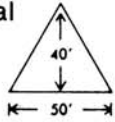
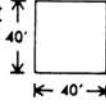


Triangle To find the number of sq. ft. in any shape triangle or 3 sided surface, multiply the height by the width and divide the total by 2.

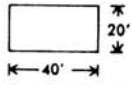
$$\begin{array}{r} 40' \text{ height} \\ \times 50' \text{ width} \\ \hline 2,000 \text{ sq. ft.} \end{array}$$


$2,000 \div 2 = 1,000 \text{ sq. ft.}$

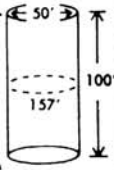
Square Multiply the base measurement in feet times the height in feet.

$$40' \times 40' = 1600 \text{ sq. ft.}$$


Rectangle Multiply the base measurement in feet time the height in feet.

$$20' \times 40' = 800 \text{ sq. ft.}$$


Cylinder When circumference (distance around cylinder) is known, multiply height by circumference.

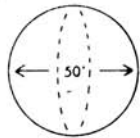
$$\begin{array}{r} 157' \text{ circumference} \\ \times 100' \text{ height} \\ \hline 15,700 \text{ sq. ft.} \end{array}$$


When diameter (distance across) is known, multiply diameter by 3.1416: This gives circumference. Then multiply by height.

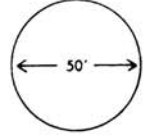
$$\begin{array}{r} 3.1416 \\ \times 50 \text{ diameter} \\ \hline 157.0800 \text{ feet} \\ 157' \text{ circumference} \\ \times 100' \text{ height} \\ \hline 15,700 \text{ sq. ft.} \end{array}$$

Note: Figures do not include end area. See circle.

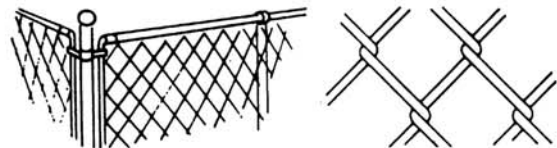
Sphere To find the number of sq. ft. of a sphere or ball, multiply the diameter (distance across) by itself and then multiply this total by 3.1416. If you haven't the diameter, you can find it by measuring the circumference and multiplying it by .31831.

$$\begin{array}{r} 50' \text{ diameter} \\ \times 50' \text{ diameter} \\ \hline 2,500 \\ \times 3.1416 \\ \hline 7,854.0000 \text{ sq. ft.} \end{array}$$


Circle To find the number of sq. ft. in a circle, multiply the diameter (distance across) by itself and then multiply this total by .7854.

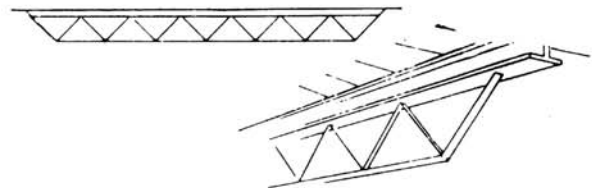
$$\begin{array}{r} 50' \text{ diameter} \\ \times 50' \text{ diameter} \\ \hline 2,500 \\ \times .7854 \\ \hline 1,969 \text{ sq. ft.} \end{array}$$


CHAIN LINK FENCES



In estimating the paint requirements for chain link fences your first consideration should be the method of application. The most economical and recommended method is with an extra-long-nap roller. Measure length by height and multiply by 2 for both sides.

The posts and rails can be easily estimated by using the chart for Pipes, Columns and Rods or the chart on "I" beams depending on the construction.



OPEN WEB STEEL JOISTS

Original equipment manufactures and fabricators generally dip these joists, as a first or ship coat. On all repaint work, by spray, these manufacturers recommend the paint be estimated by thinking of the joist as a solid and multiplying length by depth by 2.

EXAMPLE:

Suppose the tank is 30 feet across and 50 feet high. The square of the diameter then is 900 feet (30 x 30). Which when multiplied by .7854 shows 706.9 square feet at the top of the tank. The diameter of 30 feet multiplied by 3.1416 shows that the tank is 94.3 feet around. The circumference of 94.3 multiplied by the height of 50 feet equals 4,715 square feet—area of the wall. Total area of approximately 5,425 square feet.

Any accessories such as piping, valves, rails, structural work, etc. would have to be estimated separately.

In estimating the square foot area of a tank different than those shown on the preceding page, do the following—

1. To find the end areas of a tank: Multiply the square of the diameter by .7854.
2. To find the circumference of the tank: Multiply the diameter by 3.1416.
3. To find the area of the walls of the tank: Multiply the height by the circumference.

EXAMPLE

Suppose the tank is 30 feet across and 50 feet high. The square of the diameter then is 900 feet (30 x 30). Which when multiplied by .7854 shows 706.9 square feet at the top of the tank. The diameter of 30 feet multiplied by 3.1416 shows that the tank is 94.3 feet around. The circumference of 94.3 multiplied by the height of 50 feet equals 4,715 square feet—area of the wall. Total area of approximately 5,425 square feet.

Any accessories such as piping, valves, rails, structural work, etc., would have to be estimated separately.

SURFACE OF SPHERES

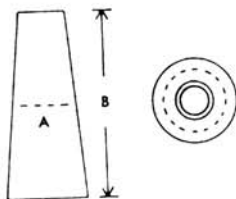
Diameter in Feet	*Surface of Sphere in Square Feet
20	1,257
25	1,963
30	2,827
35	3,848
40	5,027
45	6,362
50	7,854
55	9,503
60	11,310
65	13,273
70	15,394

*Outside surface area only—
double surface area for inside and outside.

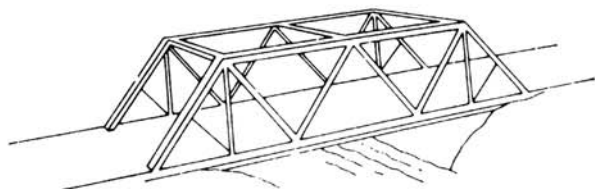
STACKS

To compute the square foot area of a stack multiply height (B) by the average diameter (A) and multiply that total by 3.

EXAMPLE: Diameter of stack at the top—5 feet. Diameter of stack at the bottom—15 feet. Average diameter—10 feet ($\frac{5}{2} + 15$). Height 60 feet. $60 \times 10 = 600$. $600 \times 3 = 1800$ square feet of surface area.



BRIDGES



For an accurate estimate of the paint requirements for a bridge it is best to inspect the construction to determine the type of structural shapes used and then using the charts in this manual to determine the paint requirements.

Here again it is important to know the method of application before an accurate estimate can be made.

SURFACE AREA OF CONE

1. Determine area of base by multiplying 3.1416 times radius (in feet) squared.
2. Determine area of side of cone by multiplying circumference of base (in feet) times one-half of the slant height (in feet).
3. Add the square foot area of the base to the square foot area of the cone side for total square foot area.

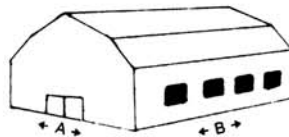
HOW TO CALCULATE ORDINARY SURFACE AREA FOR DIFFERENT SHAPES.

SURFACE ON AN ARCH ROOF:

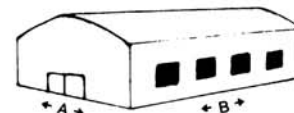
Multiply length (B) by width (A) and add one-third of the total.

SURFACE OF A GAMBREL ROOF:

Multiply length (B) by width (A) and add one-third of the total.

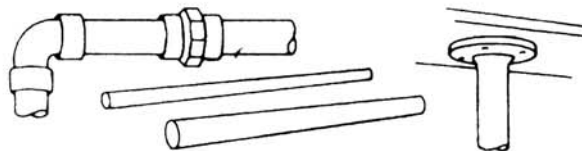


Gambrel



Arch

PIPES, RODS, COLUMNS, ETC.



AREAS OF PIPING

Use 1.5 sq. ft. per lineal foot for pipe 5" I.D. or less. Add for pipe hangers, flanges, couplings, valves, etc.

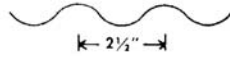
Size (I.D.)	Sq. Ft. Per Lin Ft. Exterior
1/2"	.13
1"	.34
2"	.62
3"	.92
4"	1.18
5"	1.46
6"	1.73
8"	2.26
10"	2.81
12"	3.35
14"	3.67
16"	4.2
18"	4.92
20"	5.24
24"	6.48
30"	7.85
32"	8.38
36"	9.42
40"	10.47
48"	12.56
60"	15.71

**CIRCUMFERENCE AND AREA OF ONE (FLAT) END
PIPE AND TANKS WITH DIAMETER
MORE THAN ONE FOOT**

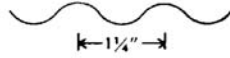
Diameter (Ft.)	Circumference (Ft.)	Area of One End (Sq. Ft.)	Diameter (Ft.)	Circumference (Ft.)	Area of One End (Sq. Ft.)	Diameter (Ft.)	Circumference (Ft.)	Area of One End (Sq. Ft.)
1	3.14	.79	28	87.97	615.75	82	257.6	5281.0
1¼	3.93	1.23	29	91.11	660.52	83	260.8	5410.6
1½	4.71	1.77	30	94.25	706.86	84	263.9	5541.8
1¾	5.50	2.41	31	97.39	754.77	85	267.0	5674.5
2	6.28	3.14	32	100.5	804.25	86	270.2	5808.8
2¼	7.07	3.98	33	103.7	855.30	87	273.3	5944.7
2½	7.85	4.91	34	106.8	907.92	88	276.5	5082.1
2¾	8.64	5.94	35	110.0	962.11	89	279.6	6221.1
3	9.43	7.07	36	113.1	1017.9	90	282.7	6361.7
3¼	10.21	8.30	37	116.2	1075.2	91	285.9	6503.9
3½	11.00	9.62	38	119.4	1134.1	92	289.0	6647.6
3¾	11.78	11.04	39	122.5	1194.6	93	292.2	6792.9
4	12.57	12.57	40	125.7	1256.6	94	295.3	6939.8
4¼	13.35	14.19	41	128.8	1320.3	95	298.5	7088.2
4½	14.14	15.90	42	132.0	1385.4	96	301.6	7238.2
4¾	14.92	17.72	43	135.1	1452.2	97	304.7	7389.8
5	15.71	19.64	44	138.2	1520.5	98	307.9	7543.0
5¼	16.49	21.65	45	141.4	1590.4	99	311.0	7697.7
5½	17.28	23.76	46	144.5	1661.9	100	314.2	7854.0
5¾	18.06	25.97	47	147.7	1734.9	105	329.9	8659.0
6	18.85	28.27	48	150.8	1809.6	110	345.6	9503.3
6¼	19.64	30.68	49	153.9	1885.7	115	361.3	10387.
6½	20.42	33.18	50	157.1	1963.5	120	377.0	11310.
6¾	21.21	35.78	51	160.2	2042.8	125	392.7	12272.
7	21.99	38.48	52	163.4	2123.7	130	408.4	13273.
7¼	22.78	41.28	53	166.5	2206.2	135	424.1	14314.
7½	23.56	44.18	54	169.7	2290.2	140	439.8	15394.
7¾	24.35	47.17	55	172.8	2375.8	145	455.5	16513.
8	25.13	50.27	56	175.9	2463.0	150	471.2	17672.
8¼	25.92	53.46	57	179.1	2551.8	155	487.0	18869.
8½	26.70	56.75	58	182.2	2642.1	160	502.3	20106.
8¾	27.49	60.13	59	185.4	2734.0	165	518.4	21383.
9	28.27	63.62	60	188.5	2827.4	170	534.1	22698.
9¼	29.06	67.20	61	191.6	2922.5	175	549.8	24053.
9½	29.85	70.88	62	194.8	3019.1	180	565.5	25447.
9¾	30.63	74.66	63	197.9	3117.3	185	581.2	26880.
10	31.42	78.54	64	201.1	3217.0	190	597.0	28353.
11	34.56	95.03	65	204.2	3318.3	195	612.6	29865.
12	37.70	113.10	66	207.4	3421.2	200	628.3	31416.
13	40.84	132.73	67	210.5	3525.7			
14	43.98	153.94	68	213.6	3631.7			
15	47.12	176.72	69	216.8	3739.3			
16	50.27	201.06	70	219.9	3848.5			
17	53.41	226.98	71	223.1	3959.2			
18	56.55	254.47	72	226.2	4071.5			
19	56.69	283.53	73	229.3	4185.4			
20	62.83	314.16	74	232.5	4300.8			
21	65.97	346.36	75	235.6	4417.9			
22	69.12	380.13	76	238.8	4536.5			
23	72.26	415.48	77	241.9	4656.6			
24	75.40	452.39	78	245.0	4778.4			
25	78.54	490.87	79	248.2	4901.7			
26	81.68	530.93	80	251.3	5026.6			
27	84.82	572.56	81	254.5	5153.0			

CORRUGATED SURFACES

2½" Corrugated Sheet - to find width before corrugation multiply the width after corrugation by 1.08. Assume depth to be ¾".

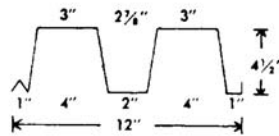


1¼" Corrugated Sheet - To find width before corrugation multiply the width after corrugation by 1.11. Assume depth to be ¾".

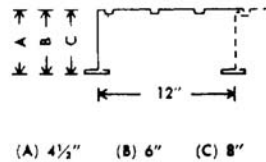


ROOF DECK, METAL SHEETING

If the surface has a cross-section view similar to that shown, first figure the square foot area then multiply by 2.42 to obtain the actual surface area.

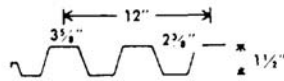


If the surface has a cross-section view similar to that shown, figure the top side as just the square foot area of surface. Figure the underside as follows—

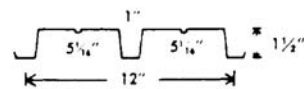


- A. For each square foot area multiply by 1.63 for actual surface area.
- B. Multiply by 1.75
- C. Multiply by 1.92

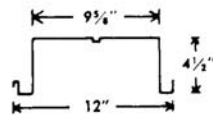
If the surface has a cross-section view similar to that shown multiply each square foot of area by 1.5 for actual surface area. Double for both sides.



If the surface has a cross-section view similar to that shown multiply each square foot of area by 1.42 for actual surface area. Double for both sides.



If the surface has a cross-section view similar to that shown multiply each square foot of area by 1.75 for actual surface area. Double for both sides.



If the depth is 3" multiply by 1.5. Double for both sides.

SURFACE AREA OF VARIOUS SIZE ELEVATED WATER TANKS*

This table is applicable to the tanks shown in the next column.

CAPACITY (Thousand Gallons)	RISER (Diameter)	INSIDE AREA (Square Feet)	OUTSIDE AREA + (Square Feet)
50	4'	3,150	6,500
100	4'	4,300	8,000
150	4'	5,100	9,900
200	4'	5,900	11,100
250	4'	6,700	12,700
500	5'	10,000	19,600
750	Dry 8'	13,600	29,100
1000	Dry 8'	17,000	36,900

*Low Water Level 100' above grade.
+ Includes supporting columns.

In estimating the square foot area of a tank different than those shown, do the following—

1. To find the end areas of a tank: Multiply the square of the diameter by .7854.
2. To find the circumference of the tank: Multiply the diameter by 3.1416.
3. To find the area of the walls of the tank: Multiply the height by the circumference.

