

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 Mundy Industrial Contractors, Inc. 11150 South Wilcrest, Houston, TX 77099
(Name and address of Manufacturer)
2. Manufactured for KoSa 4600 Hwy 421 North Wilmington, NC 28402
(Name and address of Purchaser)
3. Location of installation KoSa 4600 Hwy 421 North Wilmington, NC 28402
(Name and address)
4. Type: Vertical Tank 7689-6-99
(Horiz., vert., or sphere) (Tank, separator, jkt. vessel, heat exch., etc.) (Mfg's serial No.)
- None 4031-52006 Rev5 6 1999
(CRN) (Drawing No.) (Nat'l. Bd. No.) (Year built)
5. ASME Code, Section VIII, Div. 1 1998, 1999 Ad. NA NA
(Mat'l Spec. No., Grade or Type) H.T. -- Time & Temp. (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): 1 (b) Overall length (ft & in.): 9'-11"

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	60"	7'-0"	SA240/316L		.250	0	1	Spot	.85	1	Spot	.85	----	----

7. Heads: (a) SA 240/316L (b) SA 240/316L
(Mat'l Spec. No., Grade or Type) H.T. -- Time & Temp. (Mat'l Spec. No., Grade or Type) H.T. -- Time & Temp.

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)	Top	.250	0	60"	3.6"	2:1	----	----	---	----	X	1	Full	1.0
(b)	Bottom	.313	0	60"	3.6"	2:1	----	----	---	----	X	1	Full	1.0

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

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

If bar, give dimensions _____ If bolted, describe or sketch.

9. MAWP 30 15 psi at max. temp. 450 450 °F Min. design metal temp. -20 °F at 30 psi.
(internal) (external) (internal) (external)

10. Impact test No, Exempt per UHA 51(a) and UG 20(f)
(Indicate yes or no and the component(s) impact tested)

11. Hydro., ~~proof~~ test press. 50psi Proof test NA

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: NA
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: NA
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) NA (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) NA (b) _____
(Mat'l Spec. No., Grade or Type) H.T. -- Time & Temp. (Mat'l Spec. No., Grade or Type) H.T. -- Time & Temp.

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

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

FORM U-1 (Back)

16. MAWP NA (internal) (external) psi at max. temp. (internal) (external) °F. Min. design metal temp. (internal) (external) °F at (internal) (external) psi.
17. Impact test NA (Indicate yes or no and the component(s) impact tested)
18. Hydro., pneu., or comb. test press. NA 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	
Manway	1	16"	150#LJ	SA312*	SA105	.250"	0	Integral	UW16.1e	2-4.1	Shell
Inlet	1	6"	150#LJ	SA312*	SA105	.280"	0	Integral	UW16.1e	2-4.1	-----
Outlet	1	6"	150#LJ	SA312*	SA105	.280"	0	Integral	UW16.1e	2-4.1	-----
Pressure	2	1"	150#LJ	SA312*	SA105	.133"	0	Integral	UW16.1e	2-4.1	-----
Relief	1	3"	150#LJ	SA312*	SA105	.300"	0	Integral	UW16.1e	2-4.1	-----
Vent	1	1"	150#LJ	SA312*	SA105	.133"	0	Integral	UW16.1e	2-4.1	-----
Temperature	1	1.5"	150#LJ	SA312*	SA105	.145"	0	Integral	UW16.1e	2-4.1	-----

20. Supports: Skirt No (Yes or no) Lugs 2 (No.) Legs 4 (No.) Others (Describe) Attached Bottom Head/welded (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)

Shell, Item#6, Bendel Corporation, 5042-1/1

22. Remarks: See form U-4

Item No. 19 * All SA312 is grade 316L.

Pressure relief devices provided by Owner. NOT FOR LETHAL SERVICE

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. 17,642 Expires May 27, 18 2000

Date 2/8/00 Name Mundy Industrial Contractors, Inc. Signed Ernest E. Smith
(Manufacturer) (Representative)

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of NC and employed by Hartford Steam Boiler Insp. & Ins. Co. of Hartford, CT have inspected the pressure vessel described in this Manufacturer's Data Report on 7-6, 19 99, 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 2-8-00 Signed John M. Tull Commissions NB116664 NC 1421
(Authorized Inspector) (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. 17,642 Expires May 27, 18 2000

Date 2/8/00 Name Mundy Industrial Contractors, Inc. Signed Ernest E. Smith
(Assembler) (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/or the State or Province of NC and employed by Hartford Steam Boiler Insp. & Ins. Co. of Hartford, CT 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 50 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 2-8-00 Signed John M. Tull Commissions NB116664 NC 1421
(Authorized Inspector) (Nat'l Board Incl. endorsement, State, Province and No.)

FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by Mundy Industrial Contractors, Inc. 11150 South Wilcrest, Houston, TX 77099
(Name and address of Manufacturer)

2. Manufactured for KoSa 4600 Hwy 421 North, Wilmington, NC 28402
(Name and address of Purchaser)

3. Location of installation Same as above
(Name and address)

4. Type: Vertical Tank 7689-6-99
(Horiz., vert., or sphere) (Tank, separator, heat exch., etc.) (Mfg's. serial No.)

None	4031-52006 Rev5	6	1999
(CRN)	(Drawing No.)	(Nat'l. Bd. No.)	(Year built)

[illegible]

Certificate of Authorization: Type "U" No. 17,642 Expires May 27, 1999 2000

Date 2/8/00 Name Mundy Industrial Contractors, Inc. Signed Ernest E. Smith
(Manufacturer) (Representative)

Date 2-8-00 Name John M. Tall Commission NB11666GA NC1421
(Authorized Inspector) (Nat'l Board Incl. endorsement, State, Province and No.)

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FORM U-2A MANUFACTURER'S PARTIAL DATA REPORT (ALTERNATIVE FORM)
A Part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by BENDEL CORPORATION, 4823 N. GRAHAM STREET, CHARLOTTE, NC 28269
(Name and address of Manufacturer)
2. Manufactured for KOSA, WILMINGTON, NC
(Name and address of Purchaser)
3. Location of installation SAME AS ABOVE
(Name and address)
4. Type: SHELL 5042-1/1 ---
(Description of vessel part (shell, two-piece head, tube bundle)) (Mfg's serial No.) (CRN)
--- 01504299 BENDEL CORPORATION 1999
(Nat'l. Bd. No.) (Drawing No.) (Drawing prepared by) (Year built)
5. ASME Code, Section VIII, Div. 1 98 ED.; A98 --- ---
Edition and Addenda (date) Code Case No. Special Service per UG-120(d)
6. Shell (a) No. of course(s): ONE (b) Overall length (ft & in.): 7'0"

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	60"OD	7'0"	SA240-316L	1/4"	0"	1	NONE	70%	---	---	---	---	---

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

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

- If removable, bolts used (describe other fastening) ---
(Mat'l Spec. No., Grade, Size, No.)
8. MAWP --- --- psi at max. temp. --- --- °F Min. design metal temp. --- °F at --- psi.
(internal) (external) (internal) (external)

9. Impact test NO; EXEMPT PER UHA-51
(Indicate yes or no and the component(s) impact tested)
10. Hydro., pneu., or comb. test press. --- Proof test ---
11. 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	

12. Supports: Skirt NO Lugs --- Legs --- Others --- Attached ---
(Yes or No) (No.) (No.) / (Describe) (Where and How)
13. Remarks NO DESIGN FUNCTIONS PERFORMED BY BENDEL CORPORATION; CUSTOMER TO SPECIFY MINIMUM DESIGN METAL TEMPERATURE.

CERTIFICATE OF SHOP/FIELD COMPLIANCE

We certify that the statements made in this report are correct and that all details of material, construction, and workmanship of this pressure vessel part conform to the ASME Code for Pressure Vessels, Section VIII, Division 1.

U Certificate of Authorization No. 28314 Expires MAY 1 XX 2001
Date 4/21/99 Name BENDEL CORPORATION Signed [Signature]
(Manufacturer) (Representative)

CERTIFICATE OF SHOP/FIELD 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 NC and employed by ALLENDAL E MUTUAL INSURANCE COMPANY* of NORWOOD, MA have inspected the pressure vessel part described in this Manufacturer's Data Report on 4-21, 19 99, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel part 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 part 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 4-21-99 Signed Earl E. Underwood Commissions NB94651 NC1012
*FACTORY MUTUAL (Authorized Inspector) (Nat'l Board incl. endorsement, State, Province and No.)