

Title:	"Design Liquid Level"		Agenda Item # 650-1126
Date:	Original 03-17-2025, Rev 1 04-29-26		
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Purpose:	Update the definition for design liquid level and terms that include liquid level consistently		
Source:	Committee member (unknown)		
Revision:	1		
Impact:	No cost impact, adds clarity to the standard		
Rational:	The term "Design Liquid Level" occurs in (50) places, and is defined in 5.6.3.2 as: H is the design liquid level, in m: is the height from the bottom of the course under consideration to the top of the shell including the top angle, if any; to the bottom of any overflow that limits the tank filling height; or to any other level specified by the Purchaser, restricted by an internal floating roof, or controlled to allow for seismic wave action; The term "Maximum Design Liquid Level" is used in (16) of the (50) places and in these locations the modifier "Maximum" is used correctly but it is undefined. The term "maximum liquid level" appears twice where the intent is "maximum design liquid level. There are locations where "Design Liquid Level" is used but the intent is clearly to use "Maximum Design Liquid Level". There are locations where "Design Liquid Level" is modified because the definition in 5.6.3.2 does not include the liquid level reference needed. There are locations where reference to 5.6.3.2 and Figure 5.4 are not shown together or omitted. Below are changes to consistently use Maximum Design Liquid Level where intended and consistently refer to 5.6.3.2 and Figure 5.4 remove references to 5.6.3.2 Rev 1: deletions in green, additions in red - move definitions to Section 3, remove all subsequent references to figure 5.4 and section 5.6.3.2, remove previous Rev 0 revisions if not needed, update references to E14		
Proposed wording:	3.8 design liquid level The height from the bottom of the course or the centerline elevation of the object under consideration to the top of the shell including the top angle, if any; to the bottom of any overflow that limits the tank filling height; or to any other level specified by the Purchaser, restricted by an internal floating roof, or controlled to allow for seismic wave action; 3.23 maximum design liquid level The height from the bottom of the course under consideration to the top of the shell including the top angle, if any; to the bottom of any overflow that limits the tank filling height; or to any other level specified by the Purchaser, restricted by an internal floating roof, or controlled to allow for seismic wave action (see figure 5.4); [to the editors: insert all the text shown and renumber Section 3 after both updates are inserted. After Section 3 is renumbered, update all references to section 3 throughout the		

document]

[committee note: **text in red** is changes to the copy/paste from 5.6.3.2]

5.2.1

Committee only: all changes deleted, no change to this section

5.2.5.2 Maximum capacity is the volume of product in a tank when the tank is filled to its **maximum** design liquid level ~~as defined in 5.6.3.2 (see Figure 5.4).~~

Figure 5.4

Committee only: all changes deleted, no change to this figure

5.5.2

Committee only: all changes deleted, no change to this section

5.6.3.2 [to the editors: remove the language below from both locations]

~~is the height from the bottom of the course under consideration to the top of the shell including the top angle, if any; to the bottom of any overflow that limits the tank filling height; or to any other level specified by the Purchaser, restricted by an internal floating roof, or controlled to allow for seismic wave action;~~

5.6.4.1

Committee only: all changes deleted, no change to this section

5.6.4.6

Committee only: all changes deleted, no change to this section

Tables 5.3a and 5.3b

Add superscript **e** in Column 1 after “H” like this: “Max. Design Liquid Level m H^e”

Add to the notes on the bottom of both tables:

e H is the height of design liquid level above centerline of manhole

Tables 5.10a and 5.10b

Add superscript **h** in Column 1 after “H” like this: “Max. Design Liquid Level ft H^h”

Add to the notes on the bottom of both tables:

h H is the height of design liquid level above centerline of manhole

5.7.5.6

... H is the **height of** design liquid level **above the centerline of manhole** ~~(see 5.6.3.2)~~, in m;

... H is the **height of** design liquid level **above the centerline of manhole** ~~(see 5.6.3.2)~~, in ft;

5.7.7.6

... H is the maximum design liquid level **above the centerline of opening** ~~(see 5.6.3.2)~~, in m;

... H is the maximum design liquid level **above the centerline of opening** ~~(see 5.6.3.2)~~, in ft;

5.7.7.7

...H is the maximum design liquid level **above the centerline of opening** ~~(see 5.6.3.2)~~, in meters;

...H is the maximum design liquid level **above the centerline of opening** ~~(see 5.6.3.2)~~, in feet;

5.8.1.1 a)

...items installed above the maximum **design** liquid level of the tank...

7.3.6.1.1

Committee only: all changes deleted, no change to this section

10.1

Figure 10.1

...**MAX DESIGN LIQUID LEVEL**

...g) The **maximum** design liquid level (~~see 5.6.3.2~~), in meters (ft and in.).

A.4.1

Committee only: all changes deleted, no change to this section

AL.1.5

Committee only: all changes deleted, no change to this section

Figure AL.1

Committee only: all changes deleted, no change to this figure

Figure AL.3

... H is the **maximum** design liquid level, m (ft).

E.6.1.5 3)

Committee only: this section is revised in E14 no change to this section

F.4.4

...the **maximum** design liquid level

L.7

...**Maximum** Design Liquid Level*: See ~~5.6.3.2~~, C.3.1.1, and E.2.2.

L.21

... Full of Water*: Indicate weight filled with water to **maximum** design liquid level.

L.32

...Shell Extension?... **maximum** design liquid level

L Data Sheet (page 1 of 8)

... 7. Max. Design. Temp. _____ □ Design Metal Temp.* _____ □ **Maximum** Design Liquid Level* _____

L Data Sheet (page 3 of 8)

Committee only: all changes deleted, no change to this figure

M.4.2

... N is the number of **maximum** design liquid level and temperature cycles estimated...

... N is the number of **maximum** design liquid level and temperature cycles estimated...

P.3.2.4

...Load cases shall include product and hydrostatic conditions at **maximum** design liquid level (H).

S.3.2.2.3

... H = **maximum** design liquid level, in m (~~see 5.6.3.2~~);

	...H = maximum design liquid level, in ft-(see 5.6.3.2); V.10.1 ...Maximum design liquid level = 48 ft-0 in. X.3.3.3.3 ...H is the maximum design liquid level, in m-(see 5.6.3.2); ...H is the maximum design liquid level, in ft-(see 5.6.3.2);
	End of Agenda Item