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

**OSHPD Preapproval of Manufacturer’s Certification (OPM)**

**Type:** [ ] New  **X** Renewal/Update

**Manufacturer Information**

**Manufacturer:** Steris Corporation  
**Manufacturer’s Technical Representative:** Zachary Miday  
**Mailing Address:** 5900 Heisley Road, Mentor, OH 44060  
**Telephone:** (440) 392-7688  
**Email:** Zachary_Miday@steris.com

**Product Information**

**Product Name:** 26 X 37.5 STEAM STERILIZER  
**Product Type:** Steam Sterilizer (Process Type)  
**Product Model Number:** AMSCO 400, Century, Evolution, Evolution L, & 630 LS  
**General Description:** Steam sterilizers are designed for fast, efficient sterilization of heat and moisture material Stable material in life science and healthcare applications, floor Mounted Sterilizer.

**Applicant Information**

**Applicant Company Name:** Engineering ONE Group, Inc.  
**Contact Person:** James Yan  
**Mailing Address:** 16551 4S Ranch Pkwy, San Diego, CA 92127  
**Telephone:** (858) 876-8695  
**Email:** jyan@engineeringonegroup.com  
**Title:** Structural Engineer
**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.*

- [x] Analysis
- [ ] Experience Data
- [ ] Combination of Testing, Analysis, and/or Experience Data (Please Specify):

**OSHPD Approval**

<table>
<thead>
<tr>
<th>Date:</th>
<th>6/24/2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
<td>Jeffrey Kikumoto</td>
</tr>
<tr>
<td>Title:</td>
<td>Senior Structural Engineer</td>
</tr>
</tbody>
</table>

Condition of Approval (if applicable): 

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**Company Name:** JAMES YAN (SOLE PROPRIETORSHP)  
**Name:** James Yan  
**California License Number:** S5914  
**Mailing Address:** 17130 Glen Aspen Dr., San Diego, CA 92127  
**Telephone:** (626) 226-8695  
**Email:** james.linjun.yan@gmail.com  

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**OSHPD Special Seismic Certification Preapproval (OSP)**

- [ ] Special Seismic Certification is preapproved under OSP  
**OSP Number:** 

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**Registered Design Professional Preparing Engineering Recommendations**

<table>
<thead>
<tr>
<th>Name:</th>
<th>Jeffrey Kikumoto</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title:</td>
<td>Senior Structural Engineer</td>
</tr>
<tr>
<td>Condition of Approval (if applicable):</td>
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**OSHPD**  
**STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY**
**Steris Corporation**

**Steam Sterilizers 26" X 37.5"**

Office of Statewide Health Planning and Development

OSHPD Preapproval of Manufacturer’s Certification

**OPM-0484-19**

**This Pre-Approval Conforms to the 2019 California Building Code**

**Equipment Manufacturer:** Steris Corporation  
**Equipment Type:** Evolution, Evolution L, 630 LS, AMSCO 400 & Century

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### General Notes

1. This OSHPD Preapproval of Manufacturer’s Certification (OPM) is based on the CBC 2019. The demand (design forces) for use with this OPM shall be based on the CBC 2019.

2. This Pre-Approval covers only the supports & attachments of the equipment to the structure.

3. **Post-Installed Anchors:**
   - Attachment is to be made with the anchors listed below and installed as described in the corresponding ICC report.
   - This Pre-Approval requires concrete slab edge distance to be 18" Min.
   - Avoid damaging (E) steel reinforcing in concrete slab when installing concrete expansive anchors.
   - Provide full thread engagement of nut & washer.

<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. (hef)</th>
<th>Min. Spacing</th>
<th>Min. Conc. Thickness</th>
<th>Installation Torque</th>
<th>Test Loads</th>
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<tbody>
<tr>
<td>3/4&quot;</td>
<td>N.W.</td>
<td>4000</td>
<td>HIT-RE 500 V3 + HAS-R 316 SS</td>
<td>ESR-3814</td>
<td>6&quot;</td>
<td>12&quot;</td>
<td>18&quot;</td>
<td>8&quot;</td>
<td>100 Ft-Lb</td>
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<td></td>
<td>Hydraulic Ram Method 11555 Lb</td>
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<tr>
<td>1/2&quot;</td>
<td>N.W. OR SAND L.W. FOR CONC. OVER METAL DECK</td>
<td>3000</td>
<td>KB-TZ SS304</td>
<td>ESR-1917</td>
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<td>Torque Wrench Method 40 Ft-Lb</td>
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3. Testing of post-installed anchors per 2019 CBC, 1910A.5: Tension testing shall be done in the presence of the Special Inspector and a report of the test results shall be submitted.
   - 50 percent or alternate bolts in a group shall be tested.
   - Testing shall occur a minimum of 24 hours after installation of the subject anchors.
   - Acceptance criteria:
     - Hydraulic Ram Method: 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 Wrench Method: Anchors tested with a calibrated torque wrench must attain the specified torque within 1/2 turn of the nut.
   - If any anchor fails, test all anchors.
**STEAM STERILIZER SCHEDULE**

<table>
<thead>
<tr>
<th>LINE NO.</th>
<th>MODLE ID</th>
<th>OVERALL</th>
<th>ANCHOR SPACING</th>
<th>C.G. HEIGHT (in)</th>
<th>WEIGHT (lbs)</th>
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<td></td>
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<td>WIDTH (in)</td>
<td>LENGTH (in)</td>
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<td>S/S (in)</td>
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<td>75.25</td>
<td>47.50</td>
</tr>
</tbody>
</table>

**NOTE:**
- F/S: FRONT TO BACK
- S/S: SIDE TO SIDE
- SD: SINGLE DOOR
- DD: DOUBLE DOOR

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**Steris Corporation**

**STEAM STERILIZERS 26" X 37.5"**

**ENGINEERING ONE GROUP, INC.**

Phone: 858.876.8695  
info@engineeringonegroup.com  
www.engineeringonegroup.com
GENERAL NOTES (CONTINUED)

4. FORCES PER ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3, WHERE
   \[ S_{ds} = 2.12 \]
   \[ a_p = 1.0 \]
   \[ I_p = 1.5 \]
   \[ R_p = 2.5 \]
   \[ \Omega_0 = 2.0 \]
   \[ z/h = 0(\text{CASE 1}) & 1(\text{CASE 2}) \]

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

RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD OF THE BUILDING

6. VERIFY THAT PROJECT SPECIFIC VALUES OF \( S_{ds} \) & \( z/h \) RESULT IN SEISMIC FORCES \( (E_h, E_v) \) THAT DO NOT EXCEED THE VALUES ON THE DETAILS.

7. VERIFY THAT THE CONCRETE SLAB TO WHICH THE EQUIPMENT IS ANCHORED MEETS THE REQUIREMENTS OF THE APPLICABLE ICC ESR.

8. VERIFY THAT THE ANCHORS ARE AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPENINGS (SEE TYPICAL DETAIL ON SHEET 1).

9. VERIFY THAT ALL NEW OR EXISTING ANCHORS ARE AN ADEQUATE DISTANCE FROM THE ANCHORS SHOWN IN THIS PRE-APPROVAL. SEOR SHALL VERIFY THAT THERE IS NO ADVERSE INTERACTION WHERE OTHER ANCHORS ARE WITHIN 18" OR 6\( h_f \) FROM THIS UNIT'S ANCHORS.

10. PROVIDE SUPPORTING STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN, IN ADDITION TO ALL OTHER LOADS. VERIFY THE ADEQUACY OF THE STRUCTURES (SUCH AS WALLS AND FLOORS) WHICH SUPPORT THE EQUIPMENT FOR THE LOADS IMPOSED ON THEM BY THE EQUIPMENT IN ADDITION TO ALL OTHER LOADS.

11. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2016 CBC AND WITH THE DETAILS SHOWN IN THIS PRE-APPROVAL. VERIFY THAT THE ACTUAL EQUIPMENT'S WEIGHT, CG LOCATION, ANCHOR LOCATIONS, ANCHOR DETAILS, AND THE MATERIAL AND GAGE OF THE UNIT WHERE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN ON THE PRE-APPROVAL DOCUMENTS.
NOTE:

1. FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16. STRENGTH DESIGN IS USED.
   
   HORIZONTAL SEISMIC FORCE ($E_h$) = $0.954 W_p$
   VERTICAL SEISMIC FORCE ($E_v$) = $0.424 W_p$

2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF SLAB ON GRADE AND OTHER SUPPORTING STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN.

4. SEE SHEET 2 FOR THE OVERALL DIMENSIONS.
SEISMIC SUPPORTS & ATTACHMENTS

PLAN VIEW AT BASE OF LINE NO. 1-6

<table>
<thead>
<tr>
<th>LINE NO.</th>
<th>MODEL ID</th>
<th>WEIGHT (lbs)</th>
<th>$V_u$/bolt (lbs)</th>
<th>$T_u$/bolt (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>EVOLUTION, EVOLUTION L, 630LS 42SD</td>
<td>3800</td>
<td>2356</td>
<td>4787</td>
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<td>5571</td>
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</table>

NOTE:
1. THE SHOWN ANCHOR FORCE CALCULATION INCLUDES OVERSTRENGTH FACTOR $\Omega_0 = 2.0$
2. SEE SHEET 2 FOR ANCHOR SPACING.
SEISMIC SUPPORTS & ATTACHMENTS

SLAB ON GRADE
(CASE 1)

\( S_{os} = 2.12, z_h = 0 \)

NOTE:
1. THE SHOWN ANCHOR FORCE CALCULATION INCLUDES OVERSTRENGTH FACTOR \( \Omega_s = 2.0 \)
2. SEE SHEET 2 FOR ANCHOR SPACING.

<table>
<thead>
<tr>
<th>LINE NO.</th>
<th>MODEL ID</th>
<th>WEIGHT (lbs)</th>
<th>( V_u /\text{bolt} ) (lbs)</th>
<th>( T_u /\text{bolt} ) (lbs)</th>
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<tr>
<td>7</td>
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</table>
1. FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16. STRENGTH DESIGN IS USED.

   HORIZONTAL SEISMIC FORCE ($E_h$) = 1.526 $W_p$
   VERTICAL SEISMIC FORCE ($E_v$) = 0.424 $W_p$

2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF CONC. METAL DECK AND OTHER SUPPORTING STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN.

4. SEE SHEET 2 FOR THE OVERALL DIMENSIONS.
SEISMIC SUPPORTS & ATTACHMENTS

TYP. SEISMIC TIEDOWN
SEE SHEET 11

C.G. WT. (SEE SCHED BELOW)

EVOLUTION STEAM GENERATOR
POST INSTALLED ANCHORS

TYP. SEISMIC MOUNT, SEE SHEET 12

(Stanard Seismic Base) (Steam Generator Seismic Base)

PLAN VIEW AT BASE OF LINE NO. 1-6

<table>
<thead>
<tr>
<th>LINE NO.</th>
<th>MODEL ID</th>
<th>WEIGHT (lbs)</th>
<th>V_u/bolt (lbs)</th>
<th>T_u/bolt (lbs)</th>
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NOTE:
1. THE SHOWN ANCHOR FORCE CALCULATION DOES NOT INCLUDE OVERSTRENGTH FACTOR \( \Omega = 2.0 \).
2. SEE SHEET 2 FOR ANCHOR SPACING.
**SEISMIC SUPPORTS & ATTACHMENTS**

**Plan View at Base of Line No. 7-18**

- **Typ. Seismic Tiedown, See Sheet 13.**
- **C.G. WT. (See Sched Below)**
- **Post Installed Anchors**

### TABLE

<table>
<thead>
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<td>3004</td>
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**Note:**

1. The shown anchor force calculation does not include overstrength factor \( \Omega_0 = 2.0 \).
2. See Sheet 2 for anchor spacing.
SEISMIC BRACKET PER SHEETS 11-13

13/16" HOLE IN CONC.

MIN (2) 1/2" KB-TZ SS304 BOLTS PER STRUT W/ MIN. 2" EMBED (\(h_a\)) , TYP.

L3X3X1/4

ASTM F1554 GR.36 3/4" DIA. THREADED ROD W. HEX NUT TOP & BOT OF ANGLE LEG. (TYP) AT CONDITIONS WHERE NUT CONNOT BE PROVIDED AT TOP SIDE. PROVIDE TAPPED HOLE THROUGH ANGLE LEG.

MIN STEEL DECK REQUIREMENTS AND STRUT DETAIL

FOR DECK AND SLAB INFO SEE DETAIL ABOVE

13/16" HOLE IN CONC.

MIN (2) 1/2" KB-TZ SS304 BOLTS PER STRUT W/ MIN. 2" EMBED (\(h_a\)) , TYP.

L3X3X1/4

DETAIL FOR ATTACHMENT BOLT AT THE SIDE OF THE FLUTE OR AT THE BOTTOM FLUTE

SEISMIC BRACKET PER SHEETS 11-13

13/16" HOLE IN CONC.

TAPPED HOLE IN HORIZ. LEG OF ANGLE

L3X3X1/4 X 12"

MIN (2) 1/2" KB-TZ SS304 BOLTS PER STRUT W/ MIN. 2" EMBED (\(h_a\)) , TYP.

3/4" BOLT WITH (2) WASHERS AND NUTS.

1" MIN. TYP.

6" MIN.

6" MIN.

3000 PSI MIN.

DETAIL FOR ATTACHMENT BOLT AT SOLID CONCRETE SLABS
SEISMIC TIE DOWN TYPE A

1" BOTTOM PLATE
ASTM A36

12"
10 1/2"

Ø 13/16 THRU

3/8" THK. CASTER BRACKET
CONN. PL. INTEGRAL W/ THE
COMPONENT, ASTM A36, TYP.

1/2" DIA. A325 BOLT W/
Ø 9/16 HOLE, TYP.

3/4" TOP PL., A36

HSS 4X3X3/8, ASTM
A500, F_y=46KSI MIN.

1/4" GUSSET PL, A36

NOTE: ALL SUPPORTS LISTED ON THIS SHEET ARE SUPPLIED BY STERIS.
SEISMIC TIE DOWN TYPE B

TAPPED HOLE PER MFR W/ THREADS FOR 3/4" DIA. A325 BOLT

NOTE: ALL SUPPORTS LISTED ON THIS SHEET IS SUPPLIED BY STERIS.
SEISMIC TIE DOWN TYPE C

3/4" TOP PL, A36

1" BOTTOM PL.
ASTM A36

ø 13/16"

3/8" THK. CASTER BRACKET CONN.
PL. INTEGRAL W/ THE COMPONENT,
ASTM A36, TYP.

1/4" GUSSET PL. A36

9 1/32"

3 3/8"

2 7/8"

2 3/8" 11/16"

3 7/8"

7/8"

7"

5 1/2"

5 1/4"

2"

3/8" HOLE, TYP.

NOTE: ALL SUPPORTS LISTED ON THIS SHEET ARE SUPPLIED BY STERIS.