SECTION 210548.13 - VIBRATION CONTROLS FOR FIRE-SUPPRESSION PIPING AND EQUIPMENT

Use this Section if Project is not in a seismic area. Use Section 210548 "Vibration and Seismic Controls for Fire-Suppression Piping and Equipment" for projects in a seismic area.

Revise this Section by deleting and inserting text to meet Project-specific requirements.

1. GENERAL
	* + 1. RELATED DOCUMENTS
				1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
			2. SUMMARY
				1. Section Includes:

Elastomeric isolation pads.

Elastomeric isolation mounts.

Restrained elastomeric isolation mounts.

Pipe-riser resilient supports.

Resilient pipe guides.

Elastomeric hangers.

* + - * 1. Related Requirements:

Retain subparagraphs below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.

Section 220548.13 "Vibration Controls for Plumbing Piping and Equipment" for devices for plumbing equipment and systems.

Section 230548.13 "Vibration Controls for HVAC" for devices for HVAC equipment and systems.

* + - 1. SUBMITTALS

Only request submittals needed to verify compliance with Project requirements.

* + - * 1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the

General Conditions.

* + - * 1. Manufacturer’s installation instructions shall be provided along with product data.
				2. Submittals shall be provided in the order in which they are specified and tabbed (for

combined submittals).

* + - * 1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
				2. Manufacturer’s installation instructions shall be provided along with product data.
				3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
				4. Product Data: For each type of product.

Include rated load, rated deflection, and overload capacity for each vibration isolation device.

Illustrate and indicate style, material, strength, fastening provision, and finish for each type and size of vibration isolation device type required.

Retain "Delegated-Design Submittal" Paragraph below if design services have been delegated to Contractor.

* + - * 1. Delegated-Design Submittal: For each vibration isolation device.

Include design calculations for selecting vibration isolators.

Retain "Coordination Drawings" Paragraph below if piping, ducts, equipment, and other fire-suppression system components are installed in congested areas.

* + - * 1. Coordination Drawings: Show coordination of vibration isolation device installation for fire-suppression piping and equipment with other systems and equipment in the vicinity, including other supports and restraints, if any.

Retain "Welding certificates" Paragraph below if retaining "Welding Qualifications" Paragraph in "Quality Assurance" Article.

* + - * 1. Welding certificates.
			1. QUALITY ASSURANCE

Retain "Welding Qualifications" Paragraph below if shop or field welding is required. If retaining, also retain "Welding certificates" Paragraph in "Informational Submittals" Article.

* + - * 1. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code - Steel."
1. PRODUCTS

See Editing Instruction No. 1 in the Evaluations for cautions about named manufacturers and products.

See Evaluations for more detailed information about controlling vibration, additional information on products listed in Part 2, illustrations, selection guides, and supplements to equipment schedules.

* + - 1. ELASTOMERIC ISOLATION PADS

Copy "Elastomeric Isolation Pads" Paragraph below and re-edit for each product.

The configuration and materials of elastomeric isolation pads depend on the equipment being supported. It is possible to have more than one type of elastomeric isolation pad on the same Project. Insert drawing designation for each elastomeric isolation pad type required. Use these designations on Drawings to identify each product.

* + - * 1. Elastomeric Isolation Pads: <**Insert drawing designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9242) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Ace Mountings Co., Inc

Caddy; nVent

Isolation Technology, Inc

Kinetics Noise Control, Inc

Vibration Isolation

Approved equivalent.

Fabrication: Single or multiple layers of sufficient durometer stiffness for uniform loading over pad area.

Size: Factory or field cut to match requirements of supported equipment.

Verify availability of various pad materials and their properties with manufacturers.

Pad Material: Oil and water resistant with elastomeric properties.

Surface Pattern: [**Smooth**] [**Ribbed**] [**Waffle**] pattern.

Retain first subparagraph below if pad is infused with synthetic fibers.

Infused nonwoven cotton or synthetic fibers.

Retain first subparagraph below if galvanized-steel baseplates are adhered to the isolation pad to facilitate load distribution.

Load-bearing metal plates adhered to pads.

Retain "Sandwich-Core Material" Subparagraph below if pad has a sandwich-core material.

Copy "Sandwich-Core Material" Subparagraph below and re-edit for each sandwich-core material. Core materials may not be elastomeric. See "Elastomeric Isolation Pads" Article in the Evaluations for more information.

Sandwich-Core Material: [**Resilient**] [**and**] [**elastomeric**] <**Insert compound**>.

Retain "Surface Pattern" Subparagraph below if the sandwich-core material has a surface pattern.

Surface Pattern: [**Smooth**] [**Ribbed**] [**Waffle**] pattern.

Retain subparagraph below if pad is infused with synthetic fibers.

Infused nonwoven cotton or synthetic fibers.

* + - 1. ELASTOMERIC ISOLATION MOUNTS

Copy "Double-Deflection, Elastomeric Isolation Mounts" Paragraph below and re-edit for each product.

The configuration and materials of elastomeric isolation mounts depend on the equipment being supported. It is possible to have more than one type of elastomeric isolation mount on the same Project. Insert drawing designation for each elastomeric isolation mount type required. Use these designations on Drawings to identify each product.

* + - * 1. Double-Deflection, Elastomeric Isolation Mounts: <**Insert drawing designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9242) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

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Caddy; nVent

Isolation Technology, Inc

Kinetics Noise Control, Inc

Vibration Isolation

Approved equivalent.

Mounting Plates:

Top Plate: Encapsulated steel load transfer top plates, factory drilled and threaded [**with threaded studs or bolts**].

Retain "Baseplate" Subparagraph below if the elastomeric mount being specified has a baseplate.

Baseplate: Encapsulated steel bottom plates with holes provided for anchoring to support structure.

Elastomeric Material: Molded, oil-resistant rubber, neoprene, or other elastomeric material.

* + - 1. RESTRAINED ELASTOMERIC ISOLATION MOUNTS

Copy "Restrained Elastomeric Isolation Mounts" Paragraph below and re-edit for each product.

The configuration and materials of restrained elastomeric isolation mounts depend on the equipment being supported. It is possible to have more than one type of restrained elastomeric isolation mount on the same Project. Insert drawing designation for each mount type required. Use these designations on Drawings to identify each product.

* + - * 1. Restrained Elastomeric Isolation Mounts: <**Insert drawing designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9242) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Ace Mountings Co., Inc

Caddy; nVent

Isolation Technology, Inc

Kinetics Noise Control, Inc

Vibration Isolation

Approved equivalent.

Description: All-directional isolator with restraints containing two separate and opposing elastomeric elements that prevent central threaded element and attachment hardware from contacting the housing during normal operation.

Housing: Cast-ductile iron or welded steel.

Elastomeric Material: Molded, oil-resistant rubber, neoprene, or other elastomeric material.

* + - 1. PIPE-RISER RESILIENT SUPPORTS
				1. Description: All-directional, acoustical pipe anchor consisting of two steel tubes separated by a minimum 1/2-inch- thick neoprene <**Insert drawing designation**>.

Vertical-Limit Stops: Steel and neoprene vertical-limit stops arranged to prevent vertical travel in both directions.

Maximum Load Per Support: 500 psig on isolation material providing equal isolation in all directions.

* + - 1. RESILIENT PIPE GUIDES

Copy "Description" Paragraph below and re-edit for each product.

The configuration and materials of resilient pipe guides depend on the equipment being supported. It is possible to have more than one type of resilient pipe guide on the same Project. Insert drawing designation for each resilient pipe guide type required. Use these designations on Drawings to identify each product.

* + - * 1. Description: Telescopic arrangement of 2 steel tubes or post and sleeve arrangement separated by a minimum 1/2-inch- thick neoprene <**Insert drawing designation**>.

Retain "Factory-Set Height Guide with Shear Pin" Subparagraph below where vertical motion due to pipe expansion and contraction is required and clearances are not readily visible.

Factory-Set Height Guide with Shear Pin: Shear pin shall be removable and reinsertable to allow for selection of pipe movement. Guides shall be capable of motion to meet location requirements.

* + - 1. ELASTOMERIC HANGERS

Copy "Elastomeric Mount in a Steel Frame with Upper and Lower Steel Hanger Rods" Paragraph below and re-edit for each product.

The configuration and materials of elastomeric hangers depend on the equipment being supported. It is possible to have more than one type of elastomeric hanger on the same Project. Insert drawing designation for each elastomeric hanger type required. Use these designations on Drawings to identify each product.

* + - * 1. Elastomeric Mount in a Steel Frame with Upper and Lower Steel Hanger Rods: <**Insert drawing designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9242) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Ace Mountings Co., Inc

Caddy; nVent

Isolation Technology, Inc

Kinetics Noise Control, Inc

Vibration Isolation

Approved equivalent.

Frame: Steel, fabricated with a connection for an upper threaded hanger rod and an opening on the underside to allow for a maximum of 30 degrees of angular lower hanger-rod misalignment without binding or reducing isolation efficiency.

Dampening Element: Molded, oil-resistant rubber, neoprene, or other elastomeric material with a projecting bushing for the underside opening preventing steel to steel contact.

1. EXECUTION
	* + 1. EXAMINATION
				1. Examine areas and equipment to receive vibration isolation control devices for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
				2. Examine roughing-in of reinforcement and cast-in-place anchors to verify actual locations before installation.
				3. Proceed with installation only after unsatisfactory conditions have been corrected.
			2. VIBRATION CONTROL DEVICE INSTALLATION
				1. Coordinate the location of embedded connection hardware with supported equipment attachment and mounting points and with requirements for concrete reinforcement and formwork specified in [**Section 033000 "Cast-in-Place Concrete."**].
				2. Installation of vibration isolators must not cause any change of position of equipment, piping, or ductwork resulting in stresses or misalignment.

END OF SECTION 210548.13