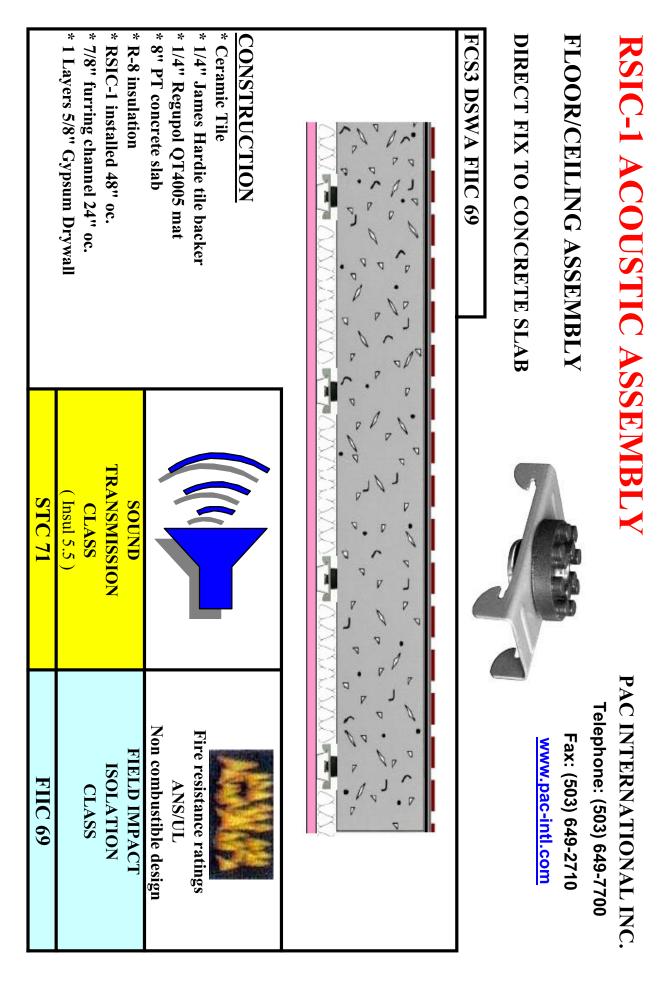


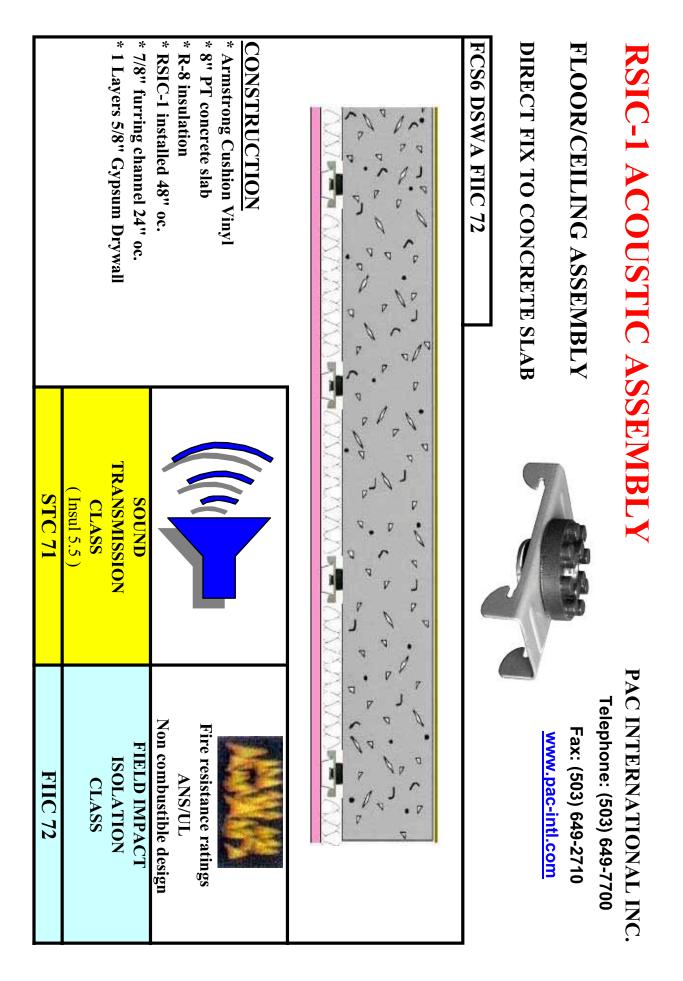


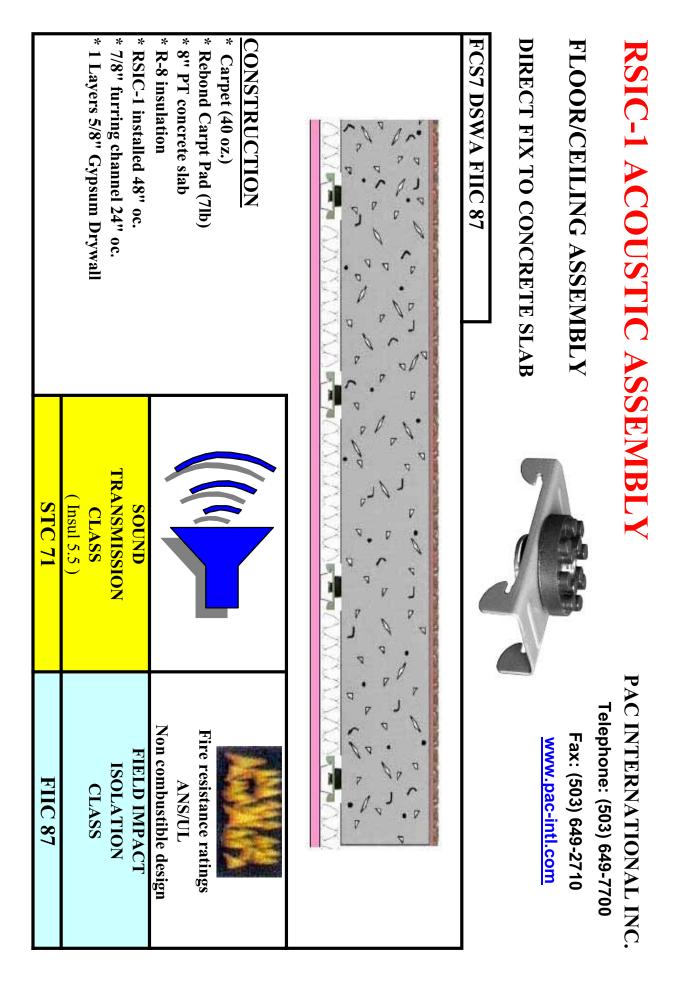


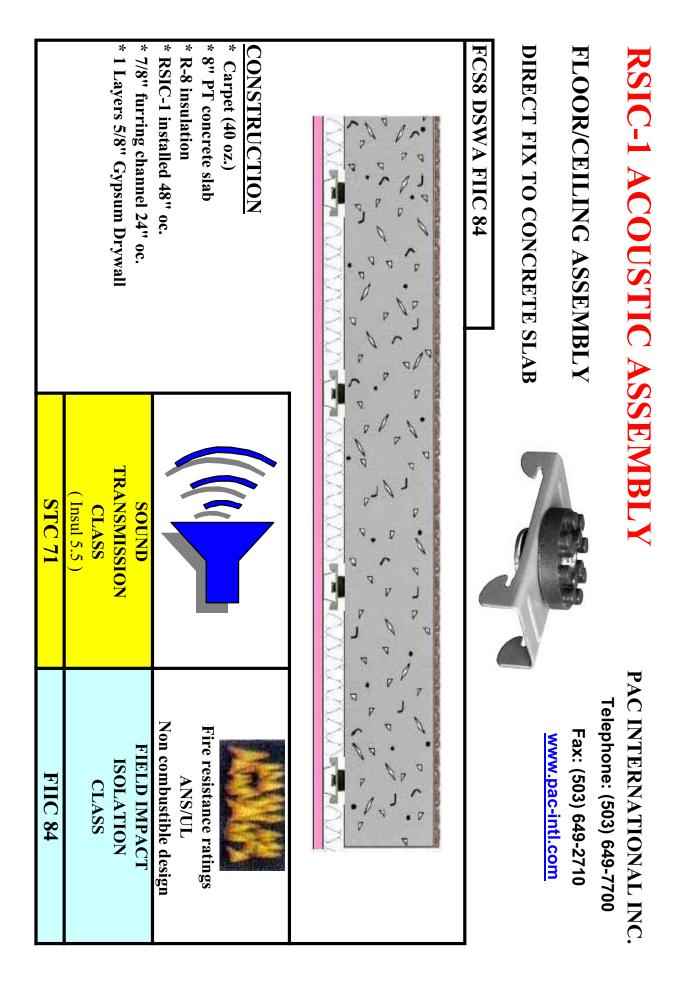








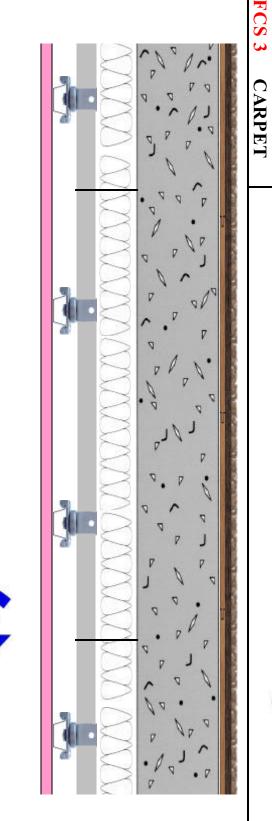




FLOOR / CEILING SYSTEMS

SUSPENDED CEILING UNDER CONCRETE FLOOR





- * Carpet 40oz/per.sq.yd.
- * Felt underlay 36oz/per.sq.yd.
- * 4" concrete flooring.
- * 1 1/2" cold rolled channel (CRC) suspended at 4' 0" oc.
- * 3" fiberglass insulation over channel.
- * RSIC-1.5 CRC acoustic assembly clipped to CRC at 2' 0" oc.
- * 7/8" furring channels attached to the RSIC-1.5 CRC.
- * 1 x 5/8" fire rated gypsum wallboard sheet taped and set.
- * Opinion 20210 RSA Acoustics (www.rsaacoustics.com.au)

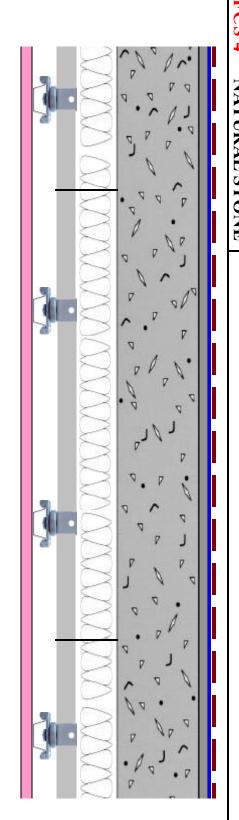
STC 59	SOUND TRANSMISSION CLASS	
IIC 80	IMPACT ISOLATION CLASS	

FLOOR / CEILING SYSTEMS

SUSPENDED CEILING UNDER CONCRETE FLOOR







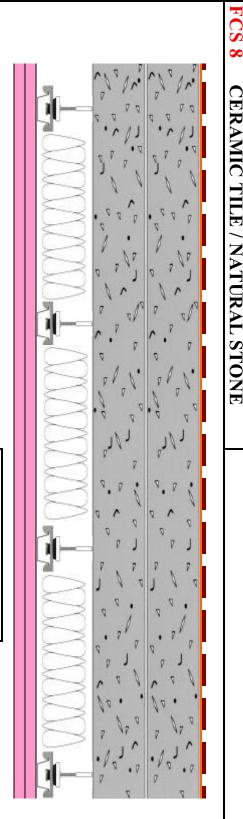
- * 1" thick GypCrete.
- * Acousti-Mat II
- * 4" concrete flooring.
- * 1 1/2" cold rolled channel (CRC) suspended at 4' 0" oc.
- * 3" fiberglass insulation over channel.
- * RSIC-1.5 CRC acoustic assembly clipped to CRC at 2' 0"oc.
- * 7/8" furring channels attached to the RSIC-1.5 CRC.
- * 1 x 5/8" fire rated gypsum wallboard sheet taped and set.
- * Opinion 20210 RSA Acoustics (www.rsaacoustics.com.au)

STC 55	SOUND TRANSMISSION CLASS	
IIC 59	IMPACT ISOLATION CLASS	

FLOOR / CEILING SYSTEMS

DIRECT FIX CEILING UNDER CONCRETE FLOOR



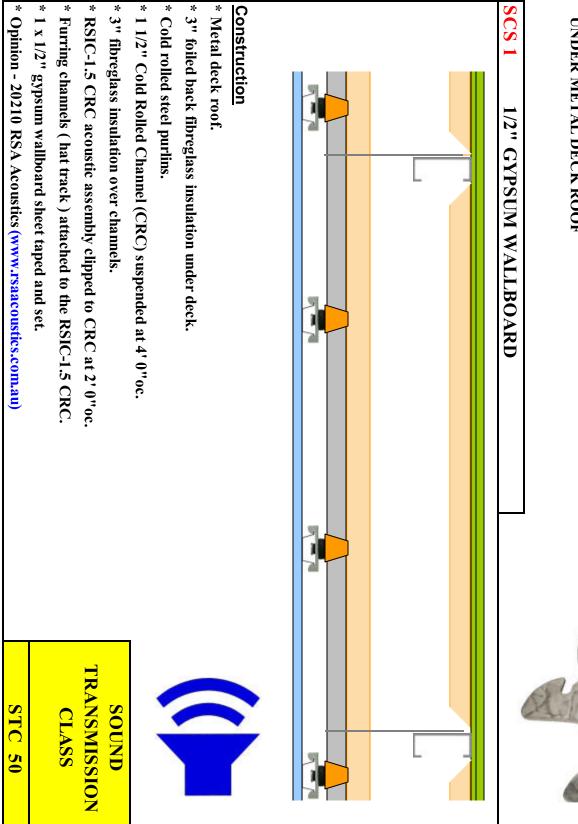


- * Natural stone or tile finish.
- * 1/4" thick cork.
- * 4" concrete slab floor.
- * 4" pre-cast concrete slab.
- * 3" fiberglass insulation.
- * RSIC-1- ADM acoustic assembly fastened to underside of slab
- at 4' 0" by 2' 0" oc., respectively.
- * 7/8" furring channel attached to the RSIC-1-ADM at 2' 0" oc.
- * 2 x 5/8" fire rated gypsum wallboard sheet. * Opinion - 20210/ADM. RSA Acoustics(www.rsaacoustics.com.au
- RSIC-1-ADM RSIC-1-ADM TRANSMISSION CLASS STC 66 IIC 61

RSIC-1.5 CRC Acoustic Assembly

SUSPENDED CEILING SYSTEMS

UNDER METAL DECK ROOF

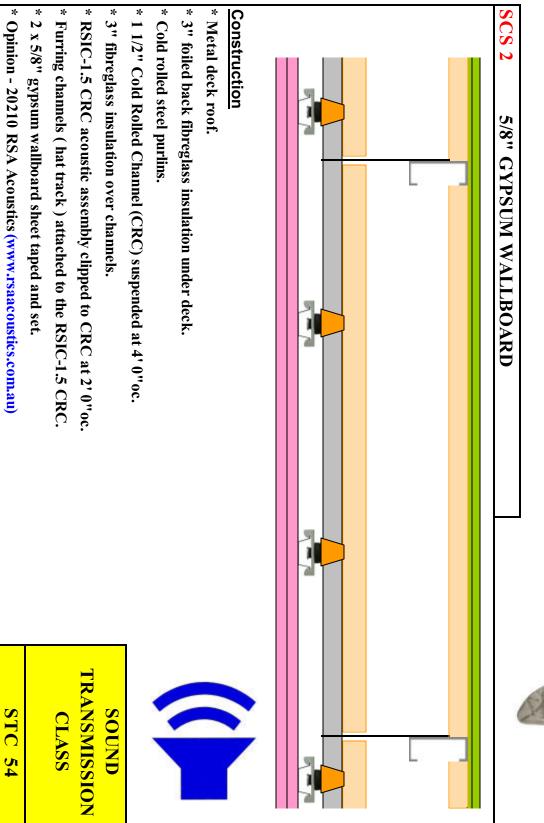


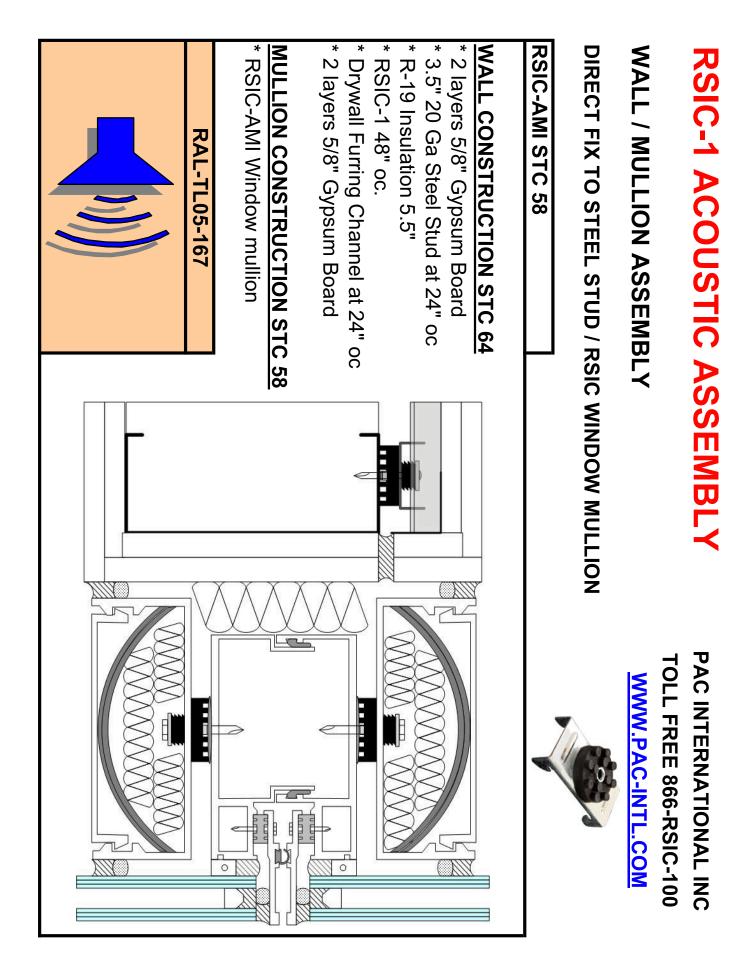
RSIC-1.5 CRC Acoustic Assembly

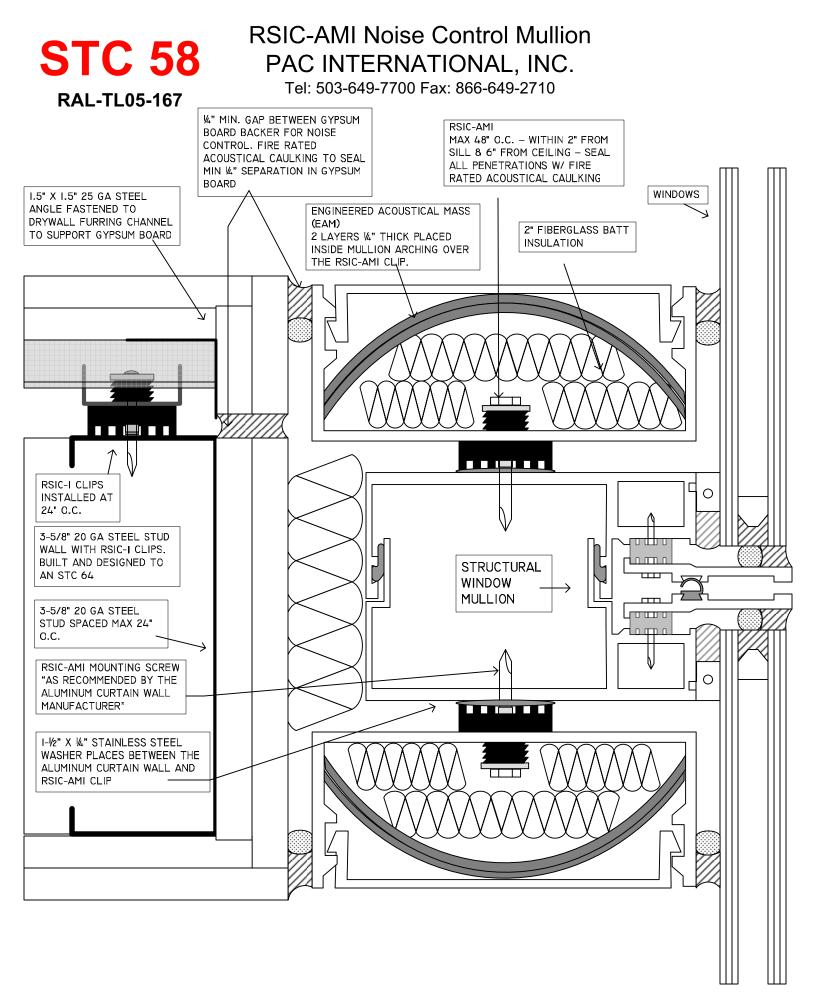
SUSPENDED CEILING SYSTEMS

UNDER METAL DECK ROOF









FIRE, LIFE & SAFETY

RSIC-1 Currently Listed Fire resistive designs

Wood V	Vall Sytem:	5				or Ceiling Systems	
1 Hour	-	2 Hour 3 Hour		3 Hour	1 Hour	2 Hour	3 Hour
		U301	U301		G501		
U305	U305				G502		
U309	U309					G503	
U311	U311					G504	
U320	U320					G505	
U331	U331				G507		
0001	0001	U334	U334		_	G510	
U340	U340	0004	0004		_		G512
U341	U341				G524	G524	
0341	0041	U342	U342		_	G525	G525
U344	U344	0042	0042		_		
U356	U356				Steel Joist Floo	or Ceiling Systems	
0330	0350				1 Hour	2 Hour	3 Hour
Ctool W	all Custom	-			G534		
Steel Wall System		s 2 Hour		3 Hour	G551	G551	
1 Hour U419	U419	2 Hour U419	1410	3 HOUI	-	G552	
			U419		G565	G565	
U423 U440	U423	U423	U423		L548		
	U440				L573		
U451	U451	11450	11450				
		U453	U453		Oalid Waad Ele		
				U455 U455		or Ceiling Systems	0.11
U465	U465				1 Hour	2 Hour	3 Hour
U473	U473				L502		
U493	U493	U493	U493		_	L505	
V469	V469				L510		
							L511
	haft Wall S	ystems			L513		
1 Hour		2 Hour		3 Hour	L514		
U415		U415			L516		
					L523		
Cmu W	all System	s				L532	
2 Hour		3 Hour		4 Hour	L569		
				U910	L593		
		U914					
					Open Web Trus	ss Floor Ceiling Syste	m
Open Web Roof Systems				1 Hour	2 Hour	3 Hour	
1 Hour		2 Hour		3 Hour	L521		
P522					L528		
P519		P519			L534		
					L542		
I Joist \	Nood Floo	r Ceiling Sy	stems		L546		
1 Hour		2 Hour		3 Hour	L550		
L518					L562		
L518					L576		
L547					L579		
L570					L582		
ITS LP60-01							
LLO LPh	10-01				ITS TSC60-01		



RSIC-V Currently Listed Fire resistive designs at UL.COM

Wood Wall Syte	ems		Steel Truss Fl	oor Ceiling Systems		
1 Hour	2 Hour	3 Hour	1 Hour	2 Hour	3 Hour	
U305			G501			
			G502			
Steel Wall Syst	ems		G507			
1 Hour	2 Hour	3 Hour				
U419			Steel Joist Floor Ceiling Systems			
			1 Hour	2 Hour	3 Hour	
Open Web Roo	f Systems		G534			
1 Hour	2 Hour	3 Hour				
P522			Solid Wood Floor Ceiling Systems			
			1 Hour	2 Hour	3 Hour	
I Joist Wood Fl	oor Ceiling Systems	;	L513			
1 Hour	2 Hour	3 Hour	L514			
L570			L523			
L589			L569			
ITS LP60-01			L590			
			L593			
			Open Web Truss Floor Ceiling System			
			1 Hour	2 Hour	3 Hour	
			L521			
			L528			
			L534			
			L546			
			L550			
			L562			
			L579			
			2010			

ITS TSC60-01

MSDS

MATERIAL SAFETY DATA SHEET

POLYCHLOROPRENE CONTAINING COMPOUNDS, MOULDINGS AND EXTRUSION including polychloroprene blends, flame resistant compounds containing polychloroprene and mouldings made from polychloroprene containing compounds.

PRODUCT IDENTIFICATION:

RSIC-1 (STEEL COMPONENT)

Manufacturers Name: Stud and Track Export Pty Ltd

Address: 71 Milperra Road Revesby N.S.W 2212 SYDNEY AUSTRALIA

Chemical Name: Steel and Rubber Composition Chemical Family: Metals/Rubber

COMPOSITION - applies to compounds, mouldings and extrusion.

Polychloroprene. Mineral fillers. Carbon black reinforcing fillers. Metal oxide activators. Naphthenic oil, aromatic oil and non-flammable phosphate plasticisers. Chlorinated flame retardant. Phenolic or amine derived antioxidants. Ethylene Thiourea ETU and sulphur vulcanisers. Anti crusting borates. Sulphur, Thlurams, Thiazyl Disulphides, Guanidine cure modifiers. Miscellaneous additives include organic acids, resins, process aids, waxes and activators. HAZARD IDENTIFICATION

Apart from the onset of cure, Polychloroprene compounds are quite stable up to curing temperatures which are typically 180° C. However, after prolonged heating above these temperatures they will start to decompose, finally emitting fumes and vapours around 200° C, which may be toxic and flammable. FIRST AID

Eye Contact In the event of eye contact with fumes, decomposition products or hot compounds, immediately flush with plenty of water.

Skin Contact In the event of skin contact with fumes, decomposition products or hot compounds, cool skin rapidly with cold water and wash off with soap and plenty of water.

Inhalation If fumes, decomposition products or high temperature emitted vapours are inhaled, move to fresh air. In cases of extreme exposure consult a doctor.

FIRE FIGHTING MEASURES

Ignition

Temperature		
Polymer	>	260° C
Compounds	>	260° C
Mouldings	>	260° C
Extrusion	>	260° C
U	-	

Hazardous Decomposition Products Hydrogen Chloride, Carbon Monoxide, Complex and toxic fumes from the decomposition products of incorporated organic accelerators, vucanisers, antioxidants, plasticisers, processing aids and flame retardants.

Extinguishing Media Water. Foam. Carbon Dioxide. Dry Powder.

Protective Clothing Fire may cause Hydrochloric Acid to be evolved. Wear self-contained breathing apparatus and protective clothing for fire fighting. HANDLING AND STORAGE

Store compound below 25° C in an open, well ventilated area. Cured mouldings and extrusion may be stored at higher temperatures without any ill effects. Do not consume food when handling compound.

Avoid inhalation of curing fume and vapours.

Ensure maintenance of personal hygiene standards.

EXPOSURE CONTROLS/PERSONAL PROTECTION

The composition of polychloroprene compound fume during cure cycle is complex but emissions from polychloroprene compounds are known to contain Carbon Dioxide, Carbon Monoxide, Water, Nitrosamines from Thiuram containing compounds and traces from Thiourea. Fumes may only be present during cure cycle, prolonged heating above standard core temperatures and combustion of mouldings and extrusion, which are otherwise stable.

The C.O.S.H.H regulations of 1988 state that rubber fume be contained within a maximum exposure level, M.E.L., of 0.75mg/m3 measured by personal operator sampling, and expressed as an 8 hour time weighted average. This limit has now been reduced to 0.6mg/m3 since January 1990.

When moulding, extruding and curing polychloroprene containing compound, operate at temperatures as low as is reasonably compatible with economical throughput. Sufficient local exhaust ventilation must be provided at processing centres to ensure compliance with the regulations and the protection and safe working of process operators.

In animal experiments it has been shown that oral administration of Ethylene Thiourea, ETU, can cause the development of thyroid and liver cancers. Additionally, pregnant rats treated by application to the skin of large doses of ETU produced malformed offspring. Whilst there is no present evidence of an excess of either thyroid cancer or foetal malformation in humans exposed to ETU, it is classed as an animal carcinogen and special care must be taken in handling ETU.

It is recommended by the suppliers of ETU that women of childbearing age should not be employed in any production stages involving the handling or curing of compounds containing ETU Ethylene Thiourea.

There is no present evidence that mouldings and extrusion made from compounds containing polychloroprene and other materials outlined in the composition are hazardous or present a danger to humans. Polychloroprene moulding and extrusions are used in everyday life and the hazards are basically restricted to the processing of polychloroprene containing compounds into mouldings and extrusion and the combustion of moulded and extruded products. PHYSICAL DATA Specific Gravity 1.20 - 1.80

Strip containing some surface antitack agent.

Preforms containing some surface antitack agent.

Vulcanised compound cured to dimensional requirements in the form of mouldings and extrusion.

STUD & TRACK EXPORT PTY LTD MATERIAL SAFETY DATA SHEET

I PRODUCT IDENTIFICATION:

RSIC-1 (STEEL COMPONMENT)

Manufacturers Name: Stud and Track Export Pty Ltd

Address: 71 Milperra Road Revesby N.S.W 2212 SYDNEY AUSTRALIA

Chemical Name: Steel and Rubber Composition Chemical Family: Metals/Rubber

II PRODUCT DESCRIPTION: RESILIENT SOUND ISOLATION CLIP

III PHYSICAL DATA

Melting Point F (C): greater than 2800 (1540) Vapor Pressure: Not Applicable Vapor Density (Air = 1): Not Applicable Solubility in Water: Negligible Appearance and Odor: Grayish to Silvery Odorless Sheet, Strip, Plate, Bar or Structural Shapes Specific Gravity (H20 = 1); Greater Than 7% Volatile by Volume (%): Not Applicable Evaporation Rate: Not Applicable

IV FIRE AND EXPLOSION HAZARD DATA

 Flash Point F (C):
 Not Applicable

 Flammable Limits:
 Not Applicable

 Extinguishing Media:
 Use methods applicable to surrounding area.

 Usual Fire and Explosion Hazards:
 None

 Special Fire Fighting Procedures:
 Use self-contained breathing apparatus for protection against degradation products and fire fighting technique or agent (s) applicable to surrounding materials.

V HEALTH HAZARD DATA

 Applicable Statuary or Recommended Occupational Exposure Limits:

 No Threshold Limit Value (TLV) or Permissible Exposure

 Limit (PEL) exists of steel.

 <u>ACUTE EFFECTS</u>

 SWALLOWED: Not expected to be swallowed in the form supplied

 EYE: Not irritating to eyes in the form supplied.

 SKIN: Not irritating to skin in the form supplied.

 INHALED: Not expected to be inhaled in the form supplied.

<u>CHRONIC EFFECTS</u> - No reports of effects from prolonged or repeated exposure to the product as supplied. Prolonged skin contact with chromium surface treatments may lead to chromium sensitisation in sensitive individuals. Prolonged contact with the surface oil used for corrosion protection may irritate the skin in sensitive individuals.

VI REACTIVITY DATA

Stability: Consider Stable Incompatibility: Not incompatible with materials Conditions to Avoid: May liberate metal fumes, metal oxide or other oxides if exposed to elevated temperatures. Coating can react with acids and alkalis, giving off hydrogen gas.

VII SPILLS AND DISPOSAL

No Special procedures usually required. This product can be recycled.

VIII SPECIAL PROTECTION INFORMATION Not applicable in the form supplied.

IX SPECIAL PRECAUTIONS

Not classified as Dangerous Goods.

Stow and secure adequately to prevent movement during transportation and storage. Store in a dry environment to prevent corrosion in storage.

DISCLAIMER

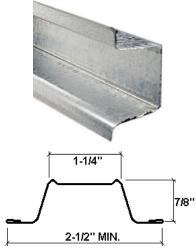
Stud and Track Export Pty Ltd makes no warranties, expressed or implied, including, but not limited to, the implied warranties or marketability and fitness for a particular purpose.

The information contained in this Material Safety Data Sheet (MSDS) is believed to be correct, but no representations, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications, hazards connected with the use of the material or the results to be obtained from the use there of. User assumes all risk and liability of any use or handling of any material beyond Stud and Track Pty Ltd's control. Variations in methods, conditions, equipment used with this material are solely the responsibility of the user and remain at its sole discretion. When applicable, the product described in thus MSDS is considered to be an "article" within the meaning of tile 29 of the code of federal regulations, section 1910.1200 of reg. This MSDS is intended to be used solely for the purpose of satisfying informational requests made pursuant to that requirement. It is not intended to preempt, replace or expand the terms contained in Stud and Track Export Pty Ltd's conditions of sale. Compliance with all applicable federal, state and local law and regulations remains the responsibility of the user, and the user has the responsibility to provide a safe work place, to examine all aspects of its operation, and to determine if or where precautions, in addition to those described herein, are required.

INSTALLATION



RSIC® is a registered Trade Mark of PAC International, Inc.



Drywall Furring Channel: (AKA "Hat Track")

- **Requirements:** 25 gauge, hemmed edge detail required on all 25 gauge furring channel. Meets or exceeds SSMA requirements.
- Depth: 7/8 inch
- Width Bottom: 2-1/2 inch wide minimum.
- Width Top: 1-1/4 inch wide

Splice drywall furring channel (hat track) with 6 inch overlap in mid span (between two clips) secure with 18 ga tie wire, or two 7/16" framing screws.



Resilient Sound Isolation Clip (RSIC-1)

- Maximum Spacing: 48 inches on center
- Maximum Acoustical Design Load: 36 lbs



1-5/8"-

1-1/4[»]→

-5/8"

3"

Fasteners:

- **RSIC-1 to Wood:** #8 x 2-1/2 inch minimum size coarse thread screw. (Recommended #12 or #10 x 2-1/2 inch hex head)
- **RSIC-1 to Steel:** # 8 x 1-5/8 inch minimum size fine thread screw. (Recommended #12 or #10 x 1-5/8 inch hex head)
- DO NOT fasten Resilient Sound Isolation Clips (RSIC-1) to framing members with nails. Use only approved screws.

RSIC-1 Dimensions:

- RSIC-1 clip 3" tall
- RSIC-1 clip 1-1/4" deep
- RSIC-1 and drywall furring channel 1-5/8" deep

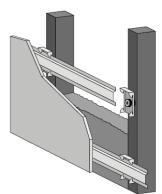
Average Labor Rates:

- **RSIC-1:** 72 clips per man hour
- Drywall Furring Channel: 550LF per man hour

Labor rates provided to PAC International, Inc by an independent contracting firm.

PAC International, Inc. Tel: (866) 774-2100 Fax: (866) 649-2710 Web Site: www.pac-intl.com

Page 2



WALLS: One and Two Layers of 5/8" Gypsum Board

- Resilient Sound Isolation Clips (RSIC-1) shall be 48 inches maximum on center (horizontal).
- Fasten the Resilient Sound Isolation Clip (RSIC-1) to the substrate with a fastener approved for a minimum pull-out and sheer of 120 lbs.
- Ensure the internal metal ferrule is tight to the substrate. Locate the first row of RSIC-1 clips within 3 inches from the floor and within 6 inches from the ceiling.
- Snap in the drywall furring channel (hat track) into the RSIC-1 clips (horizontal for walls). (see page 2 for splice details)
- Place 1/4" (minimum) shim on floor to fully support the gypsum board.
- Install the gypsum board from the bottom up leaving a 1/4" min. gap around the perimeter of the wall.
- ONLY remove the shims after ALL the gypsum board is completely screwed to ALL the drywall furring channels. Make sure every screw (floor to ceiling and wall to wall) is installed as required by the assembly design, in every layer of gypsum board before removing the shims at the floor. The shims are critical to ensure best results.
- Caulk around the entire perimeter of the gypsum board. Use fire and smoke rated acoustical sealant where required.

Ceilings: One and Two Layers of 5/8" Gypsum Board

- Resilient Sound Isolation Clips (RSIC-1) shall be 48 inches maximum on center .
- Fasten the Resilient Sound Isolation Clip (RSIC-1) to the substrate with a fastener approved for a minimum pull-out and sheer of 120 lbs.
- Ensure the internal metal ferrule is tight to the substrate.
- Locate the first row of RSIC-1 clips within 8 inches of the wall at each end of a run.
- Snap in the drywall furring channel (hat track) into the RSIC-1 clips.
- Install the gypsum board from leaving a 1/4" min. gap around the perimeter of the ceiling.
- Caulk around the entire perimeter of the gypsum board. Use fire and smoke rated acoustical sealant where required.

General Information:

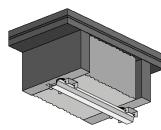
- Refer to <u>www.UL.com</u>, or <u>www.pac-intl.com</u> for complete installation details on all fire resistive assembly designs.
- Resilient Sound Isolation Clip (RSIC-1), furring channel (hat track) and gypsum board shall not carry heavy loads such as cabinets or bookshelves.
- For focused loads add RSIC-1 Backer clip.
- Splice furring channel (hat track) with 6 inch overlap in mid span, secure with 18 ga. tie wire or with two framing screws (7/16")
- Seal all potential air leaks with non-hardening acoustical caulking to achieve best noise control results. Use fire rated sealant where required.
- When attaching the RSIC-1 clips to a steel stud the minimum allowable thickness is 20 ga. (0.030).



Fire Test Information:

Approved for use in over 150 different UL fire resistive design assemblies. Check our website for the latest updates of the fire testing approvals <u>WWW.PAC-INTL.COM</u> Check UL Fire Resistance Directory File # R16638 Check UL's web pages. <u>www.ul.com/database</u> Contact UL (877) UL– HELPS

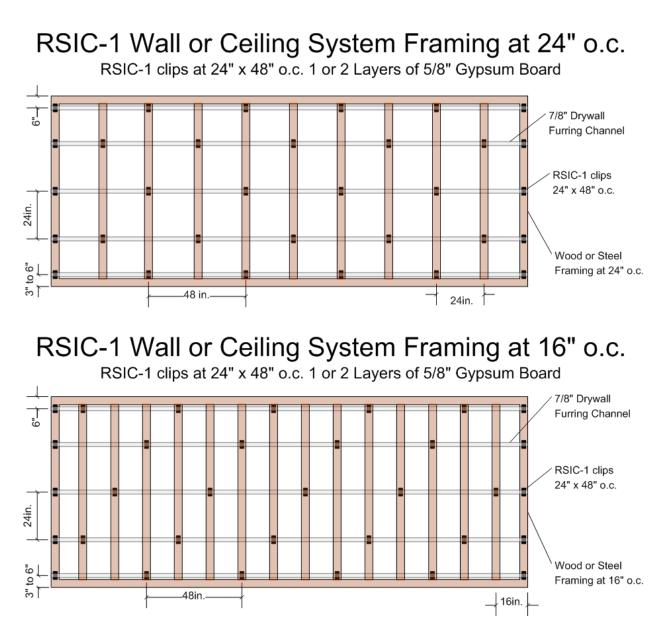
PAC International, Inc. Tel: (866) 774-2100 Fax: (866) 649-2710 Web Site: <u>www,pac-intl.com</u>



APPLICATION RECOMMENDATIONS FOR WALLS AND CEILINGS, WOOD OR STEEL FRAMING

INSTALLING RESILIENT SOUND ISOLATION CLIPS (RSIC-1)

RSIC CLIPS AT 24" OC. 1 or 2 Layers of Gyp Board



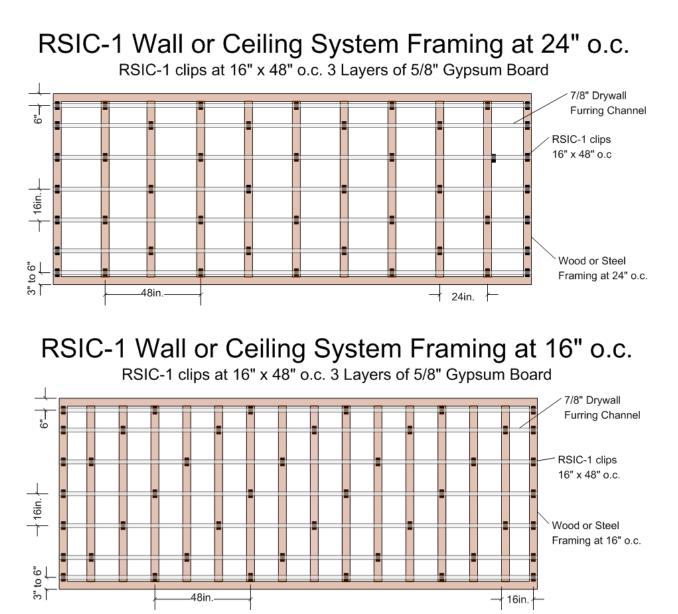
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Page 4

APPLICATION RECOMMENDATIONS FOR WALLS AND CEILINGS, WOOD OR STEEL FRAMING

INSTALLING RESILIENT SOUND ISOLATION CLIPS (RSIC-1)

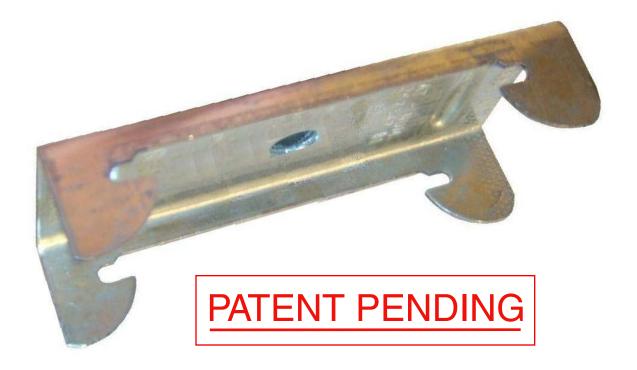
RSIC CLIPS AT 16" OC. <u>3 Layers of 5/8</u>" Gyp Board



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RSIC-V INSTALLATION GUIDE RSIC-V SOUND ISOLATION CLIP





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Furring Channel:

- Minimum requirements: 25 gauge, hemmed edge detail required on all 25 gauge furring channel. Meets or exceeds SSMA min. requirements.
- Depth: 7/8 inch
- Width Bottom: 2-1/2 inch wide minimum.
- Width Top: 1-1/4 inch wide

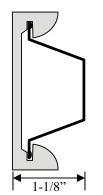
Splice drywall furring channel (hat track) with 6 inch overlap in mid span **7/8**" (between two clip) secure with 18 Ga tie wire, or two 7/16" framing screws.

Resilient Sound Isolation Clip (RSIC-V)

- Spacing: maximum 48 inches on center
- Maximum acoustical design load: 36 lbs

Fasteners:

- **RSIC-V to wood:** 1-5/8 inch minimum size coarse thread screw
- **RSIC-vVto Steel:** 1 inch minimum size fine thread screw
- DO NOT fasten Resilient Sound Isolation Clips (RSIC-V) to framing members with nails. Use only approved screws.



1 - 5/8

RSIC-V dimensions:

- RSIC-V clip 3" tall
- RSIC-V and 7/8" Drywall Furring Channel 1-1/8" deep

Average Labor Rates:

- **RSIC-V:** 72 clips per man hour
- Drywall Furring Channel: 550LF per man hour

Labor rates provided to PAC International, Inc by independent contracting firm

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WALLS: One and Two layer of 5/8" gypsum

- Resilient Sound Isolation Clips (RSIC-V) shall be 48 inches maximum on center . (horizontal)
- Fasten the Resilient Sound Isolation Clip (RSIC-V) to the substrate with a fastener approved for a minimum pull-out and shear of 120 lbs.
- Ensure the internal metal ferrell is tight to the substrate.
- Locate the first row of RSIC-V clips within 3 inches from the floor and within 6 inches
- from the ceiling.
- Snap in the drywall furring channel (hat track) into the RSIC-V clips (horizontal for walls). (see page 2 for splice details)
- Place 1/4" (minimum) shim on floor to fully support the gypsum board.
- Install the gypsum board from the bottom up leaving a 1/4" min. gap around perimeter of wall.
- ONLY remove the shims after ALL the gypsum board is completely screwed to ALL the drywall furring channels.
- Make sure every screw (floor to ceiling and wall to wall) is installed as required by the assembly design, in every layer of gypsum board before removing the shims at the floor. The shims are critical to ensure best results.
- Caulk around the perimeter of the wall. Use fire and smoke rated acoustical sealant where required.

Ceilings: One and Two layer 5/8" gypsum

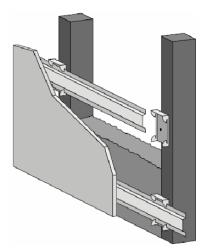
- Resilient Sound Isolation Clips (RSIC-V) shall be 48 inches maximum on center .
- Fasten the Resilient Sound Isolation Clip (RSIC-V) to the substrate with a fastener approved for a minimum pull-out and shear of 120 lbs.
- Ensure the internal metal ferrell is tight to the substrate.
- Locate the first row of RSIC-V clips within 8 inches of the wall at each end of a run
- Snap in the drywall furring channel (hat track) into the RSIC-V clips.
- Install the gypsum board leaving a 1/4" min. gap around perimeter of the ceiling.
- Caulk around the perimeter of the ceiling. Use fire and smoke rated acoustical sealant where required.

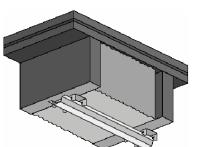
General Information:

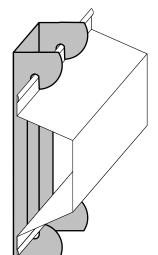
- Refer to www.UL.com for complete installation details on all fire resistive assembly designs.
- Resilient Sound Isolation Clip (RSIC-V), furring channel (hat track) and gypsum board shall not carry heavy loads such as cabinets or bookshelves.
- Splice furring channel (hat track) with 6 inch overlap in mid span, secure with 18 ga. tie wire or with two framing screws (7/16")
- Seal all potential air leaks with non-hardening acoustical caulking to achieve best noise control results. Use fire rated sealant where required.
- When attaching the RSIC-V clips to a steel stud the minimum allowable thickness is 20 ga. (0.030). 3 fasteners are required to secure the RSIC-V to 25 ga framing.

Fire Test Information:

Approved for use in over 160 different UL fire resistive design assemblies. Check our website for the latest updates of the fire testing approvals. Check UL Fire Resistance Directory File # R16638 Check UL's web pages. **www.ul.com/database** Contact UL (877) UL– HELPS







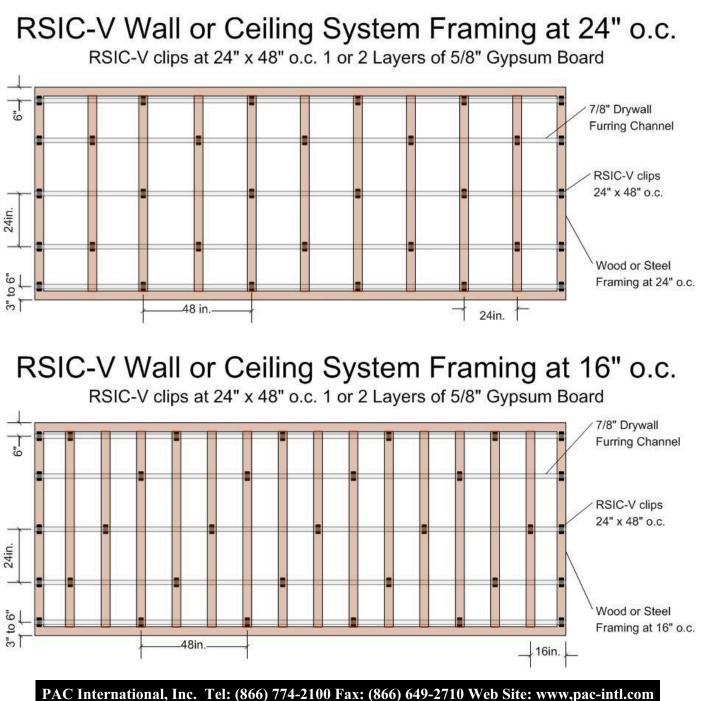


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APPLICATION RECOMMENDATIONS FOR WALLS AND CEILINGS, WOOD OR STEEL FRAMING

INSTALLING RESILIENT SOUND ISOLATION CLIPS (RSIC-V)

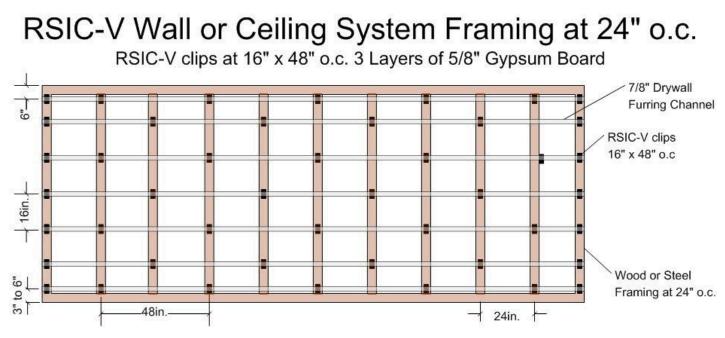
RSIC CLIPS AT 24" OC.



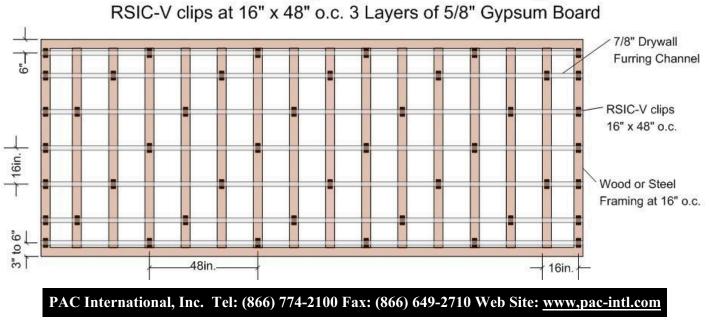
APPLICATION RECOMMENDATIONS FOR WALLS AND CEILINGS, WOOD OR STEEL FRAMING

INSTALLING RESILIENT SOUND ISOLATION CLIPS (RSIC-V)

RSIC CLIPS AT 16" OC.



RSIC-V Wall or Ceiling System Framing at 16" o.c.



WARRANTY

WARRANTY DISCLAIMER AND LIABILITY LIMITATION

NO EXPRESS OR IMPLIED WARRANTIES

THERE IS NO WARRANTY, REPRESENTATION OR CONDITION OF ANY KIND; AND ANY WARRANTY, EXPRESS OR IMPLIED, IS EXCLUDED AND DISCLAIMED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow limitations on implied warranties, so the above limitation may not apply to you.

LIABILITY LIMITED TO RETURN OF PURCHASE PRICE

IT IS AGREED THAT SELLER'S LIABILITY AND PURCHASER'S SOLE REMEDY, WHETHER IN CONTRACT, UNDER ANY WARRANTY, IN TORT (INCLUDING NEGLIGENCE), IN STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE RETURN OF THE AMOUNT OF THE PURCHASE PRICE PAID BY PURCHASER, AND UNDER NO CIRCUMSTANCES SHALL SELLER BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, PERSONAL INJURY, PROPERTY DAMAGE, DAMAGE TO OR LOSS OF EQUIPMENT, LOST PROFITS OR REVENUE, COSTS OF RENTING REPLACEMENTS AND OTHER ADDITIONAL EXPENSES, EVEN IF SELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE PRICE STATED FOR THE EQUIPMENT IS A CONSIDERATION IN LIMITING SELLER'S LIABILITY AND PURCHASER'S REMEDY. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

SELLER NOT LIABLE FOR PURCHASER'S NEGLIGENCE

SELLER WILL NOT BE LIABLE FOR ANY DAMAGES, LOSSES OR EXPENSES AS A RESULT OF PURCHASER'S NEGLIGENCE, WHETHER DEEMED ACTIVE OR PASSIVE AND WHETHER OR NOT ANY SUCH NEGLIGENCE IS THE SOLE CAUSE OF ANY SUCH DAMAGE, LOSS OR EXPENSE.

MODEL FOR DEMONSTRATION PURPOSES ONLY

THE MODEL OR SAMPLE SHOWN BY SELLER TO BUYER IS USED FOR DEMONSTRATION PURPOSES ONLY. THERE IS NO WARRANTY THAT THE GOODS AS DELIVERED SHALL CONFORM TO THE MODEL OR SAMPLE, AND CONFORMITY OF THE GOODS TO THE MODEL OR SAMPLE IS NOT PART OF THE BASIS OF THE BARGAIN BETWEEN SELLER AND BUYER.

NO WARRANTY OR COMPLIANCE WITH SAFETY CODE OR REGULATION

SELLER DOES NOT WARRANT THAT ANY OF THE GOODS SOLD WILL MEET OR COMPLY WITH THE REQUIREMENTS OF ANY SAFETY CODE, BUILDING OR DWELLING CODE, OR REGULATION OF ANY STATE, MUNICIPALITY OR OTHER JURISDICTION.

OREGON LAW APPLIES

SELLER AND BUYER AGREE THAT ALL ASPECTS OF THIS TRANSACTION INCLUDING THE APPLICABLE STATUTE OF LIMITATIONS SHALL BE GOVERNED BY THE INTERNAL LAW OF THE STATE OR OREGON, AND NOT THE LAWS OF CONFLICTS.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

RSIC SPECS

PAC International, Inc. 6585 Whispering Sands Dr

Las Vegas, NV 89131 Toll Free (866) RSIC-100 (866) 774-2100 Fax (866) 649-2710 Web Site www.pac-intl.com E-Mail info@pac-intl.com

Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, including *MasterFormat, SectionFormat,* and *PageFormat,* contained in the CSI *Manual of Practice.*

The section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the drawings.

Delete all "Specifier Notes" when editing this section.

SECTION 13085

SOUND ISOLATION

Specifier Notes: This section covers PAC International, Inc. "RSIC-1" Resilient Sound Isolation Clip installed with drywall furring channels for support of gypsum board for acoustical separation (de-coupling) in walls and ceilings. Consult PAC International for assistance in editing this section for the specific application.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Resilient sound isolation clips installed with drywall furring channels for support of gypsum board for noise control (de-coupling) in walls and ceilings.

1.2 RELATED SECTIONS

Specifier Notes: Edit the following list of related sections as required for the project. List other sections with work directly related to this section.

A. Section 05400 - Cold-Formed Metal Framing.

RSIC-1

- B. Section 06110 Wood Framing.
- C. Section 07210 Building Insulation.
- D. Section 07920 Joint Sealants.
- E. Section 09110 Non-Load-Bearing Wall Framing.
- F. Section 09250 Gypsum Board.
- G. Section 09260 Gypsum Board Assemblies.
- H. Section 09820 Acoustical Insulation and Sealants.

1.3 REFERENCES

Specifier Notes: List standards referenced in this section, complete with designations and titles. This article does not require compliance with standards, but is merely a listing of those used.

- A. AISI Specifications for Design of Cold-Formed Steel Structural Members.
- B. ASTM B 633 Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel.
- C. ASTM C 645 Standard Specification for Nonstructural Steel Framing Members.
- D. ASTM C 754 Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
- E. ASTM C 840 Standard Specification for Application and Finishing of Gypsum Board.
- F. ASTM C 1002 Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
- G. ASTM D 412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers Tension.
- H. ASTM D 573 Standard Test Method for Rubber-Deterioration in an Air Oven.
- I. ASTM D 2000 Standard Classification System for Rubber Products in Automotive Applications.
- J. ASTM D 2240 Standard Test Method for Rubber Property Durometer Hardness.
- K. UL Fire Resistance Directory. www.ul.com

1.4 DESIGN REQUIREMENTS

Specifier Notes: The "RSIC-1" Resilient Sound Isolation Clip acoustic assembly is a proprietary product used for fastening gypsum wallboard to a supporting structure, while simultaneously isolating it from vibration. This significantly reduces the amount of impact and airborne sound filtering from rooms above, below, and alongside.

To maximize the noise control capacity and potential of the RSIC-1, a professional acoustical engineer should be consulted. PAC International offers computer modeling for STC to assist in your design.

To maximize the acoustical performance of the RSIC-1, it is recommended the dead or shear load not exceed 36 pounds per RSIC-1.

- A. Dead or Shear Load: Maximum design load of 36 pounds per each resilient sound isolation clip.
- B. Conform to UL Fire Resistance Directory design assemblies, where required.

1.5 SUBMITTALS

- A. Comply with Section 01330 Submittal Procedures.
- B. Product Data: Submit manufacturer's product data and installation instructions.
 - 1. Resilient sound isolation clips.
 - 2. Drywall furring channels.
- C. Samples: Submit manufacturer's samples.
 - 1. Resilient sound isolation clips.
 - 2. Drywall furring channels.
- D. Warranty: Submit manufacturer's standard warranty for resilient sound isolation clips.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage: Store materials in clean, dry area indoors in accordance with manufacturer's instructions.
- C. Handling: Protect materials during handling and installation to prevent damage.

PART 2 PRODUCTS

2.1 SOUND ISOLATION

- A. Sound Isolation Clips: Resilient Sound Isolation Clip (RSIC-1).
 - Manufacturer: PAC International, Inc., 6585 Whispering Sands Dr Las Vegas, NV 89131. Toll Free (866) RSIC-100 (866) 774-2100. Phone (503) 649-7700. Fax (503) 649-2710. Web Site www.pac-intl.com. E-Mail info@pac-intl.com.
 - 2. Rubber Isolator:
- RSIC-1

13085 - 3

- a. Natural organic rubber compound, blended with fire-inhibiting compounds.
- b. Molded to isolate ferrule from clip.
- c. Minimum of 12 micro-vibration controlling pedestals at point of contact with framing member.
- d. Manufactured to ASTM D 2000, M2 AA 510 A13, which includes:
 - 1) Hardness, ASTM D 2240, Shore A: 47.
 - 2) Modulus 300 Percent, ASTM D 412, Die C: 5.3 MPa.
 - 3) Tensile Strength, ASTM D 412, Die C: 11.2 MPa.
 - 4) Elongation at Break, ASTM D 573: 454 percent.
- Clip: Galvanized or aluminum-zinc coated steel, 16 gauge.
- 4. Ferrule: Zinc-electroplated steel.
- 5. Projection: 1-5/8 inches from supporting structure, when 7/8-inch drywall furring channels are used.

Specifier Notes: The following materials are not furnished by PAC International.

- B. Drywall Furring Channels (Hat Track):
 - 1. Material: Cold-formed galvanized steel.
 - 2. Conformance:

3.

- a. AISI Specifications for Design of Cold-Formed Steel Structural Members.
- b. ASTM C 645.
- c. ASTM C 754.
- 3. Designation: Steel Stud Manufacturers Association (SSMA) Code 087F125-18 (25 gauge).
 - a. Size: 0.0179 inch (0.53 mm) thick, 7/8 inch (22.2 mm) height, 2-11/16 inches (68 mm) width.
 - b. Hemmed edge detail.
- C. Mechanical Fasteners:
 - 1. Type: Self-drilling, self-tapping screws. Steel, ASTM C 1002. Galvanized coating, plated, or oil-phosphate coated, ASTM B 633, as needed for required corrosion resistance.
 - 2. Resilient Sound Isolation Clip Connections:
 - a. To Wood Framing Members: Screws 2-1/2 inches (63 mm) minimum length, #8 minimum shank, Type W (course thread), bugle- or hex-head screws of equal or greater size.
 - 1) Minimum Pullout and Shear: 108 pounds.
 - b. To Steel Framing Members (Less than 20 Gauge): Screws 1-1/2 inches (38 mm) minimum length; #8 minimum shank; Type S (fine thread); bugle-, wafer-, or hexhead screws of equal or greater size.
 - 1) Minimum Pullout and Shear: 108 pounds.
 - c. To Steel Framing Members (20 Gauge through 12 Gauge): Screws 1-1/2 inches (38 mm) minimum length; #8 minimum shank; Type S (fine thread); self-drilling tip; bugle-, wafer-, or hex-head screws of equal or greater size.
 - 1) Minimum Pullout and Shear: 108 pounds.
 - d. To Concrete: Anchors 1-3/4 inches (44 mm) minimum length, 3/16-inch to 1/4-inch diameter. Mushroom head or screw-in type anchor in accordance with fastener manufacturer's instructions. Powers Fasteners or approved equal.
 - 1) Minimum Pullout and Shear: 108 pounds.
 - e. To Concrete Masonry Units: Anchors 2-1/4 inches (57 mm) minimum length, 1/4inch diameter. Designed for use in concrete masonry units in accordance with fastener manufacturer's instructions. Powers Fasteners or approved equal.

- 1) Minimum Pullout and Shear: 108 pounds.
- 3. Drywall Furring Channel Lap Joint Connection, Steel to Steel: Framing screws, button head, 7/16 inch (11 mm) minimum length, #6 minimum shank, needle point, Phillips drive or greater, or double-wire tie with 18 gauge tie wire.
- D. Tie Wire: 18 gauge, annealed, galvanized steel.
- E. Acoustical Sealant: Flexible, non-hardening. As specified in Section 07920.
- F. Fire/Smoke Sealant: Flexible, non-hardening. Classified as an acoustical sealant. As specified in Section 07920.
- G. Putty Pad Sealant: Control noise transmission and fire resistance at electrical boxes and other penetrations. As specified in Section 07920.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas to receive materials. Notify Architect if areas are not acceptable. Do not begin installation until unacceptable conditions have been corrected.

3.2 INSTALLATION - GENERAL

- A. Install resilient sound isolation clips and drywall furring channels in accordance with manufacturer's instructions.
- B. Mechanically fasten resilient sound isolation clips to structure with screws, bolts, or expansion anchors, dependent upon structure.
- C. Fire-Resistive Design Assemblies:
 - 1. Install as specified in UL Fire Resistance Directory, where required.
 - 2. Do not arbitrarily add resilient sound isolation clips to fire-rated assemblies.
- D. Space resilient sound isolation clips at maximum of 24 inches (600 mm) by 48 inches (1,200 mm) on center for walls and ceilings.
- E. Do not exceed design load (pull and shear) of 36 pounds per isolation clip.
- F. Stagger isolation clip installation, so dead load is supported by all support members.
- G. Splicing Drywall Furring Channels:
 - 1. Splice drywall furring channels with minimum of 6-inch (150-mm) laps.
 - 2. Secure laps with 2 framing screws or 18 gauge tie wire double wrapped.
 - 3. Locate splices between resilient sound isolation clips.
 - 4. Do not locate splices on resilient sound isolation clips.
- H. Install resilient sound isolation clips on 1 side of wall assembly, unless otherwise indicated on the drawings.

- I. Flanking Noise:
 - 1. Review installation details to prevent structure-borne flanking noise.
 - 2. Do not allow drywall furring channels or gypsum board to contact foreign materials, including floors, ceilings, or wall framing members.
- J. Ensure metal ferrule of resilient sound isolation clips is in firm contact with structural member.
- K. Gypsum Board:
 - 1. Install gypsum board in vertical or horizontal position with 1/8-inch (3-mm) to 1/4-inch (6-mm) gap around perimeter for acoustical sealant application.
 - 2. Install gypsum board in accordance with ASTM C 840 as specified in Section 09250.
- L. Acoustical Sealant:
 - 1. Seal potential air leaks with acoustical sealant to achieve best Field Sound Transmission Class (FSTC).
 - 2. Seal electrical outlets and penetrations with acoustical sealant.
 - 3. Apply fire-rated acoustical sealant at locations where fire-rated assembly is required.
- M. Putty Pad Sealant: Acoustically seal with putty pads, electrical boxes in walls and ceilings in which resilient sound isolation clips are used.

3.3 INSTALLATION - WALLS

Specifier Notes: Special consideration should be given to concentrated and uniform load conditions, such as cabinets. Special consideration should be given to all penetrations to ensure the control of STC noise transfer. Consult PAC International for additional information.

- A. Install drywall furring channels perpendicular to framing members.
- B. Space drywall furring channels maximum of 24 inches (600 mm) on center.
- C. Locate first drywall furring channel parallel to floor and maximum of 3 inches (75 mm) above floor and 1 drywall furring channel maximum of 6 inches (150 mm) from ceiling.

3.4 INSTALLATION - CEILINGS

Specifier Notes: Special consideration should be given to all penetrations, such as recessed light fixtures, electrical boxes, exhaust fans, and sprinkler heads to ensure the control of both STC and IIC noise transfer. Consult PAC International for additional information.

- A. Install drywall furring channels perpendicular, parallel, or angular to framing members.
- B. Space Drywall Furring Channels:
 - 1. Maximum of 24 inches (600 mm) on center with:
 - a. Single layer of 5/8-inch (16-mm) gypsum board.
 - b. Double layer of 5/8-inch (16-mm) gypsum board, weighing less than 2.25 pounds per square foot per layer.
 - c. Single layer of 1/2-inch (12-mm) high-strength gypsum board.
 - d. Double layer of 1/2-inch (12-mm) high-strength gypsum board.
 - 2. Maximum of 16 inches (400 mm) on center with:

RSIC-1

- a. Double layer of 5/8-inch (16-mm) gypsum board.
- b. Single layer of 1/2-inch (12-mm) regular-strength gypsum board.
- c. Double layer of 1/2-inch (12-mm) regular-strength gypsum board.
- 3. Reduce spacing of drywall furring channels to prevent potential for sagging of gypsum board or when additional loads are supported by resilient sound isolation clips.
- C. Locate resilient sound isolation clips maximum of 8 inches (200 mm) from ends of drywall furring channels.
- D. Locate drywall furring channels maximum of 3 inches (75 mm) from parallel wall assemblies.

END OF SECTION

PAC International, Inc. 6585 Whispering Sands Dr

Las Vegas, NV 89131 Toll Free (866) RSIC-100 (866) 774-2100 Fax (866) 649-2710 Web Site www.pac-intl.com E-Mail info@pac-intl.com

Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, including *MasterFormat, SectionFormat,* and *PageFormat,* contained in the CSI *Manual of Practice.*

The section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the drawings.

Delete all "Specifier Notes" when editing this section.

SECTION 13085

SOUND ISOLATION

Specifier Notes: This section covers PAC International, Inc. "RSIC-V" Resilient Sound Isolation Clip installed with drywall furring channels for support of gypsum board for acoustical separation (de-coupling) in walls and ceilings. Consult PAC International for assistance in editing this section for the specific application.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Resilient sound isolation clips installed with drywall furring channels for support of gypsum board for noise control (de-coupling) in walls and ceilings.

1.2 RELATED SECTIONS

Specifier Notes: Edit the following list of related sections as required for the project. List other sections with work directly related to this section.

A. Section 05400 - Cold-Formed Metal Framing.

RSIC-V

- B. Section 06110 Wood Framing.
- C. Section 07210 Building Insulation.
- D. Section 07920 Joint Sealants.
- E. Section 09110 Non-Load-Bearing Wall Framing.
- F. Section 09250 Gypsum Board.
- G. Section 09260 Gypsum Board Assemblies.
- H. Section 09820 Acoustical Insulation and Sealants.

1.3 REFERENCES

Specifier Notes: List standards referenced in this section, complete with designations and titles. This article does not require compliance with standards, but is merely a listing of those used.

- A. AISI Specifications for Design of Cold-Formed Steel Structural Members.
- B. ASTM B 633 Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel.
- C. ASTM C 645 Standard Specification for Nonstructural Steel Framing Members.
- D. ASTM C 754 Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
- E. ASTM C 840 Standard Specification for Application and Finishing of Gypsum Board.
- F. ASTM C 1002 Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
- G. ASTM D 412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers Tension.
- H. ASTM D 573 Standard Test Method for Rubber-Deterioration in an Air Oven.
- I. ASTM D 2000 Standard Classification System for Rubber Products in Automotive Applications.
- J. ASTM D 2240 Standard Test Method for Rubber Property Durometer Hardness.
- K. UL Fire Resistance Directory.
- 1.4 DESIGN REQUIREMENTS

Specifier Notes: The "RSIC-V" Resilient Sound Isolation Clip acoustic assembly is a proprietary product used for fastening gypsum wallboard to a supporting structure, while simultaneously isolating it from vibration. This significantly reduces the amount of impact and airborne sound filtering from rooms above, below, and alongside.

To maximize the noise control capacity and potential of the RSIC-V, a professional acoustical engineer should be consulted. PAC International offers computer modeling for STC to assist in your design.

To maximize the acoustical performance of the RSIC-V, it is recommended the dead or shear load not exceed 36 pounds per RSIC-V.

- A. Dead or Shear Load: Maximum design load of 36 pounds per each resilient sound isolation clip.
- B. Conform to UL Fire Resistance Directory design assemblies, where required.

1.5 SUBMITTALS

- A. Comply with Section 01330 Submittal Procedures.
- B. Product Data: Submit manufacturer's product data and installation instructions.
 - 1. Resilient sound isolation clips.
 - 2. Drywall furring channels.
- C. Samples: Submit manufacturer's samples.
 - 1. Resilient sound isolation clips.
 - 2. Drywall furring channels.
- D. Warranty: Submit manufacturer's standard warranty for resilient sound isolation clips.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage: Store materials in clean, dry area indoors in accordance with manufacturer's instructions.
- C. Handling: Protect materials during handling and installation to prevent damage.

PART 2 PRODUCTS

2.1 SOUND ISOLATION

- A. Sound Isolation Clips: Resilient Sound Isolation Clip (RSIC-V).
 - Manufacturer: PAC International, Inc., 6585 WHispering Sands Dr, Las Vegas, NV 89131. Toll Free (866) RSIC-V00 (866) 774-2100. Phone (503) 649-7700. Fax (503) 649-2710. Web Site www.pac-intl.com. E-Mail info@pac-intl.com.
 - 2. Clip: Galvanized or aluminum-zinc coated steel, 16 gauge.
 - 3. Ferrule: Zinc-electroplated steel.

RSIC-V

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4. Projection: 1-5/8 inches from supporting structure, when 7/8-inch drywall furring channels are used.

Specifier Notes: The following materials are not furnished by PAC International.

- B. Drywall Furring Channels (Hat Track):
 - 1. Material: Cold-formed galvanized steel.
 - 2. Conformance:
 - a. AISI Specifications for Design of Cold-Formed Steel Structural Members.
 - b. ASTM C 645.
 - c. ASTM C 754.
 - 3. Designation: Steel Stud Manufacturers Association (SSMA) Code 087F125-18 (25 gauge).
 - a. Size: 0.0179 inch (0.53 mm) thick, 7/8 inch (22.2 mm) height, 2-11/16 inches (68 mm) width.
 - b. Hemmed edge detail.
- C. Mechanical Fasteners:
 - 1. Type: Self-drilling, self-tapping screws. Steel, ASTM C 1002. Galvanized coating, plated, or oil-phosphate coated, ASTM B 633, as needed for required corrosion resistance.
 - 2. Resilient Sound Isolation Clip Connections:
 - a. To Wood Framing Members: Screws 1-5/8 inches (41 mm) minimum length, #6 minimum shank, Type W (course thread), bugle- or hex-head screws of equal or greater size.
 - 1) Minimum Pullout and Shear: 108 pounds.
 - b. To Steel Framing Members (Less than 20 Gauge): Screws 9/16 inch (25 mm) minimum length; #8 minimum shank; Type S (fine thread); bugle-, or wafer- head screws of equal or greater size.
 - 1) Minimum Pullout and Shear: 108 pounds.
 - c. To Steel Framing Members (20 Gauge through 12 Gauge): Screws 1 inch (25 mm) minimum length; #8 minimum shank; Type S (fine thread); self-drilling tip; bugle-, wafer-, or hex-head screws of equal or greater size.
 1) Minimum Bullout and Shaar: 102 nounder
 - 1) Minimum Pullout and Shear: 108 pounds.
 - d. To Concrete: Anchors 3/4 inch (19 mm) minimum length, 3/16-inch to 1/4-inch diameter. Mushroom head, screw-in, drop in, or shoot in type anchor in accordance with fastener manufacturer's instructions. Powers Fasteners or approved equal.
 1) Minimum Pullout and Shear: 108 pounds.
 - e. To Concrete Masonry Units: Anchors 1 inch (25 mm) minimum length, 1/4-inch diameter. Designed for use in concrete masonry units in accordance with fastener manufacturer's instructions. Powers Fasteners or approved equal.
 1) Minimum Pullout and Shear: 108 pounds.
 - 3. Drywall Furring Channel Lap Joint Connection, Steel to Steel: Framing screws, button head, 7/16 inch (11 mm) minimum length, #6 minimum shank, needle point, Phillips drive or greater, or double-wire tie with 18 gauge tie wire.
- D. Tie Wire: 18 gauge, annealed, galvanized steel.
- E. Acoustical Sealant: Flexible, non-hardening. As specified in Section 07920.
- F. Fire/Smoke Sealant: Flexible, non-hardening. Classified as an acoustical sealant. As specified in Section 07920.

G. Putty Pad Sealant: Control noise transmission and fire resistance at electrical boxes and other penetrations. As specified in Section 07920.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas to receive materials. Notify Architect if areas are not acceptable. Do not begin installation until unacceptable conditions have been corrected.

3.2 INSTALLATION - GENERAL

- A. Install resilient sound isolation clips and drywall furring channels in accordance with manufacturer's instructions.
- B. Mechanically fasten resilient sound isolation clips to structure with screws, bolts, or expansion anchors, dependent upon structure.
- C. Fire-Resistive Design Assemblies:
 - 1. Install as specified in UL Fire Resistance Directory, where required.
 - 2. Do not arbitrarily add resilient sound isolation clips to fire-rated assemblies.
- D. Space resilient sound isolation clips at maximum of 24 inches (600 mm) by 48 inches (1,200 mm) on center for walls and ceilings.
- E. Do not exceed design load (pull and shear) of 36 pounds per isolation clip.
- F. Stagger isolation clip installation, so dead load is supported by all support members.
- G. Splicing Drywall Furring Channels:
 - 1. Splice drywall furring channels with minimum of 6-inch (150-mm) laps.
 - 2. Secure laps with 2 framing screws or 18 gauge tie wire double wrapped.
 - 3. Locate splices between resilient sound isolation clips.
 - 4. Do not locate splices on resilient sound isolation clips.
- H. Install resilient sound isolation clips on 1 side of wall assembly, unless otherwise indicated on the drawings.
- I. Flanking Noise:
 - 1. Review installation details to prevent structure-borne flanking noise.
 - 2. Do not allow drywall furring channels or gypsum board to contact foreign materials, including floors, ceilings, or wall framing members.
- J. Ensure metal ferrule of resilient sound isolation clips is in firm contact with structural member.
- K. Gypsum Board:
 - 1. Install gypsum board in vertical or horizontal position with 1/8-inch (3-mm) to 1/4-inch (6-mm) gap around perimeter for acoustical sealant application.
 - 2. Install gypsum board in accordance with ASTM C 840 as specified in Section 09250.

- L. Acoustical Sealant:
 - 1. Seal potential air leaks with acoustical sealant to achieve best Field Sound Transmission Class (FSTC).
 - 2. Seal electrical outlets and penetrations with acoustical sealant.
 - 3. Apply fire-rated acoustical sealant at locations where fire-rated assembly is required.
- M. Putty Pad Sealant: Acoustically seal with putty pads, electrical boxes in walls and ceilings in which resilient sound isolation clips are used.

3.3 INSTALLATION - WALLS

Specifier Notes: Special consideration should be given to concentrated and uniform load conditions, such as cabinets. Special consideration should be given to all penetrations to ensure the control of STC noise transfer. Consult PAC International for additional information.

- A. Install drywall furring channels perpendicular to framing members.
- B. Space drywall furring channels maximum of 24 inches (600 mm) on center.
- C. Locate first drywall furring channel parallel to floor and maximum of 3 inches (75 mm) above floor and 1 drywall furring channel maximum of 6 inches (150 mm) from ceiling.

3.4 INSTALLATION - CEILINGS

Specifier Notes: Special consideration should be given to all penetrations, such as recessed light fixtures, electrical boxes, exhaust fans, and sprinkler heads to ensure the control of both STC and IIC noise transfer. Consult PAC International for additional information.

- A. Install drywall furring channels perpendicular, parallel, or angular to framing members.
- B. Space Drywall Furring Channels:
 - 1. Maximum of 24 inches (600 mm) on center with:
 - a. Single layer of 5/8-inch (16-mm) gypsum board.
 - b. Double layer of 5/8-inch (16-mm) gypsum board, weighing less than 2.25 pounds per square foot per layer.
 - c. Single layer of 1/2-inch (12-mm) high-strength gypsum board.
 - d. Double layer of 1/2-inch (12-mm) high-strength gypsum board.
 - 2. Maximum of 16 inches (400 mm) on center with:
 - a. Double layer of 5/8-inch (16-mm) gypsum board.
 - b. Single layer of 1/2-inch (12-mm) regular-strength gypsum board.
 - c. Double layer of 1/2-inch (12-mm) regular-strength gypsum board.
 - 3. Reduce spacing of drywall furring channels to prevent potential for sagging of gypsum board or when additional loads are supported by resilient sound isolation clips.
- C. Locate resilient sound isolation clips maximum of 8 inches (200 mm) from ends of drywall furring channels.
- D. Locate drywall furring channels maximum of 3 inches (75 mm) from parallel wall assemblies. END OF SECTION

PROJECTS



Broadway Housing: Portland, OR

This 212,095-square-foot, 10 story, mixed-use development adjacent to the Portland State University campus is the largest student-housing project to be built in Portland in the past decade. The concrete Post-tensioned structure will provide 384 studio apartment units on eight floors, 15,230 square feet of retail space at street level and 17,910 square feet of classroom space at the second level. The building also serves the University's goals for sustainability. The building is designed to meet LEED's Silver standard, with such sustainable features as an 18,000-square-foot eco-roof, the largest in the city, high-efficiency fixtures and sustainable harvested materials.

RSIC-1 was used to control Impact Isolation Class (IIC) noise from floor to floor on 8" post tension slab concrete floors. The RSIC-1 clips reduced the cost of this project by eliminating the need for floor finishes, allowing the owners to use stained concrete as the finish. The RSIC-1 isolated the foot fall noise at the ceiling below the concrete slab. The RSIC-1 clip also eliminated the high labor expense of installing a dropped ceiling below the slab.



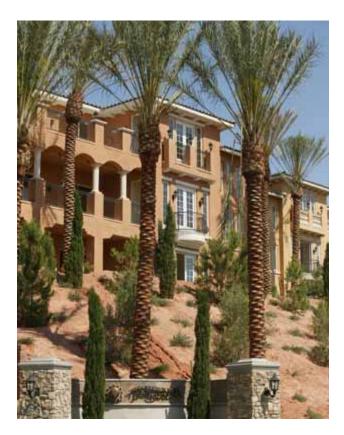


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TRAMANTO AT LAKE LAS VEGAS



TRAMANTO

Size Range: From 1,908 to 2,439 square feet Pricing: From the \$700,000's

A gated community of luxury golf villas situated on the plateau overlooking Reflection Bay Golf Club and Lake Las Vegas. This private gated community features a neighborhood pool and spa, firepit and lush landscaping. Three single level floorplans offer 2, 3 and 4 bedrooms with grand verandas.

Features:

- Tuscan style theme and elevations
- Private 2 Car Garages
- Gourmet Kitchens
- Spacious Owner Suites
- Lush landscaping

The RSIC-1 was direct attached to parallel cord truss floor/ceiling members to control both STC and IIC from floor to floor in these upscale luxury condominiums. With Natural Stone & Pre-cast tile floors FIIC 63. This project was especially challenging since each ceiling contained recessed light fixtures, sprinkler heads and ceiling mounted fans.





TIDEWATER COVE



Spacious Luxury Condominiums

Tidewater Cove Condominiums are designed to give you the greatest comfort and satisfaction.

The large rooms, specifically created to give both private and "family" spaces make for gracious, easy living and entertaining.

The RSIC clips were used to isolate the outdoor indoor transmission class (OITC) from an adjacent train track and airport.

The RSIC-1 was direct attached to "I" joist and parallel cord truss at the roof/ceiling assemblies as well as floor/ceiling assemblies. The RSIC-1 was also attached to the inside of the exterior wall systems to isolate the OITC noise.





PARK TOWNSEND



Park Townsend San Jose, CA

Size:220,000 SF Cost:\$37,000,000

Design Solutions:
Latest installment in San Jose
Redevelopment Agency's rebirth of downtown area

Embodies rich and diverse historical styles
Five-story, 87 unit luxury condominiums & one live/work unit complex

The RSIC-1 was directly attached to cold rolled "C" steel joist. Most of all these luxury Condominiums contain natural stone floor finishes. The RSIC-1 was designed into the project to enhance the Impact Isolation Class (IIC) noise isolation from foot fall noise.





MIRRA VILLA





Mira Villa offers you a totally unique experience in Las Vegas..

This collection of elegant mid-rise luxury condominiums provide the prestige and amenities of a resort-style community. In close proximity to the Angel Park and TPC Canyons Golf Courses and the JW Marriott Hotel & Resort, these homes bring a new and exciting style of living to the Summerlin Area.

Many residences feature spectacular views of the Las Vegas Valley, nearby mountains and adjacent golf courses. Amenities include a private clubhouse, fitness center featuring state-of-the-art exercise equipment, swimming pool, spas, cabanas and outdoor BBQ areas.

Home designs range from 2,071 to 3,851 square feet of enclosed area plus 265 to 1372 square feet of terraces, with two to four bedrooms, spacious gourmet kitchens, granite counters and master suites with exquisite bathrooms. These homes also feature a private 2 car garage with additional storage space. You expect convenience...you will enter your home through a private elevator, opening directly into your residence. You want beautiful surroundings...enjoy your walk along a gentle path that meanders to the pool and park area for the use of Mira Villa residents only.

Whether gathering with family or friends for an afternoon barbecue, enjoying the swimming pool or fitness club, entertaining in the comfort of your own home, or playing an early round of golf with your neighbors, Mira Villa offers a better quality of life.

The RSIC-1 has been designed into this luxury condominium to ensure undisturbed pleasures to the owners/buyers of these luxurious units. The RSIC-1 was incorporated into the floor/ceiling assembly to ensure the highest Impact Isolation Class (IIC) available.





KOLEA @ WAIKOLOA RESORT

VILLA LIFE. PERFECTION BY THE OCEAN.

Creating condominium villas to live up to one of the most remarkable resort oceanfront environments imaginable was the ultimate assignment. The team of dedicated designers, architects and landscape artists has sculpted extraordinary 3-bedroom condominium villas using a palette of elements native to Kolea. Sea. Sky. Lava. Air. Earth. Aloha Spirit. Take a closer look.

Condominium Villa Highlights:

- Air conditioning throughout, and ceiling fans in the entertainment and master bedroom areas
- Single car garage with storage
- Private elevator entrance to second and third floor homes (two homes serviced by each elevator)
- Kitchens furnished with Kitchen-Aid Architect Series stainless steel appliances
- Laundry and utility room furnished with storage cabinetry, washer, dryer and utility sink
- All master bedrooms have a walk-in closet

Custom Options Include:

- Built-in wine cooler in each kitchen
- Sound/multi media system
- Built-in cabinetry: entertainment center; china cabinet; dining buffet
- Tropical textured ceiling fabric
- Ground floor homes have the option of natural stone flooring throughout

The RSIC-1 was designed into this high quality condominium project from the beginning to the project construction. The priority was on delivery, the finest native elements and aloha experience to the owners/buyers. The RSIC-1 was incorporated into the Kolea project to provide extreme isolation and privacy to the buyers of the Hawaiian life style....Peace, Quiet, Tranquility, Sea....the aloha spirit. FIIC 56-59 with natural stone.

 Toll Free: (866) 774-2100
 Toll Free Fax: (866) 649-2710

 Web: www.pac-intl.com
 Email: info@pac-intl.com









Desert Ridge Resort & Spa is a welcome haven in the spectacular Sonoran Desert. Here, in the heart of the Southwest you'll find ultimate luxury, unparalleled service, endless recreation and exquisite cuisine. Surrounded by the grandeur of the McDowell Mountains, Desert Ridge is destined to be the region's most exciting resort, with Arizona's largest ballroom, a pampering spa, world-class dining and championship golf.

- 316 acre luxury resort woven into the Sonoran Desert, where Phoenix meets Scottsdale
- A total of 40 meeting rooms including subdivided ballrooms with 200,000 sq.ft. of flexible indoor & outdoor meeting space
- Easily accessible from Phoenix Sky Harbor Airport and Scottsdale Airport
- A total of 40 meeting rooms including subdivided ballrooms with 78,000 square feet of indoor meeting space
- The region's most intriguing swimming and entertainment complex
- Near the Phoenix Sky Harbor Airport and Scottsdale Airport

The RSIC-1 was used to control Impact Isolation Class (IIC) noise transmission from floor to floor in this Luxury Complex. The RSIC-1 terminated the structure borne path where impact noise travels from floor to floor.





CORONADO CONDOMINIUMS



Coronado is a gated condominium community featuring a resort style swimming pool, fitness center, luxurious spa, BBQ area and ramadas. Nestled in the Paseo Village at Summerlin near Summerlin Centre it is close to parks, shopping, theaters and restaurants. Convenient freeway access allows for easy travel to the airport, strip or downtown.

Three spacious floorplans are offered with expansive patios and balconies. These two and three bedroom homes include granite kitchen countertops, built-in oven and cooktop and private garages.

The RSIC-1 is used to control Impact Isolation Class (IIC) noise transfer from floor to floor. Even in high traffic areas where ceramic tile floors are used, to appeal to the satisfied buyers.





BRANSON MISOURI RESORT



Branson, MO

You've seen their pictures on CDs and music videos, you know their songs by heart, but nothing beats the human contact of a live show! World class entertainment alone would be reason enough to bring your family vacation to Branson, Missouri... There's something for everyone, on-site and at your doorstep. Step into the fresh Ozark air and let the focus be on fun and a host of amenities sure to bring the brightest of family smiles!

Hotel Information	Attractions & Landmarks
• 4 Floors, 658 Rooms	 Andy Williams Theatre (1.0 mi) Bobby Vinton (1.0 mi) Grand Palace (1.0 mi) Jim Stafford Theatre (1.5 mi) Lawrence Welk (2.5 mi) Mel Tillis Theatre (4.0 mi) Mickey Gilley Theatre (1.5 mi) Osmond Family Theatre (1.0 mi) Shoji Tabuchi Theatre (3.0 mi) Silver Dollar City Theme Park (5.0 mi) Tanger & Factory Merchant Outlet Malls (1.5 mi)
Restaurants & Lounges	
• Cascades Cabana Poolside Bar (open April-October) (nearby)	

This mid-market time share complex was looking for improved noise control from room to room. The wall design originally proposed and used, under performed the standards set forth by 15 STC pts. The rebuilding of the walls using the RSIC-1 products met and exceeded the owner's requirements for noise transmission from room to room.





GARDEN TERRACE



10809 Garden Mist Drive Las Vegas, NV. 89135 (702) 804-6801

Garden Terrace in the Gardens Village at Summerlin is a unique gated condominium community featuring a resort-style swimming pool with lush and lavish grounds where you'll discover an expansive spa, beautiful ramadas, an extensive BBQ area and a modern exercise facility. Garden Terrace is located near the beautiful Gardens park and also provides breathtaking mountain views. Three distinctive floor plans are offered with two and three bedroom choices. Expansive patios and balconies are designed to enhance the outdoor living opportunities the desert climate provides.





The RSIC-1 product was used to control Impact Isolation Class (IIC) noise transmission from floor to floor. This mid market project uses pre-cast floor tiles in the high traffic areas. The RSIC products were designed into the floor ceiling assemblies to enhance the owners/buyers living experience.

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VANCOUVER CENTER

Vancouver center: Vancouver, WA

This mixed-use project located in the heart of downtown Vancouver provides a literal transition between the City's transit mall and Esther Short Park, as well as a figurative transition between the town's traditional lifestyle and 21st-Century urban activity. A public/private venture between the City of Vancouver and a private developer, it includes more than 800 parking spaces, 165,000 square feet of office space, 194 apartments and 68 condominiums. This unique project required close coordination between the city's needs and those of the developer.



RSIC-1 was used to control Impact Isolation Class (IIC) noise from floor to floor on 8" post tension slab concrete floors.