

## TECHNICAL INFORMATION

- Foundations and pits
- Natural vaporization tables
- LPG maximum degree of filling
- LPG pressures
- Tanks for storing ammonia (NH<sub>3</sub>)

### FOUNDATIONS AND PITS

The foundations and pits for aboveground and underground tanks shown on pages 21 to 25 are for information purposes and should be reasoned for each specific installation project, apply the regulations in force.

### NATURAL VAPORIZATION TABLES

The natural vaporization values in a LPG tank depend on several factors related to the tank itself, the type of installation: aboveground or underground, consumption flows, ambient temperature and type of mix contained, amongst other factors. The tables provided on page 26 show the natural vaporization values for our standard models of tanks for propane in the conditions of installation and use indicated.

### MAXIMUM DEGREE OF FILLING

The maximum degree of filling for LPG tanks according to current regulations is 85%.

The table on page 27 gives the maximum filling heights for the tank and the free liquid heights, for the adjustment of the tubes on the valves indicating the maximum filling level.

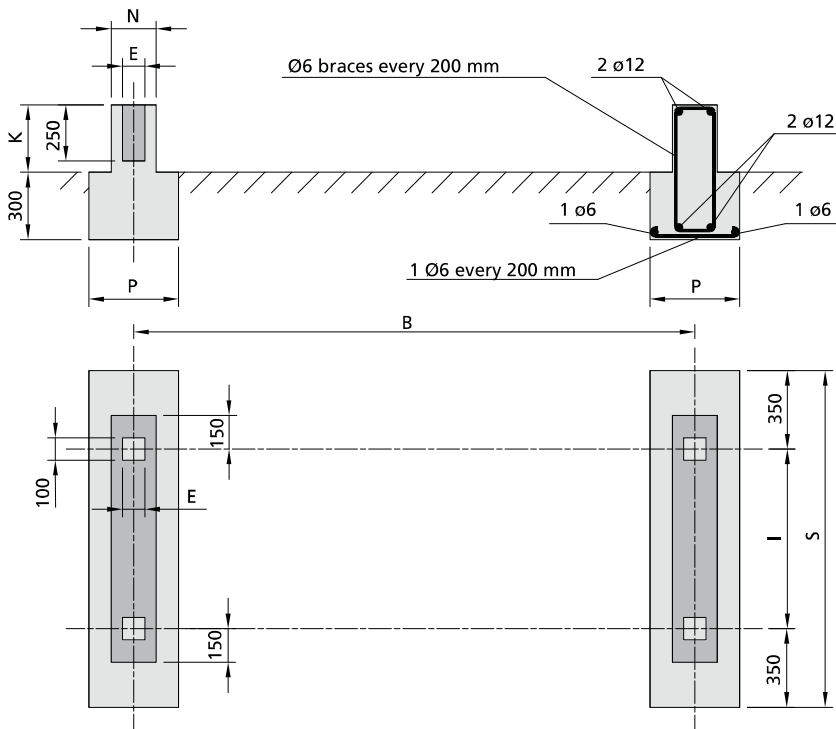
### TANKS FOR STORING AMMONIA (NH<sub>3</sub>)

The whole range of tanks for LPG presented in this catalogue can be produced for storing anhydrous ammonia, by adapting their design:

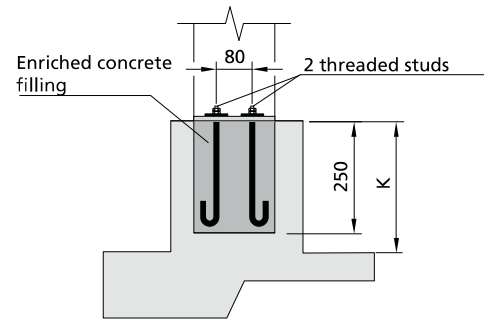
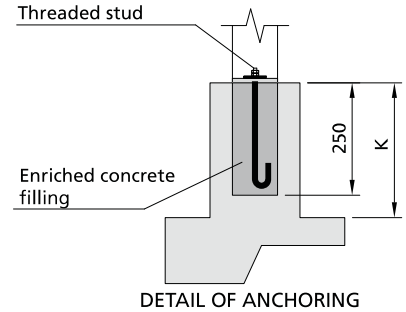
- Officially approved tanks for storing NH<sub>3</sub>
- Design pressure: 22 bar
- Composition materials compatible with NH<sub>3</sub>
- Corrosion allowance thickness: 1 mm
- Increase in X-ray control of welds
- Post welding heat treatment



FOUNDATIONS FOR ABOVEGROUND TANKS 1.200, 1.500 and 1.750 diameters



Foundation valid for tanks with drain valve on bottom generatrix.



DETAIL OF ANCHORING FOR TANKS OF Ø1750 AND CAPACITIES GREATER THAN 20 m<sup>3</sup>

Option: Threaded studs housed in hole in concrete with bonding dowel (not expanding dowel)

The following are some of the suggested foundation options. Foundations must be calculated for each specific installation project.

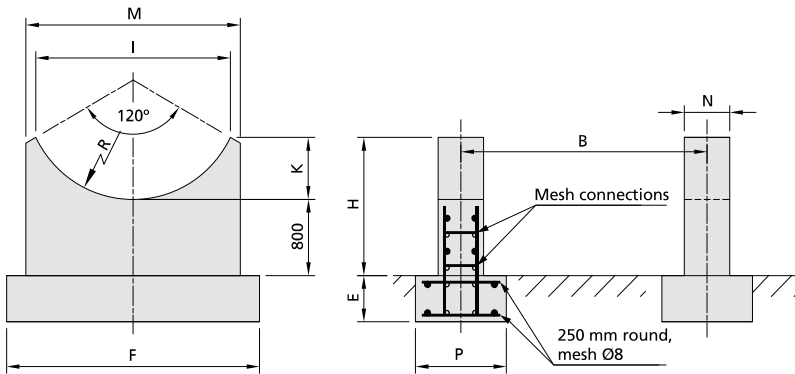
Dimensions of supports for terrains with a bearing capacity of 1 kg/cm<sup>2</sup>

CHARACTERISTICS TABLE

Model Ref.	Anchor stud (min)	Dimensions (mm)						
		B	P	N	S	I	K	E
LP2450A	M12	1.500	400	200	1.500	800	300	100
LP2670A	M12	1.500	400	200	1.500	800	300	100
LP4000A	M14	2.000	400	200	1.500	800	300	100
LP4440A	M14	2.300	400	200	1.500	800	300	100
LP4660A	M14	2.400	400	200	1.500	800	300	100
LP4880A	M14	2.500	400	200	1.500	800	300	100
LP6430A	M16	3.300	400	200	1.500	800	300	100
LP6650A	M16	3.400	400	200	1.500	800	300	100
LP6870A	M16	3.500	400	200	1.500	800	300	100
LP7090A	M16	3.600	400	200	1.500	800	300	100
LP8334A	M16	4.200	400	200	1.500	800	300	100
LP4950A	M16	1.500	400	200	1.700	1.000	300	100
LP7000A	M16	2.300	400	200	1.700	1.000	300	100
LP10A	M16	3.500	400	200	1.700	1.000	300	100
LP13A	M16	4.300	400	200	1.700	1.000	300	100
LP16A	M16	5.100	400	200	1.700	1.000	300	100
LP19A	M16	6.200	400	200	1.700	1.000	300	100
LP22A	M20	7.100	600	400	1.700	1.000	600	100
LP11A	M16	2.600	400	200	1.900	1.200	300	100
LP13A-17	M16	3.500	400	200	1.900	1.200	300	100
LP15A	M16	3.500	400	200	1.900	1.200	300	100
LP20A	M16	4.500	400	200	1.900	1.200	300	100
LP24A	M20	5.600	600	400	1.900	1.200	600	180
LP29A	M20	6.900	600	400	1.900	1.200	600	180
LP34A	M20	8.000	600	400	1.900	1.200	600	180
LP38A	M20	9.100	600	400	1.900	1.200	600	180

**SUPPORTS FOR ABOVEGROUND TANKS ≥ 2.200 mm diameter**

**TANKS WITHOUT WELDED SUPPORTS\***



Foundations for terrains with a bearing capacity of 2 kg/cm<sup>2</sup>, considering the largest tank model in the series

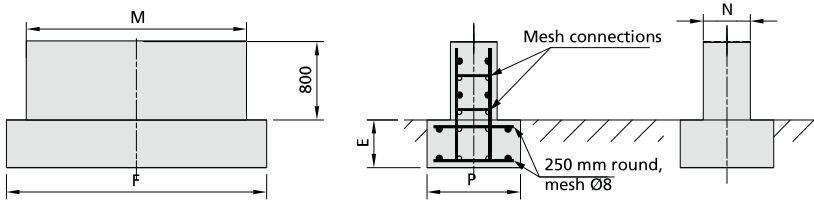
**CHARACTERISTICS TABLE**

Dimensions in mm	Tank diameter			
	2200	2450	3000	3500
E	400	500	600	800
F	3.000	3.200	3.800	4.000
H	1.355	1.418	1.555	1.680
I	1.923	2.139	2.615	3.048
K	555	618	755	880
M	2.300	2.500	3.000	3.500
N	400	500	600	800
P	800	1.100	1.500	1.900
R	1.110	1.235	1.510	1.760

(\*) For this system the following is recommended:

- 1- Build a flat wall with a height of 800 mm
- 2- Place the tank on top.
- 3- Carry out formwork once the tank is in place to obtain the indicated shape.

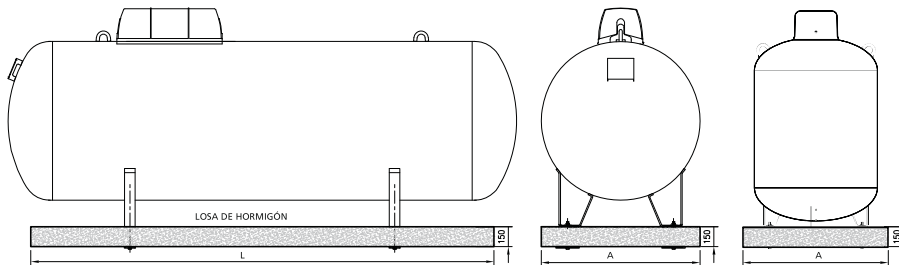
**TANKS WITH WELDED SUPPORTS**



**CHARACTERISTICS TABLE**

Dimensions in mm	Tank diameter			
	2200	2450	3000	3500
E	400	500	600	800
F	3.000	3.200	3.800	4.000
M	2.300	2.500	3.000	3.500
N	400	500	600	800
P	800	1.100	1.500	1.900

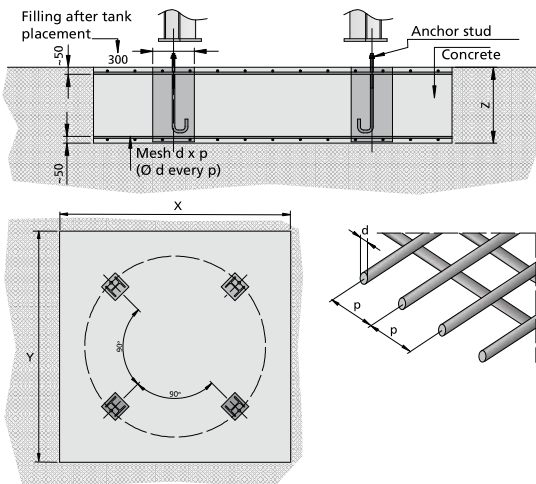
**CONCRETE SLABS FOR ABOVEGROUND TANKS**



**SLABS: DIMENSIONS AND WEIGHTS**

Model tank	L (mm)	A (mm)	Peso (kg)
LP1000A	950	950	250
LP1000AV	950	950	250
LP1450A	1.200	1.200	345
LP2450A	1.750	1.200	500
LP4000A	3.500	1.200	990
LP4880A	3.500	1.200	990
LP6650A	3.600	1.200	1.015
LP8334A	5.000	1.200	1.410

**FOUNDATIONS FOR VERTICAL ABOVEGROUND TANKS**



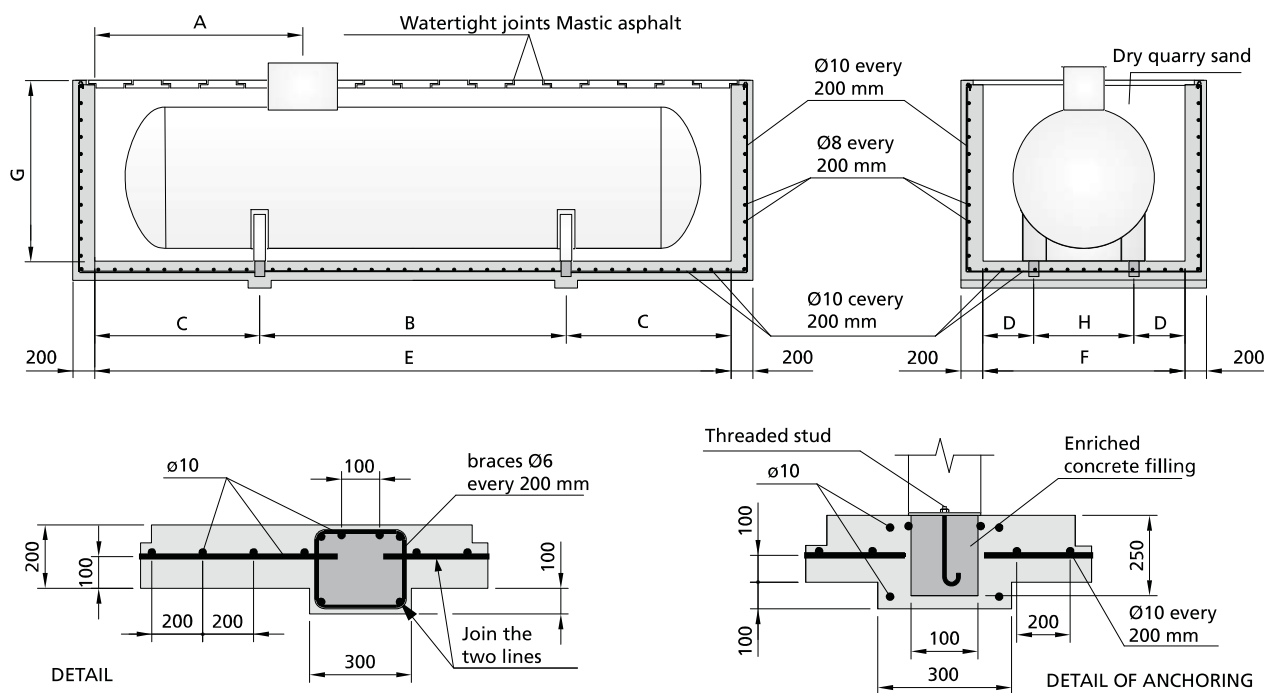
Foundations for aboveground vertical tanks.

**CHARACTERISTICS TABLE**

DIM. in mm	Anchor stud (minimum)	Dimensions (mm)				
		Footing			Mesh	
		X	Y	Z	d	p
LP1000AV	M14	1.000	1.000	300	8	150
LP2450AV	M14	1.200	1.200	300	8	150
LP5000AV-17	M16	1.600	1.600	300	8	150
LP8400AV-17	M16	1.600	1.600	300	10	150
LP13AV-17	M18	2.000	2.000	550	10	150
LP20AV	M20	2.600	2.600	550	16	200
LP33AV	M22	3.100	3.100	550	20	200
LP50AV	M24	3.900	3.900	600	25	200

Dimensions of supports for terrains with a resistance of ≥ 3 kg/cm<sup>2</sup>

PITS FOR UNDERGROUND TANKS OF LESS THAN 20 m<sup>3</sup>



Option: Threaded studs housed in hole in concrete with bonding anchor dowel (not expanding dowel)

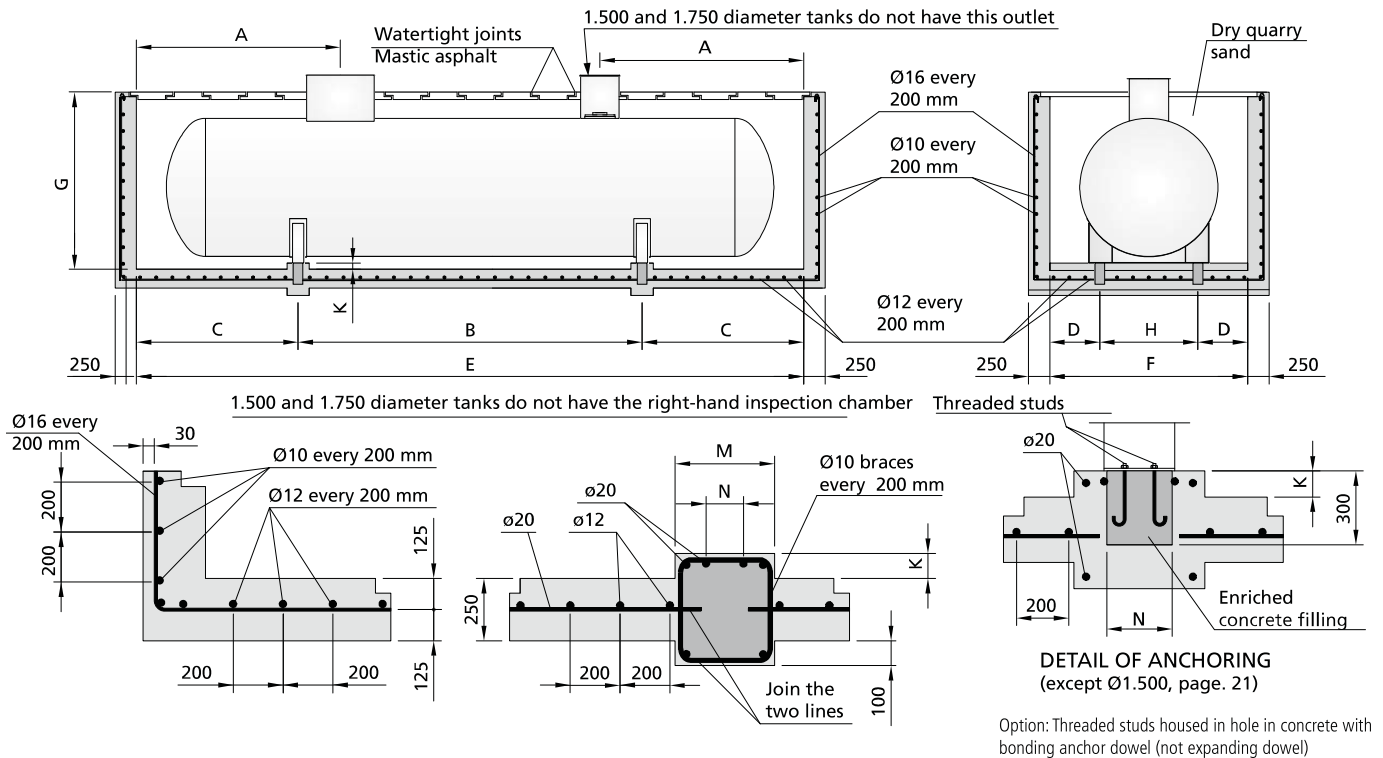
The dimensions indicated in the table are obtained based on a distance of 500 mm from the tank to the pit walls and a distance of 300 mm to the cover. For the "centred outlets" options (1.200, 1.500 and 1.750 mm diameters) dimension A should be corrected in accordance with dimension G1 of the table on page 15.

In addition to the pit shown, other types of pits can be made according to the regulations in force

CHARACTERISTICS TABLE

Model Ref.	Diameter ø	Anchor stud (minimum)	Dimensions (mm)							
			A	B	C	D	E	F	G	H
LP2450*	1.200	M12	1.520	1.500	975	700	3.450	2.200	1.700	800
LP2670*	1.200	M12	1.510	1.500	1.080	700	3.660	2.200	1.700	800
LP4000*	1.200	M14	1.510	2.000	1.420	700	4.840	2.200	1.700	800
LP4440*	1.200	M14	1.510	2.300	1.465	700	5.230	2.200	1.700	800
LP4660*	1.200	M14	1.510	2.400	1.520	700	5.440	2.200	1.700	800
LP4880*	1.200	M14	1.510	2.500	1.575	700	5.650	2.200	1.700	800
LP6430*	1.200	M16	1.510	3.300	1.855	700	7.010	2.200	1.700	800
LP6650*	1.200	M16	1.510	3.400	1.920	700	7.240	2.200	1.700	800
LP6870*	1.200	M16	1.510	3.500	1.965	700	7.430	2.200	1.700	800
LP7090*	1.200	M16	1.510	3.600	2.020	700	7.640	2.200	1.700	800
LP8334*	1.200	M16	1.510	4.200	2.315	700	8.830	2.200	1.700	800
LP4950*	1.500	M16	1.590	1.500	1.320	750	4.140	2.500	2.000	1.000
LP7000*	1.500	M16	1.590	2.300	1.510	750	5.320	2.500	2.000	1.000
LP10*	1.500	M16	1.590	3.500	1.775	750	7.050	2.500	2.000	1.000
LP13*	1.500	M18	1.590	4.300	2.245	750	8.790	2.500	2.000	1.000
LP16*	1.500	M20	1.590	5.100	2.710	750	10.520	2.500	2.000	1.000
LP19*	1.500	M22	1.590	6.200	3.025	750	12.250	2.500	2.000	1.000
LP11*	1.750	M16	1.660	2.600	1.640	775	58.80	2.750	2.250	1.200
LP13*-17	1.750	M16	1.660	3.500	1.675	775	68.50	2.750	2.250	1.200
LP15*	1.750	M20	1.660	3.500	2.160	775	78.20	2.750	2.250	1.200
LP20*	1.750	M22	1.660	4.500	2.630	775	97.60	2.750	2.250	1.200

PITS FOR UNDERGROUND TANKS GREATER THAN 20 m<sup>3</sup>



The dimensions indicated in the table are obtained based on a distance of 500 mm from the tank to the pit walls and a distance of 300 mm to the cover. For the "centred outlets" options (1.500 and 1.750 mm diameters) dimension A should be corrected in accordance with dimension G1 of the table on page 15. In addition to the pit shown, other types of pits can be made according to the regulations in force.

**CHARACTERISTICS TABLE**

Model Ref.	Diameter ø	Anchor stud (minimum)	Dimensions (mm)										
			A	B	C	D	E	F	G	H	K	M	N
LP22E	1.500	M24	1.980	7.100	3.460	750	14.020	2.500	2.600	1.000		400	150
LP24E	1.750	M20	2.050	5.600	3.055	775	11.710	2.750	2.850	1.200		400	150
LP29E	1.750	M20	2.050	6.900	3.380	775	13.660	2.750	2.850	1.200		400	150
LP34E	1.750	M20	2.050	8.000	3.800	775	15.600	2.750	2.850	1.200		400	150
LP38E	1.750	M22	2.050	9.100	4.220	775	17.540	2.750	2.850	1.200		400	150
LP23E-22	2.200	M20	1.920	2.300	2.645	820	7.590	3.200	2.710	1.560	110	475	225
LP26E-22	2.200	M20	2.320	4.300	2.090	820	8.480	3.200	2.710	1.560	110	475	225
LP28E-22	2.200	M20	2.570	4.300	2.315	820	8.930	3.200	2.710	1.560	110	475	225
LP30E-22	2.200	M22	2.470	4.800	2.285	820	9.370	3.200	2.710	1.560	110	475	225
LP33E-22	2.200	M24	3.020	5.500	2.380	820	10.260	3.200	2.710	1.560	110	475	225
LP36E-22	2.200	M24	3.020	5.500	2.830	820	11.160	3.200	2.710	1.560	110	475	225
LP38E-22	2.200	M24	3.020	6.000	2.800	820	11.600	3.200	2.710	1.560	110	475	225
LP40E-22	2.200	M24	3.020	6.700	2.675	820	12.050	3.200	2.710	1.560	110	475	225
LP43E-22	2.200	M24	4.520	6.700	3.120	820	12.940	3.200	2.710	1.560	110	475	225
LP46E-22	2.200	M24	5.020	7.100	3.365	820	13.830	3.200	2.710	1.560	110	475	225
LP48E-22	2.200	M24	5.020	8.600	2.835	820	14.270	3.200	2.710	1.560	110	475	225
LP50E-22	2.200	M24	5.020	8.600	3.060	820	14.720	3.200	2.710	1.560	110	475	225
LP53E-22	2.200	M24	5.720	8.900	3.355	820	15.610	3.200	2.710	1.560	110	475	225
LP56E-22	2.200	M24	5.720	9.700	3.400	820	16.500	3.200	2.710	1.560	110	475	225
LP58E-22	2.200	M24	5.720	10.200	3.375	820	16.950	3.200	2.710	1.560	110	475	225
LP59E-22	2.200	M24	5.720	10.600	3.395	820	17.390	3.200	2.710	1.560	110	475	225
LP23E-24	2.450	M24	1.710	3.180	1.585	855	6.350	3.450	2.960	1.740	110	520	270
LP25E-24	2.450	M24	1.730	2.450	2.195	855	6.840	3.450	2.960	1.740	110	520	270
LP27E-24	2.450	M24	1.940	2.450	2.445	855	7.340	3.450	2.960	1.740	110	520	270
LP32E-24	2.450	M24	2.440	3.700	2.315	855	8.330	3.450	2.960	1.740	110	520	270
LP36E-24	2.450	M24	2.940	3.700	2.810	855	9.320	3.450	2.960	1.740	110	520	270
LP39E-24	2.450	M24	3.190	5.000	2.410	855	9.820	3.450	2.960	1.740	110	520	270
LP41E-24	2.450	M24	3.440	5.000	2.655	855	10.310	3.450	2.960	1.740	110	520	270
LP46E-24	2.450	M24	3.440	6.700	2.300	855	11.300	3.450	2.960	1.740	110	520	270
LP50E-24	2.450	M24	3.440	6.700	2.795	855	12.290	3.450	2.960	1.740	110	520	270
LP52E-24	2.450	M24	4.690	6.700	3.045	855	12.790	3.450	2.960	1.740	110	520	270
LP55E-24	2.450	M24	4.890	6.700	3.295	855	13.290	3.450	2.960	1.740	110	520	270
LP59E-24	2.450	M24	5.390	6.700	3.790	855	14.280	3.450	2.960	1.740	110	520	270

COVER FOR PIT (underground tanks)

