



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION**

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

OFFICE USE ONLY

APPLICATION #: OSP-0723

HCAI 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: Siemensstraße 3, 91301 Forchheim, Germany

Telephone: +49 (9191) 18-6521

Email: don.medlar@siemens-healthineers.com

Product Information

Product Name: CT Systems

Product Type: NA

Product Model Number: SOMATOM X.ceed CT System

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

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

Applicant Company Name: W.E. GUNDY & ASSOCIATES INC

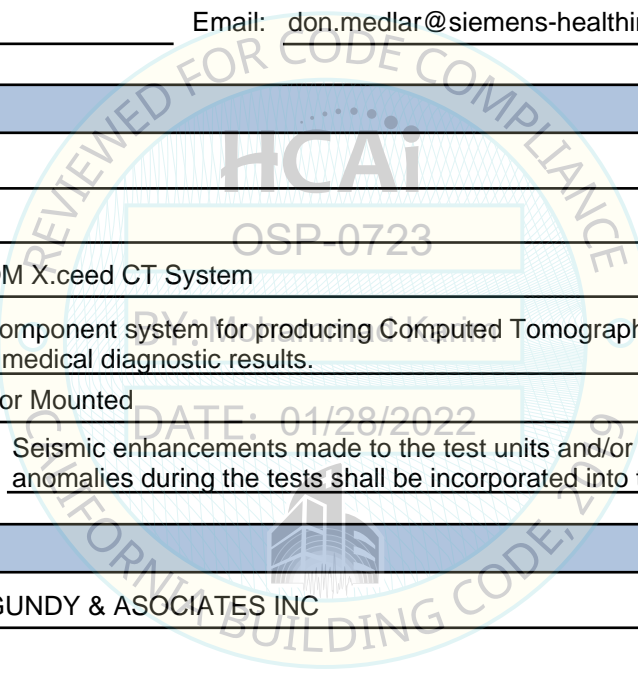
Contact Person: Travis Soppe

Mailing Address: P.O. Box 9121, Boise, ID 83707

Telephone: (208) 342-5989

Email: tsoppe@wegai.com

Title: President





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

Company Name: W.E. GUNDY & ASSOCIATES INC.

Name: Travis Soppe

California License Number: S6115

Mailing Address: P.O. Box 9121, Boise, ID 83707

Telephone: (208) 342-5989

Email: tsoppe@wegai.com

Certification Method

GR-63-Core

ICC-ES AC156

IEEE 344

IEEE 693

NEBS 3

Other (Please Specify): _____

Testing Laboratory

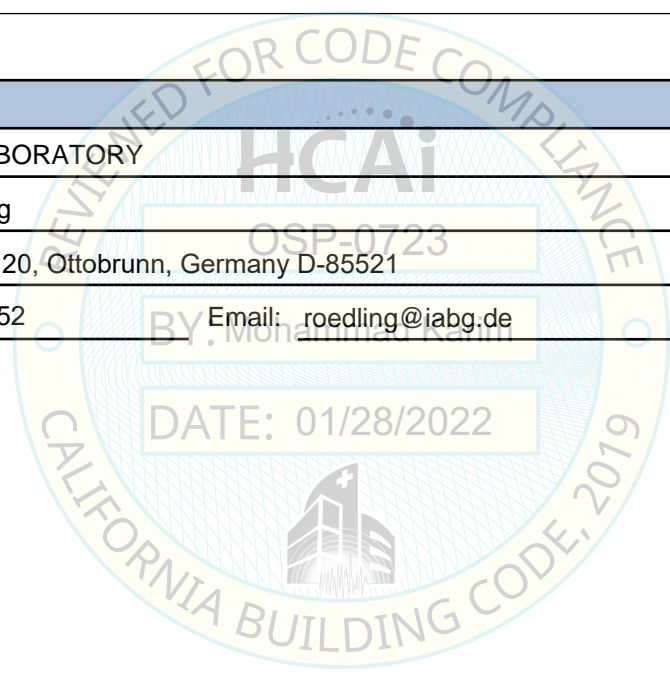
Company Name: IABG TEST LABORATORY

Contact Person: 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 Basis of Equipment or Components (F_p/W_p) = See Attachment

SDS (Design spectral response acceleration at short period, g) = 2.0 at z/h = 1.0 and 2.5 at z/h = 0

a_p (Amplification factor) = 1.0

R_p (Response modification factor) = See Attachment

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

HCAI Approval (For Office Use Only) - Approval Expires on 01/28/2028

Date: 1/28/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = See Above z/h = See Above

Condition of Approval (if applicable): DATE: 01/28/2022

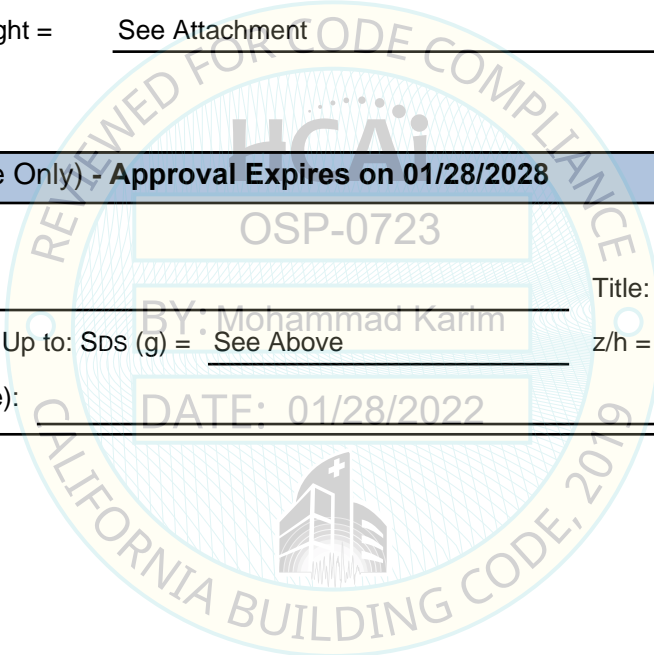


TABLE 1	SIEMENS HEALTHCARE GmbH SPECIAL SEISMIC CERTIFICATION CERTIFIED SYSTEM AND COMPONENTS				 WEGAI <small>W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING</small>		
	Manufacturer: Siemens Healthcare GmbH						

System: SOMATOM X.ceed CT System

System Component ¹	Siemens Part Number	Dimensions (in)			Weight (lb)	Mounting	UUT ²
		Width	Depth	Height			

Gantries

SOMATOM X.ceed (air cooled)	11330002	99.8	37.7	78.1	4554	floor	UUT-1
SOMATOM X.ceed (water cooled)	11330002	99.8	37.7	78.1	4748	floor	UUT-2

Patient Table

Vario 2.D PHS	11061335	27.6	97.6-179.5	24.0-40.7	802 ²	floor	UUT-3
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Image Reconstruction - UPS

UPS-Rack with IRS	11331272	15.4	32.7	22.5	167	floor	UUT-4
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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 weights listed do not include simulated patient weight used for test. See UUT summary sheet for simulated patient weight.

SEISMIC CERTIFICATION LIMITS

System Component	Code	S _{DS} (g)	z / h	I _p	a _p	R _p	Ω ₀	F _p / W _p
Gantries	CBC 2019	2.0	1.0	1.50	1.0	1.5	2.0	2.40
		2.5	0					1.13
Patient Tables	CBC 2019	2.0	1.0	1.50	1.0	1.5	2.0	2.40
		2.5	0					1.13
UPS-Rack with IRS	CBC 2019	2.0	1.0	1.50	1.0	2.5	2.0	1.44
		2.5	0					1.13

UUT-1

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



Mounting Details: Rigid floor mounted with (5) 5/8" grade 8 bolts



Manufacturer: Siemens Healthcare GmbH	Test Location: IABG mbH, Germany
Component: X.ceed Gantry (air cooled)	Test Date: May 2021
Model Number: 11330002	Report Number: TAB3-PB-21-074-V1
UUT Function: Continuous rotating x-ray to generate diagnostic imaging	
UUT Description: Gantry with air cooling for the SOMATOM X.ceed CT system.	
UUT Modifications: Modifications required for the UUT to pass the seismic test will be incorporated in the standard production units.	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
4,554	99.8	37.7	78.1	12.7	6.4	26.1

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	Sds (g)	z / h	Ip	AFLX-H (g)	ARIG-H (g)	AFLX-V (g)	ARIG-V (g)
CBC 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	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-2

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



Mounting Details: Rigid floor mounted with (5) 5/8" grade 8 bolts



Manufacturer: Siemens Healthcare GmbH	Test Location: IABG mbH, Germany
Component: X.ceed Gantry (water cooled)	Test Date: May 2021
Model Number: 11330002	Report Number: TAB3-PB-21-074-V1
UUT Function: Continuous rotating x-ray to generate diagnostic imaging	
UUT Description: Gantry with water cooling for the SOMATOM X.Ceed CT system.	
UUT Modifications: Modifications required for the UUT to pass the seismic test will be incorporated in the standard production units.	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
4,748	99.8	37.7	78.1	12.5	6.4	24.5

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 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	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-3

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



Mounting Details: Rigid Floor mounting using Siemens provided seismic restraint kit SN:11500840. Seismic restraint kit includes three 1" wide hand tightened cam buckle straps (560lb WLL) looped thru angle brackets positioned on the long and short sides of the unit. The six angle brackets are attached to the table with individual 3/8" grade 5 bolts.



Manufacturer: Siemens Healthcare GmbH	Test Location: TABG mbH, Germany
Component: UPS-IRS Rack – GXT5-IRSxple	Test Date: May 2021
Model Number: 11331272	Report Number: TAB3-PB-21-074-V1
UUT Function: Combined Uninterruptable Power System and Image Reconstruction System	
UUT Description: Component of the SOMATOM X.ceed CT system.	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
167	15.4	32.7	22.5	> 33	8.3	> 33

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	SDS (g)	z / h	Ip	AFLX-H (g)	ARIG-H (g)	AFLX-V (g)	ARIG-V (g)
CBC 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	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-4**UNIT UNDER TEST (UUT)
SUMMARY SHEET****Mounting Details:** Rigid floor mounted with (4) 5/8" grade 8 bolts.

Manufacturer: Siemens Healthcare GmbH	Test Location: IABG mbH, Germany
Component: Vario 2.D PHS	Test Date: May 2021
Model Number: 11061335	Report Number: TAB3-PB-21-074-V1
UUT Function: Motorized patient support	
UUT Description: Patient table for the SOMATOM X.ceed CT system	

UUT PROPERTIES

Weight (lb) with Patient	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,343	27.6	97.6 – 179.5	24.0 – 40.7	11.6	14.9	> 33

The patient table moves vertically and horizontally to accommodate different positions and procedures. The system was tested in the normal operating position, with the tabletop extended 39.4 inches, vertically extended 36.8 inches, and with a total simulated patient weight of 540lbs.

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 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	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.