危險性設備型式合格廠委外製造處理原則

一、型式合格廠對於製造中之危險性設備，因囿於製造能力，部分構造需委外製造者，於經危險性設備主任設計者及施工負責人，簽核相關資料以示負責後，得採以下原則辦理。

二、**國內製造：**

1. 委由經型式檢查合格之製造人施作者，依本會 77 年 7 月 28 日台 77 勞檢 2 字第 14236 號函示原則辦理（如附件 1）。
2. 委由未經型式檢查合格之製造人施作者，依本會 90 年 3 月 23 日台 90 勞安 2 字第 0011034 號函，略以「製造人如僅製造端板者，無需單獨申請；應由負責鍋爐、第一種壓力容器、高壓氣體特定設備、高壓氣體容器等之主要部分之製造者，聯合其他共同參與製造之各製造廠依規定，共同提出申請型式檢查。」辦理（如附件 2），並於 100 年 7 月 1 日前完成相關補正事宜。

三、**國外製造：**

1. 由國外專業廠進口管帽（caps）、法蘭（flanges）・・・等供主要構造使用之標準壓力件（Standard pressure parts），或以整體成型製作之蓋板（covers）、端板（heads）等非標準壓力件（Non-standard pressure parts），經採以指定之標準設計、製造者，得視為材料，依材質證明執行材料檢查。
2. 由國外進口焊接非標準壓力件，為齊一做法，以採用 ASME 標準之方式，並取得該標準授權機構檢查提供之相關證明文件辦理，得以提

供 Section VIII-1 FORM U-2 或 Section I FORM P-4 等，經登錄之檢查證明文件佐證（格式如附件 3），其內容應包括使用材料、最大內徑或內緣半徑、厚度、形狀或型式等。

3. 另對於前開取得 Section VIII-1 FORM U-2 或 Section I FORM P-4 等經登錄之證明者，進口後併國內製造之危險性設備接續介面，得採下列方式辦理：

（1）對於採同一經指定之標準接續製造者，應依危險性機械及設備安全檢查規則第 6 條第 2 項規定辦理；即與該標準相關之材料選用、機械性質、施工方法、施工技術及檢查方式等相關規定，其於國內製造部分仍應一併採用。

（2）對於需改採本國國家標準接續製造者，考量原採用之國外標準與國內標準存有差異，故應採用國內標準重新核算其強度；惟為避免困擾，對擬採此種樣態者，應於事前依規定核算，並於申請資料中敘明。

副本

行政院勞工委員會（函）

受文者：台灣省政府勞工處中區勞工檢查所

副本：台灣省政府勞工處

抄本：高雄市政府勞工局等單位

發文日期：中華民國[illegible]

發文字號：台七十七勞檢二字第14236號

主旨：被復第一種壓力容器端板製造廠申請端板熔接檢查，檢查機構是否受理，及壓力容器製造廠使用未檢查合格之預先製妥端板製造時，如何實施檢查乙案，請查照。

說明：

一、復貴處七十七年六月廿四日(77)勞六字第一七二〇一號函。

二、依鍋爐及壓力容器安全規則第十三條之規定，以熔接製造之第一種壓力容器，應由製造人於施工前向製造所在地檢查機構申請熔接檢查。壓力容器之端板如由專業製造廠製造時，端板製造廠應申請製前認可合格後方得製造。至以熔接製造之端板應依下列方式處理：

1. 新製之端板熔接部應由端板製造廠作成試驗板並提供材質證明及尺寸交由壓力容器製造廠一併申請熔接檢查，並作機械試驗、放射線檢查及退火處理。

2. 已製妥之舊有熔接端板仍應依前款方式辦理，如未做試驗板時得由原熔接工依同一熔接方法重做。

三、無熔接之端板，由端板製造廠提供材質證明及尺寸交由壓力容器製造廠一

主任委員 鄭水枝

校對：孫偉玲

勞工處中區勞工檢查所 收文 7月30日

77. 4. 20,000

行政院勞工委員會　書函

機關地址：一〇五臺北市民生東路三段一三二號六樓
機關傳真：（〇二）二五一四九二四〇
聯絡人：　傳遞方式：
聯絡電話：　傳真：

受文者：勞工檢查處

速別：
密等及解密條件：
發文日期：中華民國九十年三月二十三日
發文字號：台九十勞安二字第〇〇一一〇三四號
附件：

主旨：有關製造「端板」是否應經「型式檢查」合格，方可製造疑義乙案，釋如說明，請查照。

說明：

一、復貴公司九十年三月十二日九十隆字第九〇〇三一二〇一號函。

二、經查製造人擬製造或修改「鍋爐」、「第一種壓力容器」、「高壓氣體特定設備」、「高壓氣體容器」等，未經「型式檢查」合格，不得為之，於「危險性機械及設備安全檢查規則」已有明定。製造人如僅製造「端板」者，無須單獨申請；應由負責「鍋爐」、「第一種壓力容器」、「高壓氣體特定設備」、「高壓氣體容器」等之主要部分之製造者，聯合其他共同參與製造之各製造廠依上開規定，共同提出申請「型式檢查」。

正本：隆成發鐵工廠股份有限公司
副本：台北市政府勞工局勞動檢查處、高雄市政府勞工局勞工檢查所、經濟部加工出口區管理處、科學工業園區管理局、台南科學工業園區開發籌備處、本會北區勞動檢查所、中區勞動檢查所、南區勞動檢查所、台灣區高壓氣體工業同

保存年限：檔

07

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

1. Manufactured and certified by _____ (1) (Name and address of Manufacturer)

2. Manufactured for _____ (2) (Name and address of Purchaser)

3. Location of installation _____ (3) (56) (Name and address)

4. Type _____ (7) (Description of vessel part (shell, two-piece head, tube bundle)) _____ (8) (Manufacturer's serial number) _____ (9) (CRN)

_____ (12) (National Board number) _____ (10) (Drawing number) _____ (11) (61) (Drawing prepared by) _____ (Year built)

5. ASME Code, Section VIII, Div. 1 _____ (13) (Edition and Addenda (date)) _____ (14) (Code Case number) _____ (15) (56) (Special service per UG-120(d))

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

6. Shell: (a) Number of course(s) _____ (16) (b) Overall length _____ (17)

Course(s)			Material	Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter	Length	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
	(18)	(19)	(20)	(21)	(22)	(23)	(24)		(25)	(26)		(27)	

7. Heads: (a) _____ (20) (17) (Material spec. number, grade or type) (H.T. — time and temp.) (b) _____ (Material spec. number, grade or type) (H.T. — time and temp.)

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)		(28)	(29)	(30)									(31)	
(b)														

If removable, bolts used (describe other fastening) _____ (33) (Material spec. number, grade, size, number)

8. Type of jacket _____ (30) Jacket closure _____ (34) (Describe as ogee & weld, bar, etc.)

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

9. MAWP _____ (35) (36) (Internal) _____ (External) at max. temp. _____ (36) (Internal) _____ (External) Min. design metal temp. _____ (37) at _____

10. Impact test _____ (38) (Indicate yes or no and the component(s) impact tested) at test temperature of _____ (38)

11. Hydro., pneu., or comb. test pressure _____ (39) Proof test _____ (40)

Items 12 and 13 to be completed for tube sections.

12. Tubesheet _____ (19) (Stationary (material spec. no.)) _____ (18) (Diameter (subject to pressure)) _____ (21) (Nominal thickness) _____ (22) (56) (Corr. allow.) _____ (Attachment (welded or bolted))

_____ (20) (Floating (material spec. no.)) _____ (18) (Diameter) _____ (21) (Nominal thickness) _____ (22) (56) (Corr. allow.) _____ (Attachment)

13. Tubes _____ (20) (Material spec. no., grade or type) _____ (O.D.) _____ (Nominal thickness) _____ (Number) _____ (Type (straight or U))

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

14. Shell: (a) No. of course(s) _____ (b) Overall length _____

Course(s)			Material	Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter	Length	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
	(18)	(19)	(20)	(21)	(22)	(23)	(24)		(25)	(26)		(27)	

(04/07)

FORM U-2 (Back)

15. Heads: (a) _____ (Material spec. number, grade or type) (H.T. — time and temp.) (b) _____ (Material spec. number, grade or type) (H.T. — time and temp.)

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

If removable, bolts used (describe other fastening) _____ (Material spec. number, grade, size, number)

16. MAWP _____ (Internal) _____ (External) at max. temp. _____ (Internal) _____ (External). Min. design metal temp. _____ at _____.

17. Impact test _____ (58) _____ at test temperature of _____ (58)
(Indicate yes or no and the component(s) impact tested)

18. Hydro., pneu., or comb. test pressure _____ Proof test _____

19. Nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
				(20)	(20)						
(41)		(42)	(43)	(44)	(45)	(46)		(47)	(48) (49)	(48) (49)	(50)

20. Identification of part(s) (58)

Name of Part	Quantity	Line No.	Mfr's. Identification No.	Mfr's. Drawing No.	CRN	National Board No.	Year Built
(59)		(70)	(71)	(10)	(8)	(12)	

21. Supports: Skirt _____ (51) (Yes or No) Lugs _____ (51) (Number) Legs _____ (51) (Number) Others _____ (51) (Describe) Attached _____ (51) (Where and how)

22. Remarks _____
(53)

(66) **CERTIFICATE OF SHOP/FIELD COMPLIANCE**

We certify that the statements in this report are correct and that all details of material, construction, and workmanship of this pressure vessel part conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1.

U Certificate of Authorization Number _____ Expires _____

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

(69) **CERTIFICATE OF SHOP/FIELD 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 _____ (61) _____ and employed by _____ of _____ have inspected the pressure vessel part described in this Manufacturer's Data Report on _____, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel part in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel part described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her 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 _____ (63) (National Board (incl. endorsements), State, Province and number)

(04/07)

FORM P-4 MANUFACTURER'S 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 (4)	Quantity	Line No. (5)	Mfr's. Identifying Numbers (6)	Manufacturer's Drawing No. (7)	CRN	National Board No. (8)	Year Built (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 _____ (Number(s))

6(a). Drums

No.	Inside Diameter	Inside Length	Shell Plates			Tubesheets		Tube Hole Ligament Efficiency, %	
			Material Spec. No., Grade	Thickness	Inside Radius	Thickness	Inside Radius	Longitudinal	Circumferential
			(12)	(11)		(10)		(31)	(33)
1									
2									
3									
4									

No.	Longitudinal Joints		Circum. Joints		Heads						Hydrostatic Test
	No. & Type*	Efficiency	No. & Type	Efficiency	Material Spec. No., Grade	Thickness		Type**	Radius of Dish	Manholes No. Size	
					(12)	(13)	(14)		(15)		(16)
1											
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 (17)	Thickness	Material Spec. No., Grade (12)

6(c). Headers No. _____ (19) (12) (13) or (18) (Box or sinuous or round; Material spec. no.; Thickness)

Heads or Ends _____ (22) (12) (14) (Shape; Material spec. no.; Thickness) Hydro. Test _____ (16)

6(d). Staybolts _____ (18) (Material spec. no.; Diameter; Size (athale; Net area)

Pitch _____ (Horizontal and vertical) Net Area _____ (Supported by one bolt) MAWP _____ (30)

6(e). Mud Drum _____ (20) (21) (12) (13) or (18) (For sect. header boilers, state: Size; Shape; Mat'l. spec. no.; Thickness) Heads or Ends _____ (22) (12) (14) (Shape; Material spec. no.; Thickness) Hydro Test, psi _____ (16)

7(a). Waterwall Headers

7(b). Waterwall Tubes

No.	Size and Shape	Material Spec. No.	Thickness	Heads or Ends			Hydro. Test	Diameter	Thickness	Material Spec. No.
				Shape	Thickness	Material Spec. No.				
	(20) (21)	(12)	(19) (18)	(22)	(14)	(12)	(16)	(17)	(18)	(12)

(09/06)

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FORM P-4

P-4 ID No. (32)

8(a). Economizer Headers

No.	Size and Shape (20) (21)	Material Spec. No. (12)	Thickness (13) or (14)	Heads or Ends: Shape (22)	Heads or Ends: Thickness (14)	Heads or Ends: Material Spec. No. (12)

8(b). Economizer Tubes

Hydro. Test (16)	Diameter (17)	Thickness (18)	Material Spec. No. (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) Pressure Relief 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	Hydro. Test	Heating Surface
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 pressure relief valve capacity.

14. Remarks (26) (34)

(27) CERTIFICATE OF COMPLIANCE

We certify the statements made in this Manufacturer's 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 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 the boiler described in this Manufacturer's 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 Manufacturer's 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.)

(04/09)