



**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION**

**APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)**

OFFICE USE ONLY	
APPLICATION #:	OSP – 0585 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Siemens Healthcare GmbH, Diagnostic Imaging, Computed Tomography

Manufacturer's Technical Representative: Don Medlar

Mailing Address: Siemensstr. 3, 91301 Forchheim, Germany

Telephone: +49 (9191) 18-6521 Email: don.medlar@siemens-healthineers.com

Product Information

Product Name: SOMATOM CT System

Product Type: Computed Tomography (CT) medical imaging system

Product Model Number: See Attached
(List all unique product identification numbers and/or part numbers)

General Description: Multiple component system for producing Computed Tomography (CT) medical images for a wide variety of medical diagnostic results.

Mounting Description: Rigid floor mounted, see attachment

Applicant Information

Applicant Company Name: W.E. Gundy & Associates, Inc.

Contact Person: Travis Soppe, SE

Mailing Address: 1199 Shoreline Drive, Suite 310, Boise, ID 83703

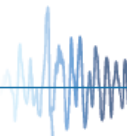
Telephone: (208) 342-5989 Ext. 115 Email: tsoppe@wegai.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant:  Date: 10/26/2018

Title: President Company Name: W.E. Gundy & Associates, Inc.

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION**

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: W.E. Gundy & Associates, Inc.

Name: Travis Soppe, SE California License Number: S6115

Mailing Address: 1199 Shoreline Drive, Suite 310, Boise, ID 83703

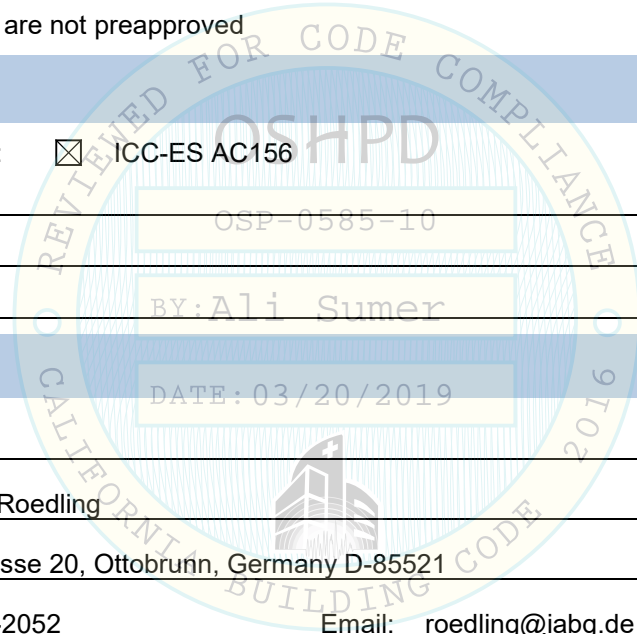
Telephone: (208) 342-5989 Ext. 115 Email: tsoppe@wegai.com

Supports and Attachments Preapproval

- Supports and attachments are preapproved under OPM- _____
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- Supports and attachments are not preapproved

Certification Method

- Testing in accordance with: ICC-ES AC156
- Other (Please Specify): _____



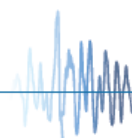
Testing Laboratory

Company Name: IABG mbH

Contact Name: Dr. Steffen Roedling

Mailing Address: Einsteinstrasse 20, Ottobrunn, Germany D-85521

Telephone: +49 (0) 89 / 6088-2052 Email: roedling@iabg.de





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Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: Yes No

Design Basis of Equipment or Components (F_p/W_p) = See Attachment

S_{DS} (Design spectral response acceleration at short period, g) = 2.0 for z/h = 1.0 and 2.5 for z/h = 0

a_p (In-structure equipment or component amplification factor) = Multiple, see attachment

R_p (Equipment or component response modification factor) = Multiple, see attachment

Ω_0 (System overstrength factor) = Multiple, see attachment

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0 at S_{DS} = 2.0g and 0 at S_{DS} = 2.5g

Equipment or Component Natural Frequencies (Hz) = Multiple, see attachment

Overall dimensions and weight (or range thereof) = Multiple, see attachment

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: Yes No

Design Basis of Equipment or Components (V/W) = _____

S_{DS} (Design spectral response acceleration at short period, g) = _____

S_{D1} (Design spectral response acceleration at 1 second period, g) = _____

R (Response modification coefficient) = OSP-0585-10

Ω_0 (System overstrength factor) = _____

C_d (Deflection amplification factor) = BY: Ali Sumer

I_p (Importance factor) = 1.5

Height to Center of Gravity above base = DATE: 03/20/2019

Equipment or Component Natural Frequencies (Hz) = _____

Overall dimensions and weight (or range thereof) = _____

Tank(s) designed in accordance with ASME BPVC, 2015: Yes No

List of Attachments Supporting Special Seismic Certification

Test Report(s) Drawings Calculations Manufacturer's Catalog

Other(s) (Please Specify): Certified System Matrix, UUT Summary Sheets, Subcomponent Certification Letter

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature: Date: March 19, 2019

Print Name: Ali Sumer Title: DSE

Special Seismic Certification Valid Up to : S_{DS} (g) = See Above z/h = See Above

Condition of Approval (if applicable): _____

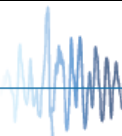


TABLE 1	SIEMENS HEALTHCARE GmbH SPECIAL SEISMIC CERTIFICATION CERTIFIED SYSTEM AND COMPONENTS				 WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING		
	Manufacturer: Siemens Healthcare GmbH						

System: SOMATOM CT Systems

System Component ¹⁾	Siemens Part Number	Dimensions (in)			Weight (lb)	Mounting	UUT
		Width	Depth	Height			

Gantries

SOMATOM go.Up	11061620	87.1	32.8	73.1	2790	floor	UUT-2x ³
SOMATOM go.Up	11061628	87.1	32.8	73.1	2790	floor	interpolated
SOMATOM.go.All	11061630 11061638	87.1	32.8	73.1	2990	floor	interpolated
SOMATOM.go.Top	11061648	87.1	32.8	73.1	3014	floor	interpolated
SOMATOM.go.Top	11061640	87.1	32.8	73.1	3014	floor	UUT-1

Patient Table

PHS-Vario 2	11061334	97.6-179.5	27.6	24.0-40.7	810 ²	floor	UUT-2
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¹ All components are manufactured by Siemens Healthcare GmbH unless noted. Part numbers listed uniquely identify type of component, manufacturer, and material of construction for each sub-component within the tested units.

² Patient table weight does not include 552lb simulated weight.

³ 'x' designates that the UUT was tested at different time then other UUT's listed.

SEISMIC CERTIFICATION LIMITS

System Component	Code	S _{DS} (g)	z / h	I _p	a _p	R _p	Ω ₀	F _p / W _p
SOMATOM go.Up	CBC 2016	2.0	1.0	1.50	1.0	1.5	1.5	2.40
	ASCE 7-10	2.5	0					1.13
SOMATOM.go.All	CBC 2016	2.0	1.0	1.50	1.0	1.5	1.5	2.40
	ASCE 7-10	2.5	0					1.13
SOMATOM.go.Top	CBC 2016	2.0	1.0	1.50	1.0	1.5	1.5	2.40
	ASCE 7-10	2.5	0					1.13
PHS-Vario 2	CBC 2016	2.0	1.0	1.50	1.0	1.5	1.5	2.40
	ASCE 7-10	2.5	0					1.13

Subcomponent	Siemens Part Number	Dimensions (in)			Weight (lb)	UUT
		Width	Length	Height		
TABLE 2						
SIEMENS HEALTHCARE GmbH						
SPECIAL SEISMIC CERTIFICATION						
CERTIFIED SUBCOMPONENTS						
						
Manufacturer: Siemens Healthcare GmbH						
System: SOMATOM CT Systems - Gantries						
Collimator						
LP2	11061231	16.5	3.0	1.6	35	UUT-2x
HP2	11061232	16.5	3.0	1.6	35	interpolated
HP2	11061233	16.5	3.0	1.6	35	UUT-1
X-Ray Tube Assembly						
CHRONON XTA	11253390	19.2	11.6	14.4	111	UUT-2x
ATHLON XTA	11253400	19.2	11.7	14.4	116	UUT-1
High Voltage Tank						
HVT LP	11115456	18.1	13.3	13.3	61	UUT-2x
HVT HP	11115450	18.1	13.3	13.3	61	UUT-1
Detector						
DMS_LP2	11019902	44.2	16.0	6.4	72	UUT-2x
DMS_HP4	11019903	41.3	16.0	6.4	83	UUT-1
Slipring System						
SLIPRING	11115543	1.5	50.7	50.7	49	UUT-2x / UUT-1
Cooling System						
CHRONON XTC	11020260	33.0	17.5	8.1	51	UUT-2x
ATHLON XTC	11020265	33.2	17.5	8.2	55	UUT-1
Gantry Arm (for injector)						
GANTRY ARM	11101974	55.2	32.2	7.9	82	UUT-1
Notes:						

UUT-1

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with 4 - 5/8" grade 8 bolts.



Manufacturer: Siemens Healthcare GmbH

Component: SOMATOM go.Top Gantry

Model / Serial Number: 11061640 / 119071

UUT Function: Continuous rotating detector for high-resolution data acquisition

UUT Description: Component of SOMATOM CT Systems - supporting Gantry Arm for injector support

Test Location: IABG mbH, Germany

Test Date: June 2018

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
3,014	87.1"	32.8"	73.1"	7.8	7.6	7.3

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

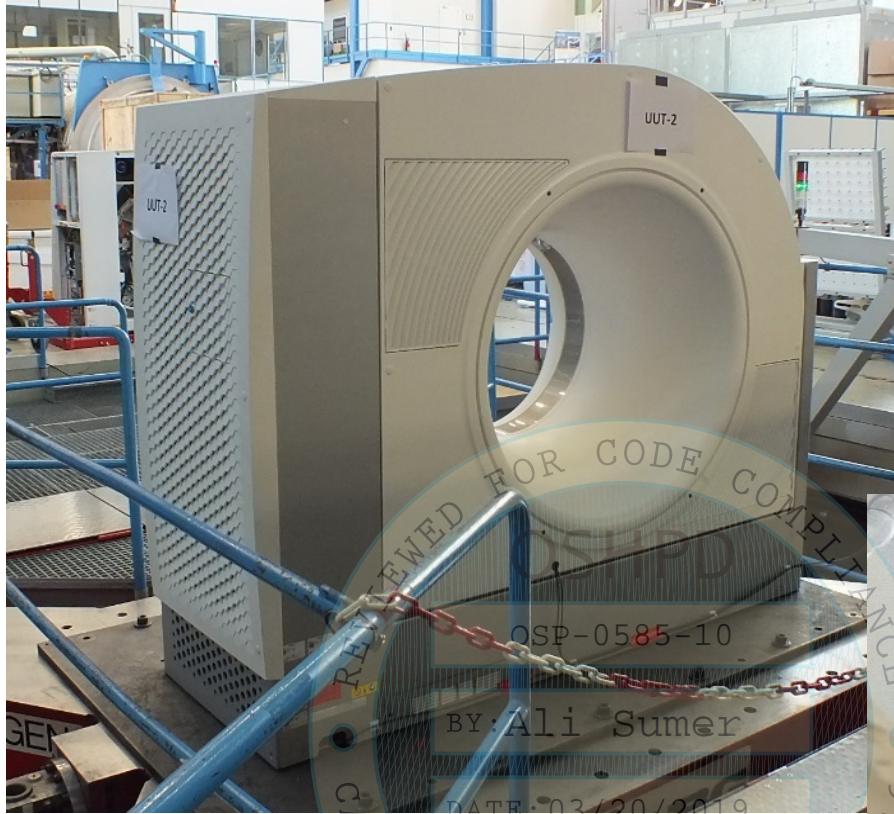
Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-2x

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with 4 - M14 grade 12.9 bolts



Manufacturer: Siemens Healthcare GmbH

Component: SOMATOM go.Up Gantry

Model / Serial Number:

11061620 / 111076

UUT Function: Continuous rotating dectector for high-resolution data acquisition

UUT Description: Component of SOMATOM CT Systems

Test Location: IABG mbH, Germany

Test Date: August 2017

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
2,790	87.1"	32.8"	73.1"	8.2	8.0	7.8

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-2

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid Floor mounted with 4 - 5/8" grade 8 bolts



Manufacturer: Siemens Healthcare GmbH

Component: PHS-Vario 2 Patient Table **Model / Serial Number:** 11061334 / 1005

UUT Function: Motorized patient table for moving patient thru CT system

UUT Description: Component of SOMATOM CT Systems

Test Location: IABG mbH, Germany

Test Date: June 2018

UUT PROPERTIES

Weight (lb) with Patient	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,362	97.6" - 179.5"	27.6"	24.0" - 40.7"	12.1	7.0	>33

The patient table moves vertically and horizontally to accommodate different patients and procedures. The system was tested in the normal operating position with a horizontal extension of 39.4" (137.0" length), vertical height of 40.7", and a total simulated patient weight of 552lbs.

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.