



Decoupling for Walls Resilient Wall Tie / Sway Brace

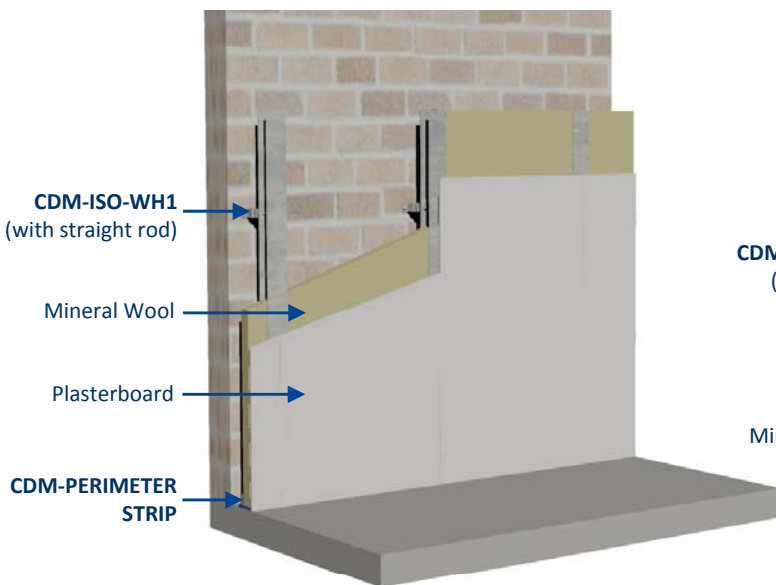


CDM-ISO-WH1 Resilient Wall Tie enables floating walls to be resiliently connected to adjacent structures. **CDM-ISO-WH1** can be used to provide stability to floating walls while substantially reducing sound transmission.

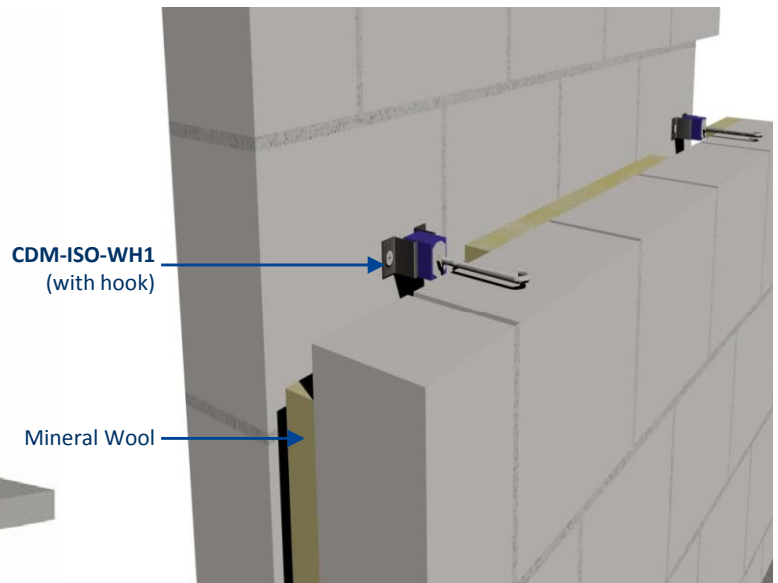
Features:

- Easy to install
- Reduces transmission of sound energy
- Resonant Frequencies below 15 Hz
- Available with straight rod for stud walls or with hooks for masonry walls
- Stainless steel metal elements
- Minimum void depth = 2.36" [60 mm]
- Standard design for axial forces up to 112 lbf [500 N]
- Higher axial loading can be accommodated

Installation of CDM-ISO-WH with straight rod



Installation of CDM-ISO-WH with hook



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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FIELD OF APPLICATION

CDM-ISO-WH1 Resilient wall tie/sway braces have been specially developed for situations where a fixation for stability between two walls is required, without transmitting audible noise energy. Walls can be light (floating) or load-bearing.

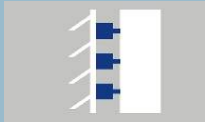
DESCRIPTION

The **CDM-ISO-WH1** element consists of two identical high resilient elastomers (nearly cubic in shape), which are fixed to a stainless steel element. One elastomer serves as the “isolator” while one serves as the “stabilizer”. A steel plate with a threaded hole maintains factory precompression, which is necessary to load the elastomers in an acoustically optimal load range. Because of this precompression, the elastomers are also slightly squeezed into a large hole (not visible) in the center of the steel element, thereby eliminating the possibility for any rigid contact with the threaded rod (M6).

The element can be supplied with a straight threaded rod (standard), with a hooked rod, or with three hooked rods. Hooks are used for masonry (wet) walls, and are installed in the mortar joints during construction.

RECOMMENDATIONS

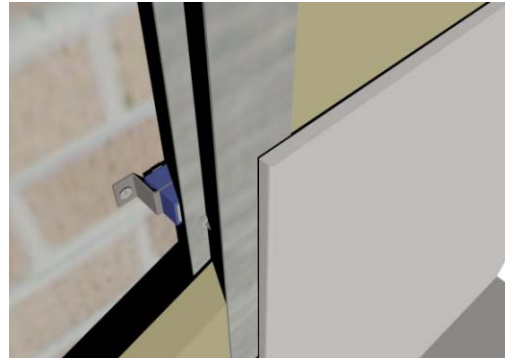
- **CDM-ISO-WH1** elements have been optimized for a **horizontal force of 112.5 lbf [500 N]**.
- **Distribution** is typically set at one element per 20 ft² [2 m²]. If horizontal forces to be taken up are considerably higher, element spacing can be decreased, or a higher capacity elastomer can be used in the unit. Although these elements do not transmit significant amounts of acoustical energy, it is still recommended to minimize the number of contact points. Spacing should always be verified based on actual loading.
- The minimum **acoustical void** between is 2.4" [~60 mm] to allow space for the elements to exist in the void.
- It is recommended to **acoustically float** one of the supported walls to eliminate structural noise transmission.



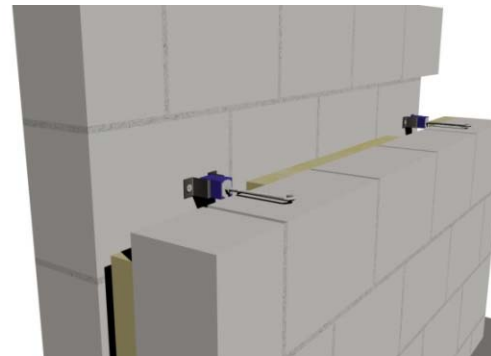
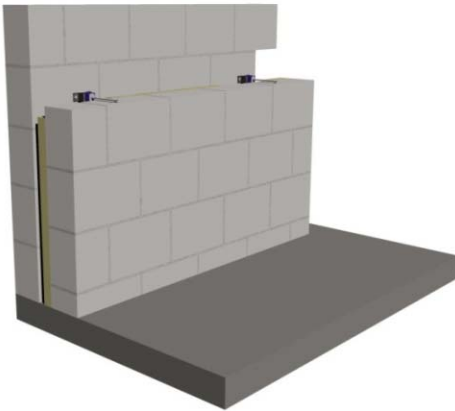
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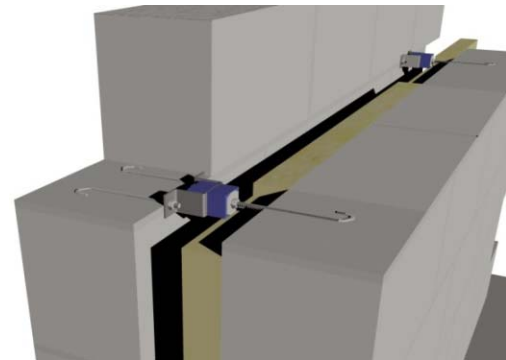
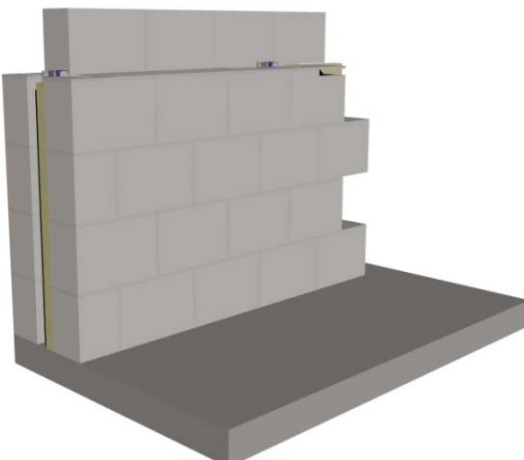
SETUP 1 Existing Heavy Wall & New Light Wall (straight rod)



SETUP 2 Existing Heavy Wall & New Heavy Wall (one hooked rod)



SETUP 3 Two New Heavy Walls (three hooked rods)





Decoupling for Walls Resilient Wall Tie / Sway Brace



CDM-ISO-WH1 (Heavy Wall with Light Wall) – TEST RESULTS

CDM product tested	CDM-ISO-WH
Description	Resilient wall tie
Tested by	EMI (HU)
Test site	EMI lab in Szentendre
Test date	10/07/2004
Test method	Following ISO 140-3 (1998)
Measured parameter(s)	Rw

Setup	
1) double layer in gypsum board (2 x BA13)	
2) high-damping layer in 0.2" corkelastomer CDM-17	
3) 3.93" mineral wool as absorption (lightweight wall)	
4) CDM-ISO-WH wall tie	
5) masonry wall of 11.8", plastered at both sides	
6) NA	
7) NA	
8) NA	
9) NA	
10) NA	

Results		
Frequency [Hz]	R base [dB]	R [dB]
100	34,5	47,1
125	42,8	49,0
160	38,7	50,0
200	44,3	53,2
250	38,4	54,1
315	38,3	57,4
400	40,9	60,0
500	41,8	64,8
630	42,1	68,5
800	44,0	71,0
1000	44,6	71,8
1250	42,6	72,8
1600	43,6	75,0
2000	47,0	76,0
2500	48,3	75,1
3150	52,7	76,9
4000	56,3	79,0
5000	59,6	73,6
Rw(C;Ctr) [dB]	44(0;-1)	67(-2;7)
STC	46	69

— R base [dB]

— R [dB]

Acoustical isolation

Third octaves [Hz]

Artist Boat, Budapest, HU

PROJECT DATASHEET



Suspension Elements CDM-ISO-WH



Job Type	Suspension elements for a Concert Hall inside a boat
Systems	CDM-ISO-WH1 and custom made CDM-pads for ceiling suspension
Architect	VM Művek Építésziroda
Acoustic Consultant	AFT Akusztika
Installation	2002-2003



Artemovsk 38 (A38) is a new floating meeting place in Budapest, on the Danube river, close to two universities and vibrant campuses. The thoroughly refurbished former rock transporting barge now accommodates a restaurant, a bar and a 191.36 yard² concert room.

Decoupling the structures of the concert room, inside the steel boat body, with excellent vibration transmitting properties, left the acoustical consultants with no other option than to create a box-in-the-box solution.

The positive feed-back of the first artists giving concerts on the boat and the reception by the press, justified all the efforts that were put into the vibration and room acoustical design. CDM supplied suspension elements for the walls and ceiling of the concert room.

CASE STUDY – CDM-ISO-WALL

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CDM
Reutenbeek 9-11
BE-3090 Overijse
Belgium
T: +32-2-6877907
F: +32-2-6873552
Email: general@cdm.be
www.cdm.be



noise & vibration control

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RPG Diffusor Systems, Inc.
651-C Commerce Drive
Upper Marlboro, MD 20774
USA
T: +1-301-2490044
F: +1-301-2493912
Email: info@rpginc.com
www.rpginc.com