



Joist Ceiling Isolation Resilient Hangers



CDM-ISO-PSJ



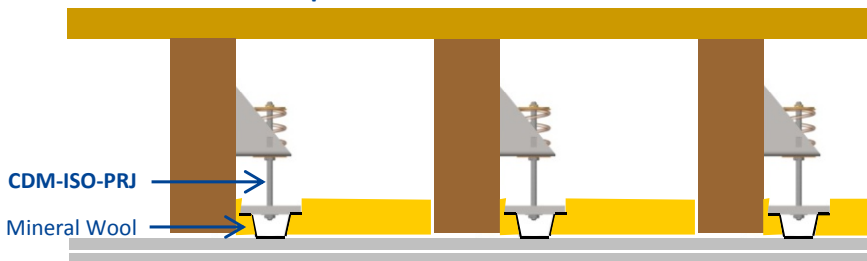
CDM-ISO-PRJ

CDM-ISO-PSJ/PRJ Resilient Joist Hangers are designed to acoustically suspend a plasterboard ceiling from a joist floor. The elements are designed in such a way that loss of free height is minimized. Sound isolation can be optimized by removing rigid connections and by introducing sufficient sound absorption mineral wool between the joists.

The **CDM-ISO-PSJ** element is equipped with a resilient solid material, whereas the isolation in the **CDM-ISO-PRJ** is achieved by means of a spring. The choice depends on the required resonance frequency. The distribution & type of **CDM-ISO-PSJ/PRJ** is based on the applied load and the joist spacing. This system requires a resilient perimeter strip to decouple the suspended gypsum ceiling from the surrounding walls.

Resonant Frequency [Hz]	Type	Optimal load per element [lbf]
10 – 12 Hz	ISO-PSJ-L	34 (min: 23 - max: 45)
	ISO-PSJ-H	80 (min: 45 – max: 124)
4 – 5 Hz	ISO-PRJ-S	18 (min: 15 – max: 23)
	ISO-PRJ-L	56 (min: 51 – max: 62)
	ISO-PRJ-H	112 (min: 90 – max: 135)

Example: Installation of CDM-ISO-PRJ



Required Data for Design:

- Required performance (insertion loss or natural frequency)
- Imposed permanent and temporary loads
- Contact surface (type and dimensions)

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Decoupling for Joist Ceiling Resilient Hangers



FIELD OF APPLICATION

CDM-ISO-PSJ

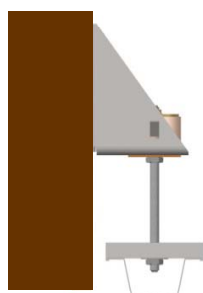


CDM-ISO-PRJ

CDM-ISO-PSJ/PRJ hangers are used to resiliently suspend plasterboard ceilings from a joist floor, and minimize the lost height as well as the transmission of audible energy.

DESCRIPTION

CDM-ISO-PSJ/PRJ resilient hangers consist of a galvanized steel frame into which an isolator element is positioned. This isolator can be either a CDM-SOLID elastomer cylinder (PSJ) or a steel spring (PRJ). The force is distributed over the isolator by a steel washer. For spring isolators, soundstop layers in corkelastomer are installed above and below the spring to avoid steel-on-steel contact. Springs resonate at approx. 4 to 5 Hz and can achieve greater isolation than elastomers, which resonate at approximately 10 to 12 Hz. However, depending on the level of isolation required, elastomer hangers are a lower-cost alternative to springs.



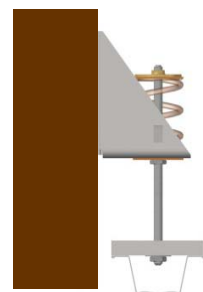
Standard element type and loading is as follows:

Elastomer (PSJ):

- Type L: 35 lbf [150 N] - Type H: 80 lbf [350 N]

Springs (PRJ):

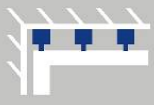
- Type S: 18 lbf [80 N] - Type L: 56 lbf [250 N] - Type H: 112 lbf [500 N]



Hanger type and spacing depends on the ceiling weight and spacing of the joists. Hangers are attached to the side of the joist with one fixation. A threaded rod is inserted through the element, onto which adjustment hardware is threaded. A bracket is then used to connect to either 20-25ga drywall furring channel or a drywall grid system. The grid/furring network is then leveled in order to receive the plasterboard ceiling.

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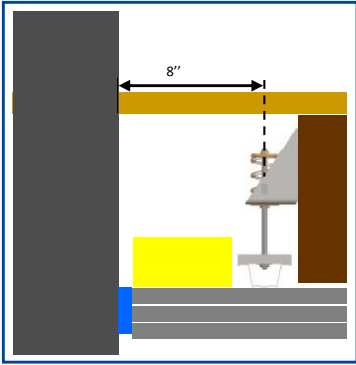
145



Decoupling for Joist Ceiling Resilient Hangers



RECOMMENDATIONS

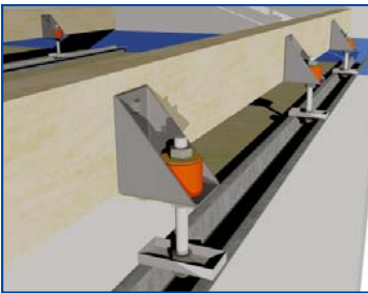


- For stability reasons, it is best to limit the distance from a hanger to the edge of the suspended ceiling to 8" [200 mm] maximum.

- Always ensure that a minimum of (2) hanger units support any one length of furring channel or grid main runner.

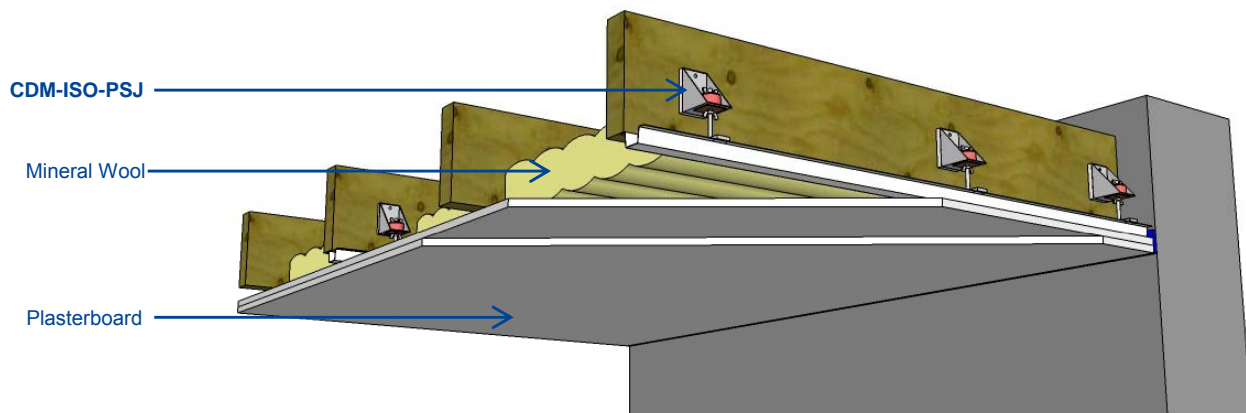
- The perimeter of the suspended ceiling construction must be completely decoupled from the surrounding structure using **CDM-ISO-PERIMETER-STRIP** of ~0.4" [10 mm] thickness.

- It is recommended to use low density mineral wool or fiberglass as sound absorption between the furring channels, to avoid standing waves. This absorptive layer should not be compressed, and should allow free space for the air above the ceiling to circulate.



- For added isolation of 2 to 3 dB, a high-performance damping sheet in corkelastomer can optionally be installed in between the ceiling board layers. CDM-RC material in 0.12" to 0.2" [3 mm to 5 mm] thickness is an excellent product for this application.

- A typically recommended drywall grid system is Armstrong® Drywall Grid System with HD8906 main runners and appropriate cross members. Always ensure members are selected to support the total ceiling load.



CDM-ISO-CEILING

146





Decoupling for Joist Ceiling Resilient Hangers

The following **APPLICATIONS TABLE** shows the types of **CDM-ISO-PSJ/PRJ** generally used as a function of the number of layers of board material installed.

Assumptions:

- Typical unit spacing is 2' x 3' on center.
- Board layers are either 5/8" Gypsum Board (2.4 lb/ft²), 3/4" Plywood (2.2 lb/ft²), or a combination of the two types up to the number of layers shown.
- Includes one layer of 3.5" thick fiberglass insulation at 0.5 lb/ft².
- Drywall Furring Channel network or Drywall Grid System weight ranging from ~2.5 to 4.5 lb/ft².
- Perimeter weight is 50% the ceiling weight. Corner weight is 25% the ceiling weight.
- Ceiling deflection approximately L/240 for Drywall Grid Systems.
- This does not include the weight of fixtures, equipment, etc.

For specifying: The CDM model number will be:

- “**CDM-ISO-PSJ-X**” for Elastomer Type (11-12 Hz Performance)
- “**CDM-ISO-PRJ-X**” for Spring Type (4-5 Hz Performance)

Where “X” represents the letter shown in the table below (S, L, or H)

# of Layers	PSJ (Elastomer Type)			PRJ (Spring Type)		
	Ceiling	Perimeter	Corner	Ceiling	Perimeter	Corner
1	L	L	L	L	S	S
2	H	L	L	L	L	S
3	H	L	L	H	L	S
4	H	L	L	H	L	S

