

Delete 620-245 and 620-251(approved for publication) and replace with wording shown in bold and italics.

(Editorial Note: Existing Fig. 6.1 is to be renumbered to Fig.6.3, Revise reference in 6.16 Fig.6.1 to Fig.6.3)

6.4 Forming Sidewall Sections, and Roof and Bottom Plates

6.4.1 Cylindrical Side Wall Sections:

Figure 6.1 for steel tanks and Figure 6.2 for Aluminum tanks provide criteria for shaping of cylindrical sidewalls to the curvature of the tank prior to installation in the tank. Shaping of plates concurrently with installation in the tank shell is permitted if the diameter exceeds the limits in the Figure 6.1 (for steel tanks) and Figure 6.2 (for Aluminum tanks) or if the manufacturer's alternate procedure for any diameter has been accepted by the purchaser.

6.4.2 Roof and Bottom Plates:

If curved, roof and bottom plates shall be formed to the required shape by any process that will not unduly impair the mechanical properties of the material.

(620-251 is attached as reference for reviewer)

AGENDA ITEM- 620-271

Sheet 1 of 1

Date: Sept.15 ,2003

Title: Shaping of Plates

Source: 650-548

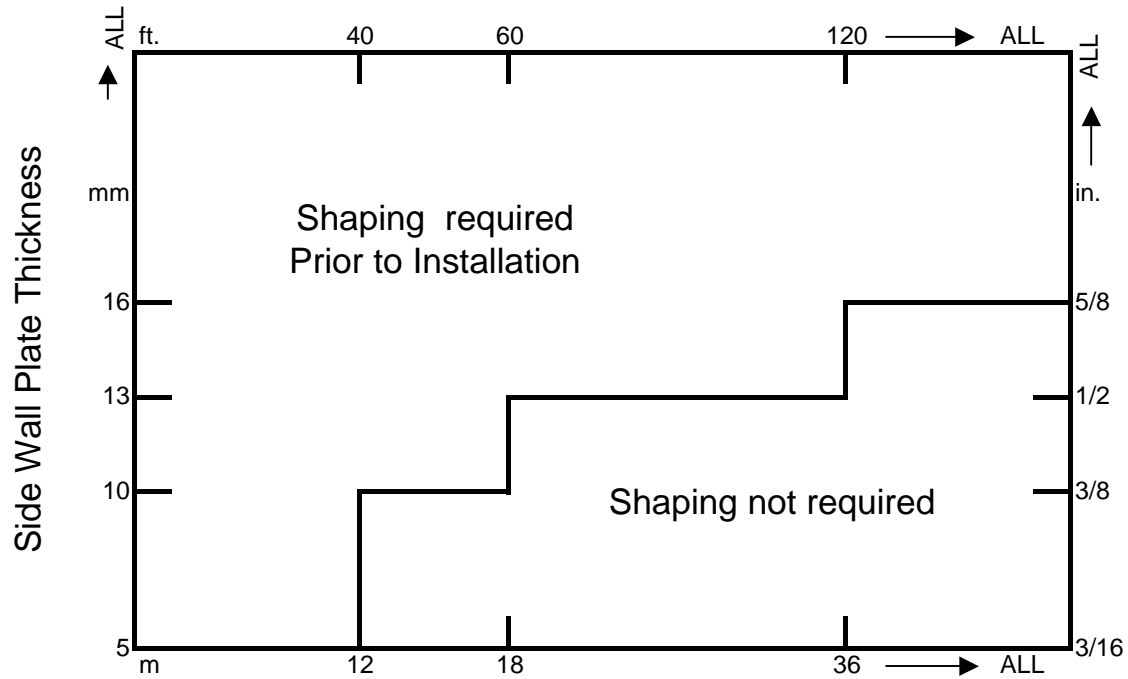
Purpose: To explain clearly meaning of Table in 6.4 of API-620 (Agenda 620-251)and how to apply.

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Technical Justification:

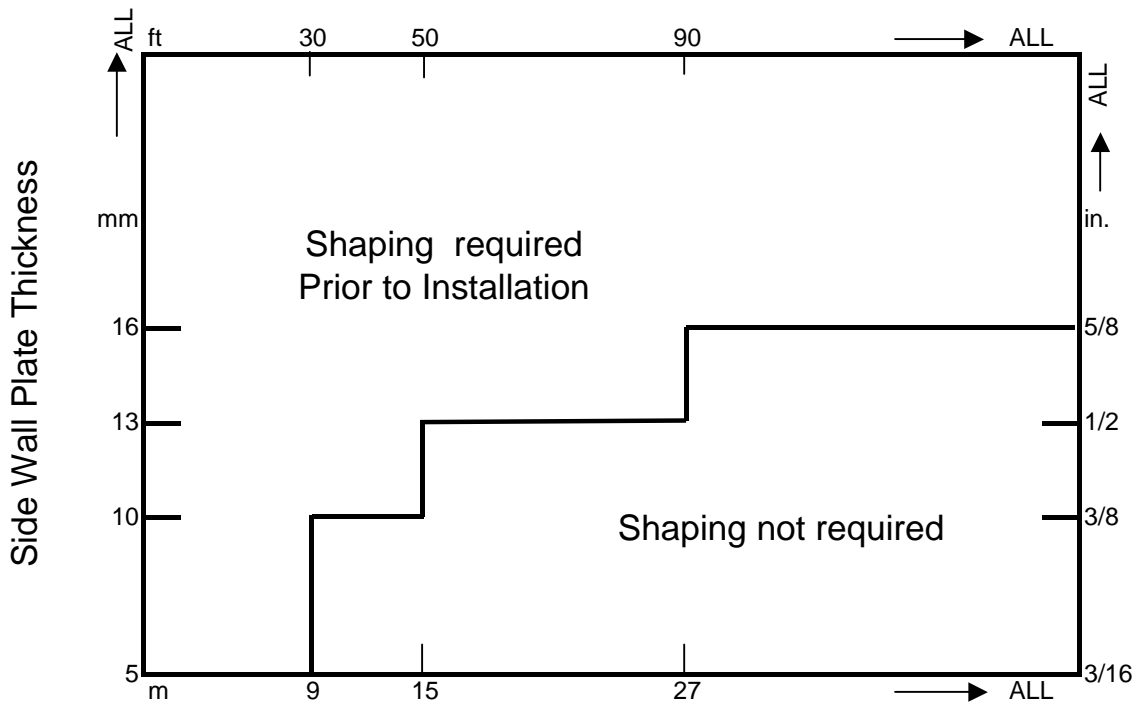
Wording in 6.4 (Agenda 620-251) may not be as clear to someone, not very familiar with tank design and construction.

Cost Effects: None.



Tank Diameter
Figure- 6.1
Shaping of Plates (Para. 6.4)
Steel Steel Tanks

Note: Any combination of diameter and thickness falling on or above the solid line requires shaping prior to installation.



Tank Diameter
Figure- 6.2
Shaping of Plates (Para. 6.4)
Aluminum Tanks

Note: Any combination of diameter and thickness falling on or above the solid line requires shaping prior to installation.

AGENDA ITEM 620-251 (FOR REFERENCE ONLY)

Agenda Item: 620-251
Title: Thickness Limits for Forming of Aluminium Plates
Source: 620-245
Purpose: To determine the thickness and forming radii for aluminium plates requiring shaping for construction purposes
Contact: Earl J. Crochet
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Cost Effect: Minimal
Technical Basis: Item 620-245 was passed to publication at the Fall 2001 meeting. Several people commented that limits were also needed for aluminium plates. This item addresses those concerns.

Dimensions in new Aluminium Table provided by Randy Kissell from B96.1

EDITORIAL NOTE:

Fabrication was Section 4 in the ninth edition; Fabrication is now Section 6 in the Tenth edition.

SECTION 6 - FABRICATION

6.1 General

This section covers details in fabrication practices that are considered essential in constructing large, welded tanks designed according to the rules in this standard.

6.2 Workmanship

6.2.1 All work of fabricating API Standard 620 tanks shall be done in accordance with this standard and with the permissible alternatives specified in the purchaser's inquiry or order. The workmanship and finish shall be first class in every respect and subject to the closest inspection by the manufacturer's inspector, whether or not the purchaser waives any part of the inspection.

6.2.2 When material requires straightening, the work shall be done by pressing or another noninjurious method prior to any layout or shaping. Heating or hammering is not permissible unless the material is heated to a forging temperature during straightening.

From API 650, Section 4 – Fabrication

4.1.3 Shaping of Shell Plates

Shell plates shall be shaped to suit the curvature of the tank and the erection procedure according to the following schedule:

Nominal Plate Thickness mm (in.)	Nominal Tank Diameter m (ft.)
≥ 16 (5/8)	All
From 13 (1/2) to < 16 (5/8)	≤ 36 (120)
From 10 (3/8) to < 13 (1/2)	≤ 18 (60)
From 5 (3/16) to < 10 (3/8)	≤ 12 (40)

(ABOVE FOR REFERENCE ONLY)

NEW API 620 SECTION 6.4 APPROVED FALL 2001

Text added since approval of Item 620-245 in Bold Italics

AGENDA ITEM 620-251 (FOR REFERENCE ONLY)

6.3 Cutting Plates

6.3.1 Plates, edges of heads, and other parts may be cut to shape and size by mechanical means such as machining, shearing, and grinding or by gas or arc cutting. After gas or arc cutting, all slag and detrimental discoloration of material that has been molten shall be removed by mechanical means before further fabrication or use.

6.3.2 All holes made in the tank wall, the edges of which are not to be fused by welds, should preferably be tool-cut. If openings are manually flame-cut, the edges to remain unwelded shall be tool-cut or ground smooth (see Figure 3-8 for finish of unwelded exposed edges).

6.4 Forming Sidewall Sections and Roof and Bottom Plates

All plates for sidewall sections and, if curved, for roof and bottom plates shall be formed to the required shape by any process that will not unduly impair the mechanical properties of the material.

6.5 Dimensional Tolerances

6.5 Forming Sidewall Sections and Roof and Bottom Plates

All plates for sidewall sections shall be shaped to suit the curvature of the tank and the erection procedure according to the following schedule:

For Steel and Stainless Steel Plates

Nominal Plate Thickness mm (in.)	Nominal Tank Diameter m (ft.)
≥ 16 (5/8)	All
From 13 (1/2) to < 16 (5/8)	≤ 36 (120)
From 10 (3/8) to < 13 (1/2)	≤ 18 (60)
From 5 (3/16) to < 10 (3/8)	≤ 12 (40)

For Aluminum Plates

<i>Nominal Plate Thickness mm (in.)</i>	<i>Nominal Tank Diameter m (ft.)</i>
<i>≥ 16 (5/8)</i>	<i>All</i>
<i>From 13 (1/2) to < 16 (5/8)</i>	<i>≤ 27 (90)</i>
<i>From 10 (3/8) to < 13 (1/2)</i>	<i>≤ 15 (50)</i>
<i>From 5 (3/16) to < 10 (3/8)</i>	<i>≤ 9 (30)</i>

~~If curved, roof and bottom plates shall be formed to the required shape by any process that will not unduly impair the mechanical properties of the material.~~