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## 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-U-HD" Resilient Sound Isolation Clip installed at the base of walls for acoustical separation (de-coupling) of the walls from the ceiling structure. 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 installs between the ceiling and steel or wood framing, mechanical items, or other mounting methods for noise control (de-coupling) in walls, floors, ceilings, and other spaces.

## 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.
- 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 96500 – Resilient Flooring
- I. 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.

#### **1.4 DESIGN REQUIREMENTS**

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

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

To maximize the acoustical performance of the RSIC-U-HD, it is recommended the dead or shear load not exceed 144 pounds per RSIC-U-HD.

- A. Dead or Shear Load: Maximum design load of 144 pounds per each resilient sound isolation clip (RSIC-U-HD).

#### **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.
- C. Samples: Submit manufacturer's samples.
  - 1. Resilient sound isolation clips (RSIC-U-HD)
- 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-U-HD).
1. Manufacturer: PAC International, Inc., Las Vegas, NV. Toll Free (866) 774-2100. Phone (503) 649-7700. Fax (503) 649-2710. Web Site <http://www.pac-intl.com>. E-Mail [info@pac-intl.com](mailto:info@pac-intl.com).
  2. Steel and Rubber manufactured and assembled in the United States.
  3. Rubber Isolator:
    - a. Natural organic rubber compound, virgin and recycled, with fire-inhibiting compounds.
    - b. Molded to isolate ferrule from clip.
    - c. Minimum of 12 micro-vibration controlling pedestals at point of contact with structure or framing member.
    - d. Manufactured in the United States to ASTM D 2000, M2 AA 510 A13, which includes:
      - 1) Hardness, ASTM D 2240, Shore A: 45.
      - 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.
  3. Clip: Galvanized or aluminum-zinc coated steel, 18 gauge.
  4. Ferrule: Zinc-electroplated steel.
  5. Projection: 1/2 inch from supporting structure.

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

- B. 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 allowable Pullout and Shear: 144 pounds.
    - b. 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 allowable Pullout and Shear: 144 pounds.
    - c. 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 allowable Pullout and Shear: 144 pounds.

- C. Insulation: Mineral wool insulation Minimum 2.5 pounds per cubic foot density 1/2 inch thick cut to fit directly under framing member supported by RSIC-U-HD clip.

- D. Acoustical Sealant: Flexible, non-hardening. As specified in Section 07920.
- E. Fire/Smoke Sealant: Flexible, non-hardening. Classified as an acoustical sealant. 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 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. 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) on center for walls.
- E. Do not exceed design load (pull and shear) of 144 pounds per isolation clip.
- F. Space RSIC-U-HD clips under or near vertical framing members.
- G. Flanking Noise:
  - 1. Review installation details to prevent structure-borne flanking noise.
  - 2. Do not allow framing to come in contact with ceiling or walls to reduce flanking paths for noise
- H. Ensure metal ferrule of resilient sound isolation clips is in firm contact with structural member.
- I. 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.

### 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 RSIC-U-HD clips to topside of framing member and attach to ceiling structure using above referenced fasteners.
- B. Drill a 1-1/8" hole in the wall top plate near each stud location. Secure the RSIC-U-HD mounting plate to the underside of the bottom plate using a minimum of four (4) #6 nails (for wood framing) or four (4) #6 x 7/16" screws (for steel framing).
- C. Secure the RSIC-U-HD to the ceiling above using the proper fasteners as defined above, by fastening through the 1/4" hole in the center of the RSIC-U-HD.
- D. Be certain the head of the RSIC-U-HD center ferrule does NOT contact the framing. This will may create a flanking path for noise transmission.

**END OF SECTION**