

THE
REFEREE

A HANDBOOK OF USEFUL
INFORMATION



TWELFTH EDITION
(WITH APPENDIX)

With the Compliments of
JOHN LYSAGHT (Aust.) LTD.

Wyvern

Brinigagee

T.P.O. 684.

27. 9. 65

Dear Mr Pearce,

I acknowledge receipt of the latest "Referee". Thank you very much, I was interested to learn that you have a collection of these books. I am sending you my 1922 copy, but I feel it is hardly in a condition to grace any collection as I mentioned in my original letter it has ^{had} much use and handling.

With best wishes.

Yours faithfully

J. Ley

23. 10. 65.

Dear Mr Pearce, I can't understand how this was overlooked. I found it this a.m. in my husband's map box. Kindest apologies.
J. L.

REMEMBERED long after Price is forgotten.

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TWELFTH EDITION.

The various tables contained herein have been carefully compiled from existing sources of information. No responsibility is accepted, and no originality is claimed in respect thereof. They are intended to give closely approximate information which may not always be readily accessible elsewhere.

The Publisher will be thankful to receive suggestions for further improvements or to have pointed out any printer's or other errors which may have inadvertently crept in. Communications may be addressed to Box 196 G.P.O., Sydney.

“ORB” IRON. You know it at once by its

CALENDAR 1922

	JANUARY					FEBRUARY					MARCH				
SUN	1	8	15	22	29	..	5	12	19	26	..	5	12	19	26
MON	2	9	16	23	30	..	6	13	20	27	..	6	13	20	27
TUES	3	10	17	24	31	..	7	14	21	28	..	7	14	21	28
WED	4	11	18	25	...	1	8	15	22	...	1	8	15	22	29
TH	5	12	19	26	...	2	9	16	23	...	2	9	16	23	30
FRI	6	13	20	27	...	3	10	17	24	...	3	10	17	24	31
SAT	7	14	21	28	...	4	11	18	25	...	4	11	18	25	...

	APRIL					MAY					JUNE				
SUN	..	2	9	16	²³ / ₃₀	..	7	14	21	28	..	4	11	18	25
MON	..	3	10	17	24	1	8	15	22	29	..	5	12	19	26
TUES	..	4	11	18	25	2	9	16	23	30	..	6	13	20	27
WED	..	5	12	19	26	3	10	17	24	31	..	7	14	21	28
TH	..	6	13	20	27	4	11	18	25	...	1	8	15	22	29
FRI	..	7	14	21	28	5	12	19	26	...	2	9	16	23	30
SAT	1	8	15	22	29	6	13	20	27	...	3	10	17	24	...

	JULY					AUGUST					SEPTEMBER				
SUN	..	2	9	16	²³ / ₃₀	..	6	13	20	27	..	3	10	17	24
MON	..	3	10	17	²⁴ / ₃₁	..	7	14	21	28	..	4	11	18	25
TUES	..	4	11	18	25	1	8	15	22	29	..	5	12	19	26
WED	..	5	12	19	26	2	9	16	23	30	..	6	13	20	27
TH	..	6	13	20	27	3	10	17	24	31	..	7	14	21	28
FRI	..	7	14	21	28	4	11	18	25	...	1	8	15	22	29
SAT	1	8	15	22	29	5	12	19	26	...	2	9	16	23	30

	OCTOBER					NOVEMBER					DECEMBER				
SUN	1	8	15	22	29	..	5	12	19	26	..	3	10	17	²⁴ / ₃₁
MON	2	9	16	23	30	..	6	13	20	27	..	4	11	18	25
TUES	3	10	17	24	31	..	7	14	21	28	..	5	12	19	26
WED	4	11	18	25	...	1	8	15	22	29	..	6	13	20	27
TH	5	12	19	26	...	2	9	16	23	30	..	7	14	21	28
FR	6	13	20	27	...	3	10	17	24	...	1	8	15	22	29
SAT	7	14	21	28	...	4	11	18	25	...	2	9	16	23	30

The Evolution of Galvanized Iron

IT is interesting to note at the present day, when the use of Galvanized Iron has become so widely extended, that its introduction dates back only to 1837. Although a plain sheet was exhibited at the Great Exhibition in 1851, it was not until the application of steam power for the purpose of corrugating was brought about in 1854, that Galvanized Iron really came into practical use.

In 1857 the celebrated "ORB" Brand was first manufactured by Mr. JOHN LYSAGHT.

During the half-century which has since elapsed, greatly improved methods for its production, and extreme care displayed in its manufacture, have secured for **LYSAGHT'S GALVANIZED IRON** an unrivalled reputation throughout the world, and so universally has it been adopted to meet the needs of modern civilization, that it may with truth be said that the sun is always shining on "ORB" IRON.

We are pleased to record that the major portion of the heavy sheets of "Elephant Iron," and the more familiar corrugated curved sheets so extensively used for roofing Hutments and Dug-outs on the Western and other Fronts during the Great War were manufactured by Messrs. John Lysaght Limited, of Bristol, Newport and Scunthorpe (Eng.)

Whether made in England or Australia, "ORB" IRON

LYSAGHT'S AUSTRALIAN WORKS

NEWCASTLE, N.S.W.!



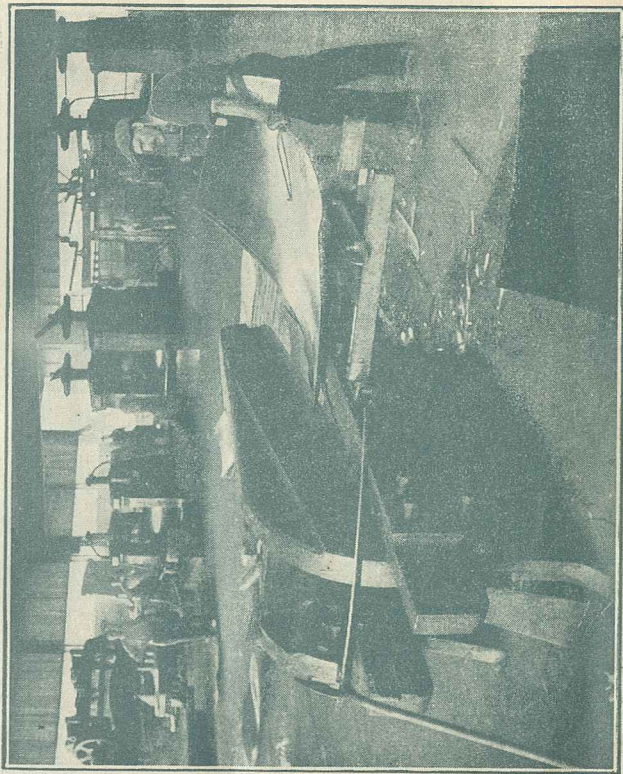
NEW era in the history of LYSAGHT'S GALVANIZED IRON has now been entered upon.

Operations on an extensive scale have been commenced at Lysaght's Newcastle Works, and the sheets produced, both Black and Galvanized, have already won the highest approval of discriminating judges.

Illustrations in this edition will give some idea of the modern methods and machinery that are employed, and permission to inspect the works will be granted to approved applicants, if made to the Head Office, 8 Spring Street, Sydney.

is still the Best in the World.

Lysaght's Newcastle Works.



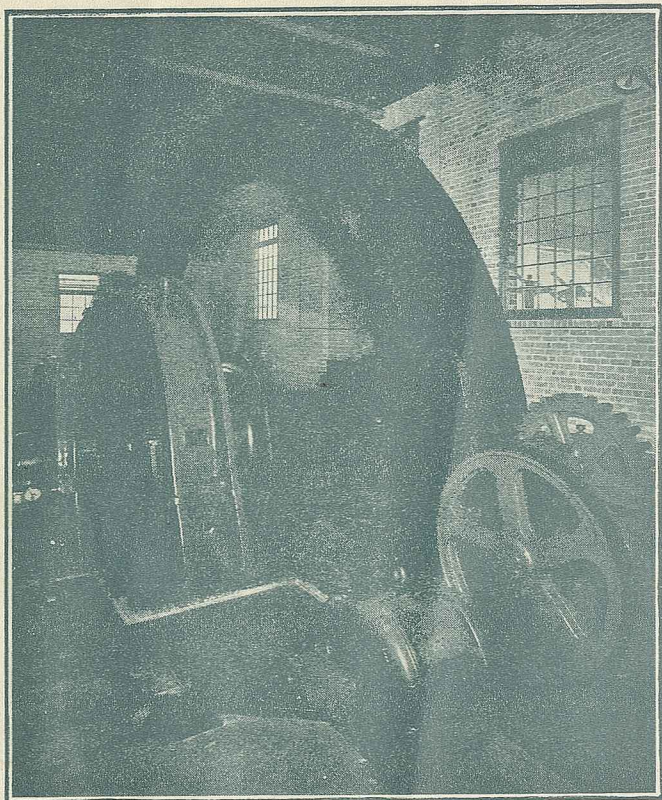
"SHEET SHEARING"

(with view of Rolling Mills in background.)

A skilled operator by means of this machine will trim sheets to required size with a remarkable degree of exactness.

Whether made in England or Australia, "ORB" IRON

Lysaght's Newcastle Works.

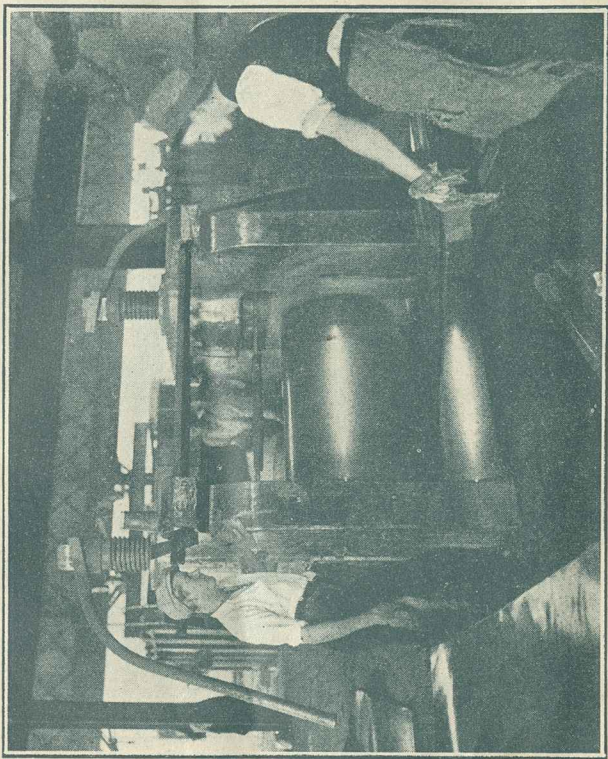


The LARGEST FLY WHEEL in the Southern Hemisphere

34ft. in diameter, 160 tons weight, driven by 1,300 K.W. motor, developing sufficient power to drive eight Rolling Mills.

is still the Best in the World.

Lysaght's Newcastle Works.

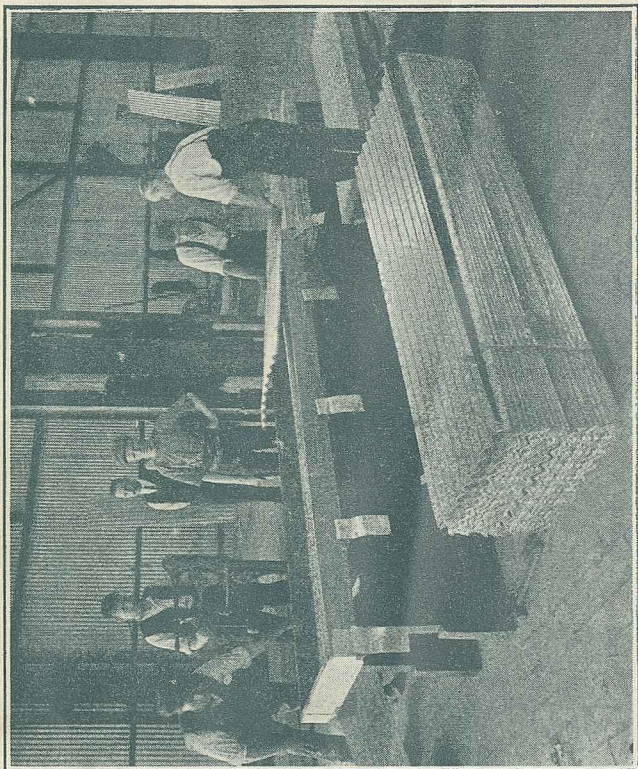


"COLD ROLLING."

One of the processes essential to a good Black or Galvanized Sheet.

Whether made in England or Australia, "ORB" IRON

Lysaght's Newcastle Works.



"PACKING"

(A section of the Packing Shop.)

Note the care and supervision exercised to ensure that only perfect sheets are packed, and that the weight and count of sheets are correct.

is still the Best in the World.

Galvanized Iron—Corrugated.

Approximate number of sheets to a case (ordinary Corrugations) weighing about 10cwt.

Length.	Gauges.					
	18	20	22	24	26	28
5 feet	42	53	66	83	116	132
6 feet	35	44	55	69	98	111
7 feet	30	38	47	59	84	95
8 feet	26	33	41	51	73	83
9 feet	23	29	36	45	65	74
10 feet	21	26	33	41	58	66
11 feet	19	24	30	38	54	62
12 feet	17	22	28	35	49	56

NOTE:—2 cwt. bundles contain approximately one-fifth of the above number of sheets.



(Made in England)

BRANDS
ALWAYS
RELIABLE



(Made in Australia)

Approximate weight per sheet in lbs. (based on above table) to nearest $\frac{1}{4}$ lb.

Gauge	5 ft.	6 ft.	7 ft.	8 ft.	9 ft.	10 ft.	11 ft.	12 ft.
18	26 $\frac{1}{2}$	32	37 $\frac{1}{4}$	43	49	53	58 $\frac{1}{2}$	64 lbs.
20	21	25 $\frac{1}{2}$	29 $\frac{1}{2}$	34	38 $\frac{1}{2}$	43	46 $\frac{1}{2}$	51 „
22	17	20 $\frac{1}{4}$	24	27 $\frac{1}{4}$	31	34	37 $\frac{1}{4}$	40 $\frac{1}{2}$ „
24	13 $\frac{1}{2}$	16 $\frac{1}{4}$	19	22	25	27 $\frac{1}{4}$	29 $\frac{3}{4}$	32 $\frac{1}{2}$ „
26	9 $\frac{1}{2}$	11 $\frac{1}{2}$	13 $\frac{1}{2}$	15 $\frac{1}{2}$	17 $\frac{1}{4}$	19 $\frac{1}{4}$	20 $\frac{3}{4}$	23 „
28	8 $\frac{1}{2}$	10	11 $\frac{3}{4}$	13 $\frac{1}{2}$	15 $\frac{1}{4}$	17	18 $\frac{1}{4}$	20 „

Cases of LYSAGHT'S Brands of Corrugated Iron usually contain sheets in excess of the numbers given in above tables.

Every Sheet of ORB Iron is its own best Advertisement.

Galvanized Iron—Corrugated

Approximate price per sheet based on given rates per ton.

22 G.

Price per Ton.	132 Sheets. 5 ft.	110 Sheets. 6 ft.	94 Sheets. 7 ft.	82 Sheets. 8 ft.	72 Sheets. 9 ft.	64 Sheets. 10 ft.
£25	3/9½	4/6½	5/4	6/1	6/11½	7/10
26	3/11½	4/9	5/6½	6/4	7/2½	8/1½
27	4/1	4/11	5/9	6/7	7/6	8/5½
28	4/3	5/1	5/11½	6/10	7/9½	8/9
29	4/5	5/3½	6/2	7/1	8/0½	9/1
30	4/7	5/5½	6/4½	7/4	8/4	9/4½
31	4/9	5/7½	6/7½	7/7	8/7½	9/8½
32	4/10½	5/10	6/9½	7/10	8/10½	10/-
33	5/-	6/-	7/-	8/1	9/2	10/4
34	5/2	6/2	7/2½	8/3½	9/5½	10/7½
35	5/3½	6/4½	7/5½	8/6½	9/8½	10/11½
36	5/5½	6/6½	7/8	8/9½	10/-	11/3
37	5/7½	6/9	7/10½	9/0½	10/3½	11/7
38	5/9	6/11	8/1	9/3½	10/6½	11/10½
39	5/11	7/1	8/3½	9/6½	10/10	12/2½
40	6/1	7/3½	8/6	9/9	11/1½	12/6
41	6/2½	7/5	8/8½	10/-	11/4½	12/10
42	6/4	7/7½	8/11	10/3	11/8	13/1½
43	6/6	7/10	9/2	10/6	11/11	13/5
44	6/8	8/-	9/4	10/9	12/2½	13/9
45	6/10	8/2	9/7	10/11½	12/6	14/1
46	7/-	8/4	9/9½	11/2½	12/9	14/4½
47	7/1½	8/6½	10/-	11/5½	13/0½	14/8
48	7/3	8/8½	10/2½	11/8½	13/4	15/-
49	7/5	8/11	10/5	11/11	13/7½	15/4
50	7/7	9/1	10/7½	12/2	13/10½	15/7½
51	7/9	9/3	10/10	12/5	14/2	15/11
52	7/10½	9/5½	11/1	12/8	14/5	16/3
53	8/0½	9/7½	11/3	12/11	14/8½	16/7
54	8/2	9/10	11/6	13/2	15/-	16/10½
55	8/4	10/-	11/8½	13/5	15/3	17/2

Galvanized Iron—Corrugated

Price per sheet based on given rates per ton.

24 G.

Price per Ton.	166 Sheets. 5 ft.	188 Sheets. 6 ft.	119 Sheets. 7 ft.	102 Sheets. 8 ft.	90 Sheets. 9 ft.	82 Sheets. 10 ft.
£25	3/-	3/7½	4/3	4/10½	5/6½	6/1
26	3/1½	3/9	4/5	5/1	5/9½	6/4
27	3/3	3/11	4/7	5/3	6/-	6/7
28	3/4½	4/0½	4/9	5/6	6/2½	6/10
29	3/6	4/2½	4/11	5/8	6/5½	7/1
30	3/7½	4/4	5/1	5/10½	6/8	7/4
31	3/9	4/6	5/3	6/1	6/10½	7/6½
32	3/10	4/7½	5/5	6/3	7/1½	7/9½
33	3/11½	4/9½	5/7	6/5½	7/4	8/0½
34	4/1	4/11	5/9	6/8	7/6½	8/3½
35	4/2½	5/1	5/11	6/10½	7/9½	8/6½
36	4/4	5/2½	6/1½	7/0½	8/-	8/9½
37	4/5½	5/4½	6/3½	7/3	8/2½	9/0½
38	4/7	5/6	6/5½	7/5½	8/5½	9/3½
39	4/8½	5/8	6/7½	7/8	8/8	9/6½
40	4/10	5/9½	6/9½	7/10	8/10½	9/9½
41	4/11	5/11	6/11½	8/0½	9/1	10/-
42	5/1	6/1	7/1½	8/3	9/4	10/3
43	5/2	6/3	7/3½	8/5	9/7	10/6
44	5/3½	6/4½	7/5½	8/7½	9/9	10/9
45	5/5	6/6	7/7½	8/10	10/-	11/-
46	5/6½	6/8	7/9½	9/-	10/2½	11/3
47	5/8	6/10	7/11½	9/2½	10/5	11/5½
48	5/9½	6/11½	8/1½	9/5	10/8	11/8½
49	5/11	7/1	8/3½	9/7	10/10½	11/11½
50	6/-	7/3	8/6	9/9½	11/1	12/2
51	6/1½	7/5	8/7½	10/-	11/4	12/5
52	6/3	7/6½	8/10	10/2	11/6½	12/8
53	6/4½	7/8	9/-	10/4½	11/9	12/11
54	6/6	7/10	9/2	10/7	12/-	13/2
55	6/7½	7/11½	9/4	10/9½	12/2½	13/5

Galvanized Iron—Corrugated

Price per sheet based on given rates per ton.

26 G.

Price per Ton.			236 Sheets 5 ft.	196 Sheets 6 ft.	168 Sheets 7 ft.	146 Sheets 8 ft.	130 Sheets 9 ft.	116 Sheets 10 ft.
£	s.	d.						
25	0	0	2/1½	2/6½	2/11½	3/5	3/10	4/4
26	0	0	2/2½	2/8	3/1	3/6½	4/-	4/6
27	0	0	2/3½	2/9	3/2½	3/8	4/2	4/8
28	0	0	2/4½	2/10½	3/4	3/10	4/3½	4/10
29	0	0	2/5½	2/11½	3/5½	4/-	4/5½	5/-
30	0	0	2/6½	3/1	3/7	4/1	4/7½	5/2
31	0	0	2/7½	3/2	3/8½	4/3	4/9	5/4
32	0	0	2/8½	3/3	3/10	4/4½	4/11	5/6
33	0	0	2/9½	3/4½	3/11	4/6	5/1	5/8
34	0	0	2/10½	3/5½	4/0½	4/8	5/3	5/10½
35	0	0	2/11½	3/7	4/2	4/9½	5/4½	6/0½
36	0	0	3/0½	3/8	4/3½	4/11	5/6½	6/2½
37	0	0	3/1½	3/9½	4/5	5/1	5/8½	6/4½
38	0	0	3/2½	3/10½	4/6½	5/2½	5/10½	6/6½
39	0	0	3/3½	4/-	4/8	5/4	6/-	6/8½
40	0	0	3/4½	4/1	4/9½	5/6	6/2	6/10½
41	0	0	3/6	4/2½	4/10½	5/7	6/3½	7/1
42	0	0	3/6½	4/3½	5/-	5/9	6/5½	7/3
43	0	0	3/8	4/5	5/1½	5/10½	6/7	7/5
44	0	0	3/9	4/6	5/3	6/-	6/9	7/7
45	0	0	3/10	4/7	5/4	6/2	6/11	7/9
46	0	0	3/11	4/8½	5/5½	6/3½	7/1	7/11
47	0	0	4/-	4/10	5/7	6/5	7/3	8/1
48	0	0	4/1	4/11	5/8½	6/7	7/4½	8/3
49	0	0	4/2	5/-	5/10	6/8½	7/6	8/5
50	0	0	4/3	5/1½	5/11½	6/10	7/8	8/7
51	0	0	4/4	5/2½	6/1	7/-	7/10	8/9½
52	0	0	4/5	5/4	6/2	7/1	8/-	9/-
53	0	0	4/6	5/5	6/3½	7/3	8/2	9/1½
54	0	0	4/7	5/6½	6/5	7/5	8/3½	9/3½
55	0	0	4/8	5/7½	6/6½	7/6	8/5½	9/6

Specify **“QUEEN’S HEAD.”** It’s bright and it lasts!

Galvanized Iron—Plain

Approximate number of 6 ft. sheets to a case of Plain Iron averaging about 10 cwt.

Approximate weight per sheet 6 ft. long, in lbs., based on foregoing list.

Gauge	Width.			Gauge	Width.		
	24 in.	30 in.	36 in.		24 in.	30 in.	36 in.
16	36	29	24 shts.	16	31	38 $\frac{2}{3}$	46 $\frac{2}{3}$ lbs.
18	47	37	31 „	18	24	30 $\frac{1}{4}$	36 „
20	57	45	38 „	20	19 $\frac{1}{2}$	25	29 $\frac{1}{2}$ „
22	74	59	49 „	22	15	19	23 „
24	86	69	57 „	24	13	16 $\frac{1}{4}$	19 $\frac{3}{4}$ „
26	120	97	80 „	26	9 $\frac{1}{3}$	11 $\frac{1}{2}$	14 „
28	140	112	92 „	28	8	10	12 $\frac{1}{4}$ „
30	160	130	112 „	30	7	8 $\frac{3}{4}$	10 „

Cases of Lysaght’s Brands of Plain Galvanized Iron usually contain sheets in excess of the number given in the above tables.



“QUEEN’S HEAD”

LYSAGHT’S “Queen’s Head” Special Flat Plain Galvanized Iron is a High-grade Sheet of exceptional finish.

“It will stand the severest tests, and commands the confidence of Ironworkers everywhere. Obtainable also in special sizes other than above, to order.

LYSAGHT’S “Fleur de Lis”

Plain Iron is largely used for the manufacture of the lighter classes of guttering, down-pipe ridging, &c., its smoothness of surface and freedom from buckle being conspicuous features.



“FLEUR-DE-LIS”

Galvanized Iron—Plain

Approximate price per sheet based on given rates
per ton.

16 G.

18 G.

Price per Ton.	72 Sheets. 24 in.	58 Sheets. 30 in.	48 Sheets. 36 in.	94 Sheets. 24 in.	74 Sheets. 30 in.	62 Sheets. 36 in.
£25	6/11	8/7½	10/5	5/4	6/9	8/1
26	7/2½	8/11½	10/10	5/6	7/-	8/5
27	7/6	9/3½	11/3	5/9	7/3½	8/8½
28	7/9	9/8	11/8	5/11½	7/7	9/0½
29	8/0½	10/-	12/1	6/2	7/10	9/4
30	8/4	10/4	12/6	6/4½	8/1	9/8
31	8/7	10/8	12/11	6/8	8/4½	10/-
32	8/10½	11/0½	13/4	6/9½	8/7½	10/3
33	9/2	11/4½	13/9	7/-	8/11	10/7½
34	9/5	11/8½	14/2	7/3	9/2½	10/11½
35	9/8½	12/1	14/7	7/5	9/5½	11/3
36	10/-	12/4½	15/-	7/8	9/8½	11/7
37	10/3½	12/9	15/5	7/10½	10/-	11/11
38	10/6½	13/1	15/10	8/1	10/3	12/3
39	10/10	13/5	16/3	8/3½	10/6½	12/7
40	11/1	13/9½	16/8	8/6	10/9½	12/10½
41	11/4½	14/1½	17/1	8/8½	11/1	13/2½
42	11/8	14/5½	17/6	8/11	11/4	13/6
43	11/11	14/9½	17/11	9/2	11/7	13/10
44	12/2½	15/2	18/4	9/4	11/10½	14/2
45	12/6	15/6	18/9	9/6½	12/2	14/6
46	12/9	15/10	19/2	9/9½	12/5	14/10
47	13/-	16/2	19/7	10/-	12/8½	15/2
48	13/4	16/6	20/-	10/2½	12/11½	15/6
49	13/7	16/10½	20/5	10/5	13/3	15/10
50	13/10½	17/3	20/10	10/7½	13/6	16/1½
51	14/2	17/7	21/3	10/10	13/9	16/5½
52	14/5	17/11	21/8	11/0½	14/-	16/9½
53	14/8½	18/3	22/1	11/3	14/3½	17/1
54	15/-	18/7	22/6	11/6	14/7	17/5
55	15/3	18/11	22/11	11/8½	14/10	17/9

Galvanized Iron—Plain

Approximate price per sheet based on given rates per ton.

20 G.

22 G.

Price per Ton.	114 Sheets. 24 in.	90 Sheets. 30 in.	76 Sheets. 36 in.	148 Sheets. 24 in.	118 Sheets. 30 in.	98 Sheets. 36 in.
£25	4/5½	5/6½	6/7	3/4½	4/3	5/1
26	4/7	5/9	6/10	3/6	4/5	5/3½
27	4/9	6/-	7/1	3/8	4/7	5/6
28	4/11	6/2½	7/4½	3/10	4/9	5/8½
29	5/1	6/5	7/7½	3/11	4/11	5/11
30	5/3	6/8	7/10	4/1	5/1	6/1½
31	5/5	6/10½	8/2	4/2	5/3	6/4
32	5/7	7/1	8/5	4/4	5/5	6/6½
33	5/9	7/4	8/8	4/5½	5/7	6/9
34	5/11	7/6½	8/11	4/7	5/9	6/11
35	6/1½	7/9	9/2½	4/8	5/11	7/2
36	6/3½	8/-	9/5½	4/10	6/1	7/4
37	6/6	8/3	9/9	5/-	6/3	7/6½
38	6/8	8/5	10/-	5/1½	6/5	7/9
39	6/10	8/8	10/3	5/3	6/7	7/11
40	7/-	8/10½	10/6	5/5	6/9½	8/2
41	7/2	9/1	10/9	5/6½	6/11½	8/4½
42	7/4½	9/3½	11/0½	5/8	7/1½	8/6½
43	7/6½	9/6½	11/4	5/9½	7/3½	8/9
44	7/8½	9/9	11/8	5/11	7/5½	8/11½
45	7/10½	10/-	11/10½	6/1	7/7½	9/2
46	8/0½	10/2½	12/1	6/2½	7/9½	9/4½
47	8/2	10/5	12/4	6/4	7/11½	9/7
48	8/5	10/7½	12/7½	6/6	8/1½	9/9½
49	8/7	10/10½	12/10½	6/7½	8/3½	10/-
50	8/9	11/1	13/2	6/9	8/5½	10/2½
51	8/11½	11/4	13/5	6/11	8/7½	10/5
52	9/1½	11/6½	13/8	7/0½	8/10	10/7
53	9/3½	11/9	13/11	7/2	9/-	10/9½
54	9/5½	11/11½	14/2½	7/3½	9/2	11/-
55	9/7½	12/2	14/5½	7/5	9/4	11/2½

Every Sheet of LYSAGHT'S "ORB" is Guaranteed.

Galvanized Iron—Plain

Approximate price per sheet based on given rates per ton.

24 G.

26 G.

Price per Ton.	172 Sheets. 24 in.	138 Sheets. 30 in.	114 Sheets. 36 in.	240 Sheets. 24 in.	194 Sheets. 30 in.	160 Sheets. 36 in.
£25	2/11	3/7½	4/5	2/1	2/7	3/1½
26	3/0½	3/9½	4/7	2/2	2/8½	3/3
27	3/2	3/11	4/9	2/3	2/9½	3/4½
28	3/3	4/1	4/11	2/4	2/11	3/6
29	3/4½	4/2½	5/1½	2/5	3/-	3/7½
30	3/6	4/4½	5/3½	2/6	3/1½	3/9
31	3/7½	4/6	5/5½	2/7	3/2½	3/10½
32	3/9	4/8	5/7½	2/8	3/4	4/-
33	3/10	4/9½	5/9½	2/9	3/5	4/1½
34	3/11½	4/11½	6/-	2/10	3/6	4/3
35	4/1	5/1	6/2	2/11	3/7½	4/4½
36	4/2½	5/3	6/4	3/-	3/8½	4/6
37	4/4	5/4½	6/6	3/1	3/10	4/7½
38	4/5	5/6½	6/8	3/2	3/11	4/9
39	4/6½	5/8	6/10½	3/3	4/0½	4/10½
40	4/8	5/10	7/0½	3/4	4/1½	5/-
41	4/9	5/11	7/2	3/5	4/3	5/1½
42	4/10½	6/1	7/4½	3/6	4/4	5/3
43	5/-	6/3	7/6½	3/7	4/5	5/4½
44	5/1	6/4½	7/8½	3/8	4/6½	5/6
45	5/3	6/6	7/11	3/9	4/7½	5/7½
46	5/4	6/8	8/1	3/10	4/9	5/9
47	5/5½	6/10	8/3	3/11	4/10	5/10½
48	5/7	6/11½	8/5	4/-	4/11	6/-
49	5/8	7/1	8/7	4/1	5/0½	6/1½
50	5/10	7/3	8/9	4/2	5/2	6/3
51	5/11	7/4½	8/11	4/3	5/3	6/4½
52	6/0½	7/6½	9/1	4/4	5/4	6/6
53	6/2	7/8	9/3½	4/5	5/5½	6/7½
54	6/3	7/10	9/5½	4/6	5/7	6/9
55	6/5	7/11½	9/8	4/7	5/8	6/10½

“QUEEN'S HEAD” IRON branded in Blue.

Galvanized Iron—Plain

Approximate price per sheet based on given rates
per ton.

28 G.

30 G.

Price per Ton.	280 Sheets. 24 in.	224 Sheets. 30 in.	184 Sheets. 36 in.	320 Sheets. 24 in.	260 Sheets. 30 in.	224 Sheets. 36 in.
£25	1/9½	2/3	2/8½	1/7	1/11	2/2½
26	1/10½	2/4	2/10	1/7½	2/-	2/3½
27	1/11½	2/5	2/11½	1/8½	2/1	2/5
28	2/-	2/6	3/0½	1/9	2/2	2/6
29	2/1	2/7	3/2	1/10	2/3	2/7
30	2/2	2/8½	3/3½	1/10½	2/4	2/8
31	2/3	2/9½	3/5	1/11½	2/5	2/9½
32	2/3½	2/10½	3/6	2/-	2/5½	2/10½
33	2/4½	2/11½	3/7½	2/1	2/6½	2/11½
34	2/5½	3/0½	3/9	2/1½	2/7½	3/0½
35	2/6	3/1½	3/10	2/2½	2/8	3/1
36	2/7	3/2½	3/11½	2/3	2/9	3/2½
37	2/8	3/4	4/0½	2/4	2/10	3/3½
38	2/9	3/5	4/1½	2/4½	2/11	3/4½
39	2/9½	3/6	4/3	2/5½	3/-	3/5½
40	2/10½	3/7	4/4½	2/6	3/1	3/7
41	2/11	3/8	4/5	2/6½	3/2	3/8
42	3/-	3/9	4/7	2/7½	3/3	3/9
43	3/1	3/10	4/8	2/8	3/3½	3/10
44	3/2	3/11	4/9½	2/9	3/4½	3/11
45	3/2½	4/-	4/10	2/9½	3/5½	4/-
46	3/3½	4/1	5/-	2/10½	3/6½	4/1
47	3/4	4/2	5/1	2/11	3/7	4/2½
48	3/5	4/3½	5/2½	3/-	3/8	4/3½
49	3/6	4/4½	5/4	3/0½	3/9	4/4½
50	3/7	4/5½	5/5	3/1½	3/10	4/5½
51	3/8	4/6½	5/6½	3/2	3/11	4/6½
52	3/8½	4/7½	5/8	3/3	4/-	4/7½
53	3/9	4/9	5/9	3/3½	4/1	4/8½
54	3/10	4/10	5/10½	3/4½	4/2	4/9½
55	3/11	4/11	6/-	3/5	4/2½	4/11

“ORB” IRON. You know it at once by its appearance.

Iron—Black Sheet.

Weight and Thickness.

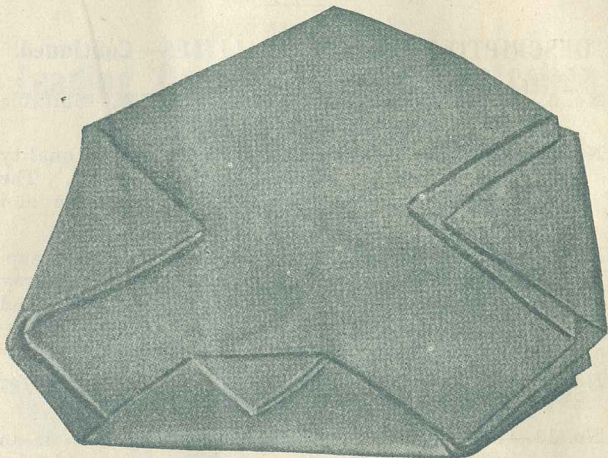
Gauge	Lbs. per square foot	Thickness inches	Thickness mm	Gauge	Lbs. per square foot	Thickness inches	Thickness mm
3/16	7.50	.1874	4.770	19	1.76	.0440	1.118
8	6.28	.1570	3.988	20	1.56	.0392	.996
9	5.59	.1398	3.551	21	1.39	.0349	.886
10	5.00	.1250	3.175	22	1.25	.0312	.794
11	4.45	.1113	2.827	23	1.11	.0278	.707
12	3.96	.0991	2.517	24	.99	.0247	.629
13	3.52	.0882	2.240	25	.88	.0220	.560
14	3.14	.0785	1.994	26	.78	.0196	.498
15	2.79	.0699	1.775	27	.69	.0174	.443
16	2.50	.0625	1.587	28	.62	.0156	.396
17	2.22	.0556	1.412	29	.55	.0139	.353
18	1.98	.0495	1.257	30	.50	.0124	.315

On the above basis, the approximate Number of Sheets 6ft. long in One Ton of Black Sheet Iron is as follows:—

Gauge	WIDTH		
	24in.	30in.	36in.
10g	37	29	24
12	47	37	31
14	59	47	39
16	74	59	49
18	94	75	62
20	119	95	79
22	149	119	99
24	188	150	125
26	239	191	159
27	270	216	180
28	301	241	200
30	373	298	248

Weight of Steel is about 2 per cent. more than Iron.

Lysaght's Black Sheets.



Descriptive List of Qualities in most General Use.

Quality.

No. A1.—“Queen’s Head.”—A high-grade quality of C.R.C.A. Sheets, extensively used for special work.

No. 1.—“Southern Cross.”—An excellent quality of C.R.C.A. Mild Steel Sheets, suitable for all ordinary working-up purposes, well and favourably known by sheet-metal workers throughout the Commonwealth.

NOTE.—“Southern Cross” Black Sheets are suitable for corrugating, and when protected by painting are found to be very durable. Rolled in lengths 5 to 10 feet.

Lysaght's Black Sheets.

DESCRIPTIVE LIST OF QUALITIES—Continued.

Quality.

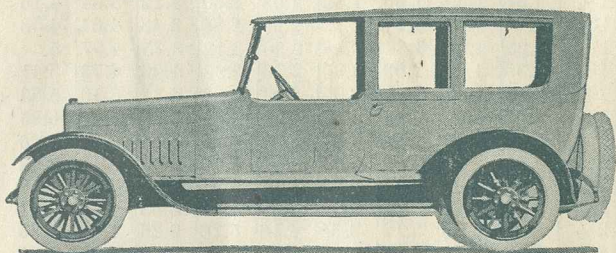
- No. 3.—**Deep Stamping Best Pickled C.R.C.A.**—Suitable for severe stamping or spinning.
- No. 4.—**Best Bright Polished Steel Sheets.**—This quality has a smooth, polished, bright surface. The sheets are flattened and resheared true and square.
- No. 9.—**Railway Waggon Body Sheets.**—These are supplied very largely for making covered railway goods waggons. The sheets are finished dead flat, and resheared exact to required dimensions.
- No. 11.—**Superior Charcoal Finish Panel Plates for Railway Carriages, etc.** (see page 75).
- No. 13.—**Copper Soft Steel Sheets C.R.C.A.**—This is an extra soft quality, specially prepared for beating and stamping. It is very suitable for blocking for ships' ventilators or any similar purpose.
- No. 14.—**Enamelling Quality.**—Special pickled steel sheets for vitreous enamelling.
- No. 21a.—**Best Bright Tinning Finish.**—For making large tinned sheets, special articles and hollow-ware that require tinning after manufacture.
- No. 25.—**Special Motor Body Sheets,** of superior finish, with smooth, clean surface, semi-bright, and with good working-up capability. Used by leading motor body builders on the Continent, Great Britain and Australia.

All the above qualities are obtainable in all gauges from 3/16 to 30-g and in widths up to 56 inches.

the world, universally admitted to be "The Best"

LYSAGHT'S MOTOR BODY SHEETS

Used exclusively by
**Leading Continental and Australian
Body Builders**



Factory Costs show that the extra price
of these Sheets is recouped by the
economy effected in
"WORKING-UP" and "FILLING"

Stocked in 20 and 22 gauge, 6, 7, and 8 feet long
24, 30, and 36 inches wide

OTHER SIZES ROLLED TO ORDER

Every Sheet of ORB Iron is its own best Advertisement.

Bar Iron—Flat.

Approximate Weight per Lineal Foot.

	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
In.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.
1	.83	1.04	1.25	1.45	1.66	2.08	2.50	2.91	3.33
1 $\frac{1}{8}$	.94	1.17	1.40	1.64	1.87	2.34	2.81	3.28	3.75
1 $\frac{1}{4}$	1.04	1.30	1.56	1.82	2.08	2.60	3.12	3.64	4.16
1 $\frac{3}{8}$	1.14	1.43	1.71	2.	2.29	2.86	3.43	4.01	4.58
1 $\frac{1}{2}$	1.25	1.56	1.87	2.18	2.50	3.12	3.75	4.37	5.
1 $\frac{5}{8}$	1.35	1.69	2.03	2.36	2.70	3.38	4.06	4.73	5.41
1 $\frac{3}{4}$	1.45	1.82	2.18	2.55	2.91	3.64	4.37	5.10	5.83
1 $\frac{7}{8}$	1.56	1.95	2.34	2.73	3.12	3.90	4.68	5.46	6.25
2	1.66	2.08	2.50	2.91	3.33	4.16	5.	5.83	6.66
2 $\frac{1}{8}$	1.77	2.21	2.65	3.09	3.54	4.42	5.31	6.19	7.08
2 $\frac{1}{4}$	1.87	2.34	2.81	3.28	3.75	4.68	5.62	6.56	7.50
2 $\frac{3}{8}$	1.97	2.47	2.96	3.46	3.95	4.94	5.93	6.92	7.91
2 $\frac{1}{2}$	2.08	2.60	3.12	3.64	4.16	5.20	6.25	7.29	8.33
2 $\frac{5}{8}$	2.18	2.73	3.28	3.82	4.37	5.46	6.56	7.65	8.75
2 $\frac{3}{4}$	2.29	2.86	3.43	4.01	4.58	5.72	6.87	8.02	9.16
2 $\frac{7}{8}$	2.39	2.99	3.59	4.19	4.79	5.98	7.18	8.38	9.58
3	2.50	3.12	3.75	4.37	5.	6.25	7.50	8.75	10.
3 $\frac{1}{4}$	2.70	3.38	4.06	4.73	5.41	6.77	8.12	9.47	10.83
3 $\frac{1}{2}$	2.91	3.64	4.37	5.10	5.83	7.29	8.75	10.20	11.66
3 $\frac{3}{4}$	3.12	3.90	4.68	5.46	6.25	7.81	9.37	10.93	12.50
4	3.33	4.16	5.	5.83	6.66	8.33	10.	11.66	13.33
4 $\frac{1}{4}$	3.54	4.42	5.31	6.19	7.08	8.85	10.62	12.39	14.16
4 $\frac{1}{2}$	3.75	4.68	5.62	6.56	7.50	9.37	11.25	13.12	15.
4 $\frac{3}{4}$	3.95	4.94	5.93	6.92	7.91	9.89	11.87	13.85	15.83
5	4.17	5.20	6.25	7.29	8.33	10.41	12.50	14.58	16.66
5 $\frac{1}{4}$	4.37	5.46	6.56	7.65	8.75	10.93	13.12	15.31	17.50
5 $\frac{1}{2}$	4.58	5.72	6.87	8.02	9.16	11.45	13.75	16.04	18.33
5 $\frac{3}{4}$	4.79	5.98	7.18	8.38	9.58	11.97	14.37	16.77	19.16
6	5.	6.26	7.50	8.75	10.	12.50	15.	17.50	20.

Weight of Steel is about 2 per cent. more than Iron.

Weight of Round & Square Iron & Steel.

Size (dia.)	IRON.		STEEL.	
	Round Weight per lineal foot	Square Weight per lineal foot	Round Weight per lineal foot	Square Weight per lineal foot
3/16	0.092	0.117	0.094	0.120
1/4	0.164	0.208	0.157	0.213
5/16	0.256	0.326	0.261	0.332
3/8	0.368	0.469	0.376	0.478
7/16	0.501	0.638	0.511	0.651
1/2	0.654	0.833	0.668	0.849
9/16	0.828	1.062	0.845	1.076
5/8	1.023	1.302	1.043	1.328
11/16	1.237	1.576	1.262	1.607
3/4	1.473	1.875	1.502	1.912
13/16	1.728	2.201	1.763	2.245
7/8	2.004	2.552	2.044	2.603
15/16	2.301	2.930	2.347	2.988
1	2.618	3.333	2.670	3.400
1 1/8	3.313	4.219	3.380	4.303
1 1/4	4.091	5.208	4.172	5.312
1 1/2	4.950	6.302	5.049	6.428
1 3/4	5.890	7.500	6.008	7.750
1 7/8	6.913	8.802	7.051	8.978
1 3/4	8.018	10.208	8.178	10.412
1 7/8	9.204	11.719	9.388	11.953
2	10.472	13.333	10.681	13.600
2 1/8	11.82	15.05	12.06	15.35
2 1/4	13.25	16.87	13.52	17.21
2 3/8	14.77	18.80	15.06	19.18
2 1/2	16.36	20.83	16.69	21.25
2 5/8	18.04	22.97	18.40	23.43
2 3/4	19.80	25.21	20.19	25.71
2 7/8	21.64	27.55	22.07	28.10
3	23.56	30.00	24.03	30.60
3 1/4	27.65	35.21	28.21	35.91
3 1/2	32.07	40.83	32.71	41.65
3 3/4	36.82	46.87	37.55	47.81
4	41.89	53.33	42.73	54.40
4 1/4	47.29	60.21	48.23	61.41
4 1/2	53.01	67.50	54.07	68.85
4 3/4	59.07	75.21	60.25	76.71
5	65.45	83.33	66.76	85.00
5 1/2	79.19	100.83	80.78	102.85
6	94.25	120.00	96.13	122.40

TABLE
Shewing Weight in Pounds
OF VARIOUS AREAS OF
Iron Plates of Different Thicknesses

Area in Feet.	Thickness in Fractions of an Inch.									
	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
1	5	10	12.5	15	17.5	20	25	30	35	40
2	10	20	25.0	30	35.0	40	50	60	70	80
3	15	30	37.5	45	52.5	60	75	90	105	120
4	20	40	50.0	60	70.0	80	100	120	140	160
5	25	50	62.5	75	87.5	100	125	150	175	200
6	30	60	75.0	90	105.0	120	150	180	210	240
7	35	70	87.5	105	122.5	140	175	210	245	280
8	40	80	100.0	120	140.0	160	200	240	280	320
9	45	90	112.5	135	157.5	180	225	270	315	360
10	50	100	125.0	150	175.0	200	250	300	350	400
11	55	110	137.5	165	192.5	220	275	330	385	440
12	60	120	150.0	180	210.0	240	300	360	420	480
13	65	130	162.5	195	227.5	260	325	390	455	520
14	70	140	175.0	210	245.0	280	350	420	490	560
15	75	150	187.5	225	262.5	300	375	450	525	600
16	80	160	200.0	240	280.0	320	400	480	560	640
17	85	170	212.5	255	297.5	340	425	510	595	680
18	90	180	225.0	270	315.0	360	450	540	630	720
19	95	190	237.5	285	332.5	380	475	570	665	760
20	100	200	250.0	300	350.0	400	500	600	700	800
30	150	300	375.0	450	525.0	600	750	900	1050	1200
40	200	400	500.0	600	700.0	800	1000	1200	1400	1600
50	250	500	625.0	750	875.0	1000	1250	1500	1750	2000
60	300	600	750.0	900	1050	1200	1500	1800	2100	2400
70	350	700	875.0	1050	1225	1400	1750	2100	2450	2800
80	400	800	1000	1200	1400	1600	2000	2400	2800	3200
90	450	900	1087	1350	1575	1800	2250	2700	3150	3600
100	500	1000	1250	1500	1750	2000	2500	3000	3500	4000

STEEL JOISTS.—British Standard Sections.

A=Depth
B=Width of Flange
C=Thickness of Web
D=Thickness of Flange

Dimensions in Inches.				Weight lbs. per foot-run	Safe Load Tons distributed for Spans of					
A	B	C	D		6 ft.	10 ft.	12 ft.	16 ft.	20 ft.	30 ft.
3	1 1/2	0.16	0.248	4.0	0.92	0.55	0.46	—	—	—
3	3	0.20	0.332	3.5	2.0	1.2	1.0	—	—	—
4	1 3/4	0.17	0.24	5.0	1.5	0.91	0.76	—	—	—
4	3	0.22	0.336	9.5	3.1	1.9	1.6	—	—	—
4 1/2	1 3/4	0.18	0.325	6.5	2.4	1.4	1.2	—	—	—
5	3	0.22	0.376	11.0	4.5	2.7	2.3	1.7	—	—
5	4 1/2	0.29	0.448	18.0	7.6	4.5	3.8	2.8	—	—
6	3	0.26	0.348	12.0	5.6	3.4	2.8	2.1	—	—
6	4 1/2	0.37	0.431	20.0	9.6	5.8	4.8	3.6	—	—
6	5	0.41	0.520	25.0	12.0	7.3	6.0	4.5	—	—
7	4	0.25	0.387	16.0	9.4	5.6	4.7	3.5	2.8	—
8	4	0.28	0.402	18.0	11.0	7.0	5.8	4.3	3.5	—
8	5	0.35	0.575	28.0	18.0	11.0	9.9	7.0	5.5	—
8	6	0.44	0.597	35.0	23.0	14.0	11.0	8.6	7.0	—
9	4	0.30	0.460	21.0	15.0	9.0	7.5	5.6	4.5	—
9	7	0.55	0.924	58.0	42.0	25.0	21.0	16.0	12.0	—
10	5	0.36	0.552	30.0	24.0	14.0	12.0	9.0	7.2	—
10	6	0.40	0.736	42.0	35.0	21.0	17.0	13.0	10.0	—
10	8	0.60	0.970	70.0	53.0	34.0	28.0	21.0	17.0	—
12	5	0.35	0.550	32.0	30.0	18.0	15.0	11.0	9.0	—
12	6	0.40	0.717	44.0	40.0	26.0	22.0	16.0	13.0	—
12	6	0.50	0.883	54.0	52.0	31.0	26.0	19.0	15.0	—
14	6	0.40	0.698	46.0	43.0	31.0	26.0	19.0	15.0	—
14	6	0.50	0.873	57.0	59.0	38.0	31.0	24.0	19.0	—
15	5	0.42	0.647	42.0	47.0	28.0	24.0	18.0	14.0	9.5
15	6	0.50	0.880	59.0	62.0	42.0	35.0	26.0	21.0	14.0
16	6	0.55	0.847	62.0	73.0	45.0	38.0	28.0	22.0	15.0
18	7	0.55	0.928	75.0	—	64.0	53.0	40.0	32.0	21.0
20	7 1/2	0.60	1.01	89.0	—	83.0	69.0	52.0	41.0	27.0
24	7 1/2	0.60	1.07	100.0	—	102.0	92.0	69.0	55.0	36.0

Span should not exceed 20 x A, or deflection will be excessive.

Various Metals.

The Comparative Weight of a Superficial Foot.

Thickness in inches.	Wrought Iron.	Cast Iron.	Steel.	Copper.	Brass.	Lead.	Zinc.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1/16	2.526	2.344	2.552	2.891	2.734	3.708	2.344
1/8	5.052	4.687	5.104	5.781	5.469	7.417	4.687
3/16	7.578	7.031	7.656	8.672	8.303	11.125	7.031
1/4	10.104	9.375	10.208	11.563	10.938	14.833	9.375
5/16	12.630	11.719	12.760	14.453	13.672	18.542	11.719
3/8	15.156	14.062	15.312	17.344	16.406	22.250	14.062
7/16	17.682	16.406	17.865	20.234	19.141	25.958	16.406
1/2	20.208	18.750	20.417	23.125	21.875	29.667	18.750
9/16	22.734	21.094	22.969	26.016	24.609	33.375	21.094
5/8	25.260	23.437	25.521	28.906	27.344	37.083	23.437
11/16	27.786	25.781	28.073	31.797	30.078	40.792	25.781
3/4	30.312	28.125	30.625	34.688	32.813	44.500	28.125
13/16	32.839	30.469	33.177	37.578	35.547	48.208	30.469
7/8	35.635	32.812	35.729	40.469	38.281	51.917	32.812
15/16	37.801	35.156	38.281	43.359	41.016	55.625	35.156
1	40.417	37.500	40.833	46.250	43.750	59.333	37.500

Gauge.	Iron.	Copper.	Brass.	Gauge.	Iron.	Copper.	Brass.
30	.48	.550	.527	15	2.88	3.298	3.161
29	.52	.595	.579	14	3.32	3.801	3.644
28	.56	.641	.615	13	3.80	4.351	4.170
27	.64	.733	.702	12	4.36	4.992	4.785
26	.72	.824	.790	11	4.80	5.496	5.268
25	.80	.916	.878	10	5.36	6.137	5.883
24	.88	1.008	.966	9	5.92	6.778	6.497
23	1.00	1.145	1.097	8	6.60	7.557	7.248
22	1.12	1.282	1.229	7	7.20	8.244	7.902
21	1.28	1.466	1.405	6	8.12	9.297	8.912
20	1.40	1.603	1.536	5	8.80	10.076	9.658
19	1.68	1.924	1.844	4	9.52	10.900	10.448
18	1.96	2.244	2.151	3	10.36	11.862	11.370
17	2.32	2.656	2.546	2	11.36	13.007	12.468
16	2.60	2.977	2.853	1	12.00	13.740	13.170

Zinc Sheets.

Gauge No.	Approximate weight per sq. ft.	Thousandths of an inch.	7' x 2' 8"		7' x 3'		8' x 3'		Nearest Wire Gauge
			Approximate		Approximate		Approximate		
			Weight per sht.	No. of shts. in 10 cwt.	Weight per sht.	No. of shts. in 10 cwt.	Weight per sht.	No. of shts. in 10 cwt.	
	oz.		lb. oz.		lb. oz.		lb. oz.		
1	2 $\frac{1}{4}$	.004	2 10	427	—	—	—	—	41
2	3 $\frac{1}{4}$	.006	3 13	294	—	—	—	—	38
3	3 $\frac{3}{4}$	.007	—	—	4 15	227	—	—	37
4	4 $\frac{3}{4}$	.008	—	—	6 4	180	—	—	34
5	5 $\frac{3}{4}$	.010	—	—	7 9	148	—	—	31
6	6 $\frac{3}{4}$	.011	7 14	142	8 14	126	10 2	111	30
7	7 $\frac{3}{4}$	.013	9 1	124	10 3	110	11 10	96	29
8	9	.015	10 8	107	11 13	95	13 8	83	28
9	10	.017	11 11	96	13 2	85	15 0	75	27
10	11 $\frac{1}{2}$	.019	13 7	83	15 2	74	17 4	65	25
11	13	.021	15 3	74	17 1	66	19 8	57	24
12	15	.025	17 8	64	19 11	57	22 8	50	23
13	17	.028	—	—	22 5	50	25 8	44	22
14	19	.031	—	—	24 15	45	28 8	39	21
15	22	.036	—	—	28 14	39	33 0	34	20
16	25	.041	—	—	32 13	34	37 8	30	19
17	28	.046	—	—	36 12	30	42 0	27	18
18	31	.051	—	—	40 11	28	46 8	24	—
19	35	.059	—	—	45 15	24	52 8	21	17
20	39	.065	—	—	51 3	22	58 8	19	16
21	43	.072	—	—	56 7	20	64 8	17	15

Tin Plates.

The Principal Denominations and Sizes with their Equivalent Thicknesses in Millimetres.

Strength or Gauge.	Size.	Sheets per Box.	Weight per Box.	Thicknesses of Sheets.	
	in.		lb.	mm.	in.
IC	14 x 10	225	108	0.313	0.0123
IX	"	"	136	0.395	0.0155
IXX	"	"	156	0.453	0.0179
IXXX	"	"	176	0.511	0.0201
IC	20 x 14	112	108	0.315	0.0123
ICL	"	"	100	0.292	0.0114
ICL	"	"	95	0.277	0.0109
ICL	"	"	90	0.262	0.0103
ICL	"	"	85	0.248	0.0097
ICL	"	"	80	0.233	0.0091
IX	"	"	136	0.396	0.0155
IXX	"	"	156	0.455	0.0179
IXXX	"	"	176	0.513	0.0201
IXXXX	"	"	196	0.571	0.0223
IC	28 x 20	"	216	0.315	0.0124
IX	"	"	272	0.396	0.0156
IC	"	56	108	0.315	0.0123
IX	"	"	136	0.396	0.0155
IC	20 x 10	225	154	0.313	0.0123
IX	"	"	194	0.394	0.0155
IC	14 x 18 $\frac{3}{4}$	124	110	0.309	0.0122
IC	14 x 19 $\frac{1}{4}$	120	110	0.311	0.0122
IC	30 x 21	112	243	0.315	0.0124
CL	"	"	224	0.290	0.0114
CLL	"	"	190	0.246	0.0097
CLLL	"	"	176	0.228	0.0090
CLLLL	"	"	160	0.207	0.0081
DC	17 x 12 $\frac{1}{2}$	100	94	0.404	0.0160
DX	"	"	122	0.525	0.0206
DXX	"	"	143	0.615	0.0242
DXXX	"	"	164	0.706	0.0278
DXXXX	"	"	185	0.796	0.0313

Tin Plates.

Thickness of Tin Plates by Gauge.

Tinplate.			Gauge.	Tinplate.			Gauge.
IC	...	...	30	DXXXX	...	...	22
IX	...	...	28	DXXXXX	...	...	21
IXX	...	...	27	DXXXXXX	...	...	20
IXXX	...	...	26	S D C	...	...	28 full
IXXXX	...	...	25	S DX	...	...	25 easy
IXXXXX	...	...	24	S DXX	...	...	25 full
IXXXXXX	...	...	22 easy	S DXXX	...	...	24
DC	...	...	28 full	S DXXXX	...	...	24 full
DX	...	...	26	S DXXXXX	...	...	22 easy
DXX	...	...	25	S DXXXXXX	...	...	22 full
DXXX	...	...	24				

LEAD.

Weight per Super Foot.

Inch.	Lbs.	Inch.	Lbs.	Inch.	Lbs.
1/16	3·7	7/16	25·9	3/4	44·7
1/8	7·4	1/2	29·5	13/16	48·3
3/16	11·1	9/16	33·2	7/8	51·0
1/4	14·8	5/8	36·9	15/16	55·1
5/16	18·5	11/16	40·6	1	59·4
3/8	22·2				

LEAD Sheet.

Weight per Roll—30 feet x 7 feet 9 inches.

	C.	Q.	L.			C.	Q.	L.	
3 lbs. ...	...	6	0	14	5 lbs....	...	10	1	14
3½ „ ...	...	7	0	20	6 „ ...	...	12	1	0
4 „ ...	...	8	1	0	7 „ ...	...	14	2	0
4½ „ ...	...	9	1	0					

EXPANSION OF METAL.

A comparison between the common metals at 32 degrees Fahr. and 212 degrees Fahr. showed the following results:—

Lead expands 1 part in 349	Block Tin expands 1 part in 403
Zinc „ 1 „ 322	Cast Iron „ 1 „ 901
Copper „ 1 „ 581	Wrought Iron „ 1 „ 846
	Brass „ 1 „ 584

It will be observed that in expansiveness lead is only beaten by zinc.

Sheet Copper—Weights of.

No.	Per Square Foot.	No.	Per Square Foot.
1	14 lbs. 0 oz.	16	3 lbs. 0 oz.
2	13 „ 0 „	17	2 „ 12 „
3	12 „ 0 „	18	2 „ 4 „
4	11 „ 0 „	19	2 „ 0 „
5	10 „ 2 „	20	1 „ 12 „
6	9 „ 8 „	21	1 „ 8 „
7	8 „ 8 „	22	1 „ 6 „
8	7 „ 10 „	23	1 „ 3 „
9	7 „ 0 „	24	1 „ 0 „
10	6 „ 4 „	25	0 „ 14 „
11	5 „ 8 „	26	0 „ 13 „
12	5 „ 0 „	27	0 „ 11½ „
13	4 „ 8 „	28	0 „ 10 „
14	4 „ 0 „	29	0 „ 9 „
15	3 „ 8 „	30	0 „ 8 „

Gauges of Copper Sheets.

48 in. x 24 in. x 8 lbs. =	24	W G
„	10	23 „ full
„	12	21 „
„	14	20 „
„	16	19 „
„	18	18 „
„	24	16 „

Imitations. There is nothing "just as good."

ALUMINIUM.

Gauge.	Weight per square foot in lbs.	Weight of Sheet 24 x 48 in., in lbs.
16	.875	7
18	.656	5¼
20	.5	4
22	.375	3

A cube foot of Aluminium weighs 166 lbs.

SOLDERS.

For Lead .. 1 part Tin, 2 parts Lead.
 For Brass .. 2 parts Brass, 1 part Zinc.
 Hard Solder .. 2 parts Copper, 1 part Zinc.
 Soft Solder .. 2 parts Tin, 1 part Lead.

FLUXES—For Soldering.

Tinned Iron .. Resin or Spirits of Salts
 Copper and Brass .. Sal Ammonia or Spirits of Salts
 Zinc .. Spirits of Salts
 Lead .. Resin

Fusing Temperature of Metals.

	Degrees Fahr.
Solder	330
Tin	426
Lead	630
Zinc	800
Brass	1650
Silver	1830
Copper	2192
Gold	2280
Cast Iron	2912

SOMETHING ABOUT TANKS.

CIRCULAR CORRUGATED IRON. REPUTED CAPACITY.

Diam.	Height of Tank.			
	4 ft.	5 ft.	6 ft.	8 ft.
ft. in.	gall.	gall.	gall.	gall.
3 3	200	250	300	400
3 6	240	300	360	480
3 9	280	350	420	560
4 0	310	390	470	620
4 4	—	—	540	720
4 6	—	—	590	787
5 0	—	—	720	960
6 0	—	—	1,050	1,400

SQUARE IRON.

CAPACITY.	
2 ft. 8 in. sq.	100 gall.
3 " 3 " "	200 "
3 " 8 " "	300 "
4 " 0 " "	400 "

WATER.

- 1 pint pure water weighs 1½ lb.
- 1 gallon pure water contains 277·274 cubic ins.
- 1 cubic ft. distilled water, 62 deg. Fahr., weighs 62·321 lbs.
- 1 cubic yard distilled water, 62 deg. Fahr., weighs ¾ ton.
- 1 cubic fathom distilled water, 62 deg. Fahr., weighs 6 tons.

To Compute the Capacity of a Tank.

SQUARE OR RECTANGULAR.—Multiply the length by the breadth and the product by the depth; the result multiplied by $6\frac{1}{4}$ (6.2321) will give the base and contents in gallons.

Example:—Circumference 20 ft., height 6 ft.

20 ft. x 20 ft. x 3 ft. = 1,200 gals. approximate capacity.

CIRCULAR.—Rule A.—Multiply the circumference by itself and the product by half the height.

Rule B.—Multiply the diameter by itself and the product by five times the height.

Example:—Diameter 6 ft., height 6 ft.

6 ft. x 6 ft. x 30 ft. = 1,080 gals. approximate capacity.

A GOOD TANK.

It is highly necessary that a Corrugated Iron Tank should possess lasting properties, and adaptability to withstand the climatic conditions of the locality in which it is to be used.

Thousands of TANKS are made every year from Lysaght's Corrugated "ORB" Sheets, the durable properties of which, in a pure dry atmosphere remote from the sea, are almost unlimited.

In tropical countries and other localities in which the water possesses mineral properties, the result is, however, less satisfactory, and in such cases Tanks should be made from Lysaght's Special Blue Tank-Making Sheets, which are largely used for this purpose in India and other tropical countries.

Useful Information for Plumbers and Tankmakers.

**GALVANIZED IRON REQUIRED FOR THE MANUFACTURE OF
CIRCULAR CORRUGATED IRON TANKS OF
VARIOUS CAPACITIES.**

Capa'ty of Tank. Gals.	Height	Diam.		IRON REQUIRED.
	ft.	ft.	in.	
200	4	3	3	2 sheets 10ft. x 24G. Galv. Corrugated Iron, curve each to a full circle. 1 sheet each 72in. x 36in. x 24G. P.G. Iron 72in. x 36in. x 26G. „
400	6	3	9	6 sheets 6ft. x 24G. Galv. Corrugated Iron, curve each to half circle. 1 sheet each 72in. x 36in. x 24G. P.G. Iron 72in. x 36in. x 26G. „
500	4	5		4 sheets 8ft. x 24G. Galv. Corrugated Iron, curve each to half circle. 2 sheets each 72in. x 30in. x 24G. P.G. Iron 72in. x 30in. x 26G. „
600	6	4	4	6 sheets 7ft. x 24G. Galv. Corrugated Iron, curve each to half circle. 2 sheets each 72in. x 24in. x 26G. P.G. Iron 72in. x 24in. x 24G. „
800	6	5	3	3 sheets each 8ft. & 9ft. x 24G. Galv. C. Iron, curve 1/8 & 1/9 to circle. 1 sheet each 72in. x 30in. x 24G. P.G. Iron 72in. x 36in. x 24G. „ 72in. x 30in. x 26G. „ 72in. x 36in. x 26G. „
1000	6	6		3 sheets each 9ft. & 10ft. x 24G. Galv. C. Iron, curve 1/9 & 1/10 to circle. 2 sheets each 72in. x 36in. x 24G. P.G. Iron 72in. x 36in. x 26G. „
1000	8	5		8 sheets 8ft. x 24G. Galv. Corrugated Iron, curve each to half circle. 2 sheets each 72in. x 36in. x 24G. P.G. Iron 72in. x 36in. x 26G. „
1200	6	6	3	6 sheets 10ft. x 24G. Galv. Corrugated Iron, curve each to 1/3 circle. 2 sheets each 72in. x 36in. x 24G. P.G. Iron 72in. x 36in. x 26G. „
2000	6	8	3	9 sheets 9ft. x 24G. Galv. Corrugated Iron curve each to 1/3 circle. 5 sheets each 72in. x 36in. x 24G. P.G. Iron 72in. x 36in. x 26G. „
2500	6	9	3	9 sheets 10ft. x 24G. Galv. Corrugated Iron, curve three to circle. 5 sheets each 72in. x 36in. x 24G. P.G. Iron 72in. x 36in. x 26G. „

Weight per Lineal Foot of Seamless Drawn Copper Tubes.

Imp. Std Gauge.	Thickness of Copper.							
	6	8	10	12	14	16	18	20
Inches	0.192	0.160	0.128	0.104	0.080	0.064	0.048	0.036
Inside Diam. Inches	Weight of a Lineal Foot in Pounds.							
$\frac{1}{4}$	1.03	0.79	0.58	0.44	0.32	0.24	0.17	0.12
$\frac{3}{8}$	1.32	1.04	0.78	0.60	0.44	0.34	0.25	0.18
$\frac{1}{2}$	1.61	1.28	0.97	0.76	0.56	0.44	0.32	0.23
$\frac{5}{8}$	1.90	1.52	1.17	0.92	0.68	0.53	0.39	0.29
$\frac{3}{4}$	2.19	1.76	1.36	1.07	0.80	0.63	0.46	0.34
$\frac{7}{8}$	2.48	2.00	1.55	1.23	0.92	0.73	0.54	0.40
1	2.77	2.24	1.75	1.39	1.04	0.82	0.61	0.45
$1\frac{1}{8}$	3.06	2.49	1.94	1.55	1.17	0.92	0.68	0.51
$1\frac{1}{4}$	3.35	2.73	2.13	1.70	1.29	1.02	0.75	0.56
$1\frac{3}{8}$	3.64	2.97	2.33	1.86	1.41	1.11	0.83	0.61
$1\frac{1}{2}$	3.93	3.21	2.52	2.02	1.53	1.21	0.90	0.67
$1\frac{5}{8}$	4.22	3.45	2.71	2.17	1.65	1.31	0.97	0.72
$1\frac{3}{4}$	4.51	3.70	2.91	2.33	1.77	1.40	1.04	0.78
$1\frac{7}{8}$	4.80	3.94	3.10	2.49	1.89	1.50	1.12	0.83
2	5.09	4.18	3.29	2.65	2.01	1.60	1.19	0.89
$2\frac{1}{8}$	5.38	4.42	3.49	2.80	2.13	1.69	1.26	0.94
$2\frac{1}{4}$	5.67	4.66	3.68	2.96	2.25	1.79	1.33	1.00
$2\frac{3}{8}$	5.96	4.91	3.88	3.12	2.38	1.89	1.41	1.05
$2\frac{1}{2}$	6.25	5.15	4.07	3.28	2.50	1.98	1.48	1.10
$2\frac{3}{4}$	6.83	5.63	4.46	3.59	2.74	2.18	1.62	1.21

To ascertain the weight of a Seamless Tube of other metal, multiply the weight of a similar Copper Tube by 0.9626 for Brass (70 & 30 alloy)—by 0.86 for Wrought Iron—by 0.81 for Cast Iron—or by 1.28 for Lead.

The above weights are theoretically correct, but in practice a slight deviation from the theoretical weights must be expected.

Lead Pipe—Water and Gas.

Inside Dia.	Strength.	Weight per Yard.	Average Length.	Inside Dia.	Strength.	Weight per Yard.	Average Length.
Inch		Lbs.	Yards.	Inch.		Lbs.	Yards.
$\frac{3}{8}$	Thin	$3\frac{1}{2}$	35	$1\frac{1}{4}$	Thin	10	17
"	Middle	4	32	"	Thin	11	16
"	Strong	$4\frac{1}{2}$	28	"	Middle	12	14
"	Strong	5	24 or 48	"	Middle	$12\frac{1}{2}$	13
"	Strong	$5\frac{1}{2}$	22 or 44	"	Strong	14	12
$\frac{1}{2}$	Thin	3	39	"	Strong	16	11
"	Thin	$3\frac{1}{2}$	35	$1\frac{1}{2}$	Thin	12	14
"	Middle	4	32	"	Thin	14	12
"	Strong	$4\frac{1}{2}$	28	"	Middle	$15\frac{1}{2}$	11
"	Strong	5	48	"	Strong	$17\frac{1}{2}$	9
"	Strong	6	38	"	Strong	21	8
"	Strong	7	33	$1\frac{3}{4}$	Thin	15	11
"	Strong	8	29	"	Middle	17	10
$\frac{5}{8}$	Thin	$4\frac{1}{2}$	28	"	Strong	19	9
"	Middle	5	24 or 48	2	Thin	19	9
"	Strong	6	38	"	Middle	23	7
"	Strong	7	33	"	Strong	26	7
"	Strong	8	29	"	Thin	19	12-foot Lengths
$\frac{3}{4}$	Thin	5	24	"	Middle	23	
"	Thin	6	20	"	Strong	26	
"	Middle	7	25	"	Strong	30	
"	Strong	8	22	$2\frac{1}{2}$	Thin	26	
"	Strong	$8\frac{1}{2}$	20	"	Thin	27	
"	Strong	9	19	"	Middle	30	
"	Strong	10	17	"	Strong	33	
"	Strong	11	16	3	Thin	36	
"	Strong	12	14	"	Middle	42	
1	Thin	7	25	"	Strong	44	
"	Thin	8	22	$3\frac{1}{2}$	Thin	45	
"	Middle	9	19	"	Middle	49	
"	Middle	$9\frac{1}{2}$	18	"	Strong	52	
"	Strong	10	17	4	Thin	48	
"	Strong	11	16	"	Middle	57	
"	Strong	12	14	"	Strong	61	
"	Strong	14	12	5	Thin	73	
"	Strong	15	11	"	Strong	84	
				6		68	

Trade Price List of Gas, Water, and Steam Tubes

TUBES (Current at January 1st, 1921).

Internal Diam. in inches.	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2	2 $\frac{1}{4}$	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4	4 $\frac{1}{2}$	5	6
Tubes 2ft long & over per ft	-/4	-/4 $\frac{1}{4}$	-/5 $\frac{1}{2}$	-/6 $\frac{3}{4}$	-/9 $\frac{1}{2}$	1/1	1/4 $\frac{1}{2}$	1/8	1/10	2/6	2/10	3/3	4/-	4/5	5/6	6/-	7/6
Pieces 12 to 23 $\frac{1}{2}$ in. long (each)	-/10	-/11	1/1	1/5	1/11	2/8	3/4	4/6	4/9	6/9	8/-	10/6	13/6	15/6	21/-	24/-	32/6
Pieces 4 to 11 $\frac{1}{2}$ in. long (each)	-/7	-/8	-/9	-/11	1/3	1/8	2/2	2/10	3/-	4/3	5/3	6/9	9/3	10/9	15/6	18/-	25/3
Long Screws, 12 to 23 $\frac{1}{4}$ in. long (each)	-/11	1/-	1/3	1/7	2/2	2/10	3/9	5/-	5/3	7/6	9/-	12/-	15/6	17/-	23/-	26/6	35/6
Long Screws, 3 to 11 $\frac{1}{4}$ in. long (each)	-/8	-/9	-/10	1/1	1/5	1/11	2/6	3/3	3/6	5/-	6/6	8/6	11/6	13/-	17/-	20/-	28/-
Barrel nipples (each)	-/5	-/5	-/6	-/7	-/9	1/-	1/4	1/8	1/9	2/6	3/-	4/-	6/-	7/-	10/-	12/6	20/-
Bends (each)	-/8	-/9	-/11	1/2	1/7 $\frac{1}{2}$	2/7 $\frac{1}{2}$	3/2	4/2	5/2	8/6	12/-	18/-	25/-	32/6	80/-	105/-	150/-
Springs, not socketed (each)	-/5	-/6	-/7	-/9	1/1 $\frac{1}{2}$	1/1 $\frac{1}{2}$	2/3 $\frac{1}{2}$	3/1	3/11	6/9	9/6	14/6	20/-	26/6	70/-	93/-	132/-

Trade Price List of Water and Steam Fittings

FITTINGS. (Current at January 1st, 1921).

Internal Diam. in inches.	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6
Pipe Union .. each	2/-	2/6	3/-	3/-	4/-	5/6	6/9	8/-	9/-	10/-	15/-	17/6	22/6	27/6	35/-	48/-	66/-	105/-
Elbows, square .. "	-10	-11	1/1	1/1	1/3	1/6	2/2	2/7	3/4	4/3	6/9	9/6	14/-	22/-	28/-	75/-	95/-	150/-
Elbows, round .. "	-11	1/-	1/2	1/2	1/5	1/8	2/4	2/10	3/9	4/8	7/3	10/6	16/-	24/-	30/-	75/-	95/-	150/-
Tees "	1/-	1/1	1/3	1/3	1/7	1/10	2/6	3/1	4/2	5/1	7/9	11/6	18/-	26/-	32/-	78/-	98/-	155/-
Crosses "	2/2	2/4	2/9	2/9	3/3	4/1	5/6	6/7	8/6	10/6	17/-	22/-	40/-	56/-	66/8	175/-	220/-	350/-
Socketts, plain .. "	-3	-3	-4	-4	-5	-6	-8	10 $\frac{1}{2}$	1/1	1/3	1/9	2/6	3/6	5/-	6/-	10/-	12/-	18/-
Socketts, diminished .. "	-4	-5	-6	-6	-7	-9	1/-	1/4	1/9	2/-	4/-	5/-	7/-	9/-	11/-	25/-	35/-	55/-
Flanges "	-9	-10	1/-	1/-	1/2	1/4	1/9	2/-	2/3	2/9	4/-	5/-	8/6	10/-	11/6	16/-	18/-	27/-
Caps "	-3 $\frac{1}{2}$	-3 $\frac{1}{2}$	-5	-5	-6	-8	1/-	1/3	1/7	1/3	2/-	3/-	4/4	9/9	10/6	25/-	30/-	45/-
Plugs "	-3	-3	-4	-4	-5	-6	-8	1/10	1/-	1/3	2/-	2/6	4/9	7/-	10/-	22/-	30/-	48/-
Backnuts "	-2	-2	-3	-3	-3 $\frac{1}{2}$	-5	-6	-8	-10	1/-	1/9	2/3	3/6	4/6	5/6	14/-	18/-	26/-
Nipples "	-2	-2	-3	-3	-3 $\frac{1}{2}$	-4	-6	-8	-10	1/-	1/9	2/3	3/6	4/6	5/6	14/-	18/-	26/-
Union Ends "	2/6	3/-	3/9	3/9	5/-	6/3	8/6	10/-	11/6	13/6	21/-	27/-	37/-	49/-	58/-	78/-	100/-	160/-
Main Cocks "	1/6	1/9	2/3	2/3	2/10	4/2	5/4	7/-	11/6	11/6	16/-	17/6	26/-	40/-	47/9	125/-	125/-	165/-
" with brass plugs .. "	3/4	4/-	5/4	5/4	4/1 $\frac{1}{2}$	5/7 $\frac{1}{2}$	7/6	10/-	13/-	21/-	34/-	40/-	50/-	75/-	100/-	225/-	225/-	325/-
Round way Cocks .. "	2/7 $\frac{1}{2}$	3/-	3/-	3/-	12/4 $\frac{1}{2}$	16/10 $\frac{1}{2}$	22/6	29/3	39/4	49/6	85/6	135/-	168/9	270/-	360/-			
" with brass plugs .. "	7/10 $\frac{1}{2}$	9/-	1/3	1/3	1/7 $\frac{1}{2}$	2/-	2/4 $\frac{1}{2}$	2/7 $\frac{1}{2}$	3/-	3/3	3/7	4/6	6/9	9/-	10/6	12/-	14/3	18/-
Cock Spanners, wrought .. "	1/1 $\frac{1}{2}$	1/1 $\frac{1}{2}$	1/3	1/3	1/3	1/6	24/-	24/6	25/2	26/3	37	4/6	6/9	9/-	10/6	12/-	14/3	18/-
" Malleable cast .. "	-9	-9	1/-	1/-	1/3	1/6	24/-	24/6	25/2	26/3	37	4/6	6/9	9/-	10/6	12/-	14/3	18/-
Syphon Boxes, 1 quart .. "	22/9	23/-	22/9	22/9	27/-	27/4	28/-	28/6	29/2	30/3	37/6	40/6	47/6	53/6	61/6	67/6		
" " 2 quarts .. "	32/-	32/-	32/-	32/-	32/-	32/4	33/-	33/6	34/2	35/3	43/6	46/6	53/6	61/6	67/6			
" " 3 quarts .. "						38/4	39/-	39/6	40/2	41/3								
" " 4 quarts .. "						38/-	39/-	39/6	40/2	41/3								

Composition Pipe

(INSIDE DIAMETER).

Inch	lbs.	oz.		Inch	lbs.	oz.	
$\frac{1}{4}$	0	13	per yard	$\frac{5}{8}$	3	4	per yard
$\frac{5}{16}$	1	0	„	$\frac{3}{4}$	4	4	„
$\frac{3}{8}$	1	5	„	$\frac{7}{8}$	4	12	„
$\frac{7}{16}$	1	10	„	1	5	8	„
$\frac{1}{2}$	2	2	„				

Length of Coils up to $\frac{1}{2}$ inch, usually 50 yards.

$\frac{5}{8}$ inch	$\frac{3}{4}$ inch	$\frac{7}{8}$ inch	1 inch
40 yards	30 yards	25 yards	20 yards

Pipes—Cast Iron (Water)

Spigot and Faucet

NINE FEET LENGTHS

Diam.	Cwts.	Qrs.	Lbs.	Diam.	Cwts.	Qrs.	Lbs.
$2\frac{1}{2}$	0	3	2	14	9	1	26
3	1	0	10	15	9	3	26
4	1	1	16	16	10	3	6
5	2	0	14	18	14	0	25
6	2	2	0	20	16	1	20
7	3	0	20	22	17	3	2
8	3	2	14	24	22	0	0
9	4	2	10	27	24	0	21
10	5	1	0	30	27	0	0
12	7	0	0	33	32	0	0

Galvanized Piping—(Iron)

Weight per 100 feet.

Size	Per 100 Feet.			Size	Per 100 Feet.		
	C.	Q.	L.		C.	Q.	L.
$\frac{1}{2}$	0	3	0	$1\frac{1}{2}$	2	3	2
$\frac{3}{4}$	1	0	5	2	4	0	6
1	1	1	22	3	6	0	8
$1\frac{1}{4}$	2	1	10				

SIZES of PIPES for WATER.

The table below gives approximately suitable diameters of pipes for passing different quantities of water. For short mains up to 200 yards long, the diameter of same, if smaller than the figures given, is not of much importance, but when they exceed 200 yds. in length the diameters given in this table are desirable.

Gallons per minute.	Diameter of pipe in in.	Gallons per minute.	Diameter of pipe in in.
$\frac{1}{2}$	$\frac{1}{2}$	60	4
$\frac{3}{4}$	$\frac{3}{4}$	100	5
$1\frac{1}{2}$	1	160	6
3	$1\frac{1}{4}$	220	7
5	$1\frac{1}{2}$	300	8
10	2	450	9
15	$2\frac{1}{2}$	500	10
20	3	800	12
40	$3\frac{1}{2}$	1000	14

ACETYLENE PIPE SERVICE.

Number of half-foot Burners or equivalent of other sizes, to burn at $2\frac{1}{2}$ inches or higher pres- sure at the burners.	Distance from Gener- ating apparatus if a main pipe, or distance from main pipe if a branch.	Sizes of Pipes.
2	15 feet	$\frac{1}{8}$ inch
5	30 "	$\frac{1}{4}$ "
10	40 "	$\frac{3}{8}$ "
20	50 "	$\frac{1}{2}$ "
50	100 "	$\frac{3}{4}$ "
70	130 "	1 "
100	150 "	$1\frac{1}{4}$ "
150	180 "	$1\frac{1}{2}$ "
270	250 "	2 "

Consumers of Galvanized Iron should note that every sheet of LYSAGHT'S "ORB" IRON has the Trade Mark stencilled thereon in blue, and is guaranteed. Beware of Imitations.

Iron, Copper & Brass Wires.

IRON.				100 FEET.	
S.W.G. No.	Weight of 100 yards in Avoir. lbs.	Weight of 1 Statute Mile in Avoir. lbs.	Length of 1 cwt. in Yards.	Copper Wire in Lbs.	Brass Wire in Lbs.
7/0	193.4	3,404	58	76.576	72.006
6/0	166.5	2,930	67	65.947	62.010
5/0	144.4	2,541	78	57.104	53.752
4/0	123.8	2,179	91	49.009	46.083
3/0	107.1	1,885	105	42.388	39.858
2/0	93.7	1,649	120	37.095	34.88
0	81.2	1,429	138	32.155	30.235
1	69.6	1,225	161	27.5445	25.922
2	58.9	1,037	190	23.333	21.940
3	49.1	864	228	19.451	18.290
4	41.6	732	269	16.486	15.502
5	34.8	612	322	13.768	12.940
6	28.5	502	393	11.792	10.617
7	24.0	422	467	9.4882	8.921
8	19.8	348	566	7.8414	7.373
9	16.0	282	700	6.3516	5.972
10	12.7	223	882	5.0185	4.7189
11	10.4	183	1,077	4.1217	3.8756
12	8.4	148	1,333	3.313	3.1153
13	6.5	114	1,723	2.5926	2.4378
14	5.0	88	2,240	1.9603	1.8433
15	4.0	70	2,800	1.5879	1.4931
16	3.2	56	3,500	1.2546	1.1767
17	2.4	42	4,667	0.96058	0.9324
18	1.8	32	6,222	0.70573	0.6636
19	1.2	21	9,333	0.49000	0.46083
20	1.0	18	11,200	0.39698	0.37328
21	0.795	13.9	14,199	0.21366	0.29493
22	0.609	10.7	18,418	0.24014	0.22529
23	0.448	7.8	25,070	0.17643	0.1659
24	0.376	6.6	29,835	0.14826	0.1394
25	0.311	5.4	36,100	0.12252	0.1152
26	0.252	4.4	44,568	0.099243	0.093318

Weight of a Cubic Inch of

Lead	equals	.4103 lbs.	Iron, cast	equals	.263 lbs.
Copper, sheet	"	.3225 "	Tin	"	.2636 "
Brass	"	.3037 "	Zinc	"	.26 "
Iron	"	.279 "	Water	"	.03617 "

Steel Wire.

Table showing quantity required per mile of fencing.

Gauge.	Length per cwt.	Weight Required per Mile.														
		1 Wire			2 Wires			3 Wires			4 Wires			5 Wires		
No.	yds.	C.	Q.	L.	C.	Q.	L.	C.	Q.	L.	C.	Q.	L.	C.	Q.	L.
4	269	6	2	4	13	0	8	19	2	12	26	0	16	32	2	20
5	322	5	1	24	10	3	20	16	1	16	21	3	12	27	1	12
6	393	4	1	26	8	3	24	13	1	22	17	3	20	22	1	18
7	467	3	3	2	7	2	4	11	1	6	15	0	8	18	3	10
8	566	3	0	12	6	0	24	9	1	8	12	1	20	15	2	4
9	700	2	2	2	5	0	4	7	2	6	10	0	8	12	2	10
10	882	1	3	27	3	3	26	5	3	25	7	3	24	9	3	23
11	1077	1	2	15	3	1	2	4	3	17	6	2	4	8	0	19
12	1333	1	1	8	2	2	16	3	3	24	5	1	4	6	2	12

Iron Wire is 2% less than Steel.

Galvanized Barbed Wire Fencing

Description.	Weight.		Length of 112 lbs.
	100 yds.	1 mile	
	Lbs.	Lbs.	Yards
2-point ordinary round, one wire only, 5 in. apart ..	19	335	598
2-point thick set, 2½ in. apart	21	370	533
4-point ordinary, 6 in. apart	20	352	560
4-point thick set, 3 in. apart	25	440	448
4-point ordinary round, both wires 6 in. apart	20	352	560
4-point thick set, round, both wires 3 in. apart ..	25	440	448

Galvanized Barb Wire Fencing.

Approximate Weight.

Points	Marks.	Gauge	100 Yards	1 Mile.	Length of 112 lbs. in Yards.
4	IOWA	12	25 lbs.	438 lbs.	450
4	"	14	16 "	281 "	700
4	SPECIAL	12½	17 "	303 "	650
4	"	14	12 "	211 "	935
2	GLIDDEN	12	21 "	375 "	525
2	"	14	13 "	225 "	875

WIRE NETTING.

Estimated Weight, 24 inches wide.

(Other Widths may be estimated pro rata.)

The following is not to be regarded as a Standard, but is merely an approximate guide.

Size.	Weight per Mile.	Weight of Roll 50 yds.	Size.	Weight per Mile.	Weight of Roll 50 yds.
Inches.	cwt. qr. lb.	Nbs.	Inches.	cwt. qr. lb.	lbs.
24 x ½ x 20	18 0 26	57	24 x 2 x 19	6 1 21	19
24 x ¾ x 19	16 3 25	53	24 x 2 x 18	8 1 12	25
24 x 1 x 20	12 2 12	41	24 x 2 x 17	12 0 14	35
24 x 1 x 19	12 2 8	36	24 x 2 x 16	14 0 25	45
24 x 1 x 20	9 3 17	28	24 x 2½ x 18	6 2 8	22
24 x 1¼ x 19	9 3 8	32	24 x 2½ x 17	9 3 17	30
24 x 1½ x 18	12 0 10	42	24 x 2½ x 16	11 2 15	35
24 x 1½ x 17	16 2 19	54	24 x 3 x 18	5 1 8	16
24 x 1½ x 19	8 2 14	26	24 x 3 x 17	7 2 16	22
24 x 1½ x 18	11 1 1	33	24 x 3 x 16	9 2 18	30
24 x 1½ x 17	14 1 10	46	24 x 3 x 15	13 0 14	38
24 x 1¾ x 19	7 0 17	21	24 x 3 x 14	15 0 12	47
24 x 1¾ x 18	8 2 7	31	24 x 4 x 16	7 2 22	24
24 x 1¾ x 17	13 1 6	42	24 x 4 x 15	9 2 6	30
			24 x 4 x 14	11 0 26	35

the world, universally admitted to be **THE BEST.**

Rabbit-proof Wire Netting Weights

Size.	Grade.	Approximate weight per mile.			
		Tons.	Cwts.	Qrs.	Lbs.
42 x 1 $\frac{1}{4}$ x 17	A	1	12	0	0
42 x 1 $\frac{1}{4}$ x 17	B	1	9	0	0
42 x 1 $\frac{1}{4}$ x 18	A	1	2	0	0
42 x 1 $\frac{1}{4}$ x 18	B	1	0	3	0
42 x 1 $\frac{1}{2}$ x 17	A	1	7	2	0
42 x 1 $\frac{1}{2}$ x 17	B	1	4	2	0
42 x 1 $\frac{1}{2}$ x 18	A		19	2	0
42 x 1 $\frac{1}{2}$ x 18	B		18	2	0
36 x 1 $\frac{1}{4}$ x 17	A	1	7	2	0
36 x 1 $\frac{1}{4}$ x 17	B	1	5	0	0
36 x 1 $\frac{1}{4}$ x 18	A		18	2	0
36 x 1 $\frac{1}{4}$ x 18	B		17	2	0
36 x 1 $\frac{1}{2}$ x 17	A	1	3	2	0
36 x 1 $\frac{1}{2}$ x 17	B	1	1	2	0
36 x 1 $\frac{1}{2}$ x 18	A		16	2	0
36 x 1 $\frac{1}{2}$ x 18	B		15	2	0

Relative Value Based on Mile Measurements

Per Mile.	Per 100 Yards	Per Mile.	Per 100 Yards.
£40 0 0	£2 5 5	£22 0 0	£1 5 0
39 0 0	2 4 4	21 0 0	1 3 10
38 0 0	2 3 2	20 0 0	1 2 9
37 0 0	2 2 1	19 0 0	1 1 7
36 0 0	2 0 11	18 0 0	1 0 5
35 0 0	1 19 9	17 0 0	0 19 4
34 0 0	1 18 8	16 0 0	0 18 2
33 0 0	1 17 6	15 0 0	0 17 1
32 0 0	1 16 4	14 0 0	0 15 11
31 0 0	1 15 3	13 0 0	0 14 9
30 0 0	1 14 1	12 0 0	0 13 8
29 0 0	1 12 11	11 0 0	0 12 6
28 0 0	1 11 10	10 0 0	0 11 4
27 0 0	1 10 8	9 0 0	0 10 3
26 0 0	1 9 7	8 0 0	0 9 1
25 0 0	1 8 5	7 0 0	0 7 11
24 0 0	1 7 3	6 0 0	0 6 10
23 0 0	1 6 2	5 0 0	0 5 8

GALVANIZED WIRE NETTING.
TABLE OF GROSS PRICES at per Roll of 50 Yards.

Mesh.	G.	12 inches wide.	18 inches wide.	24 inches wide.	30 inches wide.	36 inches wide.	42 inches wide.	48 inches wide.	60 inches wide.	72 inches wide.	G.	Mesh.							
$\frac{1}{2}$ inch	22	1 16	3	2 12	6	3 8	0	4 19	6	5 16	1	6 12	8	8	5 10	9 19	0	22	$\frac{1}{2}$ inch
"	20	2 4	0	3 3	3	4 2	0	5 0	0	7 0	0	8 0	0	10 0	0	12 0	0	20	"
"	19	2 18	9	4 4	0	5 9	6	6 13	6	8 0	0	9 6	8	10 13	4	13 6	0	19	"
$\frac{3}{4}$ inch	22	1 1	3	1 10	3	1 18	6	2 7	0	3 4	2	3 13	4	4 11	8	5 10	0	22	$\frac{3}{4}$ inch
"	20	1 6	3	1 17	6	2 7	9	3 11	6	4 3	9	4 17	9	5 11	8	6 16	6	20	"
"	19	1 12	3	2 6	0	2 18	9	3 11	6	4 3	9	4 17	9	5 11	8	6 16	6	19	"
"	18	2 2	3	3 0	6	3 17	0	4 14	0	5 10	0	6 8	4	7 6	8	8 7	6	18	"
1 inch	20	0 19	9	1 8	3	1 16	0	2 3	9	3 3	2	19 10	3	3 8	4	4 11	0	20	1 inch
"	19	1 7	0	1 11	9	2 0	3	2 9	3	3 7	1	3 16	8	4 13	4	5 0	0	19	"
"	18	1 16	0	2 11	9	3 5	9	4 0	0	4 13	9	5 9	5	6 5	0	7 6	8	18	"
$1\frac{1}{4}$ inch	17	0 18	6	1 6	6	1 13	9	2 0	9	2 7	0	2 14	10	3 2	8	3 18	4	17	$1\frac{1}{4}$ inch
"	19	1 2	0	1 11	9	2 0	6	2 8	9	3 16	3	4 7	6	5 13	9	6 10	0	19	"
"	18	1 8	6	2 1	0	2 12	0	3 2	9	4 4	6	5 8	7	6 15	0	7 5	0	18	"
"	17	1 18	3	2 15	0	3 10	0	4 4	6	5 13	9	6 10	0	7 5	0	8 2	6	17	"
$1\frac{1}{2}$ inch	16	1 18	3	2 15	0	3 10	0	4 4	6	5 13	9	6 10	0	7 5	0	8 2	6	16	$1\frac{1}{2}$ inch
"	19	0 15	6	1 2	3	1 8	6	2 1	3	3 1	9	4 17	6	5 13	9	6 10	0	19	"
"	18	0 18	9	1 6	9	1 14	0	2 1	3	3 1	9	4 17	6	5 13	9	6 10	0	18	"
"	17	1 3	6	1 13	9	2 3	0	3 0	0	4 0	0	5 0	0	6 0	0	7 0	0	17	"
"	16	1 12	0	2 5	9	2 18	6	3 10	3	4 1	3	5 10	4	6 15	5	7 2	6	16	$1\frac{3}{4}$ inch
$1\frac{3}{4}$ inch	19	0 14	0	1 0	0	1 5	3	2 10	6	3 15	3	4 14	10	5 8	4	6 15	5	19	"
"	18	0 16	3	1 3	6	1 15	3	2 15	9	3 21	3	4 14	10	5 8	4	6 15	5	18	"
"	17	1 1	0	1 10	6	1 18	6	2 16	9	3 21	3	4 14	10	5 8	4	6 15	5	17	"
"	16	1 8	0	2 0	6	2 11	0	3 1	9	4 3	2	5 10	4	6 15	5	7 2	6	16	"
2 inch	19	0 12	0	0 17	3	1 2	0	2 0	0	3 0	0	4 0	0	5 0	0	6 0	0	19	2 inch
"	18	0 14	0	1 0	3	1 5	9	2 10	6	3 15	3	4 14	10	5 8	4	6 15	5	18	"
"	17	0 18	3	1 6	0	1 13	3	2 11	6	3 16	3	4 14	10	5 8	4	6 15	5	17	"
"	16	1 3	9	1 13	9	2 3	3	3 1	9	4 3	2	5 10	4	6 15	5	7 2	6	16	"
"	15	1 10	6	2 4	0	2 16	0	3 6	9	4 9	0	5 1	8	6 7	1	7 12	6	15	"
$2\frac{1}{2}$ inch	19	0 11	0	0 15	9	1 3	0	2 1	6	3 11	6	4 9	0	5 1	8	6 7	1	19	$2\frac{1}{2}$ inch
"	18	0 12	6	0 18	0	1 3	0	2 1	6	3 11	6	4 9	0	5 1	8	6 7	1	18	"
"	17	0 15	6	1 2	3	1 8	6	2 5	3	3 4	7	4 7	6	5 2	6	6 16	16	17	"
"	16	1 0	6	1 9	6	1 17	9	2 11	3	3 0	0	4 5	5	5 0	0	6 0	0	16	"
"	15	1	4	1 14	6	2 4	0	3 10	0	4 0	0	5 0	0	6 0	0	7 0	0	15	"

"QUEEN'S HEAD" IRON branded Blue.

GALVANIZED WIRE NETTING—Continued.

Mesh.	G.	12 inches wide.	18 inches wide.	24 inches wide.	30 inches wide.	36 inches wide.	42 inches wide.	48 inches wide.	60 inches wide.	72 inches wide.	G.	Mesh.
3 inch	19	0 8 9	0 12 6	0 15 9	0 19 0	1 1 9	1 5 5	1 9 0	1 16 3	2 3 6	19	3 inch
"	18	0 10 3	0 14 9	0 18 9	1 2 6	1 5 6	1 9 9	1 14 0	2 2 6	2 11 0	18	"
"	17	0 14 6	0 19 0	1 4 3	1 9 0	1 13 0	1 18 6	2 4 0	2 15 0	3 6 0	17	"
"	16	0 17 6	1 3 9	1 10 3	1 16 3	2 1 3	2 8 2	2 15 0	3 8 9	4 2 7	16	"
"	15	1 0 6	1 8 3	1 16 0	2 2 9	2 8 9	2 16 11	3 19 0	4 1 3	4 17 6	15	"
"	14		1 14 3	2 3 6	2 12 0	2 19 3	3 9 2	3 19 0	4 18 9	5 18 6	14	"
4 inch	17	0 15 0	0 16 0	1 0 6	1 4 0	1 7 6	1 12 1	1 16 8	2 5 10	2 15 0	17	4 inch
"	16	0 17 0	0 19 6	1 4 6	1 8 6	1 13 0	1 18 6	2 4 0	2 15 0	3 6 0	16	"
"	15		1 4 6	1 11 0	1 16 6	2 2 0	2 9 0	2 16 0	3 10 0	4 4 0	15	"
"	14		1 8 0	1 16 0	2 2 0	2 8 6	2 16 7	3 4 8	4 0 10	4 17 0	14	"

For Prices of Intermediate Widths, see Note below.

SHEEP NETTING, WITH 3-PLY STRAND WIRE SELVAGES.

3 inch	16	0 17 6	1 4 6	1 11 6	1 17 6	2 2 6	2 9 7	2 16 8	3 10 10	4 5 0	16	3 inch
"	15	1 1 6	1 10 0	1 17 9	2 5 0	2 11 3	2 19 10	3 8 4	4 5 5	5 2 6	15	"
"	14	1 6 6	1 16 0	2 6 0	2 15 0	3 2 6	3 12 11	4 3 4	5 4 2	6 5 0	14	"
"	13	1 12 6	2 4 9	2 17 0	3 8 0	3 17 6	4 10 5	5 3 4	6 9 2	7 15 0	13	"
4 inch	16	0 19 0	1 1 0	1 6 3	1 10 6	1 14 9	2 0 7	2 6 4	2 17 11	3 9 6	16	4 inch
"	15		1 6 9	1 13 6	1 19 0	2 4 6	2 11 11	2 19 4	3 14 2	4 9 0	15	"
"	14		1 10 6	1 18 6	2 4 6	2 11 0	2 19 6	3 8 0	4 5 0	5 2 0	14	"
"	13		1 15 0	2 4 0	2 12 6	3 0 0	3 10 0	4 0 0	5 0 0	6 0 0	13	"
"	12		2 7 0	3 0 0	3 11 0	4 1 3	4 14 10	5 8 4	6 15 5	8 2 6	12	"

3 and 4 inch only Centre Strands—17, 16 gauges, 4/8; 15 gauge, 4/6; 14 and 13 gauges, 5/-; 12 gauge, 6/3 each extra per roll gross.

WIDTHS UNDER 12 inch are charged as 12 inch, and **INTERMEDIATE WIDTHS** are charged the same rate as the next greater width up to 4 feet wide. **INTERMEDIATE WIDTHS** over 4 feet are charged by steps of 6 inches, viz.:—54 inch at the mean between the extra for 4 feet and 5 feet. 56 inches would be charged as 60 inches. This applies to both Ordinary and Sheep Netting.

BLACK OILED WIRE NETTING, 10 per cent. less above prices.

NOTE.—A Special Tariff is issued from time to time for Rabbit-proof Sizes.

SOMETHING ABOUT WALLPAPERS

EFFECT OF COLOUR ON LIGHT.

The question is often asked “What is the best colour for Wallpapers or Hangings.” The following Table will give the fullest particulars. Common Wallpapers tested in an Illuminating Laboratory for the light absorbing qualities have given the following results:—

Colour of Wallpaper.	Percentage of Light absorbed.	Colour of Wallpaper.	Percentage of Light absorbed.
White ..	30	Emerald Green ..	82
Chrome Yellow ..	38	Dark Brown ..	87
Orange ..	50	Vermilion ..	88
Plain Deal ..	55	Blue-green ..	88
Yellow ..	60	Cobalt Blue ..	88
Light Pink ..	64	Deep Chocolate ..	96

This Table shows that if a room papered with dark green be repapered with Chrome Yellow, it will be four times as light with the same lamps and windows. In many cases householders pay too much for electricity and gas lighting because their light-absorbing wall coverings destroy the light rays.

Wallpaper is made in rolls 12 yards long, 21 inches wide.

TABLE OF MEASUREMENTS FOR WALLPAPERS.

Approximate number of pieces of English Wallpaper required for any Room, allowance to be made for doors and windows.

Number of Pieces Required.

Measurement in feet round walls.	Height of Room in Feet from Skirting to Cornice.										
	6	7	8	9	10	11	12	13	14	15	
32	4	4	5	5	6	6	7	7	8	8	
36	4	5	5	6	6	7	7	8	9	9	
40	4	5	6	6	7	8	8	9	9	10	
44	5	5	6	7	8	8	9	10	10	11	
48	5	6	7	7	8	9	10	10	11	12	
52	6	6	7	8	9	10	10	11	12	13	
56	6	7	8	8	9	10	11	12	13	14	
60	6	7	8	9	10	11	12	13	14	15	
64	7	8	9	10	11	12	13	14	15	16	
68	7	8	9	10	11	12	13	15	16	17	
72	7	9	10	11	12	13	14	15	17	18	
76	8	9	10	11	13	14	15	16	17	19	
80	8	9	11	11	13	15	16	17	18	20	
84	9	10	11	12	14	15	17	18	19	21	
88	9	10	12	12	14	16	17	19	20	22	
92	9	11	12	13	15	17	18	19	21	22	
96	10	11	13	13	16	17	19	20	22	23	
100	10	12	13	13	16	18	20	21	24	24	

beautiful appearance. It's bright and it lasts!

HOOPS.

Weight of a Ten-foot length in Pounds.

Width	16 WG	18 WG	19 WG	20 WG	21 WG	22 WG
$\frac{1}{2}$	1.10	.83	.71	.60	.54	.48
$\frac{5}{8}$	1.38	1.04	.89	.74	.68	.60
$\frac{3}{4}$	1.66	1.25	1.07	.89	.82	.71
$\frac{7}{8}$	1.80	1.35	1.16	.97	.88	.77
	10 WG	12 WG	14 WG	16 WG	17 WG	18 WG
1	4.68	3.65	2.60	2.08	1.81	1.55
$1\frac{1}{8}$	5.26	4.10	2.92	2.34	2.04	1.75
$1\frac{1}{4}$	5.85	4.56	3.25	2.60	2.27	1.93
$1\frac{3}{8}$	6.43	5.01	3.57	2.86	2.49	2.13
$1\frac{1}{2}$	7.02	5.47	3.90	3.12	2.72	2.32
$1\frac{3}{4}$	8.15	6.35	4.55	3.60	3.15	2.70
2	9.36	7.30	5.20	4.16	3.63	3.10
$2\frac{1}{4}$	10.53	8.20	5.85	4.68	4.08	3.50
$2\frac{1}{2}$	11.71	9.12	6.50	5.20	4.54	3.87
$2\frac{3}{4}$	12.87	10.03	7.15	5.72	4.99	4.26
3	14.05	10.95	7.80	6.25	5.45	4.65
$3\frac{1}{4}$	15.10	11.80	8.40	6.70	5.80	5.00
$3\frac{1}{2}$	16.30	12.70	9.10	7.20	6.30	5.40
$3\frac{3}{4}$	17.50	13.60	9.70	7.70	6.70	5.80
4	18.73	14.60	10.40	8.33	7.26	6.20
$4\frac{1}{4}$	19.19	15.50	11.05	8.84	7.70	6.60
$4\frac{1}{2}$	21.07	16.40	11.70	9.36	8.17	7.00
$4\frac{3}{4}$	22.23	17.33	12.35	9.88	8.62	7.36
5	23.42	18.25	13.00	10.41	9.08	7.75
$5\frac{1}{2}$	25.75	20.07	14.30	11.45	9.98	8.22
6	28.10	21.90	15.60	12.50	10.90	9.30

(Galvanized Hoops slightly exceed these weights).

“ORB” IRON—Owing to its extreme rigidity

Wire Ropes—Weights and Strength.

Circumference.	Weights in lbs. per fathom.			Breaking Strain in gross tons.					Circumference.
	Diameter.	Patent Steel Hoisting Ropes.	B. B. Wire Rigging.	Flexible Hawseers.	Patent Cast Steel.	Plough Quality Cast Steel.	Galv'd B. B. Rigging.	Galv'd C. S. Hawseers.	
6	1 7/8	34 3/4	32	30	115	170	55	88	6
5 1/2	1 3/4	29	26	26	95	142	42	74	5 1/2
5	1 5/8	24	22	21	80	120	34	59	5
4 3/4	1 1/2	21 3/4	20	17	71	107	32	47	4 3/4
4 1/4	1 3/8	17 1/2	16	12 1/2	57	85	26	36	4 1/4
4	1 1/4	15 1/2	14	11	51	75	22	33	4
3 1/2	1 1/8	12	11	8	39	58	16	26	3 1/2
3	1	8 3/4	8	6	28	42	11	18	3
2 3/4	7/8	7	7	5	24	36	8.55	15 1/2	2 3/4
2 1/2	13/16	6	6	4	20	29	7.4	12	2 1/2
2 1/4	11/16	5	5	3	15 1/2	23	6.35	9 1/2	2 1/4
2	5/8	4	4	2 1/2	12 1/2	18 1/2	4.3	7	2
1 3/4	9/16	3	3	2	9 1/2	14 1/2	3.25	5 1/2	1 3/4
1 1/2	1/2	2	2	1 1/2	7	10 1/2	2.25		1 1/2
1 1/4	7/16	1 1/2	1 1/2	1 1/8	4 1/2	7	1.75	3	1 1/4
1	5/16	1	1	3/4	3	4 1/2	1	1 3/4	1

and even quality, is a perfect Roofing Sheet.

MANILA ROPE.

Approximate Weight for given Lengths.

Coils of 800 Feet.

Size in.	Weight cwt. qrs. lbs.			Size in.	Weight cwt. qrs. lbs.			Size in.	Weight cwt. qrs. lbs.		
$\frac{3}{8}$	0	0	14	$1\frac{1}{4}$	0	1	20	$2\frac{1}{4}$	1	1	0
$\frac{3}{4}$	0	0	18	$1\frac{1}{2}$	0	2	10	$2\frac{1}{2}$	1	1	22
1	0	1	0	$1\frac{3}{4}$	0	2	21	$2\frac{3}{4}$	1	2	20
$1\frac{1}{8}$	0	1	7	2	1	0	5	3	2	0	12

Coils of 100 Feet.

Size in.	Weight cwt. qrs. lbs.			Size in.	Weight cwt. qrs. lbs.			Size in.	Weight cwt. qrs. lbs.		
$3\frac{1}{2}$	0	1	16	5	0	3	4	6	1	0	14
4	0	2	0	$5\frac{1}{2}$	0	3	22	$6\frac{1}{2}$	1	1	8
$4\frac{1}{2}$	0	2	14								

Covering Capacity of Galvanized Corrugated Iron.

One Ton of Galvanized Corrugated Iron has the following approximate covering capacity:—

	24g. 3in. Cor.	26g. 3in. Cor.	26g. 1 in. Cor.	28g. 1 in. Cor.
Single Lap	1,600 sq. ft.	2,200 sq. ft.	2,327 sq. ft.	2,645 sq. ft.
Lap and half	—	2,000 „	—	—
Double Lap ..	1,400 „	1,900 „	2,230 „	2,535 „

NOTE.—To ascertain the number of squares (10 ft. x 10 ft.) divide by 100.

To ascertain cost per square divide price per ton by number of squares.

SPRING HEAD NAILS.

One packet (100 nails) is usually allowed to one square of roofing.

Useful Information.

BRICKS.—About 1,000 bricks, with two bags of lime and one load of sand, are required for an ordinary Cottage Chimney; and 2,000 bricks, $3\frac{1}{2}$ bags of lime and $1\frac{1}{2}$ loads of sand for a Double Chimney. About 1,000 bricks, on an average, go to $3\frac{1}{2}$ tons weight.

LIME.—From 15 to 16 bags to 1 ton weight.

CEMENT.—About $3\frac{1}{2}$ cwt. to one cask or barrel.

PLASTER OF PARIS.—Per barrel, weighs about $2\frac{3}{4}$ cwt.

LATH and PLASTER.—100 square yards require 4 bags of lime, 3 yards of sand, 16 bundles of 4ft. 6in. American laths, 8lbs. $1\frac{1}{4}$ -inch nails, and half bag of hair.

LATHS.—A bundle of 4ft. 6in. American laths covers $6\frac{1}{2}$ square yards; a bundle of 4ft. 6in. ceiling laths covers 5 square yards.

OIL.—Oil weighs about 56lbs. per 5-gallon drum.

PAINT.—One gallon of mixed paint weighs 18 to 20 lbs., and will cover from 40 to 50 square yards with one coat, according to surface; 1lb. mixed paint will cover one square yard, three coats, or 90lbs. to 100 square yards, three coats. Allow 4lbs. mixed paint to every foot run of 11ft. high walls for three coats. Paint materials required for 100 square yards: $\frac{1}{2}$ cwt. white lead, 2 gallons of oil, 1 quart turps., 7lbs. dryers, 3lbs. putty, and colors as desired, for three coats. One gallon of Glassard Oil will cover 50 square yards, two coats, or 2 gallons per 100 square yards, two coats.

NAILS.—1lb. 2-inch brads, $1\frac{1}{2}$ lb. $2\frac{1}{4}$ -inch, 2lbs. $2\frac{1}{2}$ -inch to every 100 feet of flooring; allow $\frac{1}{2}$ lb. $1\frac{1}{2}$ -inch nails to every 100 feet of lining; 1lb. of 2-inch nails to every 300 feet of weatherboards.

HOW TO MEASURE SPOUTING, RIDGING and DOWNPIPE:—Spouting—From back to front, inside head. Ridging—From one edge to the other. Downpipe—Actual diameter.

Useful Information.

Approximate Number of Nails per lb.

Size.	Nails per lb.	Size.	Nails per lb.	Size.	Nails per lb.
1 " x 16G	1080	2 " x 11G	158	3 " x 9G	67
1 " x 15G	840	2 " x 10G	120	3 " x 8G	60
1 " x 14G	723	2 " x 9G	100	3 " x 7G	48
1½" x 14G	460	2½" x 13G	200	3 " x 6G	39
1½" x 13G	340	2½" x 12G	150	3½" x 8G	44
1½" x 12G	240	2½" x 11G	130	3½" x 7G	40
1½" x 11G	206	2½" x 10G	100	4 " x 7G	35
2 " x 14G	280	2½" x 9G	80	4 " x 6G	30
2 " x 13G	230	2½" x 8G	65	5 " x 5G	21
2 " x 12G	190	3 " x 10G	81	6 " x 4G	13

WIRE.

Number of Feet per lb. of Weight.

Gauge.	Number of Feet per lb. Weight.	Gauge.	Number of Feet per lb. Weight.	Gauge.	Number of Feet per lb. Weight.
3	6 feet	9	16 feet	15	70 feet
4	7 "	10	20 "	16	102 "
5	8 "	11	28 "	17	121 "
6	9 "	12	33 "	18	150 "
7	11½ "	13	42 "	19	194 "
8	13 "	14	54 "	20	245 "

Useful Information.

Table Showing Sustaining Degree of Best Mining Chain.

Size.	Weight per Fathom	Length in Cask.	Sustaining Degree			
			T.	c.	q.	lbs.
1/4	6½ lbs.	641 feet	0	18	0	0
5/16	7½ "	463 "	1	7	0	0
3/8	9 "	343 "	1	19	0	0
7/16	11 "	250 "	2	14	0	0
1/2	15 "	197 "	3	12	0	0
9/16	20 "	162 "	4	10	0	0
5/8	24 "	133 "	5	11	0	0
3/4	35 "	93 "	8	2	0	0
7/8	46 "	71 "	10	19	0	0
1	60 "	55 "	14	8	0	0

Table Showing Working Load and Tensile Strain of Best Mill Proof Chain.

Size.	Working Load.				Weight per Fathom.	Admiralty Tensile Strain.			
	T.	c.	q.	lbs.		T.	c.	q.	lbs.
1/8	0	2	2	0	2½ lbs.	0	5	0	0
5/32	0	3	0	0	3 "	0	6	0	0
3/16	0	4	0	7	3½ "	0	8	0	14
1/4	0	7	2	0	5¼ "	0	15	0	0
5/16	0	11	1	0	7 "	1	2	2	0
3/8	0	16	1	0	10 "	1	12	2	0
7/16	1	2	2	0	13 "	2	5	0	0
1/2	1	10	0	0	17 "	3	0	0	0
9/16	1	17	2	0	21 "	3	15	0	0
5/8	2	6	1	0	26 "	4	12	2	0
11/16	2	16	1	0	31 "	5	12	0	0
3/4	3	7	2	0	37 "	6	15	0	0
7/8	4	11	1	0	50 "	9	2	0	0
1	6	0	0	0	64 "	12	0	0	0

TIMBER, &c.

Deals—

as 9 x 3 No. of running feet to ton (20 cwt.) 350

Flooring—

6 x 1½	"	"	"	1557
6 x 1	"	"	"	1750
6 x ¾	"	"	"	2000
6 x ¾	"	"	"	2330

Matchboards—

6 x ⅝	"	"	"	2800
6 x ½	"	"	"	3400
6 x ⅜	"	"	"	4800

Weatherboards, single

Oregon No. of Super. feet " " 790

V.D.L. Hardwood " " " 450

Jarrah " " " 400

Iron Bark " " " 310

Black Butt " " " 333

Shelving (American) 12 x ⅞ " " 1050

6-feet Tasmanian Palings (Hobart) No. to " 650

5-feet Tasmanian Palings " " " 800

6-feet Tasmanian Palings (Launceston) " " 400

5-feet Tasmanian Palings " " " 500

Spruce Deals as 9 x 3 No. of running feet to " 400

Kauri No. of super feet to " 600

Cedar " " " 600

Clear Pine " " " 900

Doors 6ft. 8in. x 2ft. 8in. x 1½in. No. to ton 55

Doors 6ft. 8in. x 2ft. 8in. x 1¼in. " 70

Doors 6ft. 6in. x 2ft. 6in. x 1½in. " 58

Doors 6ft. 6in. x 2ft. 6in. x 1¼in. " 75

SUPERFICIAL FEET IN A BOARD OR PLANK

is known by multiplying the length by the breadth. If the board be tapering, add the breadth of the two ends together, and take half their sum for the mean breadth and multiply the length by this mean breadth.

Covering Capacity and Weight of French Tiles.

127 Tiles cover 100 super feet of roof.

100 super feet of Tiling weigh 635 lbs.

90 lineal feet of 2 in. x 1 in. battens to one square or roofing.

SLATES (ROOFING). Approximate.

Actual number of Slates required to cover one square (100 square feet).

Description.	Size.	2 in. Lap.	3 in. Lap.	4 in. Lap.
Duchess ...	24 x 12	109	115	120
Countess ...	20 x 10	160	169	180
Vis-Countess	18 x 10	180	192	205
Ladies ...	16 x 8	257	277	300

TO BUILDERS AND CONTRACTORS.

BRICKWORK.

3800 9 x 4½ x 3 Bricks will build a rod of Brickwork.

816 sup. ft. of a 4½-inch Brick

408 " " 9 " "

272 " " 14 " "

204 " " 18 " "

163 " " 22½ " "

} Will make a rod of
Brickwork.

A rod of Brickwork contains 306 cubic feet.

1000 Fire Bricks weigh 3 tons 5 cwt. to 3 tons 7 cwt.

1000 Ordinary Bricks weigh 3 tons 15 cwt. to 4 tons.

About 5 casks Cement are required to build a rod of Brickwork,
3 parts of Sand to 1 of Cement; 7 casks if 2 of Sand
to 1 of Cement.

About 3½ bags of Lime will build 1 rod of Brickwork.

A cubic yard of Sydney Sand weighs about 1 ton 10 cwt.

A cubic yard of Sandstone weighs about 2 tons 5 cwt.

A cubic yard of Trachite weighs about 2 tons 10 cwt.

Commonwealth Postal Rates

Letters, including United Kingdom, Oversea Dominions, British Colonies, and Protectorates, 2d. half oz.

Letter Cards, single, 2d. each; reply 2d. each half.

Post Cards, single, 1½d.; reply 1½d. each half.

Printed Papers, other than newspapers, as prescribed, 1d. per 2 oz., or part of 2 oz. up to 5lbs.

Catalogues (wholly set up and printed in Australia), 4 oz. or part of 4 oz., 1½d.; every additional 4 oz., 1d.; where percentage of printed matter added, 1d. first 4 oz.

Books, printed outside Australia, 1d. per 4 oz., or part of 4 oz.

Books, printed in Australia, 1d. per 8 oz. or part of 8 oz.

Newspapers, for places within the Commonwealth, or to New Zealand, Fiji, and Papua. Each newspaper (published and registered in the Commonwealth), for every 10 oz. or under, 1d.

Newspapers printed or published outside the Commonwealth, when posted in the Commonwealth, 1½d. per 4 oz. or part thereof, each newspaper.

United Kingdom: Not exceeding 8 oz., 1½d. each newspaper; exceeding 8 oz., but not exceeding 10 oz., 3d., every additional 2 oz. or fraction thereof, ½d. All Sea Route up to 16 oz., 1½d. (one paper only to be enclosed in same wrapper). News under 2 ozs. not subject to War tax.

All other places: Each newspaper, not exceeding 4 oz., 1½d. and ½d. for every additional 2 oz., or fraction thereof.

(a) Magazines, reviews, serials, and other similar publications printed and published in Australia, in numbers at intervals not exceeding three months, 1d. for 8 oz., or part of 8 oz.

(b) Magazines, reviews, serials, and other similar publications (including newspapers), printed and published outside Australia, in numbers at intervals not exceeding three months, 1d. per 4oz., or part of 4 oz.

Commercial Papers, patterns, samples, and merchandise, as prescribed, 1½d. per 2 oz., or part of 2 oz.

Parcels Post, Inland, 1 lb. or under, 6d.; each additional 1 lb., 3d.

Parcels Post, inter-State, 1 lb. or under, 8d.; each additional 1 lb., 6d.

REGISTRATION FEE. Letters, 3d.

Commonwealth Postal Rates

Continued.

MONEY ORDERS.

		£2	£5	£7	£10	£12	£15	£17
		to	to	to	to	to	to	to
	£2	£5	£7	£10	£12	£15	£17	£20
The Commonwealth.	6d.	6d.	1/-	1/-	1/6	1/6	2/-	2/-
New Zealand & Fiji	6d.	1/-	1/6	2/-	2/6	3/-	3/6	4/-
Papua	9d.	9d.	1/6	1/6	2/3	2/3	3/-	3/-
United Kingdom and Foreign, 6d. or any amount up to £2, and 3d. for each additional pound or fraction of a pound.								

POSTAL NOTES.

Payable throughout the Commonwealth, 1/-, 1/6, ½d.; 2/-, 2/6, 3/-, 3/6, 4/-, 4/6, 1d.; 5/-, 1½d.; 7/6, 2d.; 10/-, 10/6, 15/-, 20/-, 3d.

TELEGRAPHIC.

Including Address and Signature.

Town and Suburban—16 words, 9d. Each additional word, 1d.
 Country—16 words, 1/-. Each additional word, 1d.
 Inter-State—16 words, 1/4. Each additional word, 1d.
 New Caledonia—Per word, 9d.
 New Zealand—Per word, 4½d.
 Norfolk Island—Per word, 3d.
 United Kingdom—Per word, 3/-.
 Suva, Fiji—Per word, 8d.
 Cape Colony—Per word, 2/3.
 New York—Per word, 2/8.

Tank Makers should specify LYSAGHT'S “ORB” Brand Corrugated Iron—It will stand any and every possible test in curving or otherwise, being almost as tough as copper. It is obtainable up to 12 feet in length.

BRITISH WEIGHTS AND MEASURES.

AVOIRDUPOIS WEIGHT.

27,344 Grains	equal	1 Dram
16 Drams	"	1 Ounce (Oz.)
16 Ounces	"	1 Pound (Lb.)
28 Pounds	"	1 Quarter (Qr.)
4 Quarters	"	1 Hundredweight (Cwt.)
20 Cwt. (112 lbs. each)	"	1 Ton (2240 Lbs.)

The Avoirdupois Pound exceeds Troy in the proportion of 17 to 14 nearly, and the Troy Ounce is greater than the Avoirdupois in the proportion of 79 to 72 nearly.

TROY WEIGHT.

4 Grains	equal	1 Carat
24 Grains	"	1 Pennyweight (Dwt.)
20 Pennyweights	"	1 Ounce
12 Ounces	"	1 Pound
25 Pounds	"	1 Quarter
100 Pounds	"	1 Hundredweight
20 Hundredweights	"	1 Ton of Gold or Silver

By this weight, Gold, Silver, Platinum and Precious Stones (except Diamonds) are weighed. Diamonds and Pearls are weighed by Carats of 4 Grains each (equal only to 3.2 Grains Troy). The Troy Ounce is equal to $151\frac{1}{2}$ Diamond Carats. Gold, when pure, is said to be 24 Carats fine; if it contains one part alloy, it is said to be 23 Carats fine, and so on.

Standard Gold (i.e., Gold of our coinage) is 22 Carats fine. 40lbs. (Troy) of Standard Gold are coined into 1869 Sovereigns.

APOTHECARIES WEIGHT.

20 Grains	equal	1 Scruple	8 Drachms	equal	1 Ounce
3 Scruples	"	1 Drachm	12 Ounces	"	1 Pound

The Pound and Ounce are the same as in Troy weight.

APOTHECARIES FLUID MEASURE.

60 Minims	equal	1 Drachm	20 Ounces	equal	1 Pint
8 Drachms	"	1 Ounce	8 Pints	"	1 Gallon

There are $437\frac{1}{2}$ Grains in a Fluid Ounce.
 " 4 Drachms in one Tablespoonful.
 " 2 Ounces in one Wineglassful.
 " 3 Ounces in one Teacupful.

GRAIN AND PRODUCE.

	Weight per bushel	Bushels per bag.		Weight per bushel.	Bushels per bag.
Barley	.. 50lb.	.. 4	Oats	.. 40lb.	.. 4
Beans	.. 60lb.	.. 4	Wheat	.. 60lb.	.. 3
Bran	.. 20lb.	.. 8	Pollard	.. 20lb.	.. 9
Maize	.. 56lb.	.. 4	Peas	.. 60lb.	.. 4
Malt	.. 40lb.	.. 4			

A Bag of Flour:—Australian, 150lb.; English, 280lb.

British Weights and Measures—continued.

MEASURE OF CAPACITY.

4 Gills	equal	1 Pint	4 Pecks	equal	1 Bushel
2 Pints	"	1 Quart	3 Bushels	"	1 Bag
4 Quarts	"	1 Gallon	8 Bushels	"	1 Quarter
2 Gallons	"	1 Peck	5 Quarters	"	1 Load

MEASURE OF LENGTH.

12 Lines	equal	1 Inch
7.92 Inches	"	1 Link
9 Inches	"	1 Span
12 Inches	"	1 Foot
18 Inches	"	1 Cubit
36 Inch or 3 Feet	"	1 Yard
5½ Yards	"	1 Rod, Pole or Perch.
4 Poles,	)	
22 Yards, or	)	equal 1 Chain
100 Links	)	
40 Rods	"	1 Furlong
8 Furlongs	)	
80 Chains,	)	" 1 Mile
320 Rods, or	)	
1760 Yards	)	

MEASURE OF SURFACE.

144 Sq. Inches	equal	1 Sq. Foot	40 Sq. Rods	equal	1 Rood
9 Sq. Feet	"	1 Sq. Yard	4 Roods	"	1 Acre
30¼ Sq. Yards	"	1 Sq. Rod	10 Sq. Chains	"	1 Acre
16 Sq. Rods	"	1 Sq. Chain	640 Acres	"	1 Sq. Mile

1 Acre contains 100,000 Sq. Links.

1 " " 4,840 Sq. Yards.

A square whose side is 69½ Yards is approximately 1 Acre.

GEOGRAPHICAL AND NAUTICAL MEASURE.

6 Feet	equal	1 Fathom
110 Fathoms or	)	" 1 Furlong
660 Feet	)	" 1 Knot
6,080 Feet	"	1 League
3 Knots	"	
20 Leagues or	)	1 Degree
60 Geographical Miles	)	"
360 Degrees or	)	" The Earth's Cir-
24,856 Miles	)	cumference

MEASURE OF SOLIDITY.

1,728 Cubic Inches	equal	1 Cubic Foot
27 " Feet	"	1 Cubic Yard
5 " Feet	"	1 Barrel Bulk Shipping
40 " Feet	"	1 Ton Shipping (Mer-
		chandise)
42 " Feet	"	1 Ton Shipping (Timber)

British Weights and Measures—*continued.*

MEASURE OF TIME.

60 Seconds equal	1 Minute	7 Days equal	1 Week
60 Minutes „	1 Hour	28 Days „	1 Lunar Month
24 Hours „	1 Day		
(23h. 56m. 4s. equal 1 Sidereal Day)			
28, 29, 30, or 31 days		equal	1 Calendar Month
12 Calendar Months)			
52 Weeks)		„	1 Year
365½ Days		„	1 Common Year
366 Days		„	1 Leap Year
365d. 5h. 48m. 46s.		„	1 Tropical Year

ELECTRICAL MEASURE.

The chief units, as generally accepted by Electricians, are as follow:—

Volt—Electromotive force is equal to about 92.6 per cent. of that given by one Daniell's Battery Cell.

Ohm—Resistance equals the resistance offered to the passage of a current of Electricity by a thread of Mercury 106 cm. long and 1 mm. cross-section at the temperature of melting ice.

Ampere—Current equals the current 1 Volt will drive through 1 ohm.

Watt—Power equals 44 ft. lbs. per minute.

Board of Trade Unit—Officially defined as “the energy contained in a current of 1,000 Amperes flowing under an electromotive force of 1 Volt during an hour.

Killowatt equals one Board of Trade Unit. One Board of Trade Unit will keep a 16-candle incandescent lamp alight for about 16 hours.

746 Watts equals 1 horse-power.

METRIC WEIGHTS AND MEASURES.

Lineal Measures.

The unit for length is the Metre.

	Yds.	Ft.	In.		
10 Millimetres or	0	0	0.3937	equal	1 Centimetre
10 Centimetres or	0	0	3.9370	„	1 Decimetre
10 Decimetres or	1	0	3.3708	„	1 METRE
10 Metres or	10	2	9.7079	„	1 Decametre
10 Decametres or	109	1	1.079	„	1 Hectometre
10 Hectometres or	1093	1	10.79	„	1 Kilometre

Weight.

The unit for weight is the Gramme.

	Lb.	Oz.	Drams.		
10 Milligrammes or	0	0	0.0056438	equal	1 Centigram.
10 Centigrammes or	0	0	0.056438	equal	1 Decigramme.
10 Decigrammes or	0	0	0.56438	equal	1 Gramme.
10 Grammes or	0	0	5.6438	equal	1 Decagramme.
10 Decagrammes or	0	3	6.438	equal	1 Hectogramme.
10 Hectogrammes or	2	3	4.38	equal	1 Kilogramme.

A Milligramme measures .01543 of a Grain.

British Equivalents of Foreign Weights and Measures

For the purpose of easy and rapid calculations the following may be regarded as the approximate equivalents.

LINEAL MEASURE.

1 Millimetre	=	1/25 of an Inch
2½ Centimetres	=	1 Inch
1 Metre	=	39½ Inches (3ft. 3½in.)
1 Kilometre	=	5 Furlongs
1½ „	=	1 Mile

AVOIRDUPOIS MEASURE.

1 Kilogramme	=	2½ lbs.
1000 „	=	1 ton

SQUARE MEASURE.

6½ sq. Centimetres	=	1 sq. inch
1 sq. Metre	=	10½ sq. feet.

British and Foreign Currency. Equivalent of £1 sterling (English).

Subject to Daily Fluctuation.

	pre-War Value at 1/6/1914.	Exchange Value at 12/8/1921.
French Francs	25.18	46.90
Belgian Francs	25.34	48.05
Swiss Francs	25.20	22.18
Italian Lire	25.27	83.50
Russian Roubles	9.57	No Ex. Val.
U.S.A. Dollars	4.88	3.6612
German Marks	20.46	312.0
Dutch Florin	12.13	11.76
Austrian Kroner	24.13	No Ex. Val.
Swedish Kroner	18.24	17.40
Danish Kroner	18.24	21.98
Norwegian Kroner	18.24	23.00
Spanish Pesetas	26.47	29.75
Indian Rupees	15.05	15.77

From Commonwealth Year Book, Page 661.

Federal Government Railways at 30/6/19

Open for Traffic.

Darwin to Katherine (Northern Territory) ..	Miles. 199
Pt. Augusta to Oodnadatta (South Australia)	478
Canberra to Queanbeyan (Federal Territory)	5
Transcontinental (Pt. Augusta to Kalgoorlie)	1051

Miles, 1733

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Mileage under Different Gauges.

5' 3"	..	..	..	5,236	Miles
4' 8½"	..	..	..	6,075	"
3' 6"	..	..	..	13,093	"
3'	..	..	..	15	"
2' 6"	..	..	..	139	"
2'	..	..	..	1,071	"
1' 8"	..	..	..	28	"

25,657 Miles

Distance by Rail between State Capital Cities.

				Miles.	Approximate Time of Journey.	
					Hrs.	Mins.
Adelaide	to	Perth	.. ..	1684	64	11
"	"	Melbourne	.. ..	482	16	59
"	"	Sydney	.. ..	1072	34	25
"	"	Brisbane	.. ..	1792	61	55
Brisbane	"	Sydney	.. ..	720	26	58
"	"	Melbourne	.. ..	1309	44	0
"	"	Perth	.. ..	3476	126	6
Melb'ne	"	Sydney	.. ..	582	17	26
"	"	Perth	.. ..	2167	82	6
Sydney	"	Perth	.. ..	2756	99	8

From Commonwealth Year Book, Pages 668 and 672.

STATE GOVERNMENT RAILWAYS.

Mileage and Cost to 30/6/19.

	Mileage Open for Traffic.	Total Cost of Construction and Equipment.
New South Wales ..	4,825 Miles	£76,601,591
Victoria	4,190 "	57,403,576
Queensland	5,469 "	38,244,494
South Australia ..	2,290 "	18,649,979
Western Australia ..	3,538 "	17,995,941
Tasmania	601 "	5,076,014
	<u>20,913 Miles</u>	<u>£213,971,595</u>

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Areas of States and Territories.

	Date of Creation.	Area.
New South Wales ..	1786	309,432 Sq. Miles
Victoria	1851	87,884 "
Queensland	1859	670,500 "
South Australia ..	1834	380,070 "
Western Australia ..	1829	975,920 "
Tasmania	1825	26,215 "
Northern Territory ..	1863	523,620 "
Fed'l Capital Territory	1911	940 "

Total Area of Commonwealth 2,974,581 Sq. Miles

Commonwealth Population

as per Census, April, 1921

(Approximate Figures only).

State.	Males.	Females.	Total.
New South Wales ...	1,068,767	1,027,626	2,096,393
Victoria ...	753,910	776,204	1,530,114
Queensland ...	398,486	357,087	755,573
South Australia ...	247,960	246,907	494,867
Western Australia ...	175,056	154,172	329,228
Tasmania ...	107,602	105,925	213,527
	2,751,781	2,667,921	
Total for Commonwealth			5,419,702

Commonwealth Vital Statistics 1920

BIRTHS ...	{	Number ...	...	136,406
	{	Rate ...	...	25.74 per 1000
MARRIAGES	{	Number ...	...	51,552
	{	Rate ...	...	9.73 per 1000
DEATHS ...	{	Number ...	...	56,289
	{	Rate ...	...	10.62 per 1000

FERTILIZERS.

Analysis of Fertilizers for different purposes, reprinted from pamphlet issued
by Messrs. George Shirley Limited, Sydney:—

	Phosphoric Acid (soluble in water)	Equal to Tri-calc Phosphate (soluble in water).	Nitrogen.	Equal to Ammonia (fixed).	Sulphate of Potash.	Equal to Pure Potash.
SUPERPHOSPHATE for WHEAT	17.	36/38	—	—	—	—
Mangold, Turnips, Carrots, etc. ..	15.	33	1.6	2	1.80	1
Cabbages, Hay, Crops, Maize, Sorghum Millet, Pumpkins, Oats ..	13.	28	3.3	4	3.70	2
Potatoes, Tomatoes, Citrus Fruits, Apples, Pears, Tobacco ..	12.	26	3.3	4	12.95	7
Top-dressing Pastures— Rape ..	11.4	25	1.6	2	1.85	1
Onions, Stone Fruits, Sugar Cane, Flowers, Strawberries ..	6.5	14	4.1	5	7.40	4
Peas, Beans, Clover, Lucerne (for Top- dressing Lucerne) ..	11.4	25	—	—	12.95	7

Tables of Distances between Ports.

FREMANTLE TO BURKETOWN.

[illegible]

AVERAGE RAINFALL IN AUSTRALIA

This Information is compiled from Official
Year Book of the Commonwealth.

VICTORIA

	Inches		Inches
Bairnsdale	29.01	Omeo	25.73
Ballarat	28.45	Outtrim	45.69
Bendigo	21.53	Portland	32.87
Casterton	25.60	Port Albert	25.48
Castlemaine	23.86	Sale	23.74
Cape Otway	34.15	Swan Hill	13.43
Colac	26.28	Wodonga	26.58
Echuca	17.05	Warracknabeal ..	14.68
Geelong	16.74	Warragul	39.76
Hopetoun	11.74	Warrnambool	25.03
Horsham	17.30	Wilson's Promty.	42.45
Melbourne	25.43	Yarrawonga	19.98
Mildura	11.01		

TASMANIA

	Inches		Inches
Hobart	23.29	Stanley	33.17
Launceston	27.72	Waratah	84.53

NORTHERN TERRITORY

	Inches		Inches
Alice Springs	10.78	Port Darwin	61.56
Charlotte Waters	5.38	Tennant's Creek	15.18
Daly Waters	27.14		

WEST AUSTRALIA

	Inches		Inches
Broome	23.41	Laverton	10.43
Bunbury	36.56	Lawlers	8.68
Carnarvon	8.81	Magnet	7.20
Coolgardie	9.08	Nullagine	13.69
Derby	27.25	Northampton	20.74
Eucla	10.11	Onslow	8.13
Eyre	10.89	Perth	33.35
Esperance	25.13	Peak Hill	10.60
Geraldton	17.25	Southern Cross ..	9.06
Hall's Creek	21.40	Walebing	18.55
Katanning	17.49	Wyndham	28.08
Kellerberrin	11.86	York	17.05

SOUTH AUSTRALIA

	Inches		Inches
Adelaide	20.32	Oodnadatta	4.67
Blinman	12.94	Ororoo	13.33
Cape Borda	24.80	Port Augusta ...	9.14
Cowell	11.70	Streaky Bay	15.11
Koorunga	17.64	Wilgena	6.81
Mount Gambier ..	31.80	William Creek ..	5.32

NEW SOUTH WALES

	Inches		Inches
Armidale	31.85	Lismore	53.69
Bathurst	23.95	Maitland	33.79
Bourke	15.29	Moulamein	14.60
Broken Hill	9.25	Mudgee	26.26
Condobolin	17.82	Mungindi	20.45
Cobar	14.81	Manilla	26.09
Deniliquin	16.58	Moree	23.61
Delegate	26.70	Newcastle	47.33
Dubbo	22.23	Narrandera	17.45
Eden	34.45	Orange	36.71
Forbes	20.28	Parramatta	36.67
Grafton	38.62	Sydney	48.80
Goulburn	25.95	Walgett	18.88
Hay	14.50	Wagga	21.87
Hungerford	12.70	Wentworth	11.84
Kempsey	48.65	Wilcannia	10.46
Kiama	52.26		

QUEENSLAND

	Inches		Inches
Adavale	15.73	Georgetown	31.77
Brisbane	48.36	Geraldton	145.71
Burketown	29.03	Isisford	20.01
Birdsville	6.38	Longreach	17.28
Boulia	11.09	Mackay	69.42
Banana	28.50	Maryborough	46.58
Cooktown	65.92	Mein	44.33
Charters Towers	26.66	Normanton	37.97
Cloncurry	19.93	St. George	21.70
Clermont	25.99	Thursday Island .	60.30
Charleville.	20.32	Taroom	27.36
Fairview	38.07	Winton	14.91

— All-Steel —

Railway Carriages and Waggon

IN all the progressive countries of the World it is becoming increasingly noticeable that the Railway Authorities are building new rolling stock entirely of steel.

Every collision or accident points to the fact that Wooden Railway Carriages are most dangerous to passengers, from the point of view of splintering and their liability to ignite, and it has been proved in accidents that passengers have a better chance of escape from injury or death in all-steel vehicles than in the old-fashioned wooden carriages.

For years past, **John Lysaght Limited, of Bristol (Eng.)** have specialized in the manufacture of steel panelling for carriages, and steel sheeting for waggon, all qualities being prepared dead flat, square, and exact to any specified size.

There are different qualities for the varying purposes and conditions, and particulars of these qualities can always be obtained from **John Lysaght (Aust.), Ltd.,** in the State Capitals of the Commonwealth.

Thousands of tons of such panels are in use in different countries (England, India, China, South America, Ceylon, Burma, &c., &c.), and are giving the very greatest satisfaction; and in nearly every instance Goods Trucks are roofed with **LYSAGHT'S COR-RUGATED "ORB" IRON.**

(ADVT.)

"ORB" IRON—Maximum Value—Minimum Cost.

LYSAGHT'S TRADE MARKS



"ORB" Galvanized

CORRUGATED IRON is favorably known and used throughout the world. Its uniformly reliable character is recognised by consumers everywhere. There are many imitations, but to those who compare its covering capacity with other nominally cheaper brands, its superiority in all respects is at once apparent.

LYSAGHT



Lysaght "ORB" Australia

The highest grade of galvanized corrugated sheet produced at Lysaght's Newcastle Works, and which will be found in every respect the equal of its English namesake.

AUSTRALIA



"QUEEN'S HEAD"

GALVANIZED TINNED SPECIAL
FLAT SHEETS.

This brand will stand the severest tests, and commands the confidence of iron-workers everywhere.

"QUEEN'S HEAD"



"FLEUR-DE-LIS"

GALVANIZED TINNED FLAT SHEETS enter largely into consumption in the lighter gauges, for that class of work in which a somewhat cheaper sheet is asked for. It will be found equal to all such requirements.

"FLEUR-DE-LIS"

BLACK SHEETS — See Pages 23 and 24

The following Appendix (for which the Publisher accepts no responsibility), has been compiled from standard sources of information, and will, it is hoped, prove of value to residents in country districts who may be remote from medical aid.

FIRST AID

TO THE

INJURED

WOUNDS.

Bleeding from Arteries.

HEAD.—Pad and bandage the wound.

NECK.—Place thumb in wound and press backward against spine.

ARMPIT.—Press thumb into wound, second person to press main artery behind middle of collarbone.

UPPER AND FOREARM.—Press with fingers, or apply tourniquet to inside of upper arm where pulsating. When below elbow, place pad in hollow or bend of elbow, and bend forearm against upper arm.

PALM OF HAND.—Bandage hand, closed over a piece of stick, or press arteries at front of wrist.

THIGH.—Hand pressure at centre of fold of groin, or by tourniquet on inside of thigh.

HAM OR BACK OF KNEE-JOINT.—Same as for a thigh, or press by hand or tourniquet in ham above wound.

FRONT OR BACK OF LEG.—Press by hand or tourniquet at back of knee-joint, or double the leg up against a pad placed in the ham.

A tourniquet can be made by placing a stone over the main artery, tying a handkerchief loosely over it, and then twisting it tight with a stick.

Blood from an artery is bright red and flows in jets. Blood from a vein is dark bluish, and flows slowly.

The flow of arteries is from heart to head, hands to feet.

The flow in veins is just the reverse.

INSTEP.—Pressure to the middle of front of ankle.

SOLE OF FOOT.—Bandage with pads behind inner ankle bones and middle of instep.

FOR ALL SITUATIONS.—Elevate the part and apply pad and bandages.

FLESH WOUNDS.—Wash, stop bleeding, fix parts in natural position without delay.

GUNSHOT WOUNDS OF CHEST OR BELLY.—Place patient on wounded side with knees drawn up; give complete rest; no stimulants.

BRUISED WOUNDS.—Wash, apply wet cloths; if about head, poultices.

SPECIAL NOTE.—VALUE OF IODINE AS A FIRST-AID DRESSING.—It is stated that, in the Franco-Prussian War, out of every 100 men wounded and operated upon, 75 died of blood poisoning. In the South African War and in the Russo-Japanese War, only 2 per cent. died from this cause. The explanation of this marvellous improvement is cleanliness. In the intervening period Scientists had discovered that an immediate application of Iodine to the wound removed all danger of septicæmia or blood-poisoning, so that unless a vital part was struck, the chances of recovery were greatly enhanced. Special phials of Iodine are now prepared, and the method of application is to break off the end of the phial, pour a little Iodine in and about the wound, and on the pad of lint, binding it closely together with a bandage.

BROKEN BONES.

LOWER JAW.—Bandage the lower to upper jaw with handkerchief.

COLLAR BONE.—Place pad in armpit, bandage elbow to side, sling forearm.

RIBS.—Apply bandage 6 inches wide, 8 yards long, round chest.

UPPER ARM.—Bend arm and apply roller bandage to hand and forearm, splints to back and front, and sling forearm.

FOREARM.—Apply padded splints to back and front from hand to elbow, holding the arm extended with thumb pointing upwards.

HAND.—Apply splint bandage, and support in sling.

THIGH.—Apply a long splint from armpit to outside of heel, and short one from fork to knee on inside, and bandage.

LEG.—Apply splints inside and outside and bandage.

STRETCHER DRILL.

1. Three men fall in, facing feet of injured man, and are numbered off from the right.
2. Place foot of stretcher at patient's head in a line continuous with the body.
3. Nos. 1 and 2 one at either side—locking hands underneath the shoulders and hips, raise the patient, carry him forward over the stretcher, and then lower him on it.
4. No. 3 takes charge of the injured portion (limb or head) and steadies it with a hand on either side of the wound.
5. Nos. 1 and 2 then take their places at the head and foot of the stretcher, lift, and carry off, while No. 3 walks at side of stretcher.

SIGNS OF BROKEN BONES.

Motion at the part; crackling sensation on moving broken ends; alteration in shape; often shortening. Always apply splints before lifting or carrying. Dangers are of pushing the end through flesh, blood-vessels, nerves, or internal organs (lungs).

Splints may be formed of soldiers' weapons—rifles, swords and scabbards—umbrellas, walking sticks, broom handles, folded newspapers, etc. Bandages from handkerchiefs, sheets, and shirts. Stretchers from doors, ladders, or two rifles and a blanket.

GENERAL.

AGUE.—As a preventative, give five grains of quinine every morning. As a cure, act on the bowels, give ten grains of quinine three times a day, and a vapour bath every evening.

APPENDICITIS.—Pain and tenderness in lower right front of abdomen, often beginning in pit of stomach, accompanied at times by vomiting and fever. For temporary relief apply hot fomentations. No purgatives. Slight sips of water may be taken. Await medical advice.

APOPLEXY.—Act on the bowels, apply wet cloths to the head, undo collar.

BITES.—Of snakes, mad dogs: Apply a ligature (a cord) on the side nearest the heart; suck the wound, scratch the edges with a penknife, and apply caustic or carbolic acid to the wound.

BURNS.—Place the part in a natural position, and apply cloths soaked in oil.

COLIC AND DIARRHOEA.—Give 20 drops of chlorodyne in a little brandy and water.

DYSENTERY.—A small teaspoonful of Ipecacuanha, and a powder every two hours.

DELIRIUM TREMENS.—Act on the bowels, beef-tea every half-hour, 20 grains of chloral in water as a sleeping draught.

DROWNING—Also for **Mild Asphyxiation, Electric Shock**, etc. (Supplied by the Royal Life Saving Society, N.S.W. Head Centre).—**SEND FOR MEDICAL ASSISTANCE, IF POSSIBLE.** Place the patient face downward, with left side of the face resting on the ground or floor. If no blanket or mat available, put a piece of paper under the face near mouth and nose. Examine the mouth for, and remove any foreign substance. Extend the arms sideways and upwards. Kneel beside and close to the thighs, place the hands just above the small of the back, little finger on lowest rib, others spread out, thumbs an inch apart parallel to one another and pointing to the head. Carry the body steadily forward until its weight is on both hands, thus compressing the patient's body towards the floor, then carry the body back again, releasing the pressure, but not removing the hands. Continue the movement fifteen times to the minute, or once every four seconds for an hour or two, or until the patient starts to breathe. Then remove any wet clothing, cover with blankets and apply warmth by rubbing the body and insides of limbs, always towards the heart. Place hot-water bottles or bricks to soles of feet, inside thighs or armpits. Watch carefully for any cessation of breathing, and if such occur proceed as before.

