APPLICATION FOR OSHPD PREAPPROVAL OF MANUFACTURER’S CERTIFICATION (OPM)

OSHPD Preapproval of Manufacturer’s Certification (OPM)

Type: [ ] New [X] Renewal/Update

Manufacturer Information

Manufacturer: Shimadzu Medical Systems
Manufacturer's Technical Representative: Jim Mekker
Mailing Address: 20101 S. Vermont Ave., Torrance, CA 60502
Telephone: (216) 288-0709   Email: mekker@shimadzu-usa.com

Product Information

Product Name: D150BC-40S GENERATOR CABINET
Product Type: Generator
Product Model Number: D150BC-40S
General Description: Subcomponent of Sonalvision G4 System

Applicant Information

Applicant Company Name: EASE LLC.
Contact Person: Tiffany Tonn
Mailing Address: 1515 FAIRVIEW AVE, STE 205, MISSOULA, MT 59801
Telephone: (406) 541-3273   Email: tiffany@easeco.com
Title: 

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY
Certification Method

Testing in accordance with:  
☐ ICC-ES AC156  
☐ FM 1950-16
☐ Other(s) (Please Specify):

*Use of criteria other than those adopted by the California Building Standards Code, 2019 (CBSC 2019) for component supports and attachments are not permitted. For distribution system, interior partition wall, and suspended ceiling seismic bracings, test criteria other than those adopted in the CBSC 2019 may be used when approved by OSHPD prior to testing.

☒ Analysis  
☐ Experience Data  
☐ Combination of Testing, Analysis, and/or Experience Data (Please Specify):

OSHPD Approval

Date: 6/23/2020
Name: Haeseong Lim  
Title: Senior Structural Engineer
Condition of Approval (if applicable):
GENERAL NOTES

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2019 CBC. THE DEMANDS (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE 2019 CBC.

2. THIS DOCUMENT MAY ONLY BE USED WITH THE EXPRESS WRITTEN CONSENT OF THE MANUFACTURER LISTED ABOVE FOR THE SPECIFIC PROJECT SITE AND INSTALLATION LOCATION. THIS DOCUMENT IS INVALID WITHOUT SUCH CONSENT.

3. THIS PREAPPROVAL CONFORMS TO THE 2019 CALIFORNIA BUILDING CODE WHERE Sds IS NOT GREATER THAN 1.75.

4. FORCES PER ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3.1, 13.3.2 & 13.3.3, WHERE Sds = 1.75, Ap = 1.0, Ip = 1.5, Rp = 2.5, z/h = 0 AT CONCRETE SLAB & z/h < 1 AT CONCRETE SLAB ON METAL DECK. SEE FOLLOWING SHEETS FOR Ω.

5. THIS PREAPPROVAL COVERS ONLY THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE.

6. ALL DESIGN FORCES SHOWN ON THE DRAWINGS ARE FACTORED LOADS THAT SHALL BE USED FOR STRENGTH DESIGN.

7. CONCRETE SLAB ON METAL DECK DETAIL VALID FOR DEMANDS SHOWN AT ANY ELEVATION IN THE BUILDING. (i.e. z/h ≤ 1)

8. CONCRETE SLAB DETAIL VALID FOR DEMANDS SHOWN AT ANY ELEVATION AT OR BELOW GRADE. (i.e. z/h = 0)


10. RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD OF THE BUILDING

A. PROVIDE SUPPORTING STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN IN ADDITION TO ALL OTHER LOADS.

B. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2013 CBC AND WITH THE DETAILS, MATERIAL AND GAGE OF THE UNIT WHERE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN ON THE PREAPPROVAL DOCUMENTS.

C. VERIFY THAT PROJECT SPECIFIC VALUES OF Sds & z/h RESULT IN SEISMIC FORCES (Eh, Ev) THAT DO NOT EXCEED THE VALUES ON THE DETAILS.

D. VERIFY THAT THE CONCRETE SLAB TO WHICH THE EQUIPMENT IS ANCHORED MEETS THE REQUIREMENTS OF THE APPLICABLE ICC ESR AND THIS OPM.

E. VERIFY THAT THE ANCHORS ARE AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPENINGS (SEE TYPICAL DETAIL ON SHEET 2).

F. VERIFY THAT ALL NEW OR EXISTING ANCHORS ARE AN ADEQUATE DISTANCE FROM THE UNIT ATTACHMENTS AND CHECK FOR INTERACTION WHERE OTHER ANCHORS ARE WITHIN 18' OR 6Hf FROM THIS UNIT'S ANCHORS.
11. EXPANSION ANCHORS:

A. ATTACHMENT IS TO BE MADE WITH THE ANCHORS LISTED BELOW AND INSTALLED AS DESCRIBED IN THE CORRESPONDING ICC REPORT.

<table>
<thead>
<tr>
<th>Anchor Diameter</th>
<th>Concrete Type</th>
<th>Min. fc (psi)</th>
<th>Anchor Type</th>
<th>ICC Report No.</th>
<th>Min. Embed.</th>
<th>Min. Spacing</th>
<th>Min. Edge Dist.</th>
<th>Min. Conc. Thickness</th>
<th>Torque Test</th>
<th>Direct Tension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>Normal Weight</td>
<td>3000</td>
<td>Hilti Kwik Bolt TZ</td>
<td>ESR-1917</td>
<td>2&quot;</td>
<td>3&quot;</td>
<td>9&quot;</td>
<td>4&quot;</td>
<td>40 FT-LB</td>
<td>1204 lb</td>
</tr>
</tbody>
</table>

B. THIS PREAPPROVAL ALLOWS FOR UP TO A MAXIMUM OF 2 ADJACENT CONCRETE SLAB EDGES, 9" AWAY MINIMUM (i.e. - CORNER). SEE ADJACENT DETAIL FOR ADDITIONAL MINIMUM ALLOWABLE CONCRETE EDGE DISTANCES.

C. TESTING AND SPECIAL INSPECTION OF EXPANSION ANCHORS SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY EMPLOYED BY THE FACILITY OWNER PER CBC 1704A & 1910A.5 AND CAC 7-149. ALL REPORTS SHALL BE SENT TO THE INSPECTOR OF RECORD, OWNER AND THE ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE.

(i) AFTER AT LEAST 24 HOURS HAVE ELAPSED SINCE INSTALLATION, DIRECT PULL TENSION TEST AT LEAST 50% OF THE ANCHORS.

(ii) ACCEPTANCE CRITERIA:

- DIRECT TENSION TEST: THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE TEST LOAD. A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER BECOMES LOOSE.

- TORQUE TEST: THE APPLICABLE TORQUE MUST BE ACHIEVED WITHIN THE FOLLOWING LIMITS: WEDGE TYPE: 1/2 TURN OF THE NUT

(iii) IF ANY ANCHOR FAILS, TEST ALL ANCHORS.

D. AVOID DAMAGING EXISTING STEEL REINFORCING IN CONCRETE SLAB WHEN INSTALLING CONCRETE EXPANSION ANCHORS.

E. PROVIDE FOR FULL THREAD ENGAGEMENT OF NUT & WASHER.
SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB / CONCRETE SLAB ON METAL DECK

STRUCTURAL ENGINEER OF RECORD SHALL DESIGN THE BACKING PLATE (6 GA, 50 KSI MIN) AND THE WALL STRUCTURE

PRE-MADE WALL BRACKET (BY SHIMADZU)
(11 GA, ASTM A1008 LOW CRS,
Fy = 20 KSI) W/ 2-1/4" TEK SCREWS TO BACKING PLATE
(SEE WALL BRACKET DETAIL "A")

USE (2)- M12 (CLASS 8.8 MIN) BOLT TO TOP UNIT FRAME (0.21" THK TOTAL, 3 LAYERS CRS Fy=23 KSI)

SEISMIC BRACKET (BY SHIMADZU)
(C5 HRS 0.25 ASTM A36)
W/ (4) - 3/8" (6R 5) CAP SCREW TO BOTTOM UNIT FRAME (0.153" THK TOTAL, 2 LAYERS CRS STEEL Fy=23 KSI)
(SEE SEISMIC BRACKET DETAIL "B")

USE 2- 1/2" HILTI KB-TZ EXPANSION ANCHORS
W/ STANDARD WASHER
(MIN. EMBED. w = 2")
(SEE SEISMIC BRACKET DETAIL "D")

FRONT ELEVATION

T w = 216 LB/SCREW (MAX)
V u wall = 169 LB/SCREW (MAX)
V u floor = 348 LB/BOLT (MAX)
(V u floor INCLUDES Ω)

NOTES:
1. FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16.
   STRENGTH DESIGN IS USED. (Sds = 1.75, Δp = 10, Ip = 15, Rp = 25, Ω = 2.0, z/h ≤ 1)
   HORIZONTAL FORCE (Eh) = 126 Wp
   HORIZONTAL FORCE (Ehm) = 2.52 Wp (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (Ev) = 0.35 Wp

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.

4. SEE GENERAL NOTES: SHEET 1 AND 2
5/8" THK. WALL BOARD

C.G. WT. = 661 LB

30.45'

44.60'

4'

7.85'

11.30'

4.25'

3.25'

SIDE ELEVATION

CONCRETE SLAB / CONCRETE SLAB ON METAL DECK

STRUCTURAL ENGINEER OF RECORD
SHALL DESIGN THE BACKING PLATE (16 GA, 50 KSI MIN.) AND THE WALL STRUCTURE

PRE-MANUFACTURED
WALL BRACKET (BY SHIMADZU)
(11 GA, ASTM A1008 LOW CRS,
F_y = 20 KSI) WITH 1/4" # TEK SCREWS TO BACKING PLATE
(SEE WALL BRACKET DETAIL "A")

USE (2)- M12 (CLASS 8.8 MIN) BOLT TO TOP UNIT FRAME (0.217" THK TOTAL, 3 LAYERS CRS F_y=23 KSI)

SEISMIC BRACKET (BY SHIMADZU)
(65 HRS 0.25 ASTM A36)
W/ (.4), 3/8"# (GR 5) CAP SCREW TO BOTTOM UNIT FRAME (0.153" THK TOTAL, 2 LAYERS CRS STEEL F_y=23 KSI)
(SEE SEISMIC BRACKET DETAIL "B")

USE 2- 1/2" HILTI KB-TZ EXPANSION ANCHORS
W STANDARD WASHER
(MIN. EMBED, t_{min} = 2")
(SEE SEISMIC BRACKET 2 PLACES, 4 TOTAL)

AT CONCRETE SLAB
NORMAL WEIGHT CONCRETE
(f_{c} = 3000 PSI MIN)
AT OR BELOW GRADE LEVEL OR
AT CONCRETE SLAB ON METAL DECK
N.H. OR SAND L.W.
(f_{c} = 3000 PSI MIN)