



APPLICATION FOR PREAPPROVAL SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

For Office Use Only

APPLICATION NO.
OSP – 0027-10

Check whether application is: NEW RENEWAL

1.0 Carrier Corporation - Commercial Mike Froehlich
 Unitary Systems
Manufacturer *Manufacturer's Technical Representative*
 7310 West Morris Street, PO Box 70, Indianapolis, IN 46206-0070
Mailing Address

(315) 432-6703
Telephone

Mike.Froehlich@carrier.utc.com
E-mail Address

2.0 CARRIER Centurion Rooftop Units: Packaged Rooftop Air Conditioning Units
 48 and 50 series
Product Name *Product Type*

Models: 48PG 2-25 tons, 50PG 2-25 tons, 48 PM 15-25 tons, 50PM 15-25 tons, 48PD 4-5 tons, 50PD 4-5 tons

Product model No (List all unique product identification numbers and/or serial numbers)

General Description: Small and medium constant volume Puron (R-410A) rooftop units.

3.0 Carrier Corporation – Commercial Mike Froehlich
 Unitary Systems
Applicant Company Name *Contact Person*
 6304 Thompson Road Building TR-4, Door 25, East Syracuse, NY 13057
Mailing Address

(315) 432-6703
Telephone

Mike.Froehlich@carrier.utc.com
E-mail Address

I hereby agree to reimburse the Office of Statewide Health Planning and Development for the actual costs incurred by the department for review.

Michael J. Froehlich

12/18/2009

Signature of Applicant

Date

Staff Engineer, Mechanical
Title

Carrier Corporation
Company Name



Registered Design Professional Preparing the Report

4.0 Buehler and Buehler Structural Engineers, Inc
Company Name

Ali Sumer 72785 / Civil
Contact Name *California License Number*

600 Q St. Suite 200, Sacramento, CA 95811
Mailing Address

(916) 443-0303 asumer@bbse.com
Telephone *E-mail Address*

California Licensed Structural Engineer Review and Acceptance of the Report

5.0 Buehler and Buehler Structural Engineers, Inc
Company Name

Scott R. Hooker 3937 / Structural
Contact Name *California License Number*

600 Q St. Suite 200, Sacramento, CA 95811
Mailing Address

(916) 443-0303 shooker@bbse.com
Telephone *E-mail Address*

Anchorage Pre-Approval

6.0 Anchorage is pre-approved under OPA-
 (Separate application for anchorage pre-approval is required)

Anchorage is not Pre-approved

Certification Method

7.0 Testing in accordance with: ICC-ES AC-156 Other (Please Specify):

Analysis

Experience data

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

Testing Laboratory (if applicable)

8.0 University at Buffalo, SEESL Mark Pitman
Company Name *Contact Name*

Department of Civil, Structural, and Environmental Engineering, University at Buffalo, State University of
 New York, Buffalo, NY 14260-4300
Mailing Address

(716) 645-5400 mpitman@eng.buffalo.edu
Telephone *E-mail:*

2/A



Approval Parameters

9.0

Design in accordance with ASCE 7-05 Chapter 13: Yes No

Design Basis of Equipment or Components (F_p/W_p) = 1.5

S_{DS} (Spectral response acceleration at short period) = 2.00

a_p (In-structure equipment or component amplification factor) = 2.5

R_p (Equipment or component response modification factor) = 6

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component fundamental period(s) = See attachment # 1

Building period limits (if any) = N/A

Overall dimensions and weight (or range thereof) = See Manuf. Drawings

Equipment or Components @ grade designed in accordance with ASCE 7-05 Chapter 15: Yes No

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

S_{DS} (Spectral response acceleration at short period) =

S_1 (Spectral response acceleration at 1 second period) =

R (Response modification coefficient) = 1.0

Ω_0 (System overstrength factor) = 1.0

C_d (Deflection amplification factor) = 1.0

I_p (Importance factor) = 1.5

Height to Center of Gravity above base =

Equipment or Component fundamental period(s) = Sec

Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2007: Yes No

11.0 List of attachments supporting the special seismic certification of equipment or components:

- Test Report
- Drawings
- Manufacturer's Catalog
- Calculations
- Others (Please Specify):

11.0 OSHPD Approval (For Office Use Only)

Chris Tokas

1/07/2010

December 31, 2012

Signature & Date

Approval Expiration Date

Chris Tokas, SHFR

S_{DS} (g) = **2.00** z/h = **1.0**

Name & Title

Special Seismic Certification Valid Up to

Condition of Approval (if any):

ATTACHMENT #1

**BUEHLER & BUEHLER
STRUCTURAL ENGINEERS, INC.**

JOB	Carrier - Centurion		
JOB NO.	S09-245.00	DATE	12/22/2009
CLIENT	Carrier	BY	Ali
		SHEET NO.	

CARRIER CENTURION ROOFTOP UNITS SHAKE TABLE TESTS

Table: Identified Dominant Frequencies of Vibration*

<i>Test Report</i>	<i>Specimen ID</i>	<i>Specimen model</i>	<i>Excitation Direction</i>	<i>Frequency (Hz)</i>
UB-CSEE/SEESL-2009-13	UUT-1	PD06	X	8.88
			Y	8.69
			Z	14.9
	UUT-2	PG14	X	7.5
			Y	10.4
			Z	15.4
	UUT-3	PM16	X	7.75
			Y	7.94
			Z	12.3
	UUT-4	PM28	X	6.76
			Y	7.57
			Z	12.7

* Frequencies are for rooftop units with sheet metal curbs.

* Frequencies are for units tested prior to AC156.