E313

FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by: AMBASSADOR HEAT TRANSFER COMPANY, 10080 ALLIANCE ROAD, CINCINNATI, OHIO 45242 (Name and address of Manufacturer)
2. Manufactured for: CROWN IRON WORKS, ROSEVILLE, MN 55113 (Name and address of Purchaser)
3. Location of Installation: UNKNOWN (Name and address)

4. Type:						
VERTICAL	HEAT EXCHANGER	06-1071-1	-	061071-1	804	2007
(Horiz., vert., or sphere)	(Tank, separator, jkt. vessel, heat exh., etc.)	(Mfg's serial No.)	(CRN)	(Drawing No.)	(Nat'l. Bd. No.)	(Year built)

5. ASME Code, Section VIII, Div. 1		
2004 EDITION, 2005 ADDENDA	-	-
Edition and Addenda (date)	Code Case No.	Special Service per UG-120(d)

Items 6 - 11 incl. to be completed for single wall vessels, jackets of jacketed vessels, shell of heat exchangers, or chamber of multi-chamber vessels.

6. Shell (a) No. of course(s): ONE (b) Overall length (ft & in.): 9'-9 1/4"

Course(s)			Material	Thickness		Long Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter, in.	Length (ft & in.)	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
1	8 5/8" OD	9'-9 1/4"	SA106 B	0.322	.0625	S	NONE	85%	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-

7. Heads: (a) - (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp (b) - (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp

	Location (Top, Bottom, Ends)	Thickness Min.	Thickness Corr.	Radius Crown	Radius Knuckle	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure Convex	Side to Pressure Concave	Category A Type	Category A Full, Spot, None	Category A Eff.
(a)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(b)	-	-	-	-	-	-	-	-	-	-	-	-	-	-

If removable, bolts used (describe other fastening): - (Mat'l Spec. No., Grade, size, No.)

8. Type of jacket: - Jacket closure: - (Describe as ogee & weld, bar, etc.)

If bar, give dimensions: - If bolted, describe or sketch.

9. MAWP 165 (internal) - (external) psi at max. temp. 400 (internal) - (external) °F Min. design metal temp. 55 °F at 165 psi.

10. Impact test: EXEMPT PER UG-20f, UCS-66c at test temperature of ____ °F (Indicate yes or no and the component(s) impact tested)

11. Hydro., pneu., or comb. test press. 250 Psig. Proof test: -

Items 12 and 13 to be completed for tube sections.

12. Tubesheet:				
SA182 F304L	7.981"	1 3/16"	0	WELDED
Stationary (Mat'l Spec. No.)	Dia., in. (subject to press.)	Nom. thk., in.	Corr. Allow., in.	Attachment (welded or bolted)
-	-	-	-	-
Floating (Mat'l Spec. No.)	Dia., in.	Nom. thk., in.	Corr. Allow., in.	Attachment

13. Tubes:				
SA249 TP304L	3/4"	0.065"	30	STRAIGHT
Mat'l Spec. No., Grade or Type	O.D., in.	Nom. thk., in. or gauge	Number	Type (Straight or U)

Items 14 - 18 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers.

14. Shell (a) No. of course(s): - (b) Overall length (ft & in.): -

Course(s)			Material	Thickness		Long Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter, in.	Length (ft & in.)	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-

15. Heads: (a) SA403-304L (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp (b) SA403-304L (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp

	Location (Top, Bottom, Ends)	Thickness Min.	Thickness Corr.	Radius Crown	Radius Knuckle	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure Convex	Side to Pressure Concave	Category A Type	Category A Full, Spot, None	Category A Eff.
(a)	TOP	0.06	0	-	-	2:1	-	-	-	concave	-	-	-	-
(b)	BOTTOM	0.06	0	-	-	-	15.85	-	-	-	-	-	-	-

If removable, bolts used (describe other fastening): SA193 B7, SA194 GR.2H (16) 3/4" DIA. (Mat'l Spec. No., Grade, Size, No.)

This form may be obtained from The National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Ave., Columbus., OH 43229

16. MAWP 165 (internal) - (external) psi at max. temp. 400 (internal) - (external) °F Min. design metal temp. -20 °F at 165 psi.

17. Impact test EXEMPT PER UHA-51d at test temperature of - °F

(Indicate yes or no and the component(s) impact tested)

18. Hydro., pneu., or comb. test press. 265 psig. Proof test -

19. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
STEAM IN	1	2"	150RF	SA106 B	SA105	0.154"	0.0625	-	welded	Welded	Shell
COND. OUT	1	2"	150RF	SA106 B	SA105	0.154"	0.0625	-	welded	Welded	Shell
INLET	1	4"	150RF	SA312TP304L	SA182 F304L	0.120"	0	-	welded	Welded	Bonnet
DRAIN	1	1/2"	NPT	-	SA105	3000#	0	-	welded	Welded	Shell
OUTLET	1	4"	150RF	SA312TP304L	SA182 F304L	0.120"	0	-	welded	Welded	Bonnet

20. Supports: Skirt NO (Yes or No) Lugs 2 (No.) Legs - (No.) Others - (Describe) Attached welded to shell (Where and How)

21 Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:
(List the name of part, item number, mfg's. name and identifying number)

22. Remarks: (1) 8"-150# RFSO Flange SA182 F304/304L Welded to bonnet cone for bolting attachment of bonnet.
(1) 8"-150# RFSO Flange SA182 F304/304L Welded to bonnet Cap for bolting attachment of bonnet.
User To Install Over Pressure Protection Prior To Use Per UG-125
ITEM NO. E-313

CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1,
U Certificate of Authorization No. 27460 Expires 12/20/08

Date 5/10/07 Name Ambassador Heat Transfer Company (Manufacturer) Signed (Representative)

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province of OHIO and employed by HSB - CT of CT have inspected the pressure vessel described in this Manufacturer's Data Report on 5-10-2007, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code, Section VIII, Division 1. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 5-10-2007 Signed (Authorized Inspector) Commissions OHIO, 8H420 (Nat'l Board Incl. endorsement, State, Province and No.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements on this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME Code, Section VIII, Division 1,
U Certificate of Authorization No. _____ Expires _____

Date _____ Name _____ (Assembler) Signed _____ (Representative)

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province of _____ and employed by _____ of _____ have compared the statements in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to as data items _____, not included in the certificate of shop inspection, have been inspected by me and to the best of my knowledge and belief, the Manufacturer has constructed and assembled this pressure vessel in accordance with ASME Code, Section VIII, Division 1. The described vessel was inspected and subjected to a hydrostatic test of _____ psi. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date _____ Signed _____ (Authorized Inspector) Commissions _____ (Nat'l Board Incl. endorsement, State, Province and No.)