DICK ANDERSON CONSTRUCTION,INC **Number: 87**

Date Issued: 02/08/12

RFI 87

Project: COOLEY LABORATORY RENOVATION

Job: 3146 COOLEY LAB, PPA# 10-0023

Customer: STOFMT MSU BOZEMAN

POTENTIAL IMPACTS

Cost Impact: No

Schedule Impact: No

Issued To: CONSTRUCTION MANAGEMENT SERV.
P.O. BOX 7274
BOZEMAN, MT 59715

Attention: DONALD J. PLATISHA

Coordination copies to:

Phone/Fax: 406 585-0611 / 406 585-2698

Item: CHILLER VIBRATION ISOLATION **Type:** MECH

Reference: **Spec. Section:**

Attachments: Product Data Sheet

Description of Request

The chiller manufacturer and the vibration isolation manufacturer both recommend the use of the attached captive neoprene mount for use on the chiller, Mason model BR. This mount is more appropriate than the previously-submitted spring isolators, as the spring natural frequency can possibly resonant with the disturbing frequency of the magnetic-bearing compressors. Please verify the use neoprene mount attached is acceptable.

WILLIAMS PLUMBING

Respond By: 02/15/12 **By:** TIM THOLT

Response

The proposed isolators are acceptable.

Dave Broquist, GPD **10 February, 2012**

Signed: _____ **Date:** _____

Proceed as Indicated: **Date:** _____

Owner Authorized Representative

BRA	5	64	108	41	35	19	76	25	13	10	10	6	8 x 25	5
BRB	3/16 5	31/4 83	53/4 146	21/4 57	17/8 48	7/8 22	3 76	2 51	5/8 16	1/2 13	1/2 13	3/8 10	7/16 x 1 11 x 25	1/4 6
BRC	1/4 6	51/4 133	9 229	35/8 92	3 76	11/2 38	61/2 165	41/2 114	7/8 22	3/4 19	3/4 19	5/8 16	5/8 x 11/2 16 x 38	5/8 16
BRD	1/4 6	6 152	101/2 267	43/8 111	35/8 92	15/8 41	61/2 165	41/2 114	7/8 22	3/4 19	3/4 19	5/8 16	5/8 x 11/2 16 x 38	5/8 16

To use approved OSHPD rated load curves: 1) Calculate Vertical and Horizontal Forces on mounting including translations and overturning moments. 2) Plot Horizontal Load vs Vertical Load. The point must fall within the area below the OSHPD curve.

TYPE BR RATINGS

Type	Size (Color Mark)	Duro-meter	COMPRESSION Rated Capacity (lbs kgs)	COMPRESSION Rated Defl (in mm)	TENSION Rated Capacity (lbs kgs)	TENSION Rated Defl (in mm)	SHEAR Rated Capacity (lbs kgs)	SHEAR Rated Defl (in mm)	Maximum Horizontal Static G Rating*
BR-	A-Green	40	85 39		85 39		20 9		10.4
	A-Red	50	125 57	0.2	125 57	0.18	30 14	0.13	7.0
	A-White	60	205 93	5	205 95	5	50 23	3	4.3
	A-Yellow	70	290 132		290 132		70 32		3.0
	B-Red	50	450 204	0.2	500 227	0.18	100 45	0.15	3.4
	B-White	60	740 336	5	750 340	5	170 77	4	2.1
	B-Yellow	70	1040 472		1050 476		240 109		1.5
	C-Red	50	650 295	0.3	750 340	0.25	380 172	0.50	2.8
	C-White	60	1100 499	8	1150 522	6	500 227	13	1.6
	C-Yellow	70	1540 699		1610 730		700 318		1.2
	D-White	60	2390 1084	0.3	2450 1111	0.25	750 340	0.50	1.3
	D-Yellow	70	3150 1429	8	3430 1556	6	1050 476	13	1.0

All Rated Capacities are based on proper neoprene loadings without metal to metal contact. Seismic Max. G Ratings are based on metal failure under static seismic loadings as defined in the building codes.

*Horizontal G Ratings are for quick reference only– Use OSHPD Rated Load Curves.

Specification

Captive Neoprene elements shall be arranged in opposition within a steel or ductile iron housing to provide positive mechanical restraint in all directions. Neoprene elements shall prevent metal to metal contact during normal operation. Bonded assemblies without mechanical interlocks are not acceptable. Neoprene elements shall be of bridge bearing quality as tabulated.

All mountings shall have minimum 1.0 horizontal G ratings and anchorage preapproval "R" numbers from the Office of Statewide Health Planning and Development (OSHPD) in the state of California, attesting to the maximum horizontal and vertical load ratings. All mountings shall have bolts for rigid attachment to the equipment and adequate base bolting provision. Mountings shall have a minimum static deflection of 0.2" (5 mm).

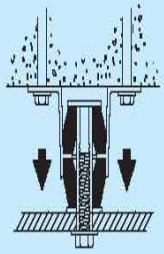
In seismic zones, submittals shall include calculations showing that the intersection of the horizontal and vertical seismic loads fall below the OSHPD approved curves. Anchorages must be designed to meet the applicable building codes. All calculations must be signed by a professional engineer. Mountings shall be type BR as manufactured by Mason Industries, Inc.

BRIDGE-BEARING NEOPRENE SPECIFICATIONS

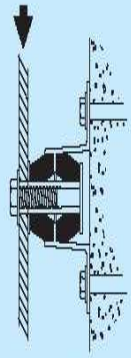
ORIGINAL PHYSICAL PROPERTIES (a) Duro-meter	(b) Tensile Strength (min)	(b) Elongat at Break (min)	TESTED FOR AGING (c) OVEN AGING(70h/212°F) Hard-ness (max)	Tensile Strength (max)	Elongat at Break (max)	(d) OZONE 1 ppm in air by Vol.20% Strain 100F°	COMPRES-SION SET (e) 22hrs 150F° Method B
40±5	2000 psi	450%	+15%	±15%	-40%	No Cracks	30%(max)
50±5	2500 psi	400%	+15%	±15%	-40%	No Cracks	25%(max)
60±5	2500 psi	350%	+15%	±15%	-40%	No Cracks	25%(max)

(a)ASTM D-676 (b)ASTM D-412 (c)ASTM D-573 (d)ASTM D-1149 (e)ASTM D-395

COMPRESSION



TENSION



SHEAR