LO4-160 Specifying Guidelines Seismic Anchorage for Free Standing, Floor Anchored Shelving OSHPD Pre-Approval OPA-0556

NOTE: OPA-0556 is valid for the 2001 and 2007 California Building Codes (CBC) which governed new building projects in the state of California designed to the requirements of the 2001 and 2007 CBC. The components were not submitted to OSHPD for the 2010 CBC and thus have not earned pre-approval for building projects subject to the 2010 CBC. However, these seismic foot plates can be used with Metro Super Erecta, Super Adjustable Super Erecta, qwikSLOT, HD Super, and MetroMaxQ shelving units to obtain site specific approval.

Drawing Description:

S1 (Page 1 of Pre-approval)	General Notes and Index to the pages for different lengths of shelves.
S2 (Page 2 of Pre-approval)	Anchorage Details
	Two-Bolt Anchor plate is used for stand-alone units (starter kit)
	Four-Bolt Anchor plate is used for stand-alone units (starter kit)
	Six-Bolt Anchor plate is used for back to back, or side to side, installations (use Four-Bolt plate tables for 6-bolt plate applications) (add-on kit)

Drawing #s S3-S10 (Pages 3-10) are for shelf lengths of 24" to 72" and are used to determine the bolt plate (sometimes referred to as the "anchor plate") needed and the number of 3/8" bolts considering the shelf seismic load capacity, seismic zone, story ratio.

Step 1: Determine the installation story (IS) upon which the shelving is to be installed. Ground floor and all levels below grade are considered to be floor "1". Determine the total stories above grade (TSG) in the building:

Story Ratio = (IS-1) / TSG

Example: If the installation is on the 2nd floor above grade of a 4-story building:

Example: If the installation is on the 1st floor below grade of a 4-story building:

Step 2: Determine the seismic zone of the installation. It will be either Zone 3, 4 or 4NF (near fault).

Length	Drawing #	Pre-Approval Page #
24	S3	3
30	S4	4
36	S5	5
42	S6	6
48	S7	7
54	S8	8
60	S9	9
72	S10	10

Note:	When referring to drawing tables Two-Bolt Anchor Plate = $\frac{1}{4}$ " bolt plates Four-Bolt Anchor Plate = $\frac{1}{2}$ " bolt plates
Note:	The loading table will help you determine which bolt (anchor) plate ($\frac{1}{2}$ " or $\frac{1}{2}$ " thick) and number of clevis pins (provided with bolt plates) the installer must install, based on the desired load capacity.

Step 4: Determine the shelf capacity. The tables are based on either 30 or 50 psf (pounds per square foot). Shelf weight capacity is based on shelf width, seismic zone, story ratio, bolt (anchor) plate and whether one or two clevis pins are used to hold the post in the socket. If the story ratio that was calculated in step 1 is not shown, use the next highest figure.

Example: If the Story Ratio = 0.25 use the table for 0.4

To determine the shelf capacity, multiple the shelf length times the shelf width in inches, multiple by the rating of 30 or 50 pounds per square foot and divide by 144 pounds per square foot.

Example: A 2460 shelf at 50 psf has a load capacity of 24" x 60" x 50 psf / 144 = 500 pounds

If the shelf capacity is not high enough, you may have to change from a two-bolt to a four-bolt anchor plate.

NOTE: The part numbers for the bolt plate kits are found in the Metro catalog or brochure # L04-101.

Step 5: Determine the total number of 3/8" clevis pins required from the tables.

Step 6: Determine the number of load markers required - one per shelving unit minimum.

Bolt (Anchor) Plate Assembly to Shelving Post Connection

The bolt plate assembly is designed to allow in-field leveling of the shelving and secure anchorage of the shelving to the bolt plates. This is accomplished with standard shelves and posts with leveling legs.

The sequence of construction is to place the assembled shelving unit in its intended position. Next mark on the floor the location of the shelving posts, or place the bolt plates under the posts, and then move the shelving unit out of the way. Utilizing a template, or the actual bolt plate, the floor anchors are located and their holes drilled. The bolt plates are then installed. The shelving unit is then moved adjacent to the bolt plates and leveled. The shelving unit is lifted and the posts are set into the pipe sleeves in the bolt plate assembly. Once the shelving unit is in place and level, horizontal holes in each pipe sleeve are used to align a 13/32" drill bit and a horizontal hole (or two, as determined from Steps 1 to 5 above) is drilled through the post. Alternatively, the pipe sleeve holes can be used to mark the post hole locations, the shelving unit removed and then drill the posts. A 3/8" diameter clevis pin (or two) is then installed. This clevis pin will resist uplift only. Lateral forces will be resisted via direct bearing of the post onto the pipe sleeve. Finally, affix the proper label designating the unit as either 30 psf or 50 psf per shelf. The load rating is determined by the tables and may be shown on your installation drawing.

Hints:

- Bottom shelf must be installed no greater than 12" from the floor. The lowest possible shelf position is recommended.
- If cleaning is an issue, it is recommended a donut bumper be specified to cover any spaces between the post and the bolt plate pipe sleeve. Specify the donut bumper to match the post type.
- Metro does not provide the concrete anchors. The correct floor anchors must be used for the specific installation conditions and meet all applicable codes.
- QwikSLOT locking clip (9985SQSL) must be used with all qwikSLOT shelving.

INTERMETRO INDUSTRIES FREE STANDING, FLOOR ANCHORED SUPERERECTA (SES) / SUPER ADJUSTABLE SUPER ERECTRA (SASE) / QWIKSLOT / HD SUPER / METROMAX Q SHELVING SEISMIC ANCHORAGE REQUIREMENTS

GENERAL NOTES:

Summary of Anchorage Tables Intermetro Super Frecta Wire Shelving

- A1. THE PRE-APPROVAL IS ONLY FOR ANCHORAGE. THE ENGINEER OF RECORD FOR A SITE SPECIFIC PROJECT MUST SUBSTANTIATE THE ADEQUACY OF THE SUPPORTING STRUCTURE.
- A2. THE PRE-APPROVAL IS ONLY FOR (1) A MAXIMUM 30 PSF AND 50 PSF CAPACITY LOCATED IN SEISMIC ZONES 3, 4 AND 4 NEAR FAULT (I.E. LESS THAN 2 KM.)
- A3 WHERE INSTALLATIONS REQUIRE A MAXIMUM 30 PSF CAPACITY, A POSTING SHALL BE REQUIRED WHICH STATES "MAX. LOADING 30PSF".
- SPECIAL INSPECTION REQUIREMENTS OF SECTION 1701A, 2001 CBC, APPLY TO CONCRETE A4. ANCHOR BOLT INSTALLATION.
- CONCRETE ANCHORS SHALL BE AS CALLED FOR ON THE DETAILS, ANY SUBSTITUTIONS SHALL A5. HAVE AN EQUIVALENT ICBO RATED LOAD VALUE. THE TESTING OF ALL EXPANSION ANCHORS SHALL BE IN COMPLIANCE WITH THE FOLLOWING: ANCHORS (LOADED IN EITHER PULLOUT OR SHEAR) SHALL HAVE 50% OF THE BOLTS TESTED,
 - IF THERE ARE ANY FAILURES, THE BALANCE OF THAT GROUP MUST ALSO BE TESTED.

A. EXPANSION ANCHORS EXPANSION ANCHORS SHALL BE HILTI HDI, ICBO ER-2895 UNLESS OTHERWISE NOTED. MININIMUM CONCRETE SLAB THICKNESS SHALL BE 3 7/8" MININIMUM CONCRETE EDGE DISTANCE FROM CENTER OF ANCHOR SHALL BE 7 11/16". PROOF LOAD TEST HDI BOLT TO A MINIMUM LOAD OF 2470 LBS. TENSION-PROOF LOAD TESTS SHALL BE DONE BY AN INDEPENDENT TESTING LABORATORY.

- A6. ADDITIONAL TEST SPECIFICATIONS PER CAN 1925.B.3.5 AS FOLLOWS:
 - 1. ANCHOR DIAMETER REFERS TO THE THREAD SIZE FOR THE WEDGE ANCHORS
 - 2. APPLY PROOF TEST LOADS TO ANCHORS WITH NUT IN PLACE.
 - 3. TEST LOADS SHALL BE AS FOLLOWS:

ANCHOR	TEST LOAD	TORQUE	
5/8" HILTI HDI	2300 LBS	80 ft. LBS	
EACTION LOADS FROM TE	ST FIXTURES MAY BE APPLIED CLC	OSE TO THE ANCHOR BEING TEST	TED

- 3. RE PROVIDED THE ANCHOR IS NOT RESTRAINED BY THE FIXTURE. 4. TEST 50% OF THE INSTALLED ANCHORS PER CBC 1923A.3.5
- 5. TESTING LAB SHALL CALIBRATE TEST EQUIPMENT INCLUDING TORQUE WRENCHES. 6. TESTING SHOULD OCCUR 24 HOURS MINIMUM AFTER INSTALLATION
- 7. IF ANY ANCHOR FAILS TESTING, ALL ANCHORS IN THE SAME CATEGORY SHALL BE TESTED
- 8. THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS:
- HYDRAULIC RAM METHOD: THE ANCHO SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD. THAT IS. THE WASHER UNDER THE NUT SHOULD NOT BECOME LOOSE TORQURE WRENCH METHOD: THE APPLICABLE TEST TORQUE MUST BE REACHED WITHIN ONE-HALF (1/2) THE TURN OF THE NUT.
- 9. ALL TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE INSPECTOR OF RECORD

A P P R O V E D Fixed Equipment Anchorage Office of Statewigte Health Planning and Development	
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PUCTURITY John D. Gillengerten (1916)654-3547	510.272.90 510.272.95 www.degen



LB ENGINEERS H. Ogawa Plaza, Suite 450 CA 94612 040 Phone 526 Fax www.degenkolb.com Job # A10246.00

TABLE	DWG	Shelf Length	Shelf Width	Shelf Loading	Anchor Plate Type
1A	1 1	24"	14" to 36"	30 psf	two bolt plate
1B	000	-			four bolt plate
1C	53.0			50 psf	two bolt plate
1D					four bolt plate
2A		30*		30 psf	two bolt plate
2B	64.0		•		four bolt plate
2C	54.0			50 psf	two bolt plate
2D		-			four bolt plate
3A		36"		30 psf	two bolt plate
3B	050		-	-	four bolt plate
3C	55.0			50 psf	two bolt plate
3D	1 1			-	four bolt plate
4A		42"		30 psf	two bolt plate
4B	000				four bolt plate
4C	\$6.0			50 psf	two bolt plate
4D	1 1	-			four bolt plate
5A		48"		30 psf	two bolt plate
5B	070		-		four bolt plate
5C	57.0			50 psf	two bolt plate
5D					four bolt plate
6A		54*		30 psf	two bolt plate
6B				-	four bolt plate
6C	S8.0			50 psf	two bolt plate
6D					four bolt plate
7A		60"		30 psf	two bolt plate
7B	600				four bolt plate
7C	59.0			50 psf	two bolt plate
7D					four bolt plate
8A		72*		30 psf	two bolt plate
8B	0100				four bolt plate
8C	510.0			50 psf	two bolt plate
8D					four bolt plate

A7. DESIGN CRITERIA

SEISMIC DESIGN:

LATERAL FORCE ON ELEMENT OF STRUCTURE

- Fp = ap Ca lp [(1 + 3 hx/hr) Wp]/Rp
- Fp = 0.7 Ca lp Wp (MINIMUM)

Fp = 4.0 Ca lp Wp (MAXIMUM)

Ip = 1.5 FOR ESSENTIAL FACILITIES

- WHERE: ap = 2.5
 - Rp = 1.5 FOR SHALLOW ANCHORS
 - Ca = VARIES FOR PROXIMITY TO NEAREST SEISMIC SOURCE Ca = 0.36 FOR SEISMIC ZONE 3, Ca = 0.44, FOR SEISMIC ZONE 4, AND
 - Ca = 0.66 for SEISMIC ZONE 4 NEAR FAULT

	DO NOT SCAL	E DRAWINGS	Intor	METD	InterMetre	o Industries Corp			
	APPROVALS	DATE			shington Street rre, PA 18705	gton Street PA 18705			
	DWN [JS]	AGE							
	CHK [CAC]	[8/31/04]	S	FREE STANDING, FLOOR ANCHORED SES / SASE / QWIKSLOT / HD SUPER / MAX Q					
NOTICE	PD [WJS]	100	6 barry	GENE	RAL NOTE	S			
DRAWING IS NOT FOR USE OR DISCLOSURE OUSIDE INTERMETRO	MFG []		SIZE	SH 1 OF 10	DWG, NO.	S1.0	REV.		
INDUSTRIES CORP EXCEPT WITH PERMISSION	METRO DWG NO 232	09	SCALE: N	.T.S	CAD GENERA MAN	ATED DRAWING	DO NOT		



Table 1 Through-bolt Requirment for Acceptable Anchorage Configurations

24 inch Long Shelving at Various Story Locations

Table 1C

Table 1A 30 psf shelf Loading² TWO BOLT ANCHOR PLA Story Ratio'; (IS-1)/TS

50 psf shelf Loading²

	Т	WO BOLT ANCH	OR PLATE			-					TWO BOLT AND	HOR PLATE			-
		Story Ratio	(IS-1)/TSG		-			Shelf			Story Rati	o': (IS-1)/TSG			
0	0.2	0,4 Zone 3	0.6	0.8	1.0			Width	0	0.2	0.4	0.6	0.8	1.0	
3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia	3/8" dia			14	3/8" dia	3/8" dia	3/8" dia	3/8" dia	3/8" dia	3/8" dia	
3/8* dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			18	3/8" dia.	3/8" dia.	3/8" dia,	3/8" dia.	3/8" dia.	3/8" dia.	
3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			21	3/8" dia.	3/8" dia.	3/8" dia.	NG	NG	NG	
3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			24	3/8" dia.	3/8" dia,	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	
3/8" dia.	3/8" dia.	3/8" dia.	NG	NG	NG			36	3/8" dia.	3/8" dia.	NG	NG	NG	NG	
		Zone 4	1								Zone	1	1		
3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	
3/8" dia	3/8" dia.	3/8 dia.	J/6 dia.	3/8 Gia.	3/8° 0ia.			18	3/8" dia.	3/8 dia.	3/8" dia.	3/8" dia.	3/8° dia.	3/8" dia.	
3/8" dia.	3/8" dia.	NG	NG	NG	NG			24	3/8" dia.	3/8" dia.	NG	NG	NG	NG	
3/8" dia.	NG	NG	NG	NG	NG			30	3/8* dia.	NG	NG	NG	NG	NG	
UR SHEAR) SHA	ALL HAVE BUS OF TH	E BOLI SNIESTED, Zone ANF	NG NG	NG	NG			36	3/8" dia.	NG	NG Zope 4N	NG NG	NG	I NG	
3/8" dia.	3/8" dia.	NG	NG	NG	NG			14	3/8" dia.	3/8" dia.	NG	NG	NG	NG	
3/8" dia.	3/8" dia.	NG	NG	NG	NG			18	3/8" dia.	3/8" dia.	NG	NG	NG	NG	
3/8" dia.	NG	NG	NG	NG	NG			21	3/8" dia.	NG	NG	NG	NG	NG	
3/6 dia.	NG	NG	NG	NG	NG			24	3/8" dia.	NG	NG	NG	NG	NG	
NG	NG	NG	NG	NG	NG			36	NG	NG	NG	NG	NG	NG	
	FC	Table 1 30 psf shelf Lo DUR BOLT ANCH	B ading ² IOR PLATE			-	r			F	Table 50 psf shelf I OUR BOLT AND	1D oading ² HOR PLATE			1
0	0.2	Story Ratio	: (IS-1)/TSG		1 10			Shelf		1 0.0	Story Ratio	(IS-1)/TSG		1	
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3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	
3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	
3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/6" dia.			21	3/8" dia.	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	
3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia	two - 3/8" dia.	two - 3/8" dia.			30	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	
3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			36	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" día.	two - 3/8" dia.	
3/8" dia	3/2" dia	Zone 4	2/0" dia	2/0* dia	2/0° dia				0.00	2107 -8-	Zone 4	210" -1	0.00* 46	2/0# 48-	
3/8" dia.	3/8" dia.	3/8° dia.	3/8" dia.	3/8" dia.	3/8" dia			14	3/8" dia	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	
3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			21	3/8" dia.	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	
3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			24	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8* dia.	3/8" dia.	
3/8" dia	3/6 dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	1wo - 3/8" dia.			30	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	
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3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			14	3/8" dia.	3/8" dia.	3/8" dia	3/8" dia.	3/8" dia.	3/8" dia.	1
3/8" dia.	3/8 0(a. 3/8" dia	3/8 dia. 3/8" dia	3/8" dia.	3/8" dia.	3/8" dia.			18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	
3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			24	3/8" dia.	3/8" dia.	3/8" dia	3/8" dia.	3/8" dia.	3/8" dia.	1
3/8" dia.	3/8" dia.	NG	NG	NG	NG			30	3/8" dia.	3/8" dia.	NG	NG	NG	NG	1
3/8° dia.	two - 3/8" dia.	NG	NG	NG	NG		0	36	3/8" dia.	3/8" dia.	NG	NG NG	NG	NG	
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wo - 3/8" dia.	Fixe	d Equipmen	t Anchorage	- Ground floor In no case shal relooment	plus all levels below g the InterMetro shelf	rade are deemed to be o rating be exceeded.	n floor "1", i.e Story Ra	tio = 0.0.		DO NOT SCAL	E DRAWINGS	Inter	METR	InterMetro Indu	stries Co
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	63 7 1	Thursd	ay, October	21, 2004	DEGENKOLB ENGINEE	RS			_	CHK [CAC]	[08/31/04]	S	ES / SASE / QWI	KSLOT / HD SUPER	/ MAX Q
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				the second se			
	Width	0	0.2	0.4	0.6	0.8	1.0
	1000			Zone 3			
	14	3/8" dia.	3/8" dia.	3/8" dia	3/8" dia.	3/8" dia.	3/8" dia.
	18	3/8* dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.
	21	3/8" dia.	3/8" dia.	3/8" dia	3/8" dia.	3/8" dia	3/8" dia
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	30	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia	3/8" dia
	36	3/8" dia.	3/8" dia.	3/8" dia.	NG	NG	NG
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	14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia	3/8" dia
	18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8* dia.	3/8" dia
	21	3/8" dia.	3/8" dia.	NG	NG	NG	NG
	24	3/8" dia.	3/8" dia.	NG	NG	NG	NG
and the second second	30	3/8" dia.	NG	NG	NG	NG	NG
ANCHORS LOADED	IN EITHER BOLLO	UT OR SHEAR) SHA	L HAVE IS OF TH	E BOLTSNIESTED.	NG	NG	NG
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	14	3/8" dia.	3/8" dia.	NG	NG	NG	NG
	18	3/8" dia.	3/8" dia.	NG	NG	NG	NG
	21	3/8" dia.	NG	NG	NG	NG	NG
	24	3/8" dia.	NG	NG	NG	NG	NG
	30	3/8" dia.	NG	NG	NG	NG	NG
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Shelf		Story Ratio ¹ : (IS-1)/TSG									
Width	0	0.2	0.4	0.6	0.8	1.0					
		011-	Zone 3	And the second second							
14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.					
18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.					
21	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.					
24	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.					
30	3/8" dia.	3/8" dia.	two - 3/8" dia	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.					
36	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.					
			Zone 4								
14	3/8" dia.	3/8" día.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.					
18	3/8" dla.	3/8" dia.	3/8" dia	3/8" dia.	3/8" dia.	3/8" dia.					
21	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.					
24	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.					
30	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.					
36	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.					
			Zone 4NF								
14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.					
18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.					
21	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.					
24	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.					
30	3/8" dia.	3/8" dia.	NG	NG	NG	NG					
36	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG					



Oakland, CA 94612 510.272.9040 Phone 510.272.9526 Fax (918)654-3547 www.degenkolb.com

Job # A10246.00

	APPROVALS	DATE			Wiles-Barre	, PA 18705	K.
	DWN [JS]		TITLE: SEIS	MIC ANCHORAGE	- FREESTANDING	G, FLOOR A	NCHORED
	CHK [CAC]	[08/31/04]		SES / SASE / QWI	KSLOT / HD SUPE	R / MAX Q	
NOTICE	PD [WJS]		Thro	ough Bolt Red	g't for 24" Lo	ng Shelv	ving
DRAWING IS NOT FOR USE OR DISCLOSURE OUSIDE INTERMETRO	MFG []		SIZE	SH 3 OF 10	DWG. NO.	S3.0	REV.
INDUSTRIES CORP EXCEPT WITH PERMISSION	METRO DWG NO	09	SCALE:	N.T.S	CAD GENERAT MANU	ED DRAWIN	IG DO NOT

two - 3/8" dia.

Legend:

No. \$352

EXP

TIE OF CALIFOR

Shelf

Table 2 Through-bolt Requirment for Acceptable Anchorage Configurations

at Various Story Locations

30 inch Long Shelving

Table 2A

30 psf shelf Loading² TWO BOLT ANCHOR PLATE

Shelf		Story Ratio ¹ : (IS-1)/TSG						
Width	0	0.2	0.4	0.6	0.8	1.0		
			Zone 3		-			
14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.		
18	3/8" dia.	3/8" dia.	3/8" dia.	3/8° dia.	3/8" dia.	3/8" dia.		
21	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.		
24	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.		
30	3/8" dia.	3/8" dia.	NG	NG	NG	NG.		
36	3/8° dia.	3/8" dia.	NG	NG	NG	NG		
			Zone 4			And the second second second second		
14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.		
18	3/8" dia.	3/8* dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.		
21	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.		
24	3/8" dia.	3/8" dia.	3/8" dia.	NG	NG	NG		
30	3/8" dia.	3/8" dia.	NG	NG	NG	NG		
36	3/8" dia.	NG	NG	NG	NG	NG		
			Zone 4NF					
14	3/8" dia.	3/8" dia.	3/8" dia.	NG	NG	NG		
18	3/8" dia.	3/8" dia.	3/8" dia.	NG	NG	NG		
21	3/8" dia.	3/8° dia	NG	NG	NG	NG		
24	3/8" dia.	NG	NG	NG	NG	NG		
30	3/8" dia.	NG	NG	NG	NG	NG		
36	3/8" dia.	NG	NG	NG	NG	NG		

Table 2B 30 psf shelf Loading²

FOUR BOLT ANCHOR PLATE

Shelf	Story Ratio ¹ : (IS-1)/TSG								
Width.	0	0.2	0.4	0.6	0.8	1.0			
			Zone 3						
14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
18	3/8" dia.	3/8° dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
21	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
24	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
30	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
36	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
			Zone 4						
14	3/8" dia.	3/8" dia.	3/8" dia:	3/8" dia.	3/8° dia.	3/8" dia.			
18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
21	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
24	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
30	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
36	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
			Zone 4NF						
14	3/8* dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
21	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
24	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
30	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG			
36	3/8" dia,	two - 3/8" dia.	NG	NG	NG	NG			

Shelf	Story Ratio ¹ ; (IS-1)/TSG							
Width	0	0 0.2		0.6	0.8	1,0		
			Zone 3					
14	3/8" dia.	3/8" dia.	3/8" dia.	3/8° dia.	3/8" dia.	3/8" dia		
18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia		
21	3/8" dia.	3/8" dia.	NG	NG	NG	NG		
24	3/8" dia.	3/8" dia.	NG	NG	NG	NG		
30	3/8" dia.	NG	NG	NG	NG	NG		
36	3/8" dia.	NG	NG	NG	NG	NG		
			Zone 4					
14	3/8" dia,	3/8" dia.	3/8" dia.	NG	NG	NG		
18	3/8" dia.	3/8" dia.	3/8" dia.	NG	NG	NG		
21	3/8" dia.	NG	NG	NG	NG	NG		
24	3/8" dla.	3/8° dia.	NG	NG	NG	NG		
30	3/8" dia.	NG	NG	NG	NG	NG		
36	3/8" dia.	NG	NG	NG	NG	NG		
			Zone 4NF					
14	3/8" dia.	NG	NG	NG	NG	NG		
18	3/8" dia.	NG	NG	NG	NG	NG		
21	3/8" dia.	NG	NG	NG	NG	NG		
24	3/8" dia.	NG	NG	NG	NG	NG		
30	NG	NG	NG	NG	NG	NG		
36	NG	NG	NG	NG	NG	NG		

Table 2D 50 psf shelf Loading²

FOUR BOLT ANCHOR PLATE

Shelf	Story Ratio': (IS-1)/TSG								
Width	0	0.2	0.4	0.6	0.8	1.0			
			Zone 3						
14	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
18	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8* dia.	two - 3/8" dia			
21	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
24	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
30	two - 3/8" dia	two - 3/8" dia.	two - 3/8" dia	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
36	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
			Zone 4						
14	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
18	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
21	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
24	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
30	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
36	two - 3/8* dia	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG			
			Zone 4NF						
14	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
18	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
21	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
24	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG			
30	two - 3/8" dia.	NG	NG	NG	NG	NG			
36	two - 3/8" dia.	NG	NG	NG	NG	NG			

NG No Good, i.e. an unacceptable configuration

John D. Gillengerten

One 3/8" diameter Arough bolt connection MauiFed D

0

PUCTU

OF CAL

Legend

3/8" dia.

where: IS: Installation story - i.e. the story upon which the shelving is to be located

1. Story Ratio formula is (IS-1)/TSG, or (Installation story - 1)/(Total Stories above grade) TSG: Total Stories above Grade

- If story ratio is not shown, use the next highest figure.

Fixed Equipment Anchorage - Ground floor plus all levels below grade are deemed to be on floor "1", i.e Story Ratio = 0.0. two 3/8 伊斯cel of Statewide Health Planning and Develcontento case shall the InterMetro shell rating be exceeded. Two 3/8 diameter through bolt connection required



Notes:

Thursday, October 21, 2004 **** Valid for 3 Years Maximum ****

(1916)654-3547

D Gullenseiter



NOTICE

PERMISSION

DEGENKOLB ENGINEERS 300 Frank H. Ogawa Plaza, Suite 450 Oakland, CA 94612 510 272.9040 Phone 510.272.9526 Fax www.degenkolb.com Job # A10246.00



Table 2C

50 psf shelf Loading² TWO POLT ANCHOP DI ATE

Table 3 Through-bolt Requirment for Acceptable Anchorage Configurations

36 inch Long Shelving

at Various Story Locations

Table 3C 50 psf shelf Loading² TWO BOLT ANCHOR PLATE

Table 3A 30 psf shelf Loading² TWO BOLT ANCHOR PLATE

STICH	Story Ratio : (IS-1)/15G								
Width	0	0.2	0.4	0.6	0.8	1.0			
			Zone 3						
14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
18	3/8* dia	3/8" dia.	3/8" dia.	3/8* dla.	3/8" dia.	3/8" dia.			
21	3/8* dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
24	3/8" dia.	3/8" dia.	3/8" dia.	NG	NG	NG			
30	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
36	3/8" dia.	NG	NG	NG	NG	NG			
			Zone 4						
14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
21	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
24	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
30	3/8" dia,	NG	NG	NG	NG	NG			
36	3/8" dia.	NG	NG	NG	NG	NG			
			Zone 4NF						
14	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
18	3/8" dia,	3/8" dia.	NG	NG	NG	NG			
21	3/8" dia.	NG	NG	NG	NG	NG			
24	3/8" dia.	NG	NG	NG	NG	NG			
30	3/8" dia.	NG	NG	NG	NG	ŇĠ			
36	NG	NG	NG	NG	NG	NG			

Table 3B 30 psf shelf Loading²

FOUR BOLT ANCHOR PLATE

Shelf	Story Ratio*: (IS-1)/TSG								
Width	0	0.2	0.4	0.6	0.8	1.0			
			Zone 3						
14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
21	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia	two - 3/8" dia			
24	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
30	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia	two - 3/8" dia			
36	3/8" dia.	two - 3/8" dia	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
			Zone 4						
14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
21	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
24	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
30	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
36	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
			Zone 4NF						
14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
21	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
24	3/8" dia	two - 3/8" dia.	two - 3/8" dia						
30	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
36	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			

Legend:

AUCTU

OF CALIF

NG

two - 3/8" dia.

No Good, i.e. an unacceptable configuration

Blue

John D. Gillengerten

3/8" dia. One 3/8" diameter through bolt connection required

APPROVED

OPA-0556

on

Thursday, October 21, 2004

**** Valid for 3 Years Maximum ****

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A Sillenguter

Shelf		Story Ratio': (IS-1)/TSG								
Width	0	0.2	0.4	0.6	0.8	1.0				
			Zone 3							
14	3/8" dia.	3/8" día.	3/8" dia.	3/8" dia.	3/8* dia.	3/8" dia.				
18	3/8" dia.	3/8" dia.	3/8* dia.	NG	NG	NG				
21	3/8" dia.	3/8" dia.	NG	NG	NG	NG				
24	3/8* dia,	3/8" dia.	NG	NG	NG	NG				
30	3/8" dia.	NG	NG	NG	NG	NG				
36	3/8" dia.	NG	NG	NG	NG	NG				
			Zone 4							
14	3/8" dia.	3/8° dia.	NG	NG	NG	NG				
18	3/8" dia.	3/8" dia.	NG	NG	NG	NG				
21	3/8" dia.	NG	NG	NG	NG	NG				
24	3/8" dia.	NG	NG	NG	NG	NG				
30	NG	NG	NG	NG	NG	NG				
36	3/8" dia.	NG	NG	NG	NG	NG				
			Zone 4NF							
14	3/8" dia.	NG	NG	NG	NG	NG				
18	3/8" dia.	NG	NG	NG	NG	NG				
21	NG	NG	NG	NG	NG	NG				
24	NG	NG	NG	NG	NG	NG				
30	NG	NG	NG	NG	NG	NG				
36	NG	NG	NG	NG	NG	NG				

Table 3D 50 psf shelf Loading²

FOUR BOLT ANCHOR PLATE

Shelf	Story Ratio1: (IS-1)/TSG								
Width	0	0.2	0.4	0.6	0.8	1.0			
			Zone 3						
14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
21	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
24	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
30	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG			
36	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG			
			Zone 4						
14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia			
18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia,	3/8" dia.			
21	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
24	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
30	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
36	3/8" dia.	two - 3/8" dia	NG	NG	NG	NG			
			Zone 4NF						
14	3/8" dia.	3/8" dia.	3/8° dia.	3/8" dia.	3/8" dia.	3/8" dia.			
18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
21	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
24	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
30	3/8" dia.	NG	NG	NG	NG	NG			
36	3/8" dia.	NG	NG	NG	NG	NG			

Notes:

1. Story Ratio formula is (IS-1)/TSG, or (Installation story - 1)/(Total Stories above grade) where:

IS: Installation story - i.e. the story upon which the shelving is to be located

TSG: Total Stories above Grade

- If story ratio is not shown, use the next highest figure.

- Ground floor plus all levels below grade are deemed to be on floor "1", i.e Story Ratio = 0.0.

wo. 38° dua. Fixed Equipment Anchorage 2. In no case shall the InterMetro shell rating be exceeded. Two 3/8° diameter through bolt Pagaintri Planting and Development

Degenkolb

DEGENKOLB ENGINEERS 300 Frank H. Ogawa Plaza, Suite 450 Oakland, CA 94612 510.272.9040 Phone 510.272.9526 Fax www.degenkolb.com Job # A10246.00

floor "1", i.e Story Ratio = 0.0.	DO NOT SCALE DRAWINGS		Intor	METP	InterMetro Industries	Corp.
	APPROVALS	DATE		MEIN	North Washington S Wiles-Barre, PA 187	treet 05
	DWN [JS] TITLE: SEISMIC ANCHORAGE - FREESTANDIN	- FREESTANDING, FLOO	R ANCHORED			
	CHK [CAC]	[08/31/04]]	SES / SASE / QWIKSLOT / HD SUPER / MAX Q		
NOTICE	PD [WJS]		Thro	ough Bolt Red	q't for 36" Long Sh	elving
DRAWING IS NOT FOR USE OR DISCLOSURE OUSIDE INTERMETRO	MFG []		SIZE	SH 5 OF 10	DWG. NO. \$5.0	REV.
INDUSTRIES CORP EXCEPT WITH PERMISSION	METRO DWG NO	 2 09	SCALE:	N.T.S	CAD GENERATED DRA MANUALLY U	WING DO NOT PDATE

Table 4 **Through-bolt Requirment for Acceptable Anchorage Configurations**

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PERMISSION

42 inch Long Shelving at Various Story Locations

Table 4A

30 psf shelf Loading² TWO BOLT ANCHOR PLATE

Shelf	Story Ratio': (IS-1)/TSG								
Width	0	0.2	0.4	0.6	0.8	.8 1.0			
			Zone 3						
14	3/8* dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
21	3/8" dia.	3/8" dia.	two - 3/8" dia.	NG	NG	NG			
24	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
30	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
36	3/8" dia.	NG	NG	NG	NG	NG			
			Zone 4						
14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
21	3/8" dia.	3/8* dia.	NG	NG	NG	NG			
24	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
30	3/8" dia.	NG	NG	NG	NG	NG			
36	3/8" dia.	NG	NG	NG	NG	NG			
			Zone 4NF						
14	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
18	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
21	3/8" dia.	NG	NG	NG	NG	NG			
24	3/8" dia.	NG	NG	NG	NG	NG			
30	NG	NG	NG	NG	NG	NG			
36	NG	NG	NG	NG	NG	NG			

Table 4B

30 psf shelf Loading² FOUR BOLT ANCHOR PLATE

Shelf		Story Ratio': (IS-1)/TSG									
Width	0	0.2	0.4	0.6	0.8	1.0					
			Zone 3								
14	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" c					
18	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" (
21	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" d					
24	3/8" dia.	two - 3/8° dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia:	two - 3/8" c					
30	two - 3/8" dia.	two - 3/8" dia	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" c					
36	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" c					
			Zone 4								
14	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" c					
18	3/8° dia.	3/8" dia.	two · 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" c					
21	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" c					
24	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" c					
30	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" c					
36	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG					
			Zone 4NF								
14	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8* dia.	two - 3/8" dia.	two - 3/8" c					
18	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" c					
21	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG					
24	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG					
30	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG					
36	two - 3/8" dia.	NG	NG	NG	NG	NG					

Table 4C
50 psf shelf Loading ²
TWO BOLT ANCHOR PLATE

Shelf	Story Ratio : (IS-1)/TSG							
Width	0	0.2	0.4	0.6	0.8	1.0		
			Zone 3					
14	3/8" dia.	3/8" dia.	NG	NG	NG	NG		
18	3/8" dia.	3/8" dia.	NG	NG	NG	NG		
21	3/8" dia.	NG	NG	NG	NG	NG		
24	3/8" dia.	NG	NG	NG	NG	NG		
30	3/8" dia.	NG	NG	NG	NG	NG		
36	3/8" dia.	NG	NG	NG	NG	NG		
			Zone 4					
14	3/8" dia.	3/8" dia.	NG	NG	NG	NG		
18	3/8" dia.	3/8" dia.	NG	NG	NG	NG		
21	3/8" dia.	NG	NG	NG	NG	NG		
24	3/8* dia.	NG	NG	NG	NG	NG		
30	NG	NG	NG	NG	NG	NG		
36	NG	NG	NG	NG	NG	NG		
			Zone 4NF					
14	3/8" dia.	NG	NG	NG	NG	NG		
18	3/8" dia.	NG	NG	NG	NG	NG		
21	NG	NG	NG	NG	NG	NG		
24	NG	NG	NG	NG	NG	NG		
30	NG	NĢ	NG	NG	NG	NG		
36	NG	NG	NG	NG	NG	NG		

Table 4D 50 psf shelf Loading²

FOUR BOLT ANCHOR PLATE

Shelf	Story Ratio': (IS-1)/TSG							
Width	0	0.2	0.4	0.6	0.8	1.0		
			Zone 3					
14	3/8" dia.	3/8* dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia		
18	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia		
21	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia		
24	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8* dia.	two - 3/8" dia.	two - 3/8" dia		
30	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG		
36	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG		
			Zone 4					
14	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia		
18	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia		
21	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG		
24	3/8" dia.	two - 3/8" dia.	two - 3/8" dia	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia		
30	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG		
36	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG		
			Zone 4NF					
14	3/8" dia.	3/8" dia.	two - 3/8" dia.	NG	NG	NG		
18	3/8" dia.	3/8" dia.	NG	NG	NG	NG		
21	3/8" dia.	NG	NG	NG	NG	NG		
24	3/8* dia.	two - 3/8" dia.	NG	NG	NG	NG		
30	3/8" dia.	NG	NG	NG	NG	NG		
36	two - 3/8" dia.	NG	NG	NG	NG	NG		

Notes: Legend: 1. Story Ratio formula is (IS-1)/TSG, or (Installation story -1)/(Total Stories above grade) NG No Good, i.e. an unacceptable configuration where: Installation story - i.e. the story upon which the shelving is to be located IS: 3/8* dia. TSG: Total Stories above Grade One 3/8" diameter through bolt connection required - If story ratio is not shown, use the next highest figure. APPROVED - Ground floor plus all levels below grade are deemed to be on floor "1", i.e Story Ratio = 0.0. two - 3/8" dia. wo-38° da. Fixed Equipment Anchorage ². In no case shall the InterMetro shell rating be exceeded. Two 3/8° diameter, through foll content op 1500 milling and Development OPA-0556 Degenkolb on DEGENKOLB ENGINEERS Thursday, October 21, 2004 300 Frank H. Ogawa Plaza, Suite 450 NOTICE Oakland, CA 94612 **** Valid for 3 Years Maximum **** DRAWING IS NOT FOR L 510.272.9040 Phone RUCTU THE OF CALIFO Sellengenter DISCLOSURE OUSIDE INTE 510.272.9526 Fax INDUSTRIES CORP EXCE aka

(916)654-3547

John D. Gillengerten

www.degenkolb.com

Job # A10246.00

	DO NOT SCALE DRAM	E DRAWINGS	Intor	METR	InterMet	ro Industries Cor	p.	
	APPROVALS	DATE	II ILGI	MEIN	North W Wiles-B	ashington Street arre, PA 18705		
	DWN [JS]		TITLE: SEISM	MIC ANCHORAGE	- FREESTAN	DING, FLOOR A	NCHORED	
	CHK [CAC]	[08/31/04]		SES / SASE / QWI	KSLOT / HD S	UPER / MAX Q		
	PD [WJS]		Thro	ugh Bolt Red	q't for 42"	Long Shelv	ing	
JSE OR ERMETRO	MFG []		SIZE	SH 6 OF 10	DWG. NO.	S6.0	REV.	
PTWITH	METRO DWG NO	METRO DWG NO.: 23209		SCALE: N.T.S		CAD GENERATED DRAWING DO NOT		

Table 5 Through-bolt Requirment for Acceptable Anchorage Configurations

48 inch Long Shelving at Various Story Locations

Shelf

Table 5C 50 psf shelf Loading² TWO BOLT ANCHOR PLATE

Table 5A 30 psf shelf Loading²

Shelf Width

14 18

24 30 36

	T	NO BOLT ANCH	OR PLATE		
		Story Ratio	: (IS-1)/TSG		
0	0.2	0.4	0.6	0.8	1.0
		Zone 3			
3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.
3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.
3/8" dia.	3/8" dia.	NG	NG	NG	NG
3/8" dia.	3/8" dia.	NG	NG	NG	NG
3/8" dia.	NG	NG	NG	NG	NG
3/8" dia	NG	NG	NG	NG	NG
		Zone 4			
3/8" día.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia	two - 3/8" dia.	two - 3/8" dia.
3/8" dia.	3/8" dia.	two - 3/8" dia.	NG	NG	NG
3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG
3/8" dia.	NG	NG	NG	NG	NG
3/8" dia.	NG	NG	NG	NG	NG
NG	NG	NG	NG	NG	NG
		Zone 4NF			
3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG
3/8" dia.	NG	NG	NG	NG	NG
two - 3/8" dia.	NG	NG	NG	NG	NG
NG	NG	NG	NG	NG	NG
NG	NG	NG	NG	NG	NG
NG	NG.	NG	NG	NG	NG
					the second se

Table 5B

30 psf shelf Loading² FOUR BOLT ANCHOR PLATE

Shelf	Story Ratio ⁵ : (IS-1)/TSG								
Width	0	0.2	0.4	0.6	0.8	1.0			
			Zone 3						
14	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
18	3/8" dia.	two - 3/6" dia.	two - 3/8" dia.	two - 3/8° dia.	two - 3/8" dia.	two - 3/8" dia			
21	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8* dia			
24	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
30	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
36	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG			
			Zone 4						
14	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
18	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8* dia.	two - 3/8" dia			
21	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
24	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
30	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG			
36	two - 3/8" dia.	two - 3/8" dia	NG	NG	NG	NG			
-			Zone 4NF						
14	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
18	3/8" dia	two - 3/8" dia.	two - 3/8" dia						
21	two - 3/8" dia.	two - 3/8" dia.	NG	NG.	NG	NG			
24	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
30	two - 3/8" dia.	NG	NG	NG	NG	NG			
36	two - 3/8" dia.	NG	NG	NG	NG	NG			

Width	0	0.2	0.4	0.6	0.8	1.0
			Zone 3			
14	3/8" dia.	3/8" dia.	NG	NG	NG	NG
18	3/8" dia.	3/8" dia.	NG	NG	NG	NG
21	3/8" dia.	NG	NG	NG	NG	NG
24	3/8" dia.	NG	NG	NG	NG	NG
30	NG	NG	NG	NG	NG	NG
36	NG	NG	NG	NG	NG	NG
			Zone 4			
14	3/8" dia.	NG	NG	NG	NG	NG
18	3/8" dia.	NG	NG	NG	NG	NG
21	3/8" dia.	NG	NG	NG	NG	NG
24	3/8" dia.	NG	NG	NG	NG	NG
30	NG	NG	NG	NG	NG	NG
36	NG	NG	NG	NG	NG	NG
			Zone 4NF			
14	3/8" dia.	NG	NG	NG	NG	NG
18	3/8" dia.	NG	NG	NG	NG	NG
21	NG	NG	NG	NG	NG	NG
24	NG	NG	NĠ	NG	NG	NG
30	NG	NG	NG	NG	NG	NG
36	NG	NG	NG	NG	NG	NG

Table 5D 50 psf shelf Loading² FOUR BOLT ANCHOR PLATE

Shelf	Story Ratio': (IS-1)/TSG							
Width	0	0.2	0.4	0.6	0.8	1.0		
			Zone 3					
14	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia		
18	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia		
21	3/8" dia.	two - 3/8" dia.	two - 3/8" dia	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia		
24	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia		
30	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG.		
36	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG		
			Zone 4					
14	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia		
18	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia		
21	3/8" dia.	two - 3/8" dia.	NG	NĠ	NG	NG		
24	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG		
30	two - 3/8" dia.	NG	NG	NG	NG	NG		
36	two - 3/8" dia.	NG	NG	NG	NG	NG		
			Zone 4NF					
14	3/8" dia.	3/8" dia.	NG	NG	NG	NG		
18	3/8" dia.	3/8" dia.	NG	NG	NG	NG		
21	3/8" dia.	NG	NG	NG	NG	NG		
24	3/8" dia.	NG	NG	NG	NG	NG		
30	NG	NG	NG	NG	NG	NG		
36	NG	NG	NG	NG	NG	NG		

	Legend: NG Good, i.e. an unacceptable configuration 3/8* dia One 3/8* diameter through bolt connection require	Notes: 1. Story Ratio for where: IS: Insta TSG: Total d - If story ratio	mula is (IS-1)/TSG, or (Installation story - 1)/(" illation story - i.e. the story upon which the shell Stories above Grade is not shown, use the next highest figure.	Total Stories above grade) ving is to be located							
	A P P R O two-3/8" dia. Fixed Equipment	V E D - Ground floor Anchoragen no case shall	plus all levels below grade are deemed to be o If the InterMetro shelf rating be exceeded.	on floor "1", i.e Story Ratio = 0.0.	DO NOT SCAL	E DRAWINGS	Inter	METR	InterMetr	o Industries Co	orp.
	Two 3/8" diametern the over the alternation of the	fining and Development			APPROVALS	DATE		ME D	North Wa Wiles-Ba	ashington Street rre, PA 18705	ət
	Solar A Cost	OPA-0556	Degenkolb)	DWN [JS]		TITLE: SEISI	MIC ANCHORAGE	- FREESTAND	ING, FLOOR A	NCHORED
	SE SOL EN	on	DEGENKOLB ENGINEERS		CHK [CAC]	[08/31/04]		SES / SASE / QWI	KSLOT / HD SL	JPER / MAX Q	
+	Ex 12/31/0	y, October 21, 2004	300 Frank H. Ogawa Plaza, Suite 450 Oakland, CA 94612	NOTICE	PD [WJS]		Thro	ough Bolt Rec	alle 5	ong Shelv	ving
	STRUCTURANT LA AN	1 tor 3 rears Maximum	510.272.9040 Phone 510.272.9526 Fax	DRAWING IS NOT FOR USE OR DISCLOSURE OUSIDE INTERMETRO	MFG []		SIZE B	SH 7 OF 10	DWG. NO.	S7.0	REV.
	OF CALITY John D. Gillengerten	(916)654-3547	www.degenkolb.com Job # A10246.00	INDUSTRIES CORP EXCEPT WITH PERMISSION	METRO DWG NO 232	09	SCALE:	N.T.S	CAD GENER	ATED DRAWIN	NG DO NOT

Table 6 Through-bolt Requirment for Acceptable Anchorage Configurations

54 inch Long Shelving

Shelt

at Various Story Locations

Table 6C 50 psf shelf Loading² TWO BOLT ANCHOR PLATE

Story Ratio !: (IS-1)/T

Table 6A 30 psf shelf Loading² TWO BOLT ANCHOR PLATE

Shelf	Story Ratio': (IS-1)/TSG								
Width	0	0.2	0.4	0.6	0.8	1.0			
			Zone 3						
14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
18	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.			
21	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
24	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
30	3/8" dia.	NG.	NG	NG	NG	NG			
36	3/8" dia.	NG	NG	NG	NG	NG			
			Zone 4						
14	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
18	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
21	3/8" dia.	NG	NG	NG	NG	NG			
24	3/8" dia.	NG	NG	NG	NG	NG			
30	3/8" dia.	NG	NG	NG	NG	NG			
36	NG	NG	NG	NG	NG	NG			
			Zone 4NF						
14	3/8" dia.	NG	NG	NG	NG	NG			
18	3/8" dia.	NG	NG	NG	NG	NG			
21	NG	NG	NG	NG	NG	NG			
24	NG	NG	NG	NG	NG	NG			
30	NG	NG	NG	NG	NG	NG			
36	NG	NG	NG	NG	NG	NG			

Table 6B

30 psf shelf Loading² FOUR BOLT ANCHOR PLATE

Shelf	Story Ratio ¹ : (IS-1)/TSG								
Width	0	0.2	0.4	0.6	0.8	1.0			
			Zone 3	1					
14	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
18	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
21	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
24	3/8* dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
30	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
36	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
			Zone 4	And the second s	have been a second as a	And and a second se			
14	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8* dia.			
18	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
21	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
24	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
30	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
36	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
			Zone 4NF			And the second s			
14	3/8" dla.	3/8" dia.	two - 3/8° dia	two - 3/8" dia.	two - 3/8" dia,	two - 3/8" dia.			
18	3/8" día.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.			
21	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
24	3/8" dia.	two - 3/8* dia.	NG	NG	NG	NG			
30	two - 3/8" dia.	NG	NG	NĠ	NG	NG			
20	hun 2/0" die	1103	110						

Width	0	0.2	0.4	0.6	0.8	1.0
			Zone 3			
14	3/8" dia.	3/8° dia.	NG	NG	NG	NG
18	3/8" dia.	3/8° dia.	NG	NG	NG	NG
21	3/8" dia.	NG	NG	NG	NG	NG
24	3/8° dia.	NG	NG	NG	NG	NG
30	NG	NG	NG	NG	NG	NG
36	NG	NG	NG	NG	NG	NG
			Zone 4			
14	3/8" dia.	NG	NG	NG	NG	NG
18	3/8" dia.	NG	NG	NG	NG	NG
21	NG	NG	NG	NG	NG	NG
24	3/8" dia.	NG	NG	NG	NG	NG
30	NG	NG	NG	NG	NG	NG
36	NG	NG	NG	NG	NG	NG
			Zone 4NF			
14	NG	NG	NG	NG	NG	NG
18	NG	NG	NG	NG	NG	NG
21	NG	NG	NG	NG	NG	NG
24	NG	NG	NG	NG	NG	NG
30	NG	NG	NG	NG	NG	NG
36	NG	NG	NG	NG	NG	NG

Table 6D 50 psf shelf Loading²

FOUR BOLT ANCHOR PLATE

Shelf	Story Ratio (IS-1)/TSG								
Width	0	0.2	0.4	0.6	0.8	1.0			
_			Zone 3						
14	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
18	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
21	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG			
24	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
30	two - 3/8" dia.	NG	NG	NG	NG	NG			
36	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
			Zone 4			14			
14	3/8" dia.	two - 3/8" dia.	two - 3/8* dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
18	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
21	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
24	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
30	two - 3/8" dia.	NG	NG	NG	NG	NG			
36	two - 3/8" dia.	NG	NG	NG	NG	NG			
			Zone 4NF						
14	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
18	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
21	two - 3/8" dia.	NG	NG	NG	NG	NG			
24	two - 3/8" dia.	NG	NG	NG	NG	NG			
30	NG	NG	NG	NG	NG	NG			
36	NG	NG	NG	NG	NG	NG			

InterMetro Industries Corp.

S8.0

CAD GENERATED DRAWING DO NOT

MANUALLY UPDATE

REV.

North Washington Street

Wiles-Barre, PA 18705

Legend: Notes: 1. Story Ratio formula is (IS-1)/TSG, or (Installation story - 1)/(Total Stories above grade) NG No Good, i.e. an unacceptable configuration where: IS: Installation story - i.e. the story upon which the shelving is to be located 3/8" dia. TSG: Total Stories above Grade One 3/8" diameter through bolt connection required A P P R O V E D - If story ratio is not shown, use the next highest figure. - Ground floor plus all levels below grade are deemed to be on floor "1", i.e Story Ratio = 0.0. DO NOT SCALE DRAWINGS two - 3/8" dia. Fixed Equipment Anchorage 2. In no case shall the InterMetro shelf rating be exceeded. InterMETRO wo 3/8" Gineter brate whele mean finant ingdand Development APPROVALS DATE OPA-0556 Degenkolb DWN [JS] TITLE: SEISMIC ANCHORAGE - FREESTANDING, FLOOR ANCHORED on SES / SASE / QWIKSLOT / HD SUPER / MAX Q CHK [CAC] [08/31/04] DEGENKOLB ENGINEERS Table 6 Thursday, October 21, 2004 300 Frank H. Ogawa Plaza, Suite 450 NOTICE PD [WJS] Through Bolt Req't for 54" Long Shelving Oakland, CA 94612 **** Valid for 3 Years Maximum **** DRAWING IS NOT FOR USE OR 510.272.9040 Phone SIZE SH 8 OF 10 DWG. NO. DISCLOSURE OUSIDE INTERMETRO MFG [] 510.272.9526 Fax B in The OF CAL INDUSTRIES CORP EXCEPT WITH METRO DWG NO. www.degenkolb.com SCALE: John D. Gillengerten (916)654-3547 N.T.S PERMISSION 23209

Job # A10246.00

Table 7 Through-bolt Requirment for Acceptable Anchorage Configurations 60 inch Long Shelving

at Various Story Locations

Table 7A

30 psf shelf Loading² TWO BOLT ANCHOR PLATE

Sherr	Story Ratio': (IS-1)/TSG								
Width	0	0.2	0.4	0.6	0.8	1.0			
			Zone 3						
14	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia.	3/8" dia			
18	3/8" dia.	3/8" dia.	3/8" dia.	NG	NG	NG			
21	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
24	3/8* dia.	NG	NG	NG	NG	NG			
30	3/8" dia.	NG	NG	NG	NG	NG			
36	NG	NG	NG	NG	NG	NG			
			Zone 4			Second Second Second			
14	3/8" dia.	3/8° dia.	NG	NG	NG	NG			
18	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
21	3/8" dia.	NG	NG	NG	NG	NG			
24	3/8" dia.	NG	NG	NG	NG	NG			
30	NG	NG	NG	NG	NG	NG			
36	NG	NG	NG	NG	NG	NG			
			Zone 4NF						
14	3/8" dia.	NG	NG	NG	NG	NG			
18	3/8" dia.	NG	NG	NG	NG	NG			
21	NG	NG	NG	NG	NG	NG			
24	NG	NG	NG	NG	NG	NG			
30	NG	NG	NG	NG	NG	NG			
36	NG	NG	NG	NG	NG	NG			

Table 7B 30 psf shelf Loading²

FOUR BOLT ANCHOR PLATE

Shelf	Story Ratio 1 (IS-1)/TSG								
Width	0	0.2	0.4	0.6	0.8	1.0			
			Zone 3						
14	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
18	3/8" dia.	3/8" dia,	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
21	3/8" dia.	two - 3/8" dia	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
24	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
30	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG			
36	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
			Zone 4						
14	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
18	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia	two - 3/8" dia			
21	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
24	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG			
30	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
36	two - 3/8" dia.	NG	NG	NG	NG	NG			
			Zone 4NF						
14	3/8" dia.	3/8" dia.	two - 3/8" dia.	two · 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
18	3/8" dia.	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
21	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
24	two - 3/8" dia.	NG	NG	NG	NG	NG			
30	two - 3/8" dia.	NG	NG	NG	NG	NG			
36	two - 3/8" dia.	NG	NG	NG	NG	NG			

Legend:

PUCTU

OF CALL

NG

3/8" dia.

two - 3/8" dia.

		TV	NO BOLT ANCH	OR PLATE						
Shelf	Shelf Story Ratio': (IS-1)/TSG									
Width	0	0.2	0.4	0.6	0.8	1.0				
			Zone 3							
14	3/8" dia.	NG	NG	NG	NG	NG.				
18	3/8" dia.	NG	NG	NG	NG	NG				
21	3/8" dia.	NG	NG	NG	NG	NG				
24	3/8" dia.	NG	NG	NG	NG	NG				
30	NG	NG	NG	NG	NG	NG				
36	NG	NG	NG	NG	NG	NG				
			Zone 4							
14	3/8" dia.	NG	NG	NG	NG	NG				
18	3/8" dia.	NG	NG	NG	NG	NG				
21	NG	NG	NG	NG	NG	NG				
24	NG	NG	NG	NG	NG	NG				
30	NG	NG	NG	NG	NG	NG				
36	NG	NG	NG	NG	NG	NG				
	and the second second second		Zone 4NF							
14	NG	NG	NG	NG	NG	NG				
18	NG	NG	NG	NG	NG	NG				
21	NG	NG	NG	NG	NG	NG				
24	NG	NG	NG	NG	NG	NG				
30	NG	NG	NG	NG	NG	NG				
36	NG	NG	NG	NG	NG	NG				

Table 7C

50 nsf shelf Loading²

Table 7D 50 psf shelf Loading²

FOUR BOLT ANCHOR PLATE

Shelf	Story Ratio ¹ : (IS-1)/TSG								
Width	0	0.2	0.4	0.6	0.8	1.0			
			Zone 3						
14	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
18	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
21	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
24	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
30	NG	NG	NG	NG	NG	NG			
36	NG	NG	NG	NG	NG	NG			
			Zone 4						
14	3/8" dia,	two - 3/8" dia.	two - 3/8" dia						
18	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG			
21	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
24	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
30	NG	NG	NG	NG	NG	NG			
36	NG	NG	NG	NG	NG	NG			
_			Zone 4NF						
14	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
18	3/8" dia.	NG	NG	NG	NG	NG			
21	two - 3/8" dia.	NG	NG	NG	NG	NG			
24	two - 3/8" dia.	NG	NG	NG	NG	NG			
30	NG	NG	NG	NG	NG	NG			
36	NG	NG	NG	NG	NG	NG			

1. Story Ratio formula is (IS-1)/TSG, or (Installation story - 1)/(Total Stories above grade) NG Good, i.e. an unacceptable configuration where: IS: Installation story - i.e. the story upon which the shelving is to be located TSG: Total Stories above Grade One 3/8" diameter through belt connection required E D - If story ratio is not shown, use the next highest figure. - Ground floor plus all levels below grade are deemed to be on floor "1", i.e Story Ratio = 0.0. Fixed Equipment Anchorage2. In no case shall the InterMetro shelf rating be exceeded. Two 3/8" daffieterath@talletwidledneedforr?tarwining and Development

OPA-0556

on

Thursday, October 21, 2004

**** Valid for 3 Years Maximum ****

(916)654-3547

John D. Gillengerten

Notes:



DEGENKOLB ENGINEERS 300 Frank H. Ogawa Plaza, Suite 450 Oakland, CA 94612 510.272.9040 Phone 510.272.9526 Fax www.degenkolb.com Job # A10246.00

loor "1", i.e Story Ratio = 0.0.	DO NOT SCALE DRAWINGS		Intor	METD	InterMet	ro Industries Co	rp.
	APPROVALS	DATE	IIIICII		North Washington Street Wiles-Barre, PA 18705		
	DWN [JS]		TITLE: SEISMIC ANCHORAGE - FREESTANDING, FLOOR ANCH				NCHORED
	CHK [CAC]	[08/31/04]	SES / SASE / QWIKSLOT / HD SUPER / MAX Q				
NOTICE DRAWING IS NOT FOR USE OR DISCLOSURE OUSIDE INTERMETRO INDUSTRIES CORP EXCEPT WITH PERMISSION	PD [WJS]		Thro	ough Bolt Ree	q't for 60"	Long Shelv	ing
	MFG []		SIZE SH 9 OF 10 DWG. NO. S9.0			REV.	
	METRO DWG NO.: 23209		SCALE:	N.T.S	CAD GENE	RATED DRAWIN	NG DO NOT

Table 8 Through-bolt Requirment for Acceptable Anchorage Configurations 72 inch Long Shelving at Various Story Locations

Shelf

Table 8A

30 psf shelf Loading² TWO BOLT ANCHOR PLATE

Snen	Story Ratio ¹ ; (IS-1)/TSG								
Width	0	0.2	0.4	0.6	0.8	10			
_			Zone 3						
14	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
18	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
21	3/8" dia.	NG	NG	NG	NG	NG			
24	3/8" dia.	NG	NG	NG	NG	NG			
30	3/8" dia.	NG	NG	NG	NG	NG			
36	NG	NG	NG	NG	NG	NG			
			Zone 4			and the second second			
14	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
18	3/8" dia.	3/8" dia.	NG	NG	NG	NG			
21	3/8" dia.	NG	NG	NG	NG	NG			
24	3/8" dia.	NG	NG	NG	NG	NG			
30	NG	NG	NG	NG	NG	NG			
36	NG	NG	NG	NG	NG	NG			
			Zone 4NF			119			
14	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
18	3/8" dia.	two - 3/8" dia	NG	NG	NG	AIG			
21	two - 3/8" dia.	NG	NG	NG	NG	NG			
24	two - 3/8" dia.	NG	NG.	NG	NG	NG			
30	two - 3/8" dia.	NG	NG	NG	NG	NIC			
36	NG	NG	NG	NG	NG	NG			

Table 8B 30 psf shelf Loading²

FOUR BOLT ANCHOR PLATE

Shelf	Story Ratio (IS-1)/TSG								
Width	0	0.2	0.4	0.6	0.8	10			
	and and and a		Zone 3			1 112			
14	3/6" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia	1 fwo - 3/8" dia			
18	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia	two - 3/8" dia			
21	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	Iwo - 3/8" dia	two - 3/8" dia			
24	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG			
30	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
36	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
			Zone 4						
14	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
18	3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia	two - 3/8" dia	hwo - 3/8" dia			
21	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG			
24	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
30	two - 3/8" dia.	NG	NG	NG	NG	NG			
36	two - 3/8" dia.	NG	NG	NG	NG	NG			
			Zone 4NF						
14	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
18	3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
21	two - 3/8" dia.	NG	NG	NG	NG	NG			
24	two - 3/8" dia.	NG	NG	NG	NG	NG			
30	two - 3/8" dia.	NG	NG	NG	NG	NG			
36	NG	NG	NG	NG	NG	NG			

Legend:

PUCTUP

OF CALIFO

NG

3/8" dla.

two - 3/8" dia.

No Good, i.e. an unacceptable configuration

John D. Gillengerten

50 psf shelf Loading² TWO BOLT ANCHOR PLATE Story Ratio : (IS-1)/TSG

Table 8C

Width	0	0.2	0.4	0.6	0.8	1.0
			Zone 3		Sector Se	
14	3/8" dia.	NG	NG	NG	NG	NG
18	3/8" dia.	NG	NG	NG	NG	NG
21	NG	NG	NG	NG	NG	NG
24	3/8" dia.	NG	NG	NG	NG	NG
30	NG	NG	NG	NG	NG	NG
36	NG	NG	NG	NG	NG	NG
1. S.			Zone 4			
14	3/8" dia.	NG	NG	NG	NG	NG
18	3/8" dia.	NG	NG	NG	NG	NG
21	NG	NG	NG	NG	NG	NG
24	NG	NG	NG	NG	NG	NG
30	NG	NG	NG	NG	NG	NG
36	NG	NG	NG	NG	NG	NG
			Zone 4NF			
.14	NG	NG	NG	NG	NG	NG
18	NG	NG	NG	NG .	NG	NG
21	NG	NG	NG	NG	NG	NG
24	NG	NG	NG	NG	NG	NG
30	NG	NG	NG	NG	NG	NG
36	NG	NG	NG	NG	NG	NG

Table 8D

50 psf shelf Loading² FOUR BOLT ANCHOR PLATE

Shelf	Story Ratio': (IS-1)/TSG								
Width	0	0.2	0.4	0.6	0.8	1.0			
			Zone 3						
14	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
18	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia.	two - 3/8" dia			
21	two - 3/8" dia.	two - 3/8" dia.	NG	NĞ	NG	NG			
24	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
30	two - 3/8" dia	NG	NG	NG	NG	NG			
36	NG	NG	NG	NG	NG	NĢ			
			Zone 4						
14	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
18	two - 3/8" dia.	two - 3/8" dia.	NG	NG	NG	NG			
21	two - 3/8" dia.	NG	NG	NG	NG	NG			
24	two - 3/8" dia.	NG	NG	NG	NG	NG			
30	NG	NG	NG	NG	NG	NG			
36	NG	NG	NG	NG	NG	NG			
			Zone 4NF						
14	two - 3/8" dia.	NG	NG	NG	NG	NG			
18	two - 3/8" dia.	NG	NG	NG	NG	NG			
21	NG	NG	NG	NG	NG	NG			
24	two - 3/8" dia.	NG	NG	NG	NG	NG			
30	NG	NG	NG	NG	NG	NG			
36	NG	NG	NG	NG	NG	NG			

Notes: 1. Story Ratio formula is (IS-1)/TSG, or (Installation story - 1)/(Total Stories above grade) where

IS: Installation story - i.e. the story upon which the shelving is to be located

TSG: Total Stories above Grade

- If story ratio is not shown, use the next highest figure.

One 3/8" diameter through bolt connection required A P P R O V E D - Ground floor plus all levels below grade are deemed to be on floor "1", i.e Story Ratio = 0.0 Fixed Equipment Anchorage². In no case shall the InterMetro shelf rating be exceeded. Two 3/8" diameter dirstate bold someanin Pranting and Development



**** Valid for 3 Years Maximum ****

Dellengertun rten (916)654-3547



Oakland, CA 94612 510.272.9040 Phone 510.272.9526 Fax www.degenkolb.com Job # A10246.00

loor "1", i.e Story Ratio = 0.0.	DO NOT SCALE DRAWINGS		Intor		InterMet	ro Industries Corr	o.
	APPROVALS	DATE	North Washington Street Wiles-Barre, PA 18705 TITLE: SEISMIC ANCHORAGE - FREESTANDING, FLOOR AN				
	DWN [JS]						CHORED
	CHK [CAC]	[08/31/04]	SES / SASE / QWIKSLOT / HD SUPER / MAX Q				
NOTICE DRAWING IS NOT FOR USE OR DISCLOSURE OUSIDE INTERMETRO INDUSTRIES CORP EXCEPT WITH PERMISSION	PD [WJS]		Thro	ugh Bolt Red	able o	Long Shelvi	ing
	MFG []		SIZE SH 10 OF 10 DWG. NO. S10.0				REV.
	METRO DWG NO.: 23209		SCALE: N.T.S		CAD GENERATED DRAWING DO NOT		