APPLICATION FOR OSHPD SPECIAL SEISMIC **CERTIFICATION PREAPPROVAL (OSP)** APPLICATION #: OSP - 0130 - 10 **OSHPD Special Seismic Certification Preapproval (OSP) Manufacturer Information** Manufacturer: Young Touchstone, a Wabtec Company Manufacturer's Technical Representative: Vicki Piazza Mailing Address: 200 Smith Lane, Jackson TN, 38301 Telephone: 414-768-7420 Email: vpiazza@wabtec.com **Product Information** Product Name: Young Touchtone Remote Charge Air Coolers Remote Radiators Product Type: Product Model Number: 1.5 Square Feet thru 8 Square Feet (List all unique product identification numbers and/or part numbers) Units are remote mounted charge air coolers (also called intercoolers or aftercoolers) for General Description: turbocharged diesel powered gensets. Mounting Description: Vertical and Horizontal Core, base mounted-rigid **Applicant Information** Applicant Company Name: TRU Compliance, by Structural Integrity Associates, Inc. Contact Person: Andrew M. Coughlin, SE Mailing Address: 5215 Hellyer Ave., Suite 210, San Jose, CA 95138 Telephone: 844-878-0200 Email: acoughlin@structint.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: 10/29/2018 Title: Director, TRU Compliance Company Name: TRU Compliance, by Structural Integrity Associates, Inc.

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





Page 1 of 3

OFFICE USE ONLY

| California Licensed Structural Engineer Responsible for the Engineering and Test Report(s) |
|--|
| Company Name: _TRU Compliance, by Structural Integrity Associates, Inc. |
| Name: Andrew M. Coughlin California License Number: S6082 |
| Mailing Address: _5215 Hellyer Ave., Suite 210, San Jose, CA 95138 |
| Telephone: 844-878-0200 Email: acoughlin@structint.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: ☐ Other (Please Specify): OSP-0130-10 |
| BY:Ali Sumer |
| Testing Laboratory DATE: 07/29/2019 |
| Company Name: Pacific Earthquake Engineering Research Center (PEER) |
| Contact Name: Nate Knight |
| Mailing Address: 1301 South 46th St., Bldg. 420 |
| Telephone: 510-642-3437 Email: peer_center@berkeley.edu |





OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

| Seismic Parameters |
|--|
| Design in accordance with ASCE 7-10 Chapter 13: ⊠ Yes □ No |
| Design Basis of Equipment or Components (F _p /W _p) = 1.44 g |
| S _{DS} (Design spectral response acceleration at short period, g) = 2.0 |
| a _p (In-structure equipment or component amplification factor) = 1.0 |
| R _p (Equipment or component response modification factor) = 2.5 |
| $Ω_0$ (System overstrength factor) = 2.0 |
| I _p (Importance factor) = 1.5 |
| z/h (Height factor ratio) = 1.0 |
| Equipment or Component Natural Frequencies (Hz) = See Product Matrices |
| Overall dimensions and weight (or range thereof) = See Product Matrices |
| 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-0130-10 |
| Ω_0 (System overstrength factor) = |
| C _d (Deflection amplification factor) = BY:Ali Sumer |
| I _P (Importance factor) = 1.50 DATE: 07/29/2019 |
| Height to Center of Gravity above base = |
| 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): Product Matrices, Addendum Letter |
| OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022 |
| |
| Signature: Date: July 28, 2019 |
| Print Name: Ali Sumer Title: DSE |
| Special Seismic Certification Valid Up to : $S_{DS}(g) = 2.0$ $z/h = 1.0$ |
| Condition of Approval (if applicable): |
| |
| |

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

07/29/2019





Page 3 of 3

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX





| Manufacturer: Model Line: | Young Touchstone, a W Remote CAC | abtec Company | | | TAE | 3LE 1 |
|--------------------------------------|-------------------------------------|--------------------------|------------------------------|-----------------|----------|----------------------|
| Model Line. Certified Product Con | | | | | <u>I</u> | |
| | opper fin charge air core | (ABT), Mechanical bo | ond core header | | | |
| | | | | | | |
| Certified Options Sun | nmary: | | | | | |
| Vertical Core 1.5 ft ² to | 8 ft ² range, | | | | | |
| Mounting Configurat | ion: | | | | | |
| Base mounted - rigid | | OR CO | DE | | | |
| Note: Installed mounting c | onfiguration must be of similar | configuration and equiva | lent strength and stiffne | ss to those tes | sted. | |
| Building Code: CBC 20 | 016 | Seismic Certification | on Limits: S _{DS} = | 2.0 g | z/h=1.0 | I _P = 1.5 |
| Model Line | Model | Unit Size (ft²)13 | 0 – Weight (lb) | 3 | Notes | UUT |
| | 15A17084 | 1.5 | 370 | E-1 | | 1a |
| | 20A17 <mark>084</mark> | BY: A2Li Si | ımer ₄₄₀ | | | Interp. |
| 2010 | 25A17084 | 2.5 | 480 | 10 | | Interp. |
| RCAC | 30A17084 | DATE 307/29 | /2019510 | 7 | | Interp. |
| (Vertical Water Connections) | 40A17084 | 4 | 650 | 9/ | | Interp. |
| Connections) | 50A17084 | 5 | 900 | | | Interp. |
| | 60A17168 | 5 | 1200 | | | Interp. |
| | 80A17168 | 8 | 1700 | | | 2a |
| | | BUILD | ING | | | |
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SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX





| Manufactures | Varias Tarrabatana a M | Jahtaa Camanani | | | | |
|---------------------------------------|-------------------------------------|---------------------------|--------------------------|----------------|---------|----------------------|
| Manufacturer: Model Line: | Young Touchstone, a W Remote CAC | rabtec Company | | | TAE | BLE 2 |
| | | | | | | |
| Certified Product Cons | pper fin charge air core | (ART) Mechanical bo | nd core header | | | |
| carbon steet frame, co | pper ini charge an core | (AD1), Mechanical bo | na core neader | | | |
| | | | | | | |
| Certified Options Sumi | mary: | | | | | |
| Horizontal Core 1.5 ft ² t | | | | | | |
| | | | | | | |
| | | | | | | |
| Mounting Configuration | on: | 0.0 | | | | |
| Base mounted - rigid | | FOR CO | | | | |
| Note: Installed mounting cor | nfiguration must be of similar | configuration and equival | ent strength and stiffne | ss to those te | sted. | |
| Building Code: CBC 202 | 16 | Seismic Certificatio | n Limits: S DS= | 2.0 g | z/h=1.0 | I _P = 1.5 |
| Model Line | Model | Unit Size (ft²)13 | 0 – Weight (lb) | 3 | Notes | UUT |
| | 15A17084 | 1.5 | 370 | E. | | 1b |
| | 20A17084 | BY:Ali St | lmer ₄₄₀ | | | Interp. |
| DCAG | 25A17084 | 2.5 | 480 | 10 | | Interp. |
| RCAC | 30A170 <mark>84</mark> | DATE 307/29 | /2019510 | 7 | | Interp. |
| (Horizontal Water Connections) | 40A17084 | 4 | 650 | 9/ | | Interp. |
| Connections | 50A17084 | 5 | 900 | | | Interp. |
| | 60A17168 | 5 | 1200 | | | Interp. |
| | 80A17168 | 4 8 | 1700 | | | 2b |
| | | BUILD | ING | | | |
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| Manufactu | , | Wabtec Company | | | | |
|------------|---|--|---|----------------------------|-----|----------------|
| Model Line | : Remote CAC | | | | I | |
| UUT | Unit Description | Report Number | Testing Laboratory | \mathbf{S}_{DS} | z/h | I _P |
| 1a | 1.5 ft ² CAC, vertical core, leg mount non-isolated | PEER STI/2010-12 | Pacific Earthquake Engineering Research Center | 2.0 | 1.0 | 1.5 |
| 1b | 1.5 ft ² CAC, horizontal core, base mount non-isolated | PEER STI/2010-12 | Pacific Earthquake Engineering Research Center | 2.0 | 1.0 | 1.5 |
| 2a | 8 ft ² CAC, vertical core, leg mount non-isolated | PEER STI/2010-12 | Pacific Earthquake Engineering Research Center | 2.0 | 1.0 | 1.5 |
| 2b | 8 ft ² CAC, horizontal core, base mount non-isolated | PEER STI/2010-12 | Pacific Earthquake Engineering Research Center | 2.0 | 1.0 | 1.5 |
| | / | (F) OCHES | COMP | | | |
| | (A) | OGRACIO | | | | |
| | RE | 0SP-0130-10 | CE | | | |
| | 0 | BY:Ali Sume | | | | |
| | CAT. | DATE: 07/29/201 | 9 702 | | | |
| | Trib | Phy Service Control of the Control o | D. E. | | | |
| | | BUILDING | CO | | | |
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| Notes: | | | | | | |
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TRU Compliance, by Structural Integrity Associates, Inc. 844-TRU-0200 | info@trucompliance.com

1800975-CR-001 R1



UUT 1a

Manufacturer: Young Touchstone, a Wabtec Company

Model Line: Remote CAC Model Number: RCAC15A17084

Serial Number: 2979113

Product Construction Summary:

Carbon steel frame, horizontal arrangement, copper fin core

Options/Subcomponent Summary:

Leg mounted to frame, 1.5 ft² size, vertical core, non-isolated mount

| Weight | | Dimension (in.) | USTIPU | Lowest | Natural Frequen | ıcy (Hz) |
|--------|-------|-----------------|--------|----------------------------|-----------------|----------|
| (lb.) | Depth | Width | Height | Front-Back | Side-Side | Vertical |
| 370 | 26.3 | 33.5 | 22.2 | >33.3 | 33.0 | >33.3 |
| • | | - R | | VANDADA CA YVVIANA X YVVIA | | • |

UUT Highest Passed Seismic Run Information

| 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, IBC 2015 | OCC-ES AC156 (2015) | 2.0 | 9 1.0 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

Test Mounting Details:



Unit mounted to I-beams with twelve (12) 1/2" A307 bolts¹. The I-beams are mounted to the GENSET rail with eight (8) 1/2" A307 bolts and the GENSET rail is mounted to the shake table with eight (8) 1/2" A307 bolts.

Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

¹ See drawing with mounting details below for bolt reference. It is assumed that A307 bolts are used to mount the unit to the shake table since this bolt is called out in the drawing.

1800975-CR-001 R1



Manufacturer: Young Touchstone, a Wabtec Company **UUT 1a Model Line:** Remote CAC **Model Number:** RCAC15A17084 **Serial Number:** 2979113 Drawing with mounting details: DESCRIPTION INITIAL RELEASE NO. 8-9-10 JLG B COMPONENT CALLOUT & T-BLK UPDATE 11-11-10 WMW 1/8 CAP PL O-TT-SEAL HSS 3X3X3M6 CHARGE Θ AIR 5/6 \$ HOLE FOR (D) Θ Θ ⊕ Ø_{1/41}√HSS TO PLATE N/ 1/2" & BOLTS C STD GAGE C 2-1/2" & BOUTS STD W5X19 HSS 8X8X1/2 RALSIMULATION GENET! L 4X4X1/2 NOTES: 1. ALL DIMENSIONS ARE IN INCHES. YOUNG TOUCHSTONE 1.5 SQFT NONE APPROVALS PER REVISION BLOCK UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
1 PLACE DECIMAL=±08
2 PLACE DECIMAL=±03
3 PLACE DECIMAL=±01
ANGULAR=±030'
FRACTIONS=±1/16
BREAK SHAPP CRINERS R=.006 MAX NOTICE IS HEREIT GIVEN THAT EXCEPT AS OTHERWISE AGREDO IN NUTTING THE INFORMATION AND DETICAL DISPOSED IN THIS DOCUMENT IS A CONTRIBUTIONAL PROPRIETARY DESIGN OR IS PART OF A DISPOSEDHAL PRODUCTION DESIGN AND IS THE PROPERTY OF THE YEAR STREET, PURPOSE AND THE RECIPIENT OF ACCOPTIONS THE GONNING GRESS NOT TO SEPREY OR DISCOSED AND PERMANNING BEGAMENOR. INTERPRET IAW ANSI Y14 CAGE CODE: $\oplus \Box$ 4U931 -VIECWO A-SD-S-**VI5N**

1800975-CR-001 R1



UUT 1b

Manufacturer: Young Touchstone, a Wabtec Company

Model Line: Remote CAC
Model Number: RCAC15A17084

Serial Number: 2979113

Product Construction Summary:

Carbon steel frame, horizontal arrangement, copper fin core

Options/Subcomponent Summary:

Base mounted, 1.5 ft² size, horizontal core, non-isolated mount

| UUT Propertie |
|----------------------|
|----------------------|

| Weight | | Dimension (in. | USTIFL | Lowest | Natural Frequen | cy (Hz) |
|--------|-------|----------------|--------|------------|-----------------|----------|
| (lb.) | Depth | Width | Height | Front-Back | Side-Side | Vertical |
| 370 | 22.2 | 33.5 | 26.3 | 9.0 | >33.3 | >33.3 |

UUT Highest Passed Seismic Run Information

| | J | | - 1177 | V V V T A A | | | | |
|----------------------|----------------------|---------------------|--------|----------------|------------------------|------------------------|------------------------|------------------------|
| Building Code | Test Criteria | S _{DS} (g) | z/h | l _p | A _{FLX-H} (g) | A _{RIG-H} (g) | A _{FLX-V} (g) | A _{RIG-V} (g) |
| CBC 2016, IBC 2015 | CICC-ES AC156 (2015) | 9 /2.01 | 9 1.0 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

Test Mounting Details:



Unit mounted to the I-beams with six (6) 1/2" A307 bolts¹. The GENSET rail is mounted to the shake table with with eight (8) 1/2" A307 bolts.

Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

¹ See drawing with mounting details below for bolt reference. It is assumed that A307 bolts are used to mount the unit to the shake table since this bolt is called out in the drawing.

1800975-CR-001 R1



Manufacturer: Young Touchstone, a Wabtec Company **UUT 1b Model Line:** Remote CAC Model Number: RCAC15A17084 **Serial Number:** 2979113 Drawing with mounting details: INITIAL RELEASE 8-9-10 JGL COMPONENT CALLOUT & T-BLK UPDATE (2PLACES) CHARGED AIR COOLEK UNIT MOUNTING 4 BOLTSE STO GAGE C 3ºcc(TYP OF4) GENSET (E) 3/4 PLATE THREAD & TAP PLATE ON SITE X-1 NOTES: 1. ALL DIMENSIONS ARE IN INCHES. NS IN BRACKETS ARE FOR REFERENCE CINLY, ALL TOLERANCES ARE TO BE REFERENCED FROM C YOUNG TOUCHSTONE NONE SOFT / 1.5 SOFT NLESS OTHERWISE SPECIFIC DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1 PLACE DECIMAL = ±.06 2 PLACE DECIMAL = ±.03 3 PLACE DECIMAL = ±.01 ANQULAR = ±7.30' FRACTIONS = ± 1/16 REM SHMIP CORNERS R=.005 M ad em b a VISCMA A-SD- H8015N

1800975-CR-001 R1



UUT 2a

Manufacturer: Young Touchstone, a Wabtec Company

Model Line: Remote CAC

RCAC80A17168 **Serial Number:** 2979067

Product Construction Summary:

Model Number:

Carbon steel frame, horizontal arrangement, copper fin core

Options/Subcomponent Summary:

Leg mounted to frame, 8 ft² size, vertical core, non-isolated mount

| | U | UT | Pro | pe | rtie |
|--|---|----|-----|----|------|
|--|---|----|-----|----|------|

| Weight | | Dimension (in.) | UDITL | Lowest | cy (Hz) | | | |
|--------|-------|-----------------|--------|--------------------------|-----------|----------|--|--|
| (lb.) | Depth | Width | Height | Front-Back | Side-Side | Vertical | | |
| 1700 | 40.3 | 55.9 | 44.2 | 29.0 | 19.0 | 10.0 | | |
| | | | | INDIANALE EVVIDALE VVIDA | | | | |

UUT Highest Passed Seismic Run Information

| 3 | | | | | | | | | |
|----------------------|----------------------|---------------------|-------|----------------|------------------------|------------------------|------------------------|------------------------|--|
| Building Code | Test Criteria | S _{DS} (g) | z/h | l _p | A _{FLX-H} (g) | A _{RIG-H} (g) | A _{FLX-V} (g) | A _{RIG-V} (g) | |
| CBC 2016, IBC 2015 | CICC-ES AC156 (2015) | 9 /2.01 | 9 1.0 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 | |

Test Mounting Details:



Unit mounted to I-beams with twelve (12) 1/2" A307 bolts¹. The I-beams are mounted to the GENSET rail with eight (8) 1/2" A307 bolts and the GENSET rail is mounted to the shake table with eight (8) 1/2" A307 bolts.

Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

¹See drawing with mounting details below for bolt reference. It is assumed that A307 bolts are used to mount the unit to the shake table since this bolt is called out in the drawing.

1800975-CR-001 R1



Manufacturer: Young Touchstone, a Wabtec Company **UUT 2a Model Line:** Remote CAC **Model Number:** RCAC80A17168 **Serial Number:** 2979067 Drawing with mounting details: REVISIONS DESCRIPTION INITIAL RELEASE 8/36/10 JLG COMPONENT CALLOUT & T-BLK UPDATE CAP PLATE BRACKET SEAL .562 DIA. HOLE FOR 1/2 DIA. A307 BOLT HSS 3X3X3/16 (TYP 4X) ≺HSS TO PLATE 2-1/2 \$ BOLTS C 4'CL @ STD GAGE @ RAIL FLZX5X9 W 2-2 9 BOLTS & CCC & STO GAGE BEAM STIFFENERS 2 DIA. ACCESS HOLE (OPP, SIDE) HSS 10X8X1/2 ANGLE 4X4X5/8 (4) PER TUBE (E) 3/4 PLATE -1/4D≺3 SIDES FRONT VIEW DIMENSIONS IN BRACKETS ARE FOR REFERENCE ONLY, ALL TOLLBRANCES ARE TO BE REFERENCED FROM DECIMAL REQUIREMENTS. NOTES: 1. ALL DIMENSIONS ARE IN INCHES. ID. GTY.I PART NUMBER DESCRIPTION 1 OF 1 TOUCHSTONE YOUNG 8 SQ FT SCALE: NONE APPROVALS PER REVISION BLOCK UNLESS OTHERWISE SPECIFIED
OMENSIONS ARE IN INCHES
TOLERANCES ARE:
1 PLACE DECIMAL= ±.06
2 PLACE DECIMAL= ±.03
3 PLACE DECIMAL= ±.01
ANGULARS = ±.01 THE MOLENBRUSH THE VMC BROUP The Fower of Together Bloomingdale, NJ 07403 Houston, TX 77041 INTERPRET IAW ANSI Y14 AGE CODE: 4U93

A-SD-V80N

ANGULAR = ±0°30° FRACTIONS = ± 1/16 K SHARP CORNERS R=.005

1800975-CR-001 R1



UUT 2b

Manufacturer: Young Touchstone, a Wabtec Company

Model Line: Remote CAC
Model Number: RCAC80A17168

Serial Number: 2979067

Product Construction Summary:

Carbon steel frame, horizontal arrangement, copper fin core

Options/Subcomponent Summary:

Base mounted, 8 ft² size, horizontal core, non-isolated mount

| UU | T Prop | perties |
|----|--------|---------|
| | | |
| | | |

| Weight | | Dimension (in.) | UDTIFU | Lowest Natural Frequency (Hz) | | | | |
|--------|-------|-----------------|--------|-------------------------------|-----------|----------|--|--|
| (lb.) | Depth | Width | Height | Front-Back | Side-Side | Vertical | | |
| 1700 | 44.2 | 55.9 | 40.3 | 9.0 | 20.6 | 31.0 | | |
| | | - 14 | | VANAARAKKYYVAAKXYVA | | | | |

UUT Highest Passed Seismic Run Information

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|----------------------|----------------------|---------------------|-------|----------------|------------------------|------------------------|------------------------|------------------------|--|
| Building Code | Test Criteria | S _{DS} (g) | z/h | l _p | A _{FLX-H} (g) | A _{RIG-H} (g) | A _{FLX-V} (g) | A _{RIG-V} (g) | |
| CBC 2016, IBC 2015 | CICC-ES AC156 (2015) | 9 /2.01 | 9 1.0 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 | |

Test Mounting Details:



Unit mounted to the I-beams with eight (8) 1/2" A307 bolts¹. The GENSET rail is mounted to the shake table with with eight (8) 1/2" A307 bolts.

Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

¹ See drawing with mounting details below for bolt reference. It is assumed that A307 bolts are used to mount the unit to the shake table since this bolt is called out in the drawing.

1800975-CR-001 R1



Manufacturer: Young Touchstone, a Wabtec Company
Model Line: Remote CAC

UUT 2b

Model Number: RCAC80A17168 Serial Number: 2979067

Drawing with mounting details:

