DATA REPORT FORMS AND GUIDES

A03

A-350	Guides for Completing Manufacturers' Data Report Forms	214
Form P-2	Manufacturers' Data Report for All Types of Boilers Except Watertube and Electric	215
A-351	Guide for Completing Manufacturers' Data Report, Form P-2	218
Form P-2A	Manufacturers' Data Report for All Types of Electric Boilers	220
A-351.1	Guide for Completing Manufacturers' Data Report, Form P-2A	222
Form P-3	Manufacturers' Data Report for Watertube Boilers, Superheaters, Waterwalls, and Economizers	224
A-352	Guide for Completing Manufacturers' Data Report, Form P-3	227
Form P-3A	Engineering-Contractor Data Report for a Complete Boiler Unit	229
A-353	Guide for Completing Engineering-Contractor Data Report for a Complete Boiler Unit, Form P-3A	231
Form P-4	Manufacturers' Partial Data Report	232
A-354	Guide for Completing Manufacturers' Partial Data Report, Form P-4	234
Form P-4A	Manufacturers' Data Report for Fabricated Piping	236
A-354.1	Guide for Completing Manufacturers' Data Report, Form P-4A	238
Form P-4B	Manufacturers' Data Report for Field Installed Mechanically Assembled Piping	239
A-354.2	Guide for Completing Manufacturers' Data Report, Form P-4B	240
Form P-5	Summary Data Report for Process Steam Generators	241
A-355	Guide for Completing Summary Data Report for Process Steam Generators, Form P-5	242
Form P-6	Manufacturers' Data Report Supplementary Sheet	243
Form P-7	Manufacturers' Data Report for Safety Valves	244
A-356	Guide for Completing Manufacturers' Data Report for Safety Valves, Form P-7	246
A-357	Guide to Data Report Forms Distribution	247
Form P-8	Manufacturer's or Assembler's Certificate of Conformance for Pressure Relief Valves	247.1
A-358	Guide for the Preparation of Manufacturer's or Assembler's Certificate of Conformance Form P-8	247.2

DATA REPORT FORMS AND GUIDES

A-350 GUIDES FOR COMPLETING MANUFACTURERS' DATA REPORT FORMS

Immediately following each of the included Data Report Forms (P-2, P-2A, P-3, P-3A, P-4, P-4A, P-4B, P-5, and P-7) is a guide for completing that form. The explanations included in the guides are keyed to the Data Report Forms in the following manner:

① Circled numbers on each of the forms refer to the items listed on the applicable guide.

1 Numbers without circles appearing in the guide identify specific line or item numbers of the form.

No guide is provided for completing Form P-6, Manufacturers' Data Report Supplementary Sheet.

Appendix A-357 is a guide for determining the Data Report Forms required for Section I construction.

FORM P-2 MANUFACTURERS' DATA REPORT FOR ALL TYPES OF BOILERS EXCEPT WATERTUBE AND ELECTRIC
As Required by the Provisions of the ASME Code Rules, Section I

1. Manufactured by ① (Name and address of Manufacturer)
2. Manufactured for ② (Name and address of purchaser)
3. Location of Installation ③ (Name and address)
4. Type ④ (HRT, etc.) Boiler No. ⑤ (Mfr's. Serial No.) ⑤ (CRN) ⑤ (Drawing No.) ⑤ (Nat'l Board No.) Year Built ⑥
5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to Section I of the ASME Boiler and Pressure Vessel Code ⑦ (Year), Addenda to ⑧ (Date), and Code Cases _____ (Numbers).

   Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors are attached for the following items of this report: ⑨ (Name of part, item number, mfr's. name and identifying stamp)

6. Shells or drums: ⑩ (no.) ⑪ (mat'l. spec. gr.) [thickness (in.)] [dia (ID)] (length, inside) [dia (ID)] (length, inside)
7. Joints: ⑫ [long (seamless, welded)] ⑬ [efficiency (as compared to seamless)] ⑭ [girth (seamless, welded)] (no. of shell courses)
8. Heads _____ (Material Specification No.: Thickness — Flat, Dished, Ellipsoidal — Radius of Dish)
9. Tubesheet ⑪ (Mat'l. Spec., Grade, Thickness) Tube Holes _____ (Dia)
10. Boiler Tubes: No. _____ ⑪ (Mat'l. Spec., Grade) _____ (Straight or Bent)
    Dia _____ (If various, give max & min) Length _____ Gauge _____ (or thickness)
11. Furnace No. ⑮ Size _____ (O.D. or W x H) Length, each section ⑯ Total ⑯
    Type ⑰ (Plain, Adamson, Ring Reinforced, Corrugated, Combined, or Stayed)
    ⑪ (Mat'l. Spec., Grade, Thickness) Seams: Type ⑫ (Seamless, Welded)
12. Staybolts: No. _____ Size ⑱ ⑪ ⑲ (Dia, Mat'l. Spec. Grade, Size Telltale, Net Area)
    Pitch _____ (Hor. and Vert.) MAWP ⑳ psi.
13. Stays or braces:

Location	Material Spec. No.	Type	No. and Size	Max. Pitch	Fig. PFT-32 L/l	Dist. Tubes to Shell	MAWP, psi
(a) F.H. above tubes	⑪	㉑			㉓	㉓	㉓
(b) R.H. above tubes							
(c) F.H. below tubes							
(d) R.H. below tubes							
(e) Through stays							
(f) Dome braces							

14. Other Parts. 1. ㉔ 2. _____ 3. _____ (Brief Description — i.e., Dome, Boiler Piping, etc.)
    1. ㉕ ⑪
    2. _____
    3. _____ (Mat'l. Spec., Grade, Size, Material Thickness, MAWP)

This form (E00068) may be obtained from the ASME Order Dept., 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300.

Form P-2 (Back)

15. Openings: (a) Steam ㉖ (No., Size, and Type) (b) Safety Valve _____ (No., Size, and Type)

(c) Blowoff _____ (No., Size, Type, and Location) (d) Feed _____ (No., Size, Type, and Location)

(e) Manholes: No. _____ Size _____ Location _____

(f) Handholes: No. _____ Size _____ Location _____

16. Fusible Plug (if used) _____ (No., Dia, Location, Mfr's. Stamp)

17. Boiler Supports: No. _____ Type _____ (Saddles, Legs, Lugs) Attachment _____ (Bolted or Welded)

18. MAWP ㉗ psi Based On ㉘ (Code Par. and/or Formula) Heating Surface ㉙ (Total) sq ft

19. Shop Hydrostatic Test _____ psig. 20. Maximum Designed Steaming Capacity _____ lb/hr

21. Remarks _____

㉛ CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this data report are correct and that all details of design, material, construction, and workmanship of this boiler conform to Section I of the ASME BOILER AND PRESSURE VESSEL CODE.

Our Certificate of Authorization no. _____ to use the (S) _____ symbol expires ㉜

Date _____ Signed _____ (Authorized Representative) Name _____ (Manufacturer)

㉓ CERTIFICATE OF SHOP INSPECTION

Boiler constructed by _____ at _____.

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 ㉞ and employed by _____ have inspected parts of this boiler referred to as data items _____ ㉟ _____ and have examined Manufacturer's Partial Data Reports for items _____ ㊱ _____ and state that, to the best of my knowledge and belief, the manufacturer has constructed this boiler in accordance with Section I of the ASME BOILER AND PRESSURE VESSEL CODE.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the boiler 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 ㊲ [Nat'l. Board (incl. endorsements), State, Province, and No.]

㊳ CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the field assembly construction of all parts of this boiler conforms with the requirements of SECTION I of the ASME BOILER AND PRESSURE VESSEL CODE.

Our Certificate of Authorization no. ㊴ to use the (A) or (S) ㊴ symbol expires ㊴.

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

Form P-2 (Back Cont'd)

(40) 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 _____ (34) _____ and employed by _____

have compared statements in this Manufacturer's Data Report with the described boiler and state that the parts referred to as data items _____ (41) _____, not included in the certificate of shop inspection, have been inspected by me and that to the best of my knowledge and belief the manufacturer and/or the assembler has constructed and assembled this boiler in accordance with the applicable sections of the ASME BOILER AND PRESSURE VESSEL CODE. The described boiler 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 boiler 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_____ Commissions_____ (37)

(Authorized Inspector) [Nat'l. Board (incl. endorsements), State, Province, and No.]

A-351 GUIDE FOR COMPLETING MANUFACTURERS' DATA REPORT, FORM P-2 (See PG-112.2.1)

(1) Name and address of Manufacturer, i.e., maker of all components not covered by Partial Data Reports.

(2) Name and address of purchaser and/or owner.

(3) Name and address of location where boiler is to be installed. If not known, so indicate (e.g., "Not known—built for stock").

(4) Show type of boiler documented by this Data Report.

(5) Identification of boiler by applicable numbers. If intended for installation in Canada, indicate the Canadian Design Registration Number and drawing number.

(6) Year in which fabrication was completed in shop.

(7) Date (year) of Section I Edition under which boiler was constructed.

(8) Issue date of most recent Addenda to Section I under which boiler was constructed (e.g., "1990").

(9) To be completed when one or more components comprising the boiler are furnished by others and certified by Partial Data Report(s), Form P-4.

(10) Show quantity and inside dimensions in inches. If more than two shells or drums are used, enter data in Line 14.

(11) Show the complete ASME Material Specification No. and Grade as listed in the appropriate stress allowance table in the Appendix of Section I (e.g., "SA-285-B"). Exception: A specification number for a material not identical to an ASME Specification may be shown *only* if such material meets the criteria in the Foreword of this Section. When material is accepted through a Code Case, the applicable Case number shall be shown.

(12) Indicate type of joint(s).

(13) Show joint efficiency for welded joints.

(14) Same as (12) above.

(15) Show number of furnaces in boiler.

(16) For cylindrical furnaces of the Adamson, ring reinforced, and combined types, show length of each section and total length. For other types, show total length only.

(17) For stayed (firebox) type furnace, also complete Line 12.

(18) If threaded, show diameter at root of thread.

(19) Minimum cross-sectional area after deducting for telltale hole.

(20) Maximum allowable working pressure for the stayed area calculated according to the rules contained in Part PFT.

(21) Type of stay or brace, e.g., diagonal, girder, through, etc.

(22) Deleted.

(23) See applicable paragraphs and figures in Part PFT.

(24) List parts not covered elsewhere on the Data Report. If insufficient space, attach a supplementary sheet (Form P-6).

(25) Tabulate data for parts listed on Line 14.

(26) Show data for main, auxiliary steam outlets, and feedline connections only. Does not apply to small openings for water columns, controls, vents, drains, instrumentation, or to openings for connections internal to the boiler such as risers, downtakes, or downcomers.

(27) Maximum allowable working pressure established in accordance with PG-21.

(28) Show Section I paragraph which applies to the weakest part of the boiler as established by calculation or deformation test.

(29) Boiler heating surface calculated in accordance with PG-70.

(30) Hydrostatic pressure applied in accordance with PG-99 and witnessed by the Authorized Inspector.

(31) To be completed and signed by an authorized representative of the Manufacturer.

(32) Show Manufacturer's ASME Certificate of Authorization number, kind of symbol, and date of expiration of said authorization.

(33) This certificate to be completed by the Authorized Inspection Agency representative who performs the in-shop inspection.

(34) To determine what goes in the space, you should be guided by the following:
National Board Stamped Boilers and Pressure Vessels (see Form P-2 Line 4)
After "and/or State or Province" in the certification blocks—

If the Inspector has a valid commission for the state or province where the Manufacturer's shop is located, insert the name of that state or province. If the Manufacturer is located in a non-Code state or province, insert the name of the state or province where the Inspector took his original examination to obtain his National Board Commission, provided he still has a valid commission for that state or province. Otherwise, if no valid commission, show the name of the state or province where he has a valid commission authorizing him to make the shop inspection.

Boilers and Pressure Vessels Not Stamped National Board
Follow the above procedure. However, in this case do not list any National Board Commission number after the Inspector's signature at the bottom of the block.

(35) Indicate in this space the data items covered on Form P-2 on Lines 6 through 20.

(36) Indicate by Line numbers those items furnished by other and for which Partial Data Reports (Form P-4) have been examined.

(37) The Inspector's National Board commission number must be shown when the boiler is stamped National Board; otherwise show only his state or province commission number. (See (34) above.)

(38) To be completed when applicable, and signed by an authorized representative of the organization responsible for field assembly of the boiler.

(39) Show assembler's ASME Certificate of Authorization number, kind of symbol, and date of expiration of said authorization.

(40) This certificate to be completed by the Authorized Inspection Agency representative who performs the field assembly inspection.

A02

FORM P-2A MANUFACTURERS' DATA REPORT FOR ALL TYPES OF ELECTRIC BOILERS
As Required by the Provisions of the ASME Code Rules, Section I

PART I —— To Be Completed by the Manufacturer of the Boiler Pressure Vessel

1. Manufactured by ① (Name and address of manufacturer of boiler pressure vessel)
2. Manufactured for ② (Name and address of purchaser)
3. Location of Installation ③ (Name and address)
4. Type ④ (resistance element, electrode) Boiler No. ⑤ (Mfr's. Serial No.) ⑤ (CRN) ⑤ (Drawing No.) ⑤ (Nat'l. Brd. No.) Year Built ⑥
5. The chemical and physical properties of all parts meet the requirements of Material Specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to Section I of the ASME Boiler and Pressure Vessel Code ⑦ (year), Addenda to ⑧ (date), and Code Cases _____ (Numbers).

   Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors are attached for the following items of this report: ⑨

   (Name of part, item number, mfr's. name and identifying stamp)
6. Shells or drums: ⑩ (no.) ⑪ (mat'l. spec. gr.) [thickness (in.)] [dia (ID)] (length, inside) [dia (ID)] (length, inside)
7. Joints: ⑫ [long (seamless, welded)] ⑬ [efficiency (as compared to seamless)] ⑭ [girth (seamless, welded)] (no. of shell courses)
8. Heads _____ (Mat'l. Spec. No.: thickness — flat, dished, ellipsoidal — radius of dish)
9. Other Parts. 1. ⑮ 2. _____ 3. _____ (Brief description — i.e., dome, boiler piping, etc.)
   1. ⑯ ⑰
   2. _____
   3. _____ (Mat'l. Spec., Gr., size, material thickness, MAWP)
10. Openings: (a) Steam ⑱ (No., size, and type) (b) Safety Valve _____ (No., size, and type)
    (c) Blowoff _____ (No., size, and type) (d) Feed _____ (No., size, type, and location)
    (e) Manholes: No. _____ Size _____ Location _____
    (f) Handholes: No. _____ Size _____ Location _____
    (g) Elements/Electrodes: No. _____ Size _____ Location _____
11. Boiler Supports: No. _____ Type _____ (saddles, legs, lugs)

    Attachment _____ (bolted or welded)
12. MAWP ⑲ psi Based on ⑳ (Code para. and/or formula)
13. Shop Hydrostatic Test ㉒ psig
14. Maximum Designed Steaming Capacity _____ lb/hr
15. Remarks _____

㉓ CERTIFICATE OF COMPLIANCE OF BOILER PRESSURE VESSEL

We certify the statements in Part I of this Data Report to be Correct.

Our Certificate of Authorization No. ㉔ to use the (S) or (M) ㉔

Symbol expires ㉔

Date _____ Signed _____ (Authorized Representative) Name _____ (mfr. of boiler pressure vessel)

This form (E00120) may be obtained from the ASME Order Dept., 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300.

(25) CERTIFICATE OF SHOP INSPECTION OF BOILER PRESSURE VESSEL

BOILER PRESSURE VESSEL MADE BY _____ at _____

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 _____ (26) _____ and employed by _____

_____ have inspected parts of this boiler pressure vessel referred to as data items _____ (27) _____

and have examined Manufacturer's Partial Data Reports for Items _____ (28) _____

and state that, to the best of my knowledge and belief, the manufacturer has constructed this boiler pressure vessel in accordance with the applicable sections of the ASME BOILER AND PRESSURE VESSEL CODE.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the boiler 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 _____

_____ Commissions _____ (29) _____

(Authorized Inspector) [Nat'l. Board (incl. endorsements), State, Province, and No.]

Part II—To Be Completed by the Manufacturer Responsible for the Completed Boiler

16.

Item	Piping (30)				Valves (31)			
	Size	Sch.	Spec.	Bolted, Threaded, or Welded	Size	Type	Rating	No.
(a) Steam Pipe								
(b) Feed Water					Stop			
Feed Water					Check			
(c) Blowoff								

17. Safety Valves(s) No. _____ Size _____ Set Press _____ Total Capacity lb/hr _____

18. Heating Elements Installed: Quantity _____ kW Total _____

19. Electrodes: Quantity _____ kW Total _____

20. Hydrostatic Test of Completed Boiler _____ psig

21. Serial No. Assigned by Manufacturer Responsible for Completed Boiler _____ (35) _____

(32) CERTIFICATE OF COMPLIANCE OF COMPLETED BOILER

We certify that this completed boiler conforms with the requirements of SECTION I of the ASME BOILER AND PRESSURE VESSEL CODE.

Our Certificate of Authorization No. _____ (24) _____ to use the (S), (M), or (E) _____ (24) _____

Symbol expires _____ (24) _____

Date _____ Signed _____ By _____

(Authorized Representative) (Assembler)

CERTIFICATE OF SHOP INSPECTION OF COMPLETED BOILER

BOILER MADE BY _____ at _____

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 _____ (26) _____ and employed by _____

of _____ and have inspected the completed boiler and have examined Manufacturer's Partial Data Reports for _____ (34) _____

and state that, to the best of my knowledge and belief, the Manufacturer has constructed this boiler in accordance with the applicable sections of the ASME BOILER AND PRESSURE VESSEL CODE.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the boiler 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 _____

_____ Commissions _____ (29) _____

(Authorized Inspector) [Nat'l. Board (incl. endorsements), State, Province, and No.]

A02 **A-351.1 GUIDE FOR COMPLETING MANUFACTURERS' DATA REPORT, FORM P-2A (See PG-112.2.1.1)**

① Name and address of Manufacturer, i.e., maker of all components not covered by Partial Data Reports. When the boiler pressure vessel is constructed by a "U" symbol holder and certified on a U-1 or U-1A Data Report, indicate on line 1 "Boiler pressure vessel constructed to Section VIII, Division 1, as permitted by Part PEB," and attach the U-1 or U-1A Data Report.

② Name and address of purchaser and/or owner (to be completed by the Manufacturer of the completed boiler).

③ Name and address of location where boiler is to be installed. If not known, so indicate (e.g., "Not known—built for stock") (to be completed by the Manufacturer of the completed boiler).

④ Show type of electric boiler documented by this Data Report.

⑤ Identification of boiler by applicable numbers. If intended for installation in Canada, indicate the Canadian Design Registration Number and drawing number.

⑤a The Manufacturer of the boiler pressure vessel shall apply the ASME Code symbol stamp and the National Board Number when required. It is his responsibility to complete Part I of the Data Report, and forward it with the vessel to the company who will apply the trim ("E" symbol holder). The Manufacturer responsible for the trim and completed boiler shall complete Part II of the Data Report and if the boiler is to be stamped "National Board," forward the original Data Report to the National Board for registration.

⑥ Year in which fabrication was completed in shop.

⑦ Date (year) of Section I Edition under which boiler was constructed.

⑧ Issue date of most recent Addenda to Section I under which boiler was constructed (e.g., "1990").

⑨ To be completed when one or more components comprising the boiler pressure vessel and furnished by others and certified by Partial Data Report(s), Form P-4.

⑩ Show quantity and inside dimensions in inches. If more than two shells or drums are used, enter data in Line 9.

⑪ Show the complete ASME Material Specification No. and Grade as listed in the appropriate stress allowance table in the Appendix of Section I (e.g., "SA-285-B"). Exception: A specification number for a material not identical to an ASME Specification may be shown *only* if such material meets the criteria in the Foreword of this Section. When material is accepted through a Code Case, the applicable Case number shall be shown.

⑫ Indicate type of joint(s).

⑬ Show joint efficiency for welded joints.

⑭ Same as ⑫ above.

⑮ List parts not covered elsewhere on the data report. If insufficient space, attach a supplementary sheet (Form P-6).

⑯ Tabulate data for parts listed on Line 9.

⑰ Same as ⑪ above.

⑱ Show data for main and auxiliary steam outlets only. Does not apply to small openings for water column, controls, vents, etc.

⑲ Maximum allowable working pressure established in accordance with PG-21.

⑳ Show Section I paragraph which applies to the weakest part of the boiler pressure vessel as established by calculation or deformation test.

㉑ Deleted.

㉒ Hydrostatic pressure applied in accordance with PG-99 and witnessed by the Authorized Inspector.

㉓ To be completed and signed by an authorized representative of the Manufacturer.

㉔ Show Manufacturer's ASME Certificate of Authorization number, kind of symbol, and date of expiration of said authorization.

㉕ This certificate to be completed by the Authorized Inspection Agency representative who performs the in-shop inspection.

(26) To determine what goes in the space, you should be guided by the following:

National Board Stamped Boilers and Pressure Vessels (see Form P-2A Line 4)
After "and/or State or Province" in the certification blocks—

If the Inspector has a valid commission for the state or province where the Manufacturer's shop is located, insert the name of the state or province. If the Manufacturer is located in a non-Code state or province, insert the name of the state or province where the Inspector took his original examination to obtain his National Board Commission, provided he still has a valid commission for that state or province. Otherwise, if no valid commission, show the name of the state or province where he has a valid commission authorizing him to make the shop inspection.

Boilers and Pressure Vessels Not Stamped National Board
Follow the above procedure. However, in this case do not list any National Board Commission number after the Inspector's signature at the bottom of the block.

(27) Indicate in this space the data items covered on Form P-2 on Lines 6 through 14.

(28) Indicate by Line numbers those items furnished by others and for which Partial Data Reports (Form P-4) have been examined.

(29) The Inspector's National Board commission number must be shown when the boiler is stamped "National Board"; otherwise show only his state or province commission number. (See (26) above.)

(30) When piping is supplied with the boiler for steam, blowoff, and feedwater, complete this section. When welded piping is supplied by another stamp holder, leave blank, and provide separate Form P-4A.

(31) Complete this section when valves are furnished with the boiler.

(32) To be completed and signed by an authorized representative of the organization responsible for assembly of the boiler. Show ASME Certificate of Authorization number, kind of symbol, and date of said authorization. When the boiler pressure vessel is constructed by a "U" symbol holder and certified on a U-1 or U-1A Data Report, the "E" symbol holder shall complete lines 1 through 4 of Part 1.

(33) This certificate to be completed by the Authorized Inspection Agency representative who performs the in-shop inspection. Leave blank where final shop inspection is not required as permitted by PEB-18.1.

(34) Indicate in this space if the welded piping is furnished by others and is covered on Form P-4A.

(35) Serial number assigned by the Manufacturer responsible for the completed boiler. This may be the same number as the serial number shown on Line 4.

FORM P-3 MANUFACTURERS' DATA REPORT FOR WATERTUBE BOILERS, SUPERHEATERS, WATERWALLS, AND ECONOMIZERS
As Required by the Provisions of the ASME Code Rules, Section I

MASTER DATA REPORT YES ☐
(Check one) NO ☐

1. Manufactured by ① (Name and address of manufacturer)
2. Manufactured for ② (Name and address of purchaser)
3. Location of Installation ③ (Name and address)
4. Unit Identification ④ (Complete boiler, superheater, waterwall, economizer, etc.) ID Nos. ⑤ (Mfr's. Serial No.) ⑤ (CRN) ⑤ (Drawing No.) ⑤ (Nat'l. Board No.) ⑥ (Year Built)
5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to Section I of the ASME Boiler and Pressure Vessel Code ⑦ (Year), Addenda to ⑧ (Date), and Code Cases _____ (Numbers).

Supporting Manufacturer's Data Reports properly identified and signed by Commissioned Inspectors are attached for the following items of this report: ⑨ (Name of part, item number, mfr's name, and identifying stamp)

6(a) Drums

No.	Inside Diameter, in.	Inside Length ft in.	Shell Plates: Mat'l. Spec. No., Grade	Shell Plates: Thickness, in.	Shell Plates: Inside Radius, in.	Tubesheets: Thickness in.	Tubesheets: Inside Radius, in.	Tube Hole Ligament Efficiency, %: Longitudinal	Tube Hole Ligament Efficiency, %: Circumferential
1			⑩	⑪		⑫			
2									
3									

No.	Longitudinal Joints: No. & type*	Longitudinal Joints: Efficiency	Circum. Joints: No. & type	Circum. Joints: Efficiency	Heads: Mat'l. Spec. No., Grade	Heads: Thickness, in.		Heads: Type**	Heads: Radius of Dish	Heads: Manholes No. Size	Hydrostatic Test, psi
1					⑩	⑪	⑫		⑬		⑭
2											
3											

*Indicate if (1) Seamless; (2) Fusion welded.

**Indicate if (1) Flat; (2) Dished; (3) Ellipsoidal; (4) Hemispherical.

6(b) Boiler Tubes

Diameter	Thickness	Mat'l. Spec. No., Grade
⑮	⑯	⑩

6(c) Headers No. ⑰ ⑩ ⑪ or ⑫ (Box or sinuous or round; Mat'l. spec. no.; Thickness)

Heads or Ends ⑱ ⑩ ⑫ (Shape; Mat'l. spec. no.; Thickness) Hydro. Test, psi ⑭

6(d) Staybolts ⑩ (Mat'l. spec. no.; Diameter; Size telltale; Net area)

Pitch _____ (Hor. and Vert.) in. Net Area _____ (Supported by one bolt) $in.^2$ **MAWP** _____ **psi**

6(e) Mud Drum ⑲ ⑳ ⑩ ⑪ or ⑫ (For sect. header boilers. State Size; Shape; Mat'l. spec. no.; Thickness) Heads or Ends ⑱ ⑩ ⑫ (Shape; Mat'l. spec. no.; Thickness) Hydro. Test, psi ⑭

7(a) Waterwall Headers: No.	Size and Shape	Material Spec. No.	Thickness, in.	Heads or Ends: Shape	Heads or Ends: Thickness, in.	Heads or Ends: Material Spec. No.	7(b) Waterwall Tubes: Hydro. Test, psi.	Diameter, in.	Thickness, in.	Material Spec. No.
	⑲ ⑳	⑩	⑪ ⑫	⑱	⑫	⑩	⑭	⑮	⑯	⑩

8(a) Economizer Headers — 8(b) Economizer Tubes

This form (E00069) may be obtained from the ASME Order Dept., 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300.

Form P-3 (Back)

9(a) Superheater Headers				Heads or Ends			9(b) Superheater Tubes			
No.	Size and Shape (19) (20)	Material Spec. No. (10)	Thickness, in. (11) (12)	Shape (18)	Thickness, in. (12)	Material Spec. No. (10)	Hydro. Test, psi. (14)	Diameter, in. (15)	Thickness, in. (16)	Material Spec. No. (10)

10(a) Other Parts (1) _____ (36) (2) _____ (3) _____ 10(b) Tubes for Other Parts

1										
2										
3										

11 Openings (1) Steam _____ (21) (22) (23) (2) Safety Valve _____ (22) (23)
(No., size, and type of nozzles or outlets) (No., size, and type of nozzles or outlets)

(3) Blowoff _____ (22) (23) (4) Feed _____ (22) (23)
(No., size, and type of nozzles or outlets) (No., size, type, and location of connections)

12		Maximum Allowable Working Pressure	Code Par. and/or Formula on Which MAWP is Based	Shop Hydro. Test, psi	Heating Surface, sq. ft.
a	Boiler				
b	Waterwall				
c	Economizer				
d	Superheater				
e	Other Parts				

Heating surface to be stamped on drum heads. This heating surface not to be used for determining minimum safety valve capacity.

13 Field Hydro. Test, psi

14. Maximum Designed Steaming Capacity _____ lb/hr

15. Remarks _____

(24) CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this data report are correct and that all details of design, material, construction, and workmanship of this boiler conform to Section I of the ASME BOILER AND PRESSURE VESSEL CODE.

Our Certificate of Authorization No. _____ (25) _____ to use the (S) _____ (25) _____ Symbol expires _____ (25) _____.

Date _____ Signed _____ Name _____
(Authorized Representative) (Manufacturer)

(26) CERTIFICATE OF SHOP INSPECTION

BOILER MADE BY _____ at _____.

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 _____ (27) _____ and employed by _____ have inspected parts of this boiler referred to as data items _____ (28) _____ and have examined Supporting Manufacturer's Data Reports for items _____ (29) _____ and state that, to the best of my knowledge and belief, the Manufacturer has constructed this boiler in accordance with Section I of the ASME BOILER AND PRESSURE VESSEL CODE.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the boiler 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 _____ Commissions _____ (30) _____
(Authorized Inspector) [Nat'l. Board (incl. endorsements), State, Province, and No.]

(31) CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the field assembly of all parts of this boiler conforms with the requirements of SECTION I of the ASME BOILER AND PRESSURE VESSEL CODE.

Our Certificate of Authorization No. _____ (32) _____ to use the (A) or (S) _____ (32) _____ Symbol expires _____ (32) _____.

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

Form P-3 (Back Cont'd)

(33) 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 _____ (27) _____ and employed by _____ have compared statements in this Manufacturer's Data Report with the described boiler and state that the parts referred to as data items _____ (34) _____, not included in the Certificate of Shop Inspection, have been inspected by me and that to the best of my knowledge and belief the Manufacturer and/or the assembler has constructed and assembled this boiler in accordance with the applicable sections of the ASME BOILER AND PRESSURE VESSEL CODE. The described boiler 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 boiler 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_____ Commissions_____ (30)

(Authorized Inspector) [Nat'l. Board (incl. endorsements), State, Province, and No.]

A-352 GUIDE FOR COMPLETING MANUFACTURERS' DATA REPORT, FORM P-3 (See PG-112.2.2)

(1) Name and address of Manufacturer, i.e., maker of all components not covered by Supporting Data Reports.

(2) Name and address of purchaser and/or owner.

(3) Name and address of location where boiler is to be installed. If not known, so indicate (e.g., "Not known—built for stock").

(4) Name the unit documented by this Data Report. Note that this report may cover a complete boiler unit or separate component items (e.g., superheaters and economizers) fabricated by a manufacturer other than the Manufacturer of the boiler unit.

(5) Identification of boiler by applicable numbers. If intended for installation in Canada, indicate the Canadian Design Registration Number and drawing number.

(6) Year in which fabrication was completed in shop.

(7) Date (year) of Section I Edition under which boiler was constructed.

(8) Issue date of Addenda to Section I under which boiler was constructed (e.g., "1990").

(9) To be completed when one or more components comprising the boiler are furnished by others, and supported by Data Reports such as Forms P-3, P-4, and P-4a, as appropriate.

(10) Show the complete ASME Material Specification No. and Grade as listed in the appropriate stress allowance table in the Appendix of Section I (e.g., "SA-285-B"). Exception: A specification number for a material not identical to an ASME Specification may be shown *only* if such material meets the criteria in the Foreword of this Section. When material is accepted through a Code Case, the applicable Case number shall be shown.

(11) Nominal thickness of the plate.

(12) Minimum thickness after forming.

(13) Radius on concave side of dish.

(14) Shop hydrostatic test, if any, applied to individual part prior to test applied to the assembled boiler (see Lines 12 and 13).

(15) Outside diameter

(16) Minimum thickness of tubes.

(17) This space for headers not covered on Lines 7(a) through 10(a). It is intended primarily for sectional headers on straight tube watertube boilers.

(18) Indicate shape as flat, dished, ellipsoidal, or hemispherical.

(19) Use inside dimensions for size.

(20) Indicate shape as square, round, etc.

(21) Show data for main, auxiliary steam outlets, and feedline connections only. Does not apply to small openings for water columns, controls, vents, drains, instrumentation, or to openings for connections internal to the boiler such as risers, downtakes, or downcomers.

(22) Size is nominal pipe size.

(23) Describe type as flanged, welding neck, etc.

(24) To be completed and signed by an authorized representative of the Manufacturer.

(25) Show Manufacturer's ASME Certificate of Authorization number, kind of symbol, and date of expiration of said authorization.

(26) This certificate to be completed by the Authorized Inspection Agency representative who performs the in-shop inspection.

(27) To determine what goes in the space, you should be guided by the following:

National Board Stamped Boilers and Pressure Vessels (see Form P-3 Line 4)
After "and/or State or Province" in the certification blocks—

If the Inspector has a valid commission for the state or province where the Manufacturer's shop is located, insert the name of that state or province. If the Manufacturer is located in a non-Code state or province, insert the name of the state or province where the Inspector took his original examination to obtain his National Board Commission, provided he still has a valid commission for that state or province. Otherwise, if no valid commission, show the name of the state or province where he has a valid commission authorizing him to make the shop inspection.

Boilers and Pressure Vessels Not Stamped National Board
Follow the above procedure. However, in this case do not list any National Board Commission number after the Inspector's signature at the bottom of the block.

(28) Indicate the Data Items covered on Form P-3 on Lines 6 through 14.

(29) Indicate by Line numbers those items furnished by others for which Supporting Data Reports have been examined.

(30) The Inspector's National Board commission number must be shown when the boiler is stamped National Board; otherwise show only his state or province commission number. (See (27) above.)

(31) To be completed, when applicable, and signed by an authorized representative of the organization responsible for field assembly of the boiler.

(32) Show ASME Certificate of Authorization number, kind of symbol, and date of expiration of said authorization.

(33) This certificate to be completed by the Authorized Inspection Agency representative who performs the field assembly inspection.

(34) Indicate those items on Line 6 through 14 of Form P-3 inspected in the field that were not inspected in the shop.

(35) List parts not covered elsewhere on the Data Report. If insufficient space, attach a supplementary sheet (Form P-6).

FORM P-3A ENGINEERING-CONTRACTOR DATA REPORT FOR A COMPLETE BOILER UNIT
As Required by the Provisions of the ASME Code Rules, Section I

1. Engineering-Contractor ① (Name and Address)

2. Purchaser ② (Name and Address)

3. Type of Boiler ③

4. Boiler Number ④ (Engineer-Contractor's Serial No.) ④ (CRN) ④ (Drawing No.) ④ (Nat'l. Board No.) ④ (Year Built)

5. The design of this boiler complies with Section I of THE ASME BOILER AND PRESSURE VESSEL CODE ⑤ (Year), Addenda to ⑥ (Date), and Code Cases _____ (Numbers).

6. Design specification for complete boiler unit--list components with their pressure and temperature (use separate sheet if necessary). ⑦

7. Maximum Designed Steaming Capacity _____ lb/hr

⑧ CERTIFICATE OF COMPLIANCE

We certify the statements in this report to be correct.

Date _____

Signed _____ (Authorized Representative)

Name _____ Engineering Contractor ("S" Stamp holder)

Certificate of Authorization No. _____ Expires _____

⑨ CERTIFICATION OF ENGINEERING-CONTRACTOR

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 ⑩ and employed by _____ of _____ have examined the design specification as described in item 6 and state that, to the best of my knowledge and belief, the Engineering-Contractor has provided for the construction of a complete boiler unit in accordance with the applicable sections of the ASME Boiler and Pressure Vessel Code.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the boiler described in this 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 certification.

Date _____

_____ (Authorized Inspector) Commissions ⑪ [Nat'l. Board (incl. endorsements), State, Province, and No.]

This form (E00070) may be obtained from the ASME Order Dept., 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300.

Form P-3A (Back)

⑫ CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the field assembly construction of all parts of this boiler conforms with the requirements of SECTION I of the ASME BOILER AND PRESSURE VESSEL CODE.

Our Certificate of Authorization No. _____⑬_____ to use the (A) or (S) _____⑬_____ Symbol expires _____

Date _____ Signed _____⑫_____ Name _____
(Authorized Representative) (Assembler)

⑭ 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 _____⑩_____ and employed by _____
of _____
have compared statements in this Manufacturer's Data Report with the described boiler and state that the parts referred to as data items _____
_____⑮_____, not included in the Certificate of Shop Inspection, have been inspected by me and that to the best of my knowledge and belief the Manufacturer and/or the assembler has constructed and assembled this boiler in accordance with the applicable sections of the ASME BOILER AND PRESSURE VESSEL CODE. The described boiler 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 boiler 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 _____

_____ Commissions _____⑪_____
(Authorized Inspector) [Nat'l. Board (incl. endorsements), State, Province, and No.]

A-353 GUIDE FOR COMPLETING ENGINEERING-CONTRACTOR DATA REPORT FOR A COMPLETE BOILER UNIT, FORM P-3A (See PG-112.2.3)

(1) Name and address of Engineering-Contractor who has assumed the Manufacturer's Code responsibility for the design specifications of the complete boiler unit.

(2) Name and address of purchaser and/or owner.

(3) Show type of boiler documented by this report (e.g., "Steam watertube with superheat and reheat elements").

(4) Identification of boiler by applicable numbers and year of manufacture.

(5) Date (year) of Section I Edition to which boiler was designed.

(6) Issue date of Addenda to which boiler was designed (e.g., "1990").

(7) List design specification of the boiler unit in this space [e.g., "Boiler rating—200,000 lb/hr.; Economizer and steam generating section (drums, headers, and tubes)—1,500 psi, 600°F; Superheater elements (headers and tubes)—1,500 psi, 950°F; Reheater elements (headers and tubes)—1,000 psi, 900°F].

(8) To be completed and signed by an authorized representative of the Engineering-Contractor named in 1.

(9) This certificate to be completed by an Authorized Inspection Agency representative.

(10) To determine what goes in the space, you should be guided by the following:

National Board Stamped Boilers and Pressure Vessels (see Form P-3A Line 4)
After "and/or State or Province" in the certification blocks—
If the Inspector has a valid commission for the state or province where the Manufacturer's shop is located, insert the name of that state or province. If the Manufacturer is located in a non-Code state or province, insert the name of the state or province where the Inspector took his original examination to obtain his National Board Commission, provided he still has a valid commission for that state or province. Otherwise, if no valid commission, show the name of the state or province where he has a valid commission authorizing him to make the shop inspection.

Boilers and Pressure Vessels Not Stamped National Board
Follow the above procedure. However, in this case do not list any National Board Commission number after the Inspector's signature at the bottom of the block.

(11) The Inspector's National Board commission number should be shown when the boiler is stamped National Board; otherwise show only his state or province commission number. (See (10) above.)

(12) To be completed, when applicable, and signed by an authorized representative of the organization responsible to field assembly of the boiler.

(13) Show ASME Certificate of Authorization number, kind of symbol, and date of expiration of said authorization.

(14) This certificate to be completed by the Authorized Inspection Agency representative who performs the field assembly inspection.

(15) Indicate items inspected in the field that were not inspected in the shop. List items on back of Form P-3A or attach appropriate Data Form.

FORM P-4 MANUFACTURERS' PARTIAL DATA REPORT
As Required by the Provisions of the ASME Code Rules, Section I

1. Manufactured by (1) (Name and address of manufacturer), P-4 ID No. (32)

2. Manufactured for (2) (Name and address of purchaser)

3. Identification of Part(s) (3)

Name of Part	Quantity	Line No.	Mfr's. Identifying Numbers	Manufacturers' Drawing No.	CRN	National Board No.	Year Built
(4)		(5)	(6)	(7)		(8)	(9)

4. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design (as indicated on line 14, Remarks), construction, and workmanship conform to ASME Rules, Section I of ASME Boiler and Pressure Vessel Code.

(10) (year), Addenda to (11) (Date), and Code Cases (Numbers)

6(a). Drums

No.	Inside Diameter, in.	Inside Length ft in.	Shell Plates			Tubesheets		Tube Hole Ligament Efficiency, %	
			Mat'l. Spec. No., Grade	Thickness, in.	Inside Radius, in.	Thickness, in.	Inside Radius, in.	Longitudinal	Circumferential
1			(12)	(13)		(13)		(33)	(33)
2									
3									
4									

No.	Longitudinal Joints		Circum. Joints		Heads						Hydrostatic Test, psi
	No. & Type*	Efficiency	No. & Type	Efficiency	Mat'l. Spec. No., Grade	Thickness, in.		Type**	Radius of Dish	Manholes No. Size	
1					(12)	(13)	(14)		(15)		(16)
2											
3											
4											

*Indicate if (1) Seamless; (2) Fusion welded.

**Indicate if (1) Flat; (2) Dished; (3) Ellipsoidal; (4) Hemispherical.

6(b). Boiler Tubes

Diameter	Thickness	Mat'l. Spec. No., Grade
(17)		(12)

6(c). Headers No. (19) (12) (13) or (14) (Box or sinuous or round; Mat'l. spec. no.; Thickness)

Heads or Ends (22) (12) (14) (Shape; Mat'l. spec. no.; Thickness) Hydro. Test, psi (16)

6(d). Staybolts (12) (Mat'l. spec. no.; Diameter; Size telltale; Net area)

Pitch _____ (Hor. and Vert.) in. Net Area _____ (Supported by one bolt) sq in. MAWP (33) psi

6(e). Mud Drum (20) (21) (12) (13) or (14) (For sect. header boilers, state: Size; Shape; Mat'l. spec. no.; Thickness) Heads or Ends (22) (12) (14) (Shape; Mat'l. spec. no.; Thickness) Hydro Test, psi (16)

7(a). Waterwall Headers

7(b). Waterwall Tubes

No.	Size and Shape	Material Spec. No.	Thickness, in.	Heads or Ends			Hydro. Test, psi	Diameter, in.	Thickness, in.	Material Spec. No.
				Shape	Thickness, in.	Material Spec. No.				
	(20) (21)	(12)	(13) (14)	(22)	(14)	(12)	(16)	(17)	(18)	(12)

This form (E00071) may be obtained from the ASME Order Dept., 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300.

Form P-4 (Back)

8(a). Economizer Headers — Heads or Ends — 8(b). Economizer Tubes

No.	Size and Shape	Material Spec. No.	Thickness, in.	Shape	Thickness, in.	Material Spec. No.	Hydro. Test, psi	Diameter, in.	Thickness, in.	Material Spec. No.
	(20) (21)	(12)	(13) or (14)	(22)	(14)	(12)	(16)	(17)	(18)	(12)

9(a). Superheater Headers — 9(b). Superheater Tubes

10(a). Other Parts (1) (31) (2) _____ (3) _____ — 10(b). Tubes for Other Parts

1										
2										
3										

11. Openings (1) Steam (23) (24) (25) (No., size, and type of nozzles or outlets) (2) Safety Valve (24) (25) (No., size, and type of nozzles or outlets)

(3) Blowoff (24) (25) (No., size, and type of nozzles or outlets) (4) Feed (24) (25) (No., size, type, and location of connections)

12.		(33) Maximum Allowable Working Pressure	(33) Code Para. and/or Formula on Which MAWP is Based	Shop Hydro. Test, psi	Heating Surface, sq ft		13. Field Hydro. Test, psi
a	Boiler					Heating surface to be stamped on drum heads.	
b	Waterwall						
c	Economizer					This heating surface not to be used for determining minimum safety valve capacity.	
d	Superheater						
e	Other Parts						

14. Remarks: (26) (34) _____

(27) **CERTIFICATE OF SHOP COMPLIANCE**

We certify the statements made in this Manufacturers' Partial Data Report to be correct and that all details of design (as indicated on line 14, Remarks), material, construction, and workmanship of this boiler part conform to Section I of the ASME BOILER AND PRESSURE VESSEL CODE.

Our Certificate of Authorization No. _____ to use the (PP) or (S) _____ Symbol expires _____ .

Date _____ Signed _____ (Authorized Representative) Name _____ (Manufacturer)

(28) **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 (29) _____ and employed by _____ have inspected the part of a boiler described in this Manufacturers' Partial Data Report on _____ , and state that, to the best of my knowledge and belief, the Manufacturer has constructed this part in accordance with the applicable sections of the ASME BOILER AND PRESSURE VESSEL CODE.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Manufacturers' Partial 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 (30) _____ [Nat'l. Board (incl. endorsements), State, Province, and No.]

A-354 GUIDE FOR COMPLETING MANUFACTURERS' PARTIAL DATA REPORT, FORM P-4 (See PG-112.2.4)

(1) Name and address of manufacturer of the part(s) reported on the Form P-4.

(2) Name and address of Manufacturer of the boiler unit with which the part(s) will be used, if known. If built for stock, so state. If for an existing unit, name of the owner or user and address of the unit at place of installation.

(3) Identification of individual parts documented by the Form P-4.

(4) Show name of part, e.g., "steam drum," "Superheater header," etc.

(5) Show data Line number of Form P-4 for the named part.

(6) Show manufacturer's serial or other numbers stamped on the named part.

(7) Show the drawing number for the named part.

(8) Where applicable, the National Board Number from the Manufacturer's series of National Board Numbers.

(9) Year in which fabrication of the part was completed in the shop.

(10) Date (year) of Section I Edition under which part was constructed.

(11) Issue date of Addenda to Section I under which part was constructed (e.g., "1990").

(12) Show the complete ASME Material Specification No. and Grade as listed in the appropriate stress allowance table in the Appendix of Section I (e.g., "SA-285-B"). Exception: A specification number for a material not identical to an ASME Specification may be shown *only* if such material meets the criteria in the Foreword of this Section. When material is accepted through a Code Case, the applicable Case Number shall be shown.

(13) Nominal thickness of the plate.

(14) Minimum thickness after forming.

(15) Radius on concave side of dish.

(16) Shop hydrostatic test, if any, applied to individual part prior to test applied to the assembled boiler (see Lines 12 and 13).

(17) Outside diameter.

(18) Minimum thickness of tubes.

(19) This space for headers not covered in Lines 7(a) through 10(a). It is intended primarily for sectional headers on straight tube watertube boilers.

(20) Use inside dimensions for size.

(21) Indicate shape as square, round, etc.

(22) Indicate shape as flat, dished, ellipsoidal, or hemispherical.

(23) Show data for main, auxiliary steam outlets, and feedline connections only. Does not apply to small openings for water columns, controls, vents, drains, instrumentation, or to openings for connections internal to the boiler such as risers, downtakes, or downcomers.

(24) Size is nominal pipe size.

(25) Describe type as flanged, welding neck, etc.

(26) Any additional information to clarify the report should be entered here. When applicable and when it is known, indicate the National Board Number of the completed boiler.

(27) To be completed and signed by an authorized representative of the part(s) manufacturer.

(28) This certificate to be completed by the Authorized Inspection Agency representative who performs the in-shop inspection. If a National Board Number has been assigned to the part, the inspector signing this certificate must hold a valid National Board Commission.

(29) To determine what goes in the space, you should be guided by the following:

National Board Stamped Boiler and Pressure Vessel Parts (see Form P-4 Line 3)
After "and/or State or Province" in the certification blocks—

If the Inspector has a valid commission for the state or province where the manufacturer's shop is located, insert the name of that state or province. If the Manufacturer is located in a non-Code state or province, insert the name of the state or province where the Inspector took his original examination to obtain his National Board Commission, provided he still has a valid commission for that state or province. Otherwise, if no valid commission, show the name of the state or province where he has a valid commission authorizing him to make the shop inspection.

Boiler and Pressure Vessel Parts Not Stamped National Board
Follow the above procedure. However, in this case, do not list any National Board Commission number after the Inspector's signature at the bottom of the block.

(30) The Inspector's National Board commission number should be shown if it is known that the part is to be used on a completed boiler that is to be stamped National Board or if a National Board Number has been assigned to the part; otherwise show only his state or province number. (See (29) above.)

(31) List parts not covered elsewhere on the Data Report. If insufficient space, attach a supplementary sheet (Form P-6).

(32) If desired, the Certificate Holder may assign a unique identifying number for this form.

(33) Indicate data, if known.

(34) Indicate extent of design function [See PG-112.2.4(3)].

01

FORM P-4A MANUFACTURERS' DATA REPORT FOR FABRICATED PIPING
As Required by the Provisions of the ASME Code Rules, Section I

1. Manufactured by ① (Name and address of manufacturer) Order No. ① P-4A ID No. ㉓

2. Manufactured for ② (Name and address of purchaser) Order No. ②

3. Location of Installation ③ Boiler Registration No. 3a

4. Identification ④ (Main steam, boiler feed, blow-off or other service piping — state which) Piping Registration No. 4a

5. Design Conditions of Piping ⑤ (Pressure) psi ⑤ (Temperature) F. Specified by ⑥ (Name of Co.)

   Code Design by ⑦

6. The chemical and physical properties of all piping meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The construction and workmanship conform to Section I of the ASME BOILER AND PRESSURE VESSEL CODE _____ (Year).

   Addenda to _____ (Date), and Code Cases ⑧ (Numbers).

7. Description of Piping: (include materials Identifications by ASME specification or other recognized Code designation.)
   ⑨

8. Shop Hydrostatic Test ⑩ psi.

9. Remarks _____

CERTIFICATE OF SHOP COMPLIANCE

We certify the statement in this data report to be correct and that all details of material, construction, and workmanship of the described piping conform to Section I of the ASME Boiler and Pressure Vessel Code.
Our Certificate of Authorization No. ⑫ to use the S or PP Symbol ⑫ Expires ⑫.

Date ⑪ Signed ⑪ (Manufacturer or Fabricator) by ⑪ (Authorized Representative)

⑬ 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 ⑭ and employed by _____ have inspected the piping described in this Manufacturer's Data Report and state that to the best of my knowledge and belief, the manufacturer has constructed this piping in accordance with the applicable Sections of the ASME Boiler and Pressure Vessel Code.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the piping 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 _____

_____ (Authorized Inspector) Commissions ⑮ [Nat'l Board (incl. endorsements), State, Province, and No.]

This form (E00072) may be obtained from the Order Dept., ASME, 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300.

FORM P-4A (Back)

10. Description of Field Fabrication: (16)

11. Field Hydrostatic Test (17) psi.

(18) **CERTIFICATE OF FIELD FABRICATION COMPLIANCE**

We certify the statement in this data report to be correct and that all details of material, construction, and workmanship of the described piping conform to Section I of the ASME Boiler and Pressure Vessel Code.
Our Certificate of Authorization No. (19) to use the Pressure Piping Symbol expires (19) .

Date (18) Signed (18) (Authorized Representative) Name (18) (Fabricator)

(18) **CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE**

We certify that the field assembly of the described piping conforms with the requirements of Section I of the ASME Boiler and Pressure Vessel Code. Our Certificate of Authorization No. (19) to use the (A) (S) or (PP) Symbol expires (19) .

Date (18) Signed (18) (Authorized Representative) Name (18) (Assembler)

(20) **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 (14) and employed by
have compared the statements in this Manufacturer's Data Report with the described piping and state that the parts referred to as Data Items (21) , not included in the Certificate of Shop Inspection, have been inspected by me and that to the best of my knowledge and belief the manufacturer and/or assembler has constructed and assembled this piping in accordance with the applicable sections of the ASME Boiler and Pressure Vessel Code. The described piping was inspected and subjected to a hydrostatic test of (22) psi.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the piping 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

(Authorized Inspector) Commissions (15) [Nat'l Board (incl. endorsements), State, Province, and No.]

01 A-354.1 GUIDE FOR COMPLETING MANUFACTURERS' DATA REPORT, FORM P-4A (See PG-112.2.5)

(1) Name and address of manufacturer or fabricator of Code piping including order identifying number.

(2) Name and address of purchaser and/or owner and his identifying order number.

(3) Name and address of location where piping is to be installed, if known.

(3a) Include the registration number of the boiler where the piping is to be installed, if known (e.g., National Board No., Canadian Design Registration No., or other jurisdictionally required registration numbers).

(4) Identify each section of piping (e.g., main steam, blow-off, boiler feed), including the section's identification number, if assigned.

(4a) Include the piping registration number, if assigned (e.g., National Board No., Canadian Design Registration No., or other jurisdictionally required registration numbers).

(5) Show the maximum design pressure and temperature of the section of pipe (see ASME B31.1).

(6) Name of the organization that established the design pressure and temperature.

(7) The organization that made the calculations and selected the pipe schedules for the working conditions.

(8) Refer to the requirements of ASME B31.1.

(9) Describe each section of piping, size, thickness, schedule, etc. Show the complete ASME Material Specification No. and Grade as listed in the appropriate stress allowance table in the Appendix of Section I (e.g., "SA-106"). Exception: A specification number for a material not identical to an ASME Specification may be shown *only* if such material meets the criteria in the Foreword of this Section. When material is accepted through a Code Case, the applicable Case number shall be shown. Identify the organization that will receive this piping and the identification number of the boiler.

(10) Piping fabricated in a shop show test pressure if hydro-applied in the shop (see PG-99) and witnessed by Authorized Inspector.

(11) The name of the piping manufacturer or fabricator, signature of authorized representative and date signed.

(12) Show ASME Authorization number, kind of symbol, and date of expiration.

(13) This certificate to be completed by the Authorized Inspection Agency representative who performs the in-shop inspection.

(14) To determine what goes in this space, you should be guided by the following:

National Board Stamped Fabricated Piping (see Form P-4A Line 4)
After "and/or State or Province" in the certification blocks—

If the Inspector has a valid commission for the state or province where the Manufacturer's shop is located, insert the name of that state or province. If the Manufacturer is located in a non-Code state or province, insert the name of the state or province where the Inspector took his original examination to obtain his National Board Commission, provided he still has a valid commission for that state or province. Otherwise, if no valid commission, show the name of the state or province where he has a valid commission authorizing him to make the shop inspection.

Fabricated Piping Not Stamped National Board
Follow the above procedure. However, in this case do not list any National Board Commission number after the Inspector's signature at the bottom of the block.

(15) The Inspector's National Board commission number must be shown when the fabricated piping is stamped National Board; otherwise, show only his/her state or province commission number (See 14 above).

(16) Describe sections of piping to be joined, design of welded joint, procedure to be followed, number passes, preheat, postheat, etc. (see ASME B31.1).

(17) Show test pressure used during field hydrostatic test (see PG-99) and witnessed by the Authorized Inspector.

(18) Signed by an authorized representative of the organization responsible for the field fabrication or field assembly (assembler, manufacturer, fabricator), or both, and the date signed.

(19) Show ASME authorization number, kind of symbol, and date of expiration.

(20) This certificate to be completed by the Authorized Inspection Agency representative who performs the field assembly inspection.

(21) Only list those piping sections and welds inspected in the field.

(22) Show field hydrostatic test pressure (see PG-99).

(23) If desired, the Certificate Holder may assign a unique identifying number for this Form.

FORM P-4B MANUFACTURER'S DATA REPORT FOR FIELD INSTALLED MECHANICALLY ASSEMBLED PIPING
As Required by the Provisions of the ASME Code Rules, Section I

1. Manufactured by ① (Name and address of manufacturer) Order No. ① P-4B ID No. ⑰

2. Manufactured for ② (Name and address of purchaser) Order No. ②

3. Location of Installation ③ Boiler Registration No. 3a

4. Identification ④ (Main steam, boiler feed, blow-off or other service piping — state which) Piping Registration No. 4a

5. Design Conditions of Piping ⑤ (Pressure) psi ⑤ (Temperature) °F. Specified by ⑥ (Name of Co.)

   Code Design by ⑦

6. The chemical and physical properties of all piping meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The construction and workmanship conform to Section I of the ASME BOILER AND PRESSURE VESSEL CODE (Year), Addenda to (Date), and Code Cases ⑧ (Numbers)

7. Description of Piping: (Include materials Identifications by ASME specification or other recognized Code designation.)

   ⑨

8. Field Hydrostatic Test ⑩ psi.

9. Remarks

⑪ CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the field assembly of the described piping conforms with the requirements of Section I of the ASME Boiler and Pressure Vessel Code. Our Certificate of Authorization No. ⑫ to use the (A) (S) or (PP) Symbol expires ⑫ .

Date ⑫ Signed (Authorized Representative) Name (Assembler)

⑬ 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 ⑭ and employed by have compared the statements in this Manufacturer's Data Report with the described piping and state that the parts referred to as Data Items ⑮ have been inspected by me and that to the best of my knowledge and belief the maufacturer and/or assembler has assembled this piping in accordance with the applicable sections of the ASME Boiler and Pressure Vessel Code. The described piping was inspected and subjected to a hydrostatic test of ⑯ psi.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the piping 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

(Authorized inspector) Commissions ⑰ [Nat'l Board (incl. endorsements), State, Province, and No.]

This form (E00133) may be obtained from the Order Dept., ASME, 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300.

01 A-354.2 GUIDE FOR COMPLETING MANUFACTURERS' DATA REPORT, FORM P-4B (See PG-112.2.5)

(1) Name and address of manufacturer or fabricator of Code piping including order identifying number.

(2) Name and address of purchaser and/or owner and his identifying order number.

(3) Name and address of location where piping is to be installed, if known.

(3a) Include the registration number of the boiler where the piping is to be installed, if known (e.g., National Board No., Canadian Design Registration No., or other jurisdictionally required registration numbers).

(4) Identify each section of piping (e.g., main steam, blow-off, boiler feed), including the section's identification number, if assigned.

(4a) Include the piping registration number, if assigned (e.g., National Board No., Canadian Design Registration No., or other jurisdictionally required registration numbers).

(5) Show the maximum design pressure and temperature of the section of pipe (see ASME B31.1).

(6) Name of the organization that established the design pressure and temperature.

(7) The organization that made the calculations and selected the pipe schedules for the working conditions.

(8) Refer to the requirements of ASME B31.1.

(9) Describe each section of piping, size, thickness, schedule, etc. Show the complete ASME Material Specification No. and Grade as listed in the appropriate stress allowance table in the Appendix of Section I (e.g., "SA-106"). Exception: A specification number for a material not identical to an ASME Specification may be shown *only* if such material meets the criteria in the Foreword of this Section. When material is accepted through a Code Case, the applicable Case number shall be shown.

(10) Piping fabricated in field show test pressure of hydro-applied in the field (see PG-99) and witnessed by Authorized Inspector.

(11) Signed by an authorized representative of the organization responsible for the field assembly and hydrostatic test.

(12) Show ASME authorization number, kind of symbol, and date of expiration.

(13) This certificate to be completed by the Authorized Inspection Agency representative who performs the field assembly inspection.

(14) To determine what goes in this space, you should be guided by the following:

National Board Stamped Fabricated Piping (see Form P-4B Line 4)
After "and/or State or Province" in the certification blocks—

If the Inspector has a valid commission for the state or province where the Manufacturer's shop is located, insert the name of that state or province. If the Manufacturer is located in a non-Code state or province, insert the name of the state or province where the Inspector took his original examination to obtain his National Board Commission, provided he still has a valid commission for that state or province. Otherwise, if no valid commission, show the name of the state or province where he has a valid commission authorizing him to make the shop inspection.

Fabricated Piping Not Stamped National Board
Follow the above procedure. However, in this case do not list any National Board Commission number after the Inspector's signature at the bottom of the block.

(15) Only list those piping sections inspected in the field.

(16) Show test pressure used during field hydrostatic test (see PG-99) and witnessed by the Authorized Inspector.

(17) The Inspector's National Board commission number must be shown when the fabricated piping is stamped National Board; otherwise, show only his state or province commission number.

(18) If desired, the Certificate Holder may assign a unique identifying number for this Form.

FORM P-5 SUMMARY DATA REPORT FOR PROCESS STEAM GENERATORS
As Required by the Provisions of the ASME Code Rules, Section I

1. Manufacturer (or Engineering-Contractor) _____ ① _____ (Name and Address)
2. Purchaser _____ ② _____ (Name and Address)
3. Location of Installation _____ ③ _____ (Name and Address)
4. Type of Boiler ④
5. Boiler No. _____ (Mfr's. Serial) _____ (CRN) _____ (Drawing No.) _____ (Nat'l. Brd. No.) _____ (Year Built)
6. Data Reports Attached ⑤

No.	Name of Part	Part Manufacturer	Identifying Numbers	Data Report Form
1	⑥	⑦	⑧	⑨
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

7. Remarks _____

⑩ CERTIFICATE OF COMPLIANCE

We certify the statements of this Summary Data Report, with the attached certified data reports as listed, provide documentation that the design, construction, materials, and workmanship of the complete boiler unit do conform to the ASME Rules, Section I of the ASME Boiler and Pressure Vessel Code ⑪ (Year), Addenda to ⑫ (Date), and Code Cases _____ (Numbers).

Our Certificate of Authorization No. _____ to use the "S" Symbol expires _____ .

Signed _____ (Authorized Representative) Name _____ (Mfr. or Eng. Contractor)

This form (E00073) may be obtained from the ASME Order Dept., 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300.

A-355 GUIDE FOR COMPLETING SUMMARY DATA REPORT FOR PROCESS STEAM GENERATORS, FORM P-5 (See PG-112.2.6)

(1) Name and address of the Manufacturer or Engineering-Contractor, whichever is responsible for the complete boiler installation.

(2) Name and address of the purchaser and/or owner.

(3) Name and address of location where boiler is installed.

(4) Indicate type of boiler (e.g., "Steam Watertube — Drum Type").

(5) In this section list all parts covered by the various Data Report Forms, P-2, P-3, P-3A, P-4 or P-4A. Use supplementary sheet (Form P-6) if necessary. A copy of each Data Form shall be securely attached to Form P-5.

(6) Show name of part, e.g., "Steam Drum," "Waterwall Header," etc.

(7) Name of the manufacturer of the named part.

(8) Show manufacturer's serial number and other numbers stamped on the named part.

(9) List Manufacturer's Data Report Form number (e.g., "P-4").

(10) To be completed and signed by an authorized representative of the Manufacturer or Engineering-Contractor named in (1).

(11) Date (year) of Section I Edition under which boiler was constructed.

(12) Issue date of most recent Addenda to Section I under which boiler was constructed (e.g., "Summer 1972").

FORM P-6 MANUFACTURERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Rules

1. Manufacturer (or Engineering-Contractor) _____
(Name and Address)

2. Purchaser _____
(Name and Address)

3. Type of Boiler _____

4. Boiler No. _____ _____ _____ _____
(Mfr's. Serial No.) (CRN) (Drawing No.) (Nat'l Board No.)

_____
(Year Built)

Data Items by Line No.	

SAMPLE

Date _____ Signed _____ by _____

Date _____

_____ Commissions _____
(Authorized Inspector) [Nat'l Board (incl. endorsements), State, Province, and No.]

This form (E00074) may be obtained from the ASME Order Dept., 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300.

FORM P-7 MANUFACTURERS' DATA REPORT FOR SAFETY VALVES
As Required by the Provisions of the ASME Code Rules, Section I

1. Boiler manufactured by ① (Name and address of Manufacturer), P-7 ID No. ②

2. Boiler manufactured for ③ (Name and address of purchaser)

3. Location of installation ④ (Name and address)

4. Unit identification ⑤ (Complete boiler, superheater, waterwall, economizer, etc.) ID Nos. ⑥ (Mfr's. Serial No.) ⑥ (CRN) ⑥ (Drawing No.) ⑥ (Nat'l. Board No.)

5. Identification of Safety Valves

Tag No.	Service Location	Qty.	Size	Manufacturer Name	Design or Type No.	Material* / Conn.**	Set Press. (psig)	Capacity (lb/hr)
⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮

* Material: (1) SA-216, WCB. (2) SA-217, WC6. (3) SA-217, WC9. (4) SA-182, F 22. (5) Other _____
** Connector type: (A) Groove Weld. (B) Socket Weld. (C) Threaded. (D) Flanged.

6. Unit Relieving Capacity

Circuit	Minimum Required (lb/hr) ⑯	Furnished (lb/hr) ⑰
Boiler		
Economizer		
Superheater		
Reheater Inlet		
Reheater Outlet		
Other		

 This Form (E00129) may be obtained from the Order Dept., ASME, 22 Law Drive, Box 2300, Fairfield, NJ 07007

FORM P-7 (Back)

⑱ **CERTIFICATE OF COMPLIANCE**

We certify the statements in this Manufacturers' Data Report for Safety Valves to be correct and that all details conform to Section I of the ASME BOILER AND PRESSURE VESSEL CODE.

Our Certificate of Authorization No. _____ to use the (S) or (M) _____ Symbol expires _____ .

Date _____ Signed _____ (Authorized Representative) Name _____ (Manufacturer)

A-356 GUIDE FOR COMPLETING MANUFACTURERS' DATA REPORT FOR SAFETY VALVES, FORM P-7 (See PG-112.2.8)

(1) Name and address of boiler Manufacturer, i.e., maker of all components not covered by supporting Data Reports or engineering contractor who has assumed the Manufacturer's Code responsibility for the Design Specifications of the complete boiler unit.

(2) If desired, the Certificate Holder may assign a unique identifying number for this form.

(3) Name and address of purchaser and/or owner.

(4) Name and address of location where boiler is to be installed. If not known, so indicate (e.g., "Not known" — built for stock).

(5) Name the unit documented by this Data Report.

(6) Identification of boiler by applicable numbers. If intended for installation in Canada, indicate the Canadian Design Registration Number and drawing number.
NOTE: Items (1), (3), (4), (5), and (6) shall repeat similar information on the Master Data Report.

(7) Optional — List purchaser's or owner's identification number assigned to valve (preferred) or tag number supplied by the Manufacturer.

(8) Valve service location (e.g., "Boiler Drum, Superheater Outlet Header, Main Steam Piping, Cold Reheat Piping, Reheat Outlet Header, etc.").

(9) Quantity of identical valves installed at valve service location.

(10) Valve inlet size.

(11) Valve manufacturer's name.

(12) Valve manufacturer's figure number or other design-type designation number.

(13) Valve body material and connection type.

(14) Pressure at which safety valve is set to relieve.

(15) Certified relieving capacity of the safety valve.

(16) Minimum relieving safety valve relieving capacity, as required by PG-67 and PG-68.

(17) Actual relieving safety valve relieving capacity furnished at locations indicated.

(18) Show Manufacturer's ASME Certificate of Authorization number, kind of symbol, and date of expiration of said authorization.

A-357 GUIDE TO DATA REPORT FORMS DISTRIBUTION
Data Report Forms Required for Section I Construction

Example	Data Report Forms Required								Remarks
	P-2	P-2A	P-3	P-3A	P-4	P-4A	P-4B	P-5	
1	X						X		P-4B is submitted to authorities separately by the stamp holder assuming responsibility for the hydrostatic test.
2	X					X			P-4A is submitted to authorities separately by piping contractor.
3			X		X	X			P-4A is submitted to authorities separately by piping contractor.
4			X			X			P-3 is also Master Data Report.
5			X			X			P-3 is also Master Data Report.
6			X	X	X	X			P-3 or P-4 is required for each manufacturer supplying major component. Assembler completes field assembly portion of P-3A. P-3A submitted by Engineering-Contractor is also Master Data Report.
7			X						P-4A is not required since all work comprising Code responsibility is done by one contractor.
8		X							Appropriate portion of P-2A is completed by manufacturer of boiler pressure vessel. Shop inspection block is completed by boiler pressure vessel manufacturer's Authorized Inspector. Electric boiler Manufacturer completes the balance of P-2A.
9	X		X	X	X	X		X	P-2, P-3, or P-4 is required for each Manufacturer supplying major component. Assembler completes field assembly portion of P-3A. Summary Data Report P-5 submitted by Engineering-Contractor is Master Data Report.

Example 1 Boiler Manufacturer supplies shop-assembled firetube boiler without piping. Piping contractor, not responsible to boiler Manufacturer, supplies and installs threaded piping.

Example 2 Boiler Manufacturer supplies shop-assembled firetube boiler without piping. Piping contractor ("PP" stamp holder) not responsible to boiler Manufacturer, supplies and installs welded piping.

Example 3 Boiler Manufacturer supplies shop-assembled watertube boiler. He subcontracts boiler drums to another manufacturer. External piping (welded) is subcontracted to a piping contractor.

Example 4 Boiler Manufacturer supplies field-assembled watertube boiler. Field assembly is subcontracted to a contractor ("A" stamp holder) and external piping (welded) is subcontracted to a piping contractor ("PP" stamp holder).

Example 5 Boiler Manufacturer supplies and erects field-assembled watertube boiler. Owner contracts with piping contractor ("PP" stamp holder) for supply and installation of piping (welded).

Example 6 Engineering-Contractor designs boiler. Several manufacturers supply component parts, such as boiler drum, tubes, superheater, economizer. In addition, a contractor holding a "PP" stamp supplies headers to superheater manufacturer. A contractor holding an "A" stamp performs the field assembly. A piping contractor supplies and installs boiler piping (welded).

Example 7 Boiler Manufacturer supplies and installs field-assembled boiler, including boiler piping (welded).

Example 8 Electric boiler Manufacturer holding an "E" stamp completes assembly of piping and appurtenances (no welding). Boiler pressure vessel manufactured by "S" or "M" stamp holder.

Example 9 Engineering-Contractor designs a process steam generator consisting of several arrays of heat exchange surface. Several manufacturers supply component parts. A contractor holding an "A" stamp performs field assembly. A piping contractor holding a "PP" stamp supplies and installs boiler piping (welded).

A03

FORM P-8 MANUFACTURER'S OR ASSEMBLER'S CERTIFICATE OF CONFORMANCE FOR PRESSURE RELIEF VALVES

As Required by the Provisions of the ASME Code Rules, Section I

1. Manufactured (or assembled) by ①

2. Table of Code symbol stamped items:

I.D. #	Date	Cert. #	Qty.	Type	Size (NPS)	Set Pressure	Capacity	Test Fluid	Date Code	CI Name	CI Signature
②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬

3. Remarks ⑭

CERTIFICATE OF SHOP COMPLIANCE

By the signature of the Certified Individual (CI) noted above, we certify that the statements made in this report are correct and that all details for design, material, construction, and workmanship of the pressure relief valves conform with the requirements of Section I of the ASME Boiler and Pressure Vessel Code.

V Certificate of Authorization No. ⑮ Expires ⑯

Date ⑰ Signed ⑱ (Responsible Representative) Name ⑱ (Manufacturer or Assembler)

A-358 GUIDE FOR THE PREPARATION OF MANUFACTURER'S OR ASSEMBLER'S CERTIFICATE OF CONFORMANCE FORM P-8 A03

Note No.	Instruction
(1)	Name and address of manufacturer or assembler.
(2)	Pressure relief valve manufacturer's or assembler's unique identification such as serial number, work order number, or lot number.
(3)	The date of completion of production of the pressure relief valve.
(4)	The NB Certification Number.
(5)	The quantity of identical valves for this line item.
(6)	The manufacturer's Design or Type Number as marked on the nameplate.
(7)	The inlet size of the pressure relief valve (NPS).
(8)	The nameplate set pressure of the pressure relief valve.
(9)	The nameplate capacity of the pressure relief valve.
(10)	The fluid used for testing the pressure relief valve.
(11)	The year built or the pressure relief valve manufacturer's or assembler's date code.
(12)	The name of the Certified Individual.
(13)	The signature of the Certified Individual. Required for each line item.
(14)	Include any applicable remarks (referencing the identification number) that may pertain, such as identification of a Code Case that requires marking on the device.
(15)	The number of the pressure relief valve manufacturer's Certificate of Authorization.
(16)	Expiration date of the pressure relief valve manufacturer's Certificate of Authorization.
(17)	Date signed by the pressure relief valve manufacturer or assembler's responsible representative.
(18)	The Certificate of Shop Compliance block is to show the name of the manufacturer or assembler as shown on his/her ASME Code Certificate of Authorization. This should be signed in accordance with the organizational authority defined in the Quality Control System.

A-370 GUIDE TO INFORMATION APPEARING ON CERTIFICATE OF AUTHORIZATION

ITEM	DESCRIPTION
①	a. The name of the Manufacturer or Assembler; this description could include "doing business as" (DBA) or an abbreviation of the name. b. The full street address or physical location, city, state or province, country, and zip code.
②	This entry describes the scope and limitations, if any, on use of the Code symbol stamps, as illustrated below. **"S" Code Symbol Stamp** 1. Manufacture and assembly of power boilers at the above location. 2. Manufacture and assembly of power boilers at the above location and field sites controlled by the above location. 3. Design and assembly of power boilers with fabrication subcontracted to holders of appropriate Certificates of Authorization and field assembly at field sites controlled by the above location. 4. Design of power boilers with responsibility for compiling Code certification and for stamping the boiler. Fabrication and assembly subcontracted to holders of appropriate Certificates of Authorization. **"A" Code Symbol Stamp** 1. Assembly of Power Boilers at field sites controlled by the above location. **"PP" Code Symbol Stamp** 1. Design, fabrication, and assembly of pressure piping. **"M" Code Symbol Stamp** 1. Manufacture and assembly of miniature boilers at the above location only. **"E" Code Symbol Stamp** 1. Design and assembly of electric boilers at the above location only. **"V" Code Symbol Stamp** 1. Manufacture of safety valves for power boilers at the above location only. 2. Manufacture of safety valves for power boilers at the above location only. (This authorization does not cover welding or brazing.) 3. Assembly of safety valves for power boilers at the above location. (This authorization does not cover welding or brazing.)
③	The date authorization was granted by the Society to use the Code symbol stamp indicated.
④	The date authorization to use the Code symbol stamp will expire.
⑤	A unique Certificate number assigned by the Society.
⑥	Code Symbol granted by the Society, e.g., "S," power boiler; "M," miniature boiler; "E," electric boiler; "A," boiler assembly; "PP," pressure piping; and "V," safety valve.
⑦,⑧	The signatures of the current chairman and director.

The American Society of Mechanical Engineers

CERTIFICATE OF AUTHORIZATION

This certificate accredits the named company as authorized to use the indicated symbol of the American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the Code symbol and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with this symbol shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.

COMPANY ①

SCOPE ②

SAMPLE

AUTHORIZED ③

EXPIRES ④

CERTIFICATE NUMBER ⑤

SYMBOL ⑥

⑦

CHAIRMAN OF THE BOILER
AND PRESSURE VESSEL COMMITTEE

⑧

DIRECTOR, ASME ACCREDITATION AND CERTIFICATION

FIG. A-370 SAMPLE CERTIFICATE OF AUTHORIZATION

A-380 SAMPLE CALCULATIONS FOR EXTERNAL PRESSURE DESIGN

NOTE: In A-381 and A-382, referenced stress tables and external pressure charts are contained in Subparts 1 and 3, respectively, in Section II, Part D.

A-381 A ring reinforced furnace is to be installed in a Scotch Marine type boiler. From the following design data, determine if the furnace is satisfactory for a design pressure of 150 psi (saturated steam temperature 366°F): SA-515 Grade 70 plate $\frac{5}{8}$ in. thick, 36 in. outside diameter, 144 in. between tubesheets, 36 in. greatest distance between adjacent stiffening rings, stiffening rings are attached by full penetration welds, and rings are $\frac{5}{8}$ in. wide and 3 in. high. Show all calculations.

Given: ring reinforced furnace

P = 150 psi
material = SA-515, Grade 70
t = 0.625 in.
D_o = 36 in.
L_s = 36 in.
L_s = the smaller of 36 in. or 60t. 60t = 60(0.625) = 37.5. Therefore, L = 36 in. (see PFT-17.6)

saturated steam temperature = 366°F

Assume:

saturated steam temperature = water temperature
T design = T water + 100°F = 366°F + 100°F
= 466°F
T_r = 0.625 in.
H_r = 3 in.

Find: Does this design meet Section I requirements?

Use: PFT-17 and PFT-51

Solve: Per PFT-51.1.2(a), determine if $D_o/t \geq 10$.

Calculate D_o/t

where

D_o = 36 in. (given)
t = 0.625 in. (given)
D_o/t = 36/0.625 = 57.6

Since D_o/t is greater than 10, follow the procedure outlined in PFT-51.1.2(a).

Step 1: Determine the ratio of L/D_o and D_o/t. Calculate L/D_o

where

L = 36 in. (given)
D_o = 36 in. (given)
L/D_o = 36/36 = 1

Calculate D_o/t

where

D_o = 36 in. (given)
t = 0.625 (given)
D_o/t = 36/0.625 = 57.6

Step 2: Enter Fig. G of Section II, Part D, the value of L/D_o = 1

Step 3: Enter Fig. G of Section II, Part D, the value of D_o/t = 57.6

Find Factor A.

Factor A = 0.0031

Step 4: Enter Table 1A of Section II, Part D, for SA-515, Grade 70, at 466°F. The external pressure chart to be used is Fig. CS-2 of Section II, Part D. Enter Fig. CS-2 of Section II, Part D, and find the intersection of 0.0031 and 466°F.

Step 5: Find Factor B.

Factor B = 13,500

Step 6: Calculate MAWP

$$P = \frac{4(B)}{3(D_o/t)}$$

where

B = 13,500 (see Fig. CS-2 of Section II, Part D)
D_o = 36 in. (given)
t = 0.625 (given)

$$P = \frac{4(13{,}500)}{3(36/0.625)}$$

P = 312.50 psi

The required moment of inertia:

Step 1: Calculate A_s

$A_s = (H_r)(T_r)$

where
H_r = 3 in. (given)
T_r = 0.625 in. (given)
A_s = (3)(0.625)
A_s = 1.875 sq in.

Calculate B

$$B = \frac{P\ D_o}{t + (A_s / L_s)}$$

where
P = 150 psi (given)
D_o = 36 in. (given)
t = 0.625 in. (given)
A_s = 1.875 sq in. (calculated)
L_s = 36 in. (given)

$$B = \frac{(150)(36)}{0.625 + (1.875/36)}$$

B = 7,975 psi

Steps 2 and 3: Enter Table 1A of Section II, Part D, for SA-515, Grade 70. The external pressure chart to be used is Fig. CS-2 of Section II, Part D. Enter Fig. CS-2 of Section II, Part D, and find the intersection of 7,975 psi and 466°F.

Step 4: Find Factor A.

Factor A = 0.00059

Step 5: Calculate I_s

$$I_s = \frac{(D_o)^2 L_s\ [t + (A_s / L_s)]\ A}{14}$$

where
D_o = 36 in. (given)
L_s = 36 in. (given)
t = 0.625 in. (given)
A_s = 1.875 sq in. (calculated)
A = 0.00059 (see Fig. CS-2 of Section II, Part D)

$$I_s = \frac{(36)^2\ (36)\ [0.625 + (1.875/36)]\ (0.00059)}{14}$$

I_s = 1.3313 in.^{4}

Step 6: Calculate actual moment of inertia I:

$$I = \frac{(T_r)(H_r^3)}{12}$$

where
T_r = 0.625 in. (given)
H_r = 3 in. (given)

$$I = \frac{(0.625)(3)^3}{12}$$

I = 1.4062 in.

Step 7: Compare I_s to I.

I_s (1.3313 in.^{4}) is less than I (1.4062 in.^{4}); therefore, the design of this furnace does meet Section I requirements.

A-382 A combination furnace in a boiler is made up of a Morison central section whose least inside diameter measured across the convex curve of the corrugations is 34½ in., plate thickness is ⅝ in. and length is 8 ft 4 in. The plain-end sections are joined by full-penetration buttwelds and measure 18½ in. from weld to head attachment. These sections are 36 in. in inside diameter and have a wall thickness of ¾ in. What is the MAWP of this furnace? Material is SA-285C at 700°F.

Given: combination furnace

Morison Section
ID = 34.5 in.
D = least ID + 2 = 34.5 + 2
= 36.5 (see PFT-18.1)
t = ⅝ in. = 0.625 in.
L = 100 in.

Plain Section
L = 18.5 in.
$2L$ = 37 in. (see PFT-19.2)
ID = 36 in.
D_o = ID + 2t = 36 + 2(0.75)
= 37.5 in.
t = 0.75
material = SA-285C at 700°F

Find: MAWP

Use: Morison section — PFT-18 and PFT-19; plain section — PFT-14, PFT-19, and PFT-51

Solve: Morison section, per PFT-18.1

$$P = Ct/D$$

where
C = 15,600 (see PFT-18.1)
t = 0.625 in. (given)
D = 36.5 in. (see PFT-18.1)

$$P = \frac{(15{,}600)(0.625)}{36.5}$$

P = 267 psi

Plain section, per PFT-19.2. The MAWP shall be calculated in accordance with PFT-14 and PFT-51.

Per PFT-51.1.2(a), determine if $D_o/t \geq 10$.

Calculate D_o/t
where
D_o = 37.5 in. (calculated)
t = 0.75 (given)
$D_o/t = 37.5/0.75 = 50$

Since D_o/t is greater than 10, follow the procedure outlined in PFT-51.1.2(a).

Step 1: Determine the ratios L/D_o and D_o/t.

Calculate L/D_o
where
L = 37 in. (see PFT-19.2)
D_o = 37.5 in. (calculated)
$L/D_o = 37/37.5 = 0.99$

Calculate D_o/t
where
D_o = 37.5 in. (calculated)
t = 0.75 (given)
$D_o/t = 37.5/0.75 = 50$

Step 2: Enter Fig. G of Section II, Part D, the value of $L/D_o = 0.99$

Step 3: Enter Fig. G of Section II, Part D, the value of $D_o/t = 50$

Find Factor A.

Factor $A = 0.0039$

Step 4: Enter Table A1 of Section II, Part D, for SA-285C at 700°F. The external pressure chart to be used is Fig. CS-2 of Section II, Part D. Enter Fig. CS-2 of Section II, Part D, and find the intersection of 0.0039 and 700°F.

Step 5: Find Factor B.

Factor B = 10,500

Step 6: Calculate MAWP

$$P = \frac{4(B)}{3(D_o/t)}$$

where
B = 10,500 (see Fig. CS-2 of Section II, Part D)
D_o = 37.5 in. (calculated)
t = 0.75 (given)

$$P = \frac{4(10{,}500)}{3(37.5/0.75)}$$

P = 280 psi in plain section

MAWP is 267 psi based on Morison section.

A-383 What wall thickness of firetube in an area absorbing heat would be required to carry 500 psi if the tube is seamless SA-192, 4 in. in diameter and 15 ft long?
Given:
D_o = 4 in.
P = 500 psi
L = 15 ft = 180 in.

Find: wall thickness of tube

Use: PFT-12, PFT-50, and PFT-51

Solve: Per PFT-51.1.2(a), determine if D_o/t is greater than 10.

Calculate $D_o/t \geq 10$

where
D_o = 4 in. (given)
t = 0.125 in. (assumption)
D_o/t = 4/0.125 = 32

Since D_o/t is greater than 10, follow the procedure outlined in PFT-51.1.2(a).

Step 1: Calculate L/D_o

where
L = 15 ft (given)
D_o = 4 in. (given)
L/D_o = 180/4
L/D_o = 45

Calculate D_o/t

where
D_o = 4 in. (given)
t = 0.125 in. (assumption)
D_o/t = 4/0.125 = 32

Step 2: Enter Fig. G of Section II, Part D, for L/D_o = 45

Step 3: Move horizontally to the line for D_o/t = 32. From this point of the intersection, move vertically downward to get Factor *A*.

Factor A = 0.0013

Step 4: Enter Table 1A of Section II, Part D, for SA-192 ≤ 700°F per PFT-50 and PG-27.4, Note 2. Enter Fig. CS-1 of Section II, Part D, and find intersection of 0.0013 and 700°F.

Step 5: Move horizontally to the right to find Factor *B*.

Factor B = 7,000

Step 6: Calculate MAWP using the following formula:

$$P_a = \frac{4B}{3(D_o/t)}$$

where
B = 7,000 (see Fig. CS-1 of Section II, Part D)
D_o = 4 in. (given)
t = 0.125 in. (assumption)

$$P_a = \frac{4(7{,}000)}{3(4/0.125)}$$

P_a = 292 psi

Step 7: Since P_a is less than actual P, select a larger t and repeat the design procedure. Therefore, assume t = 0.20 in.

Per PFT-51.1.2(a), determine if D_o/t is greater than 10.

Calculate $D_o/t \geq 10$

where
D_o = 4 in. (given)
t = 0.20 in. (assumption)
D_o/t = 4/0.20 = 20

Since D_o/t is greater than 10, follow the procedure outlined in PFT-51.1.2(a).

Step 1: Calculate L/D_o

where
L = 15 ft (given)
D_o = 4 in. (given)
L/D_o = 180/4
L/D_o = 45

Calculate D_o/t

where
D_o = 4 in. (given)
t = 0.20 in. (assumption)
D_o/t = 4/0.20
D_o/t = 20

Step 2: Enter Fig. G for L/D_o = 45

Step 3: Move horizontally to the line for D_o/t = 20.

Factor A = 0.0028

Step 4: Enter Table 1A of Section II, Part D, for SA-192 ≤ 700°F per PFT-50 and PG-27.4, Note 2. Enter Fig. CS-1 of Section II, Part D, and find the intersection of 0.0028 and 700°F.

Step 5: Move horizontally to the right to find Factor *B*.

Factor B = 8,000

Step 6: Calculate MAWP using the following formula:

$$P = \frac{4B}{3\,(D_o/t)}$$

where

B = 8,000 (see Fig. CS-1 of Section II, Part D)
D_o = 4 in. (given)
t = 0.20 in. (assumption)

$$P_a = \frac{4(8{,}000)}{3(4/0.20)}$$

P_a = 533 psi

Step 7: since P_a is greater than P, the required thickness equals 0.25 in.

t = 0.20 in.