

# PATENT IMPROVED LEADEN PIPE

AND  
COMPOSITION GAS TUBES.

MANUFACTURED BY  
**TATHAM & BROTHERS,**  
NO. 44 PRUNE STREET,  
PHILADELPHIA.

The Manufacturers invite attention to the excellence of their Pipes and Tubes, made (by a newly invented process, to which they hold the American patent right) of a better quality than can be produced by any other known method.

The PATENT LEADEN PIPE is remarkable for accuracy of calibre and uniformity of thickness; for the perfect polish of the interior surface; the absence of scales and flaws; for solidity and unusual strength—and the following long lengths, by avoiding the expense of numerous jointings, offer decided advantages to water companies, and in contract work.

## Sizes, Weights, and Average Lengths.

Calibre.	Weight.	Average Lengths.	Calibre.	Weight.	Average Lengths.
	per yard,	80 feet.		per yard,	30 feet.
$\frac{1}{4}$ inch medium	3 lbs.	80 "	$1\frac{1}{4}$ inch extra light,	11 lbs.	25 "
$\frac{3}{8}$ inch light,	2 lbs. 9 oz.	70 "	" light,	13 lbs. 6 oz.	24 "
" medium,	3 lbs. 3 oz.	70 "	" medium,	16 lbs.	24 "
$\frac{1}{2}$ inch light,	3 lbs.	75 "	" strong,	20 lbs.	18 "
" medium,	4 lbs.	60 "	2 inch light,	16 lbs. 12 oz.	24 "
" strong,	5 lbs.	70 "	" medium,	20 lbs. 8 oz.	16 "
" extra strong,	6 lbs. 6 oz.	55 "	" strong,	23 lbs.	14 "
$\frac{5}{8}$ inch light,	5 lbs.	65 "	$2\frac{1}{2}$ inch 3-16 inch thick,	23 lbs. 8 oz.	28 "
" medium,	6 lbs. 8 oz.	60 "	" 1-4 "	33 lbs.	25 "
" strong,	7 lbs. 8 oz.	50 "	" 5-16 "	41 lbs.	20 "
" extra strong,	8 lbs. 4 oz.	45 "	" 3-8 "	50 lbs.	16 "
$\frac{3}{4}$ inch extra light,	5 lbs.	60 "	3 inch, 3-16 "	28 lbs.	25 "
" light,	6 lbs. 4 oz.	47 "	" 1-4 "	38 lbs.	20 "
" medium,	8 lbs.	43 "	" 5-16 "	48 lbs.	18 "
" strong,	9 lbs. 12 oz.	35 "	" 3-8 "	59 lbs.	13 "
" extra strong,	10 lbs. 8 oz.	33 "	$3\frac{1}{2}$ inch, 1-4 "	45 lbs.	18 "
1 inch extra light,	6 lbs. 14 oz.	60 "	" 5-16 "	55 lbs.	14 "
" light,	8 lbs. 5 oz.	45 "	" 3-8 "	65 lbs.	12 "
" medium,	10 lbs. 5 oz.	35 "	" 7-16 "	80 lbs.	10 "
" strong,	12 lbs. 4 oz.	30 "	4 inch, 1-4 "	49 lbs.	15 "
$1\frac{1}{4}$ inch extra light,	8 lbs. 2 oz.	45 "	" 5-16 "	63 lbs.	12 "
" light,	9 lbs. 12 oz.	38 "	" 3-8 "	76 lbs.	10 "
" medium,	11 lbs.	32 "	" 7-16 "	90 lbs.	8 "
" strong,	12 lbs. 8 oz.	25 "	4 inch waste pipe,	15 lbs. 14 oz.	" "
" extra strong,	14 lbs. 10 oz.	21 "	$4\frac{1}{2}$ inch "	17 lbs. 4 oz.	" "
$1\frac{1}{2}$ inch extra light,	10 lbs. 8 oz.	45 "			
" light,	13 lbs.	30 "			
" medium,	15 lbs. 8 oz.	25 "			
" strong,	19 lbs.	20 "			

*Will accommodate to any weight per yard provided the order be not less than one ton.*

Terms for the above      cents per lb.

## Mineral Water Pipe.

$\frac{1}{4}$  inch Lead Pipe,  
" "  
" "

$\frac{1}{4}$  inch Composition Metal,  
" "  
" "

## Paper Pipe.

Very light leaden pipe, for conducting water from springs at long distances, under slight pressure or head of water, and for chemical and other uses.

Calibre.	Lengths.	Weight.
$\frac{1}{4}$ inch,	100 yards,	1 lb. per yard.
" "	70 "	1 $\frac{1}{2}$ lb. "
" "	50 "	2 lbs. "
" "	30 "	2 $\frac{1}{2}$ lbs. "

Calibre.	Lengths.	Weight.
$\frac{3}{8}$ inch,	25 yards,	3 lbs. 6 oz. per yard.
1 "	35 feet,	5 lbs. 10 oz. "
$1\frac{1}{4}$ "	60 "	6 lbs. 14 oz. "

## Composition Gas Tubes.

$\frac{1}{4}$  inch Tubes, 90 yards long,  
" 60 "  
" 40 "

$\frac{5}{8}$  inch Tubes, 25 yards long,  
" 20 "  
" 12 "

The COMPOSITION GAS TUBES are offered to the consideration of Gas Companies, Gas Fitters and others interested. They will not corrode from the action of the gas, nor become obstructed as is continually the case with copper tubing, and frequently with iron pipes. Their perfect smoothness within, facilitates the transmission of the gas, and the drainage of the water. They are made in long lengths, requiring comparatively few jointings, and may be readily put together with the blow-pipe or soldering-iron.

These Tubes are in common use in Germany, France and England. The price is much less than of iron or copper.

## REPORT

Of a Committee of the Franklin Institute, upon TATHAM & BROTHERS' Patent Improved Leadén Pipes, &c.

Hall of the Franklin Institute,  
Philadelphia, Nov. 11, 1841.

The Committee on Science and the Arts, constituted by the Franklin Institute of the State of Pennsylvania for the promotion of the Mechanic Arts, to whom was referred for examination the Patent Improved Leadén Pipe, manufactured by Messrs. Tatham & Brothers, of Philadelphia, Pa.

Report, That they have carefully examined many specimens of these pipes, selected by themselves, and subjected them to repeated trials by a suitable force pump. The pressure was cautiously increased until the bursting point was attained in every instance, and the phenomena accurately observed.

From the result of these trials the Committee are unanimously of opinion, that these pipes possess some important advantages over those heretofore used.

1st. **THE STRENGTH** is equal to the maximum strength of Lead due to the form and weight of the tube; thus exhibiting a rare coincidence between theoretical and practical perfection in this respect. The uniformity of the thickness and perfect accuracy of the bore, which are attainable by this mode of manufacture, insure this invariably.

Experiments on the strength of leadén pipes exhibit many discordant and embarrassing characters, which have occasioned the Committee some anxiety. It is well known that the presence of a small portion of Tin, or other metal, which is usually alloyed with lead, always affects its hardness and strength: so that pipes made *precisely in the same manner*, of lead procured from different, and even from the same mines, vary exceedingly in strength. This source of error cannot be ascertained without great difficulty, and the Committee have taken it into consideration.

2d. **ABSENCE OF FLAWS.**—As the metal is forced out from the receivers under enormous pressure, whilst acquiring its form, flaws are avoided, which so often exist in the ordinary castings. It is moreover probable, that such pressure, whilst consolidating the metal, contributes to its strength.

3d. **ABSENCE OF SCALES OF LEAD, AND POLISH OF THE INTERIOR.**—The pipes are perfectly clean within, and from the mode of making them, must necessarily have this desirable property. The perfect polish also facilitates the motion of fluids.

4th. **UNIFORMITY OF BORE.**—The calibre is capable of being made precisely the same throughout, while the common leadén pipes may vary even when made with great care.

5th. **ECONOMY OF METAL**, resulting from the concentricity of the interior and exterior surfaces. No metal is wasted from variation in thickness.

6th. **THE LONGER LENGTHS**,—requiring fewer joints: thus diminishing the expense and inconvenience of soldering. These pipes can be made in lengths of from forty to three hundred feet, according to their weights.

7th. **FACILITY OF MAKING PIPES OF LARGE DIAMETER**,—which the Committee believe to be almost impracticable by the ordinary methods, but which may nevertheless be sometimes demanded in the arts.

By order of the Committee.

[Signed]

WM. HAMILTON, Actuary.