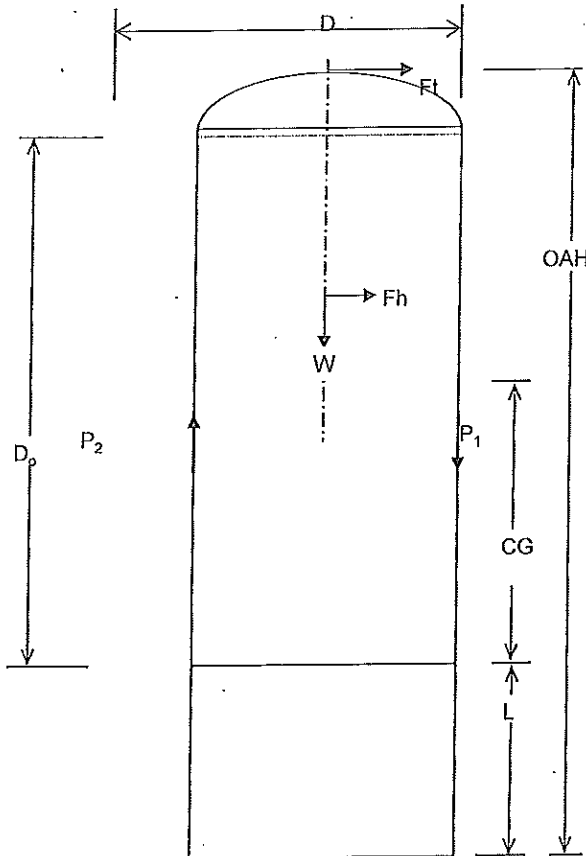


IBC: 2009 SEISMIC DESIGN - VERTICAL SILO

Quote/Order #: _____ Date: February 18, 2016
 Customer: HP Hood
 Reference: 20K Silo Product: _____
 Designer: FSK

State:



Liner Diameter (ID) =	120 in
Insul Skin (OD) =	126.5
OD of Base Ring (Db) =	129 in
Height (OAH) =	.462 in
C.G. (OAH-L)/2 =	218.5 in
Skirt Height (L) =	25 in
Product Ht (Dp) =	420 in
Empty Weight Lining (Wl) =	18,000 lbs
Empty Weight Total (We) =	18,000 lbs
Capacity (V) =	20,000 gal
Int. or Ext. Pressure (Pr) =	0 psi
Spec Gravity (SG) =	1
Number of Anchors (N) =	7
Size of Anchor Bolts	1" <input type="text"/>
Yield Strength (Fy) =	30,000 psi
Modulus (E) =	28,000,000 psi
Prod Weight (Wp) =	166,840 lbs
Total Weight (Wt) =	184,840 lbs
Total Weight on Lining (Wl) =	184,840 lbs
Silo Skin Type	Light Sheathing or With Slip Joint <input type="text"/>
Weight per Foot (w) lb/ft =	5,037.66
Moment of Inertia (Im) in ⁴ =	71,251 = $\pi r^4 t$
Gravitation Const (g) in/sec ² =	386
Fundamental Period (sec) =	0.0068

$$T = 1.79 \sqrt{wh^4/EImg}$$

 T < .06, Tank is a Rigid Structure

<http://www.zipinfo.com/search/zipcode.htm>

<http://earthquake.usgs.gov/designmaps/us/application.ph>

SEISMIC LOADING INPUT: 2009 INTERNATIONAL BUILDING CODE

USE THE LINK BELOW, ENTER A ZIP CODE OR COORDINATES FOR SEISMIC VALUES

GET USGS DATA.jar	<-CLICK THE LINK	Zip Code =>	04102
Silo is considered a "Non-Building Structure"			
Importance Factor	(I)		1.00
Site Class	Note: (Additional Info. Is needed for Site Class 'F')	<input type="text" value="D"/>	
Spectral Response Acceleration for short periods (5% damped)	S_s		0.317
Spectral Response Acceleration for 1-second periods (5% damped)	S_1		0.077
Design Response Acceleration for short periods (5% damped)	S_{Ds}		0.327
Design Response Acceleration for 1-second periods (5% damped)	S_{D1}		0.123
Site Coefficient	(Fa)		1.547
Site Coefficient	(Fv)		2.400
Max. Spectral Response Acceleration for short periods	S_{ms}		0.490
Max. Spectral Response Acceleration for 1-second periods	S_{m1}		0.185
Base Shear (Full) = .3SdsIWt	(Vs)		46,066 lbs.
Base Shear (Empty) = .3SdsIWl	(Ve)		1,766 lbs.
Base Shear (Full) Lining Only = .3SdsIWl	(Vs)		46,066 lbs.

WIND LOADING INPUT: ASCE/SEI 7-10