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The Irish Plumber and Heating Contractor, March 1963 (complete issue)

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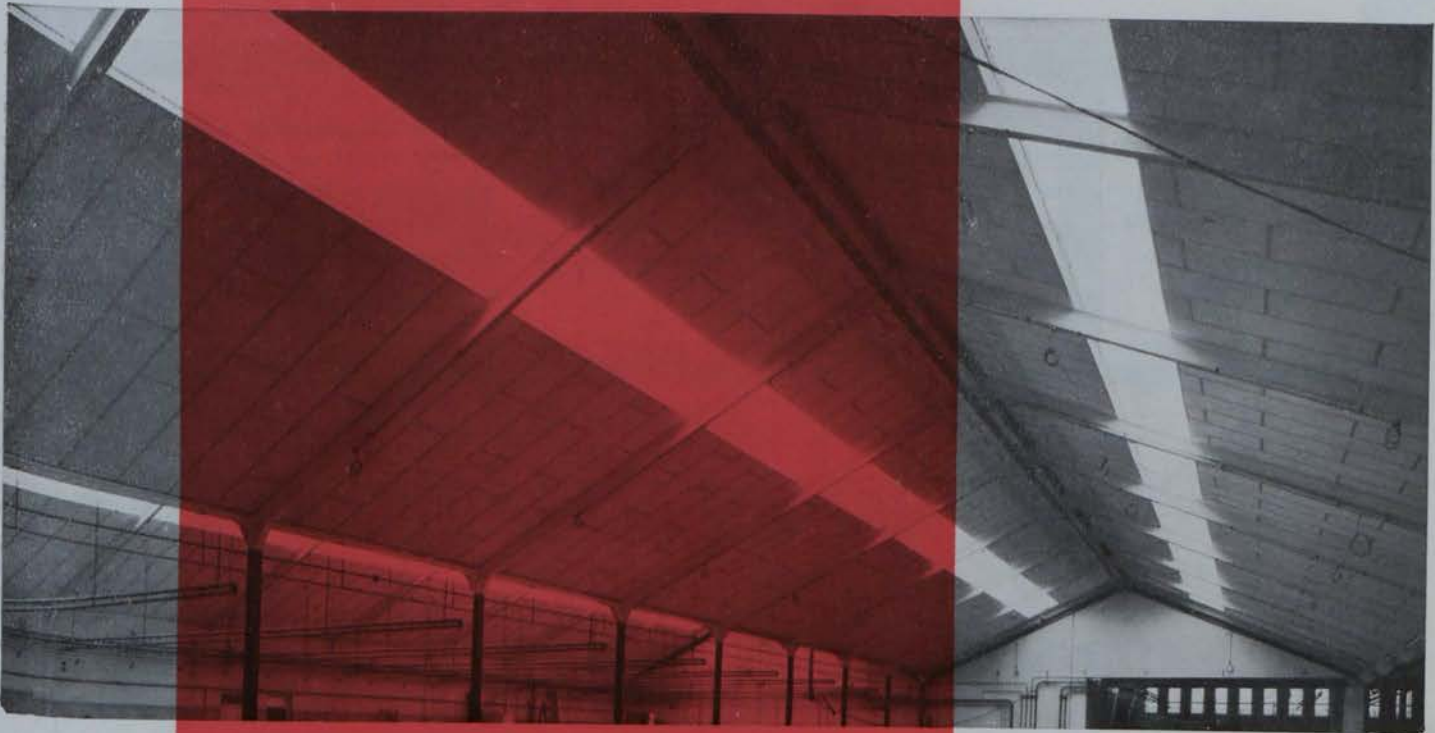
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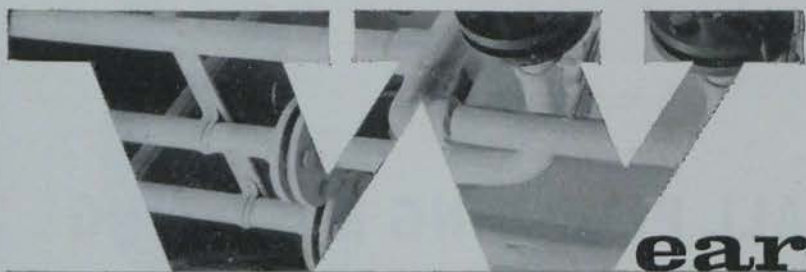
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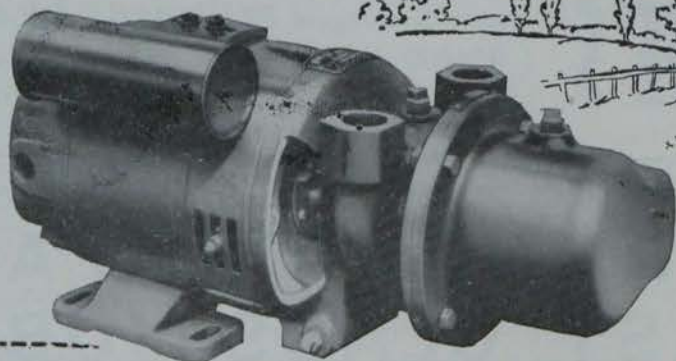
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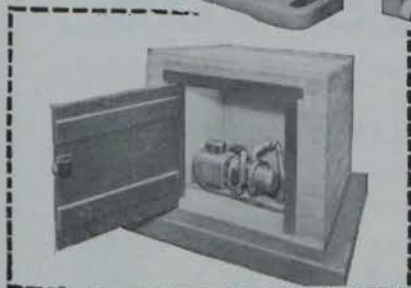
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MARCH, 1963.



THE IRISH PLUMBER & HEATING CONTRACTOR

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Reporting

THE ATTITUDE OF LEADING INTERESTS IN THE

IRISH PLUMBING AND HEATING INDUSTRIES TO EEC STAGNATION

... THEY SAY—

IT WILL NOT AFFECT US

THE breakdown of the British application for Common Market membership has meant that the Irish application is also in suspense. We are no longer working to a fixed timetable. However, after the initial shock of the de Gaulle bombshell wore off and the reappraisal of our position took place many industrialists who took decisive steps to gear their factories to meet EEC competition, are asking just what difference has de Gaulle's shattering "No" to Britain made to industrial planning here.

There are some who are grateful for a breathing space in which to continue expansion plans already on foot but to most the surprising answer to the question is that it matters very little. They see an era of stronger competition immediately ahead, whether or not EEC membership materialises. The movement is towards free trade everywhere, the reduction and eventual complete removal of tariffs and the consequent need for more efficient, productive and dynamic industrialisation here.

Frank views

This week two leaders of the industries in our sphere give frank views on the plans, prospects and preparations for future trading. They are M. Gerard Potez, Director of the Potez heater manufacturing company of Galway and Mr. R. B. Eaton, Managing Director of the Santry, Dublin, factory of Sanbra Fyffe Ltd.

In a few words, their opinion of the failure of the British application for membership of EEC, is that it will not affect their industries at all.

Mr. Eaton, whose firm completed a highly satisfactory merger with the British company Sanbra Limited of Great Bridge Tipton, Staffs. said: "We have plans for a £25,000 extension

by _____
A Contractor
Reporter

to our factory at Santry and at present we are working to capacity. What we don't sell on the home market we are selling to Britain and we are absolutely inundated with orders. Looking forward I would say that the failure of the British application has not made any difference to us at all. As an individual thinking politically I do not think that it is a permanent failure and that eventually Britain will get in but according to the rules of the EEC".

He said that the merger of Fyffe Couplings (Ireland) Ltd. and Sanbra was a very happy one. Giving the background to it he said: "Fyffe Couplings was a very old established firm in Dublin, able to survive and make a profit. Then Sanbra came in and set up in opposition to us. They are a modern and up to date firm with new ideas and one of the biggest industries in its field in Britain. At a time when it was obvious we were going forward to an era of free trade and possible membership of the EEC, with the reduction of tariffs already under way and facing a competitor who could do us a lot of damage, the merger was negotiated".

For both firms it has been a very satisfactory arrangement. Said Mr. Eaton: "We are undoubtedly expanding and increasing our business. We have already started a fairly comprehensive export trade with the British firm on a scale which we never anticipated".

He said that the export business to Britain would form a substantial part of the company's turn over and would possibly in time be as high as one-fifth. At present the export trade to

Britain was a method in which the Irish firm could recover its overheads. Conditions were so competitive that there was not yet a hope of making even a nominal profit but because they were completely covering overheads they regarded this new business as very valuable.

The product exported goes to the Tipton factory which is a wholly owned subsidiary of the giant Delta Metal Company, possibly the biggest operator in the industry in Europe. With the backing of this company and with all its varied outlets for Sanbra Fyffe products the future looks bright for the new Santry combine.

The British factory takes complete components from the Santry firm and this saves the burden of marketing. "We export in 200 gross lots" said Mr. Eaton.

Markets built

Not only is the British factory selling readily on their home market but it has also built up a substantial market in European countries.

With the Santry factory in full production and striving to meet a constant rush of orders, from home and abroad, the problem of the Common Market failure of Britain is no problem at all. Everything is working according to plans made prior to the abrupt ending of the British negotiations and with further preparation for expansion free trade will find this enterprising firm ready.

The establishment of the Potez heater factory in Galway was one of the biggest boasts to industry in that area. The news that De Gaulle's snub to Britain will not affect the industry will be welcome to all. It was given by M. Gerard Potez, a director of the parent firm the Potez Aircraft Company in Paris.

Though the French market would have been opened up, without any

Four

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"There will be no production cuts"

snags, if Ireland were in the Common Market, M. Potez sees the British market and those of the Commonwealth countries as a wide one for the products of the Galway factory. "There will be no production cuts at our heating unit factory in Galway" he said emphatically.

Not perturbed

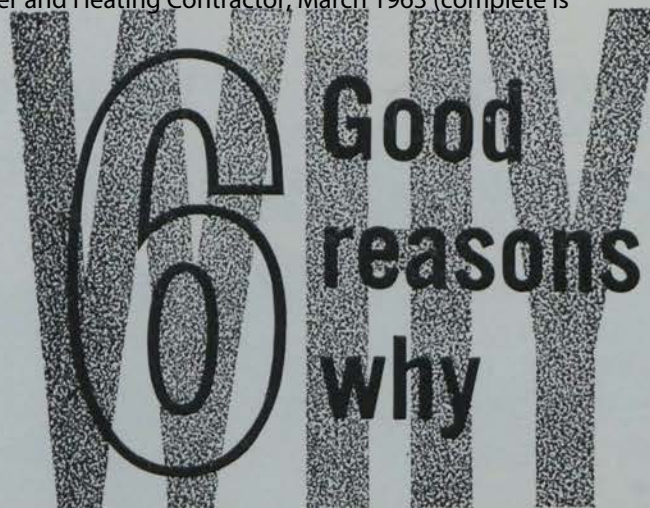
"We are not perturbed by the failure of Britain to gain entry to the European Economic Community. It is not our place to comment on de Gaulle's decision but we think that one day Britain will get into the Common Market" he said.

He said that the Irish factory was not opened in anticipation of our joining the Common Market. "The Market would have made it more easy for us to sell our products in France but we can supply this market through Paris factories, in any case. The British and the Commonwealth markets are very big and we think will be ample for us. We set a target of 100,000 to 150,000 units a year for Galway and that target still stands" he said.

Now, push-button plumbing

AMERICAN housewives will soon have hot, warm or cold water literally at their fingertips. Neat buttons operate electric valves, the valves mix the water at a central heater, deliver it at a selected pressure at any fixture in the house. If the bath tap fails, do you call an electrician?

Published by ARROW@TU Dublin, 1962



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LOBITOS

OIL FUELS

S. & L. HIGH DENSITY POLYTHENE PIPES ARE INTRODUCED TO IRELAND

TRADE
TOPICS

STEWARTS and Lloyds of Ireland Ltd. (Dublin), held successful symposiums in Limerick and in Dublin to introduce S. & L. High Density Polythene pipes to architects, consulting engineers, plumbers and agricultural engineers.

These pipes are made from an improved grade of Polythene, the tensile strength of which is about twice that of conventional Polythene. Conventional Polythene is made by subjecting ethylene gas to very high pressures at temperatures around 300 deg. C.

In 1956, however, whilst engaged in research on organo-metallic compounds, Professor Zeigler of Mulheim, in the Ruhr district of Germany, discovered that some of these compounds were capable of catalysing the polymerization of ethylene at much lower pressures, thereby simplifying the manufacturing process, but more important still, the resulting material was found to have a more regular molecular structure and therefore higher molecular weight than conventional Polythene. This material was, therefore, called High Density.

Furthermore, it was discovered that



the new material had better physical characteristics such as higher tensile strength. The tensile strength of High Density Polyethylene is about twice that of conventional Polythene, therefore High Density Polyethylene pipes can be produced with a thinner wall resulting in the saving of raw material, and consequently a cheaper pipe. The thinner wall has also the effect of giving a larger bore, and therefore a better rate of flow. Also the surface roughness of High Density Polyethylene pipe is such that it gives better flow characteristics. Another effect of the high tensile strength is that the pipe does not elongate when dragged through the ground by a mole drainer.

S. & L. High Density Polyethylene

● At the Stewarts and Lloyds film show and lecture in the Engineers' Hall were (from left): Mr. M. W. L. Graves, Director and Manager of Stewarts and Lloyds of Ireland Ltd., with S. and L. Representatives Mr. K. Tully and Mr. C. Cope.

pipes conform to B.S. 3284, Table 1, which in turn conforms dimensionally to international metric sizes.

When Stewarts and Lloyds of Ireland decided to market Polyethylene water pipe the present tendency to standardize on outside diameters was foreseen, and Stewarts and Lloyds of Ireland therefore took the futuristic view of marketing the Table 1 range of sizes.

This size range also offers some practical advantages as the nominal sizes in this range are very much larger in actual bore than their counterparts in conventional Polythene. For instance S. & L. $\frac{3}{4}$ " High Density Polyethylene pipe is over $\frac{1}{2}$ " in actual bore whilst $\frac{1}{2}$ " S. & L. High Density is equivalent in actual bore to $\frac{3}{4}$ " Low Density, and so on up to $1\frac{1}{4}$ ", which is nearly $1\frac{1}{2}$ ".

Freeze beater

THE WESTINGHOUSE Brake and Signal Co. Ltd., of London, are now marketing a new portable electric defreezing equipment. It is suitable for water-pipes from 1" to 2" bore. It weighs 56lb. It is operated by electricity from any 13 to 15 amp. power supply socket as available in every electrified building.

● Discussing the finer points of the S. and L. system were (from left): Mr. W. Lindsay, Technical Sales Manager of Stewarts and Lloyds Plastics Ltd., and Mr. T. P. Gibbons, S. and L. Technical Representative (Plastics).



domestic water supply

PIPES

THE installation of a domestic water supply involves a great deal more than just running a water pipe into the building and on to the various taps. The right kind of pipe must be chosen and fixed in such a way that it cannot be damaged by ordinary wear and tear. Pipes must be so placed that they are not likely to freeze or burst in cold weather, and they must be securely fixed so that they will not vibrate and thus cause an irritating noise.

Above all, there must be no chance of the water being wasted, misused or contaminated once it has entered the pipework system of the building.

It is important, therefore, before going on with any design or work connected with water services, to find out just what are the Bye-Laws of the water authorities in the area.

Materials For Pipework.—Pipes are needed to convey water from the main in the roadway to within the building; for distributing water throughout the building; for the discharge of water from overflowing cisterns by way of "warning pipes," and for flushing pipes which convey flush water to sanitary fittings such as W.C.'s, urinals, and slop sinks.

Other uses

PIPES are also needed for the conveyance of gas and the disposal of soiled waste waters, and these will be dealt with under separate headings.

The basic requirements of a pipe are that it should be durable, capable of withstanding the pressures likely to be imposed on it, easily jointed, and neatly and simply fixed. For potable waters, i.e., water for drinking or cooking, the pipe must be non-toxic. That is, it must not harmfully affect the purity of the water passing through it.

Materials commonly used for this work include lead, copper, and mild steel. Plastic materials such as polythene and rigid polyvinyl Chloride tubes are now extensively used in the cold water services. Because of its high resistance to corrosion, polythene tube is being widely used above and below ground in districts where the soil conditions or the water conveyed are known to be corrosive. In such cases, polythene's property of resisting corrosion means that it is chosen although its mechanical properties may be less good than those of some metal pipes.

Bye-Laws governing water services in areas generally affected by corrosive conditions generally include provision for materials other than lead, copper or mild steel. Such provisions usually insist that the material shall be "suitable and of sufficient strength to withstand not less than double the pressure to which the pipe would be subjected under working conditions."

Accepted

LEAD PIPES are generally accepted by water authorities for use on water services providing that their quality and strength comply with the British Standard (B.S.) 602 requirements.

Lead pipe is made by what is known as an extrusion process. Molten lead is placed in a hydraulic press, pressure is applied, and the lead is extruded or squeezed out in pipe form between a die which decides its outer diameter, and a mandrell which determines its inner diameter.

The low mechanical strength of lead demands that pipes of lead be made with thicker walls than either copper or mild steel pipes designed for the same working pressures. The resulting larger outside diameters of

lead pipes are sometimes thought to be ugly in comparison with the others.

Lead is, however, durable; easily manipulated, especially in awkward places; easily jointed; and resistant to corrosion in normal soils and waters. These properties will often outweigh superficial criticism of its bulk, particularly when it is to be used underground or above ground in ducted work or awkward situations—for example, behind panelled baths.

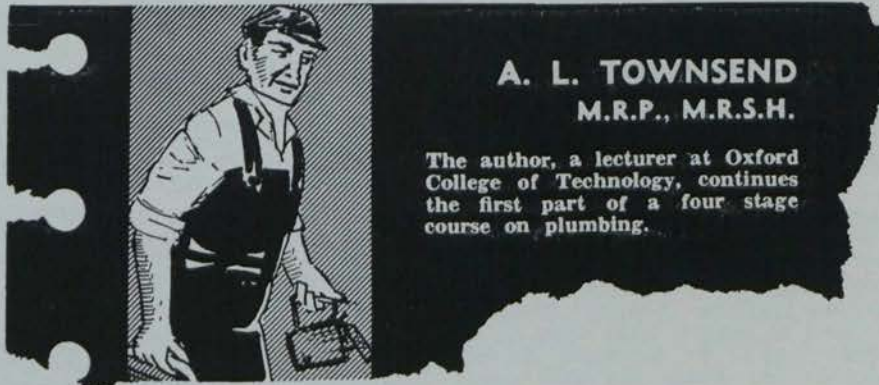
Lead pipe is manufactured to B.S. requirements, which lay down the purity of composition, the truth of cylindrical bore, the uniformity of wall thickness and freedom from defects or surface blemishes. All B.S. lead pipe up to 2" diameter is marked on a raised ribbon throughout its length with the B.S. number, the internal diameter of the pipe, and the weight per yard.

Internal dia.

SPECIFICATIONS, or descriptions of lead pipe sizes for water services, quote the internal diameter of the pipe and its weight per yard. For example, B.S. 602 $\frac{3}{4}$ " x 11 pounds indicates ordinary lead pipe for underground water services, which has a diameter of $\frac{3}{4}$ " and weighs 11 pounds per yard. As specified, this pipe would be suitable for pressures not exceeding 108 lbs. per square inch.

Warning pipes used to indicate wastage of water due to defect or misuse of fittings do not have to withstand pressures. Much lighter pipes are therefore installed for the purpose. A $\frac{3}{4}$ " warning pipe might be specified as B.S. 602 $\frac{3}{4}$ " x 4 pounds, and similarly, flush pipes in lead might be specified as B.S. 602 $1\frac{1}{4}$ " x 6 lbs., or B.S. 602 $1\frac{1}{2}$ " x 7 lbs.

Silver-Copper-Lead Alloy Pipes to B.S. 1085 are generally acceptable and have all the properties of the ordinary



A. L. TOWNSEND
M.R.P., M.R.S.H.
 The author, a lecturer at Oxford College of Technology, continues the first part of a four stage course on plumbing.

from previous page

lead pipe. They also possess a greatly improved mechanical strength which permits them to be made in lighter wall thicknesses so that they look neater and are more economical in

material. The working and jointing of this alloy, which is a mixture of lead with very small amounts of silver and copper, are the same as for ordinary B.S. 602 lead pipe.

Notes.—A service pipe is one which is subject to the pressure of the water

authorities' supply main, or would be if the service pipe stop taps were open.

A distributing pipe conveys water to taps from a storage cistern within the building and is subject only to the head pressure imposed by the water in the cistern.

In an earlier article "Head" pressure was defined as the weight of water column measured vertically from the water level in the storage cistern to any point below, in this case the lowest level of the distributing pipe.

Head pressure may be given in feet "head" or Lbs./sq. inch.

One foot "head" equals 0.434 Lbs./sq. inch. Feet "head" divided by 2.31 equals lbs./sq. inch. Lbs./sq. inch multiplied by 2.31 equals feet "head."

Light gauge copper tubes are generally accepted for water services fixed above ground if their quality, gauge, and dimensions meet the requirements of B.S. 659. Their dimensions are made to very fine engineering tolerances to ensure not only that the tubes have a uniform gauge, but also that they will accept a wide variety of fittings by different manufacturers, all of which have tube housing with exactly the same internal diameter. A badly made tube could not be used with these standard sized fittings.

Light gauged copper tubes are durable, neat in appearance, and of adequate strength for all normal purposes. Their qualities of lightness and rigidity, and the fact that they are easy to bend, joint and fix, all combine to make them quick, efficient and economic to instal in above ground water services, both hot and cold.

The tensile strength of L.G. copper tube is very high, and though they may have quite thin walls, tubes of up to 2" in diameter will withstand working pressures of up to 200 lbs. per square inch—a pressure unlikely to be exceeded in normal building practice.

The tubes are manufactured by a cold drawing process. A cylindrical billet of copper is heated and formed into a tube shell much larger in diameter and wall thickness, than the required finished tube. The shell is allowed to cool and one end is then reduced so that it can enter a cold drawing machine. The shell is drawn through a die which stretches the tube

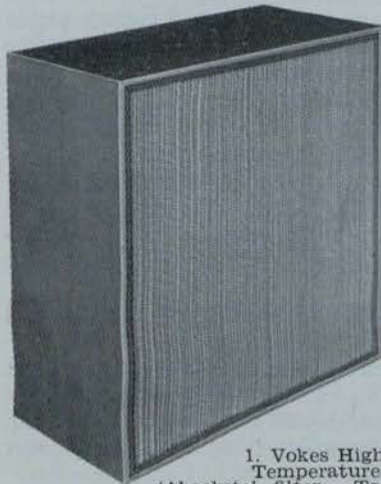
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TABLE A
 RECOMMENDED MINIMUM WEIGHTS OF LEAD PIPE FOR VARIOUS USES

Position, pressure and type of pipe:	Nominal internal diameter						
	Minimum weights in lb./yd. run						
	½ in.	¾ in.	1 in.	1¼ in.	1½ in.		
Service pipes buried underground							
Up to 150 ft. head:	65 lb./sq. in.	B.S. 602	6	9	13	16	20
		B.S. 1085	6	9	13	14	16
Up to 250 ft. head:	108 lb./sq. in.	B.S. 602	7	11	16	28	—
		B.S. 1085	6	9	13	21	—
Up to 350 ft. head:	152 lb./sq. in.	B.S. 602	9	15	21	—	—
Service pipes fixed above ground							
Up to 150 ft. head		B.S. 602	4	5	8	14	20
		B.S. 1085	4	5	7	10	15
Up to 250 ft. head		B.S. 602	5	11	16	28	—
		B.S. 1085	4	7	13	21	—
Up to 350 ft. head		B.S. 602	9	15	21	—	—
		B.S. 1085	6	12	21	—	—
Distributing pipes fixed above ground							
Cold water services							
Up to 75 ft. head		B.S. 602	4	5	7	9	—
		B.S. 1085	4	5	7	9	—
Up to 150 ft. head		B.S. 602	4	5	8	12	—
		B.S. 1085	4	5	7	10	—
Hot water services							
Up to 60 ft. head		B.S. 602	4	5	8	12	—
		B.S. 1085	4	5	8	12	—
Up to 120 ft. head		B.S. 602	5	10	18	28	—
		B.S. 1085	4	9	16	23	—
Flushing and warning pipes		B.S. 602	—	4	5	6	7

See also British Standards 602 and 1085. Consult Local Authority's requirements. They may differ in some cases from these recommendations.

VOKES 'ABSOLUTE' AIR FILTERS

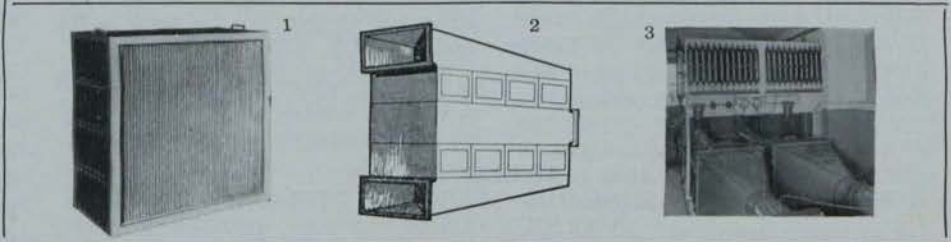


1. Vokes High Temperature 'Absolute' filter. To withstand temperatures up to 1000° F.
2. Vokes 'UNIPAK' system, available in many different sizes for a wide range of air volumes.
3. The Methylene blue test rig at Henley Park, headquarters of the Vokes Group.

Vokes 'Absolute' air filters were developed for use in nuclear energy applications where inefficient filtration could lead to hazardous conditions for both equipment and personnel. Their outstanding performance (99.95% efficiency against particles in the 0.1-0.5 micron range) has quickly led to their adoption by laboratories, food processing plants, etc.—in fact, wherever a need for super efficiency filtration exists. For further information please write for catalogue HJ.

Variants of the 'Absolute' filter include High Temperature High Humidity, and Acid Resistant types—all with a guaranteed efficiency of 99.99% against sub-micronic particles, 'Absolute' filters are available as canister types using an all welded canister assembled between headers, and Vokes can also supply 'UNIPAK' systems for housing several panels in easily-serviced, space-saving units.

Vokes 'Absolute' filters are tested in accordance with BSS.2831 on a methylene blue test rig. Every filter is subjected to a stream of air containing particles of methylene blue 'dust' ranging in size from 0.1 to 0.5 microns, and rejected if its efficiency is less than 99.95%. Vokes is the only British company to guarantee minimum performance figures in this way and Vokes filters are therefore widely used in all applications which require scientific filtration.

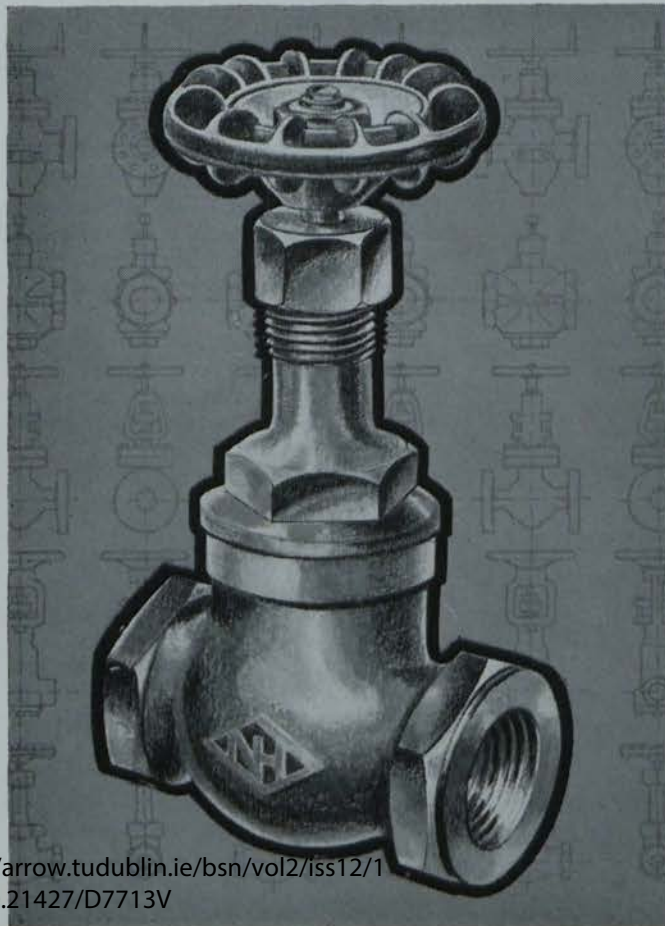


Comprehensive literature covering all Vokes filters is available on request from the Sole Agents.

THE LEINSTER ENGINEERING CO. LTD.



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Known throughout the world for the dependability and quality of their wide range of valves and fittings you cannot do better than ask Newman Hender *first* for the valve or fitting you require. Stocks are held in Dublin of many patterns to meet constant and urgent demands.

VALVES ARE OUR BUSINESS

*... in most types and sizes
... for most temperatures and pressures
... for most industries all over the world.*



NEWMAN HENDER & CO. LTD.
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AGENTS & STOCKISTS
C. H. LOCKHART LIMITED
75, MIDDLE ABBEY STREET, DUBLIN Phone: DUBLIN 43487

Irish Welding Association establish test scheme

THE Irish Welding Association has established a scheme whereby it is prepared to test the qualification of welders.

Testing Procedure.—The procedure for testing is that candidates present themselves at the test centre where they undergo a short oral examination and carry out test welds as prescribed by the Association's rules. The standard of welding and the degree of technical knowledge shown determine whether or not the Association's Certificate is awarded. The test is a "pass-or-fail" one; the candidate's marks are not revealed.

Validity of Certificates.—Welders are tested in groups, and the testing occupies a full day. Successful candidates are presented with a certificate. The length of time for which certificates should be regarded as valid depends on whether the welder is actively welding during that time or not. In any case, the Association recommends that certificated welders should be retested after two years at the latest.

Present Scope of Test.—For the moment tests are confined to gas and electric welding of mild steel. Two grades of test are offered:—

Grade C: General Welding.

Grade B: **Advanced** (Welding of mild steel for structures; mild-steel pressure-pipe welding for conditions

up to 250 psi and 450°F.).

The scope of these tests should cover the greater part of welding done in Ireland. More advanced tests will be introduced as soon as possible.

To have welders tested, application should be made to the Association's Secretaries: Messrs. Kevans & Son, 31, Fitzwilliam Place, Dublin 2. Preference will be given to groups of six or more.

At the moment tests take place in Dublin only. It is hoped to make testing facilities available in Cork at an early date.

TRADE

TOPICS

WALKER CROSWELLER IN PRODUCTIVITY FILM

WALKER CROSWELLER & Co. Ltd., manufacturers of "Leonard" thermostatic mixing valves and other water temperature control devices, is one of three main firms selected to feature in the new productivity film, "The Box On The Wall," which has been released nationally.

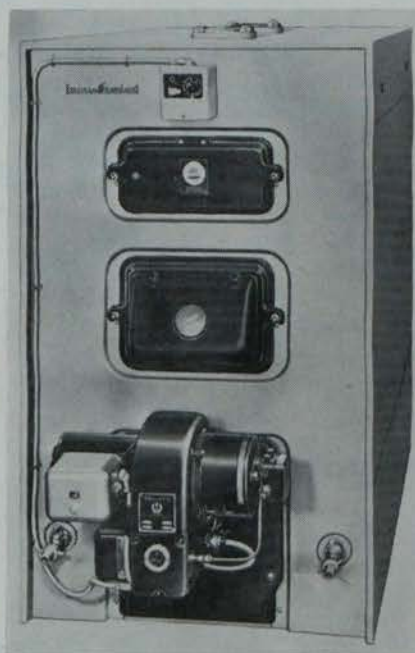
The film, one of the Rank Organisation's "Look At Life" series, has been produced as part of the British Productivity Year programme. Factory suggestion boxes are the focal point which gives the film its title, and the Walker Crossweller sequence shows "before and after" examples of how work study of Leonard thermostatic valve assembly operations at the Cheltenham plant resulted in a considerable saving of time and effort.

OSMA SYSTEM MODIFICATIONS INTRODUCED

IN the spring of 1962 modifications were made to the Osma rainwater goods system which included: The introduction of injection moulded P.V.C. fittings; design modifications to compensate for thermal expansion; and reductions in the number of fittings actually necessary to complete an installation, with appropriate savings on initial outlay and installation costs.

All Osma fittings are now injection moulded in P.V.C. This allows for intricate design detail to be included which is not possible with conventional materials. Pipe connectors and shoes permit vertical adjustment of between 0"— $\frac{1}{2}$ ", when fitted in accordance with Osma Fixing instructions this will absorb any possible expansion or contraction.

Irish agent: Victor H. Campbell, 11 University Road, Belfast 7.



New Ideal boiler

This is the "Ideal Vanguard" boiler, a new oil fired boiler available in seven sizes, from 175,000 to 385,000 B.T.U./hour. An important advantage of this boiler is that the air/fuel ratio is pre-set to give optimum CO₂ and smoke values, with a minimum of adjustment on site. The "Vanguard" is available with a choice of Camron or Selectos Burner.

Irish agent: E. J. Cocker, Stoneygate, Granville Road, Blackrock, Co. Dublin.

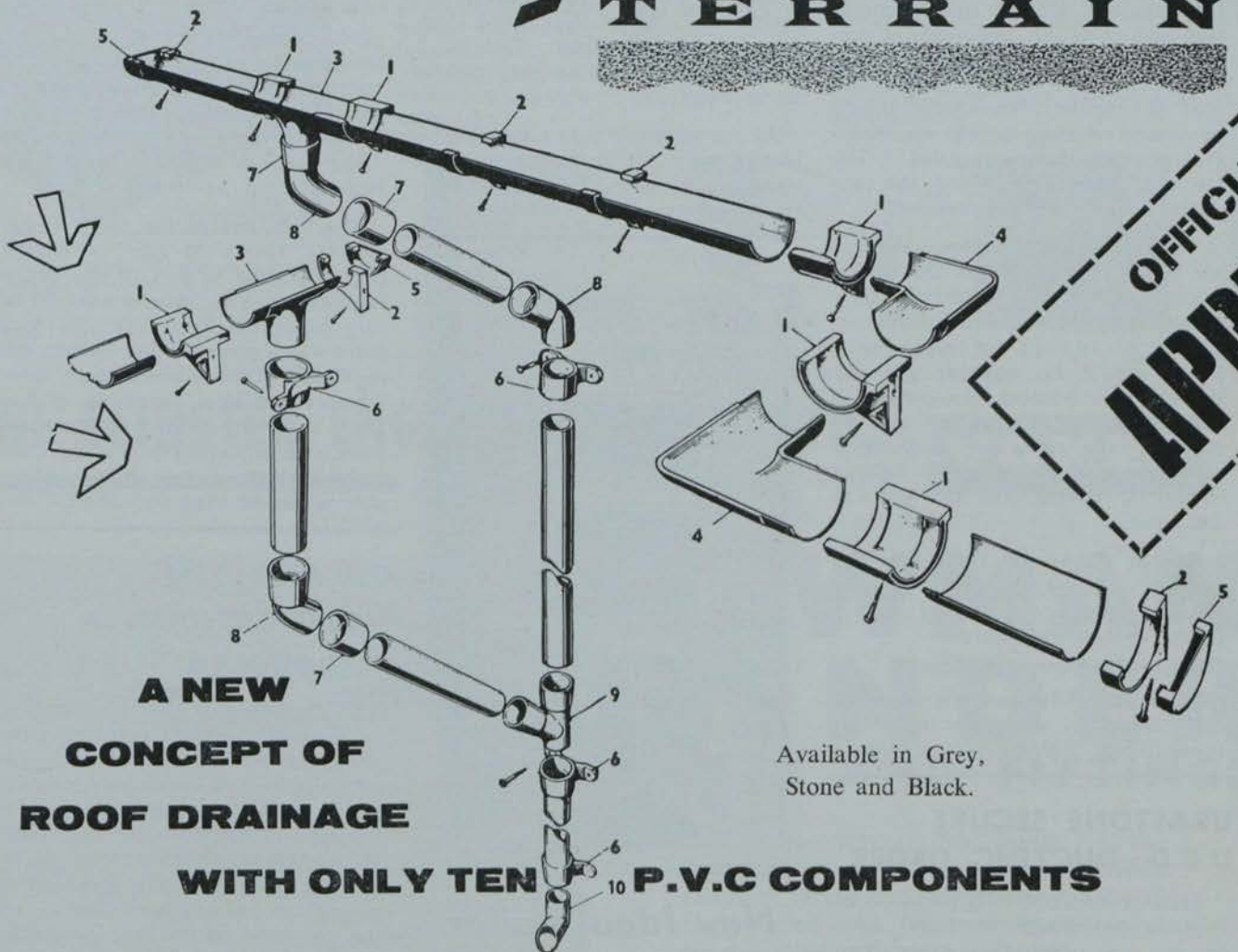
URASTONE SECURE U.C.D. DUCTING ORDER

THE URASTONE Company of Higham, Nr. Rochester (Kent), have secured an order for more than £1,000 worth of Urastone standard and special ducting, to be installed in the Science Buildings of U.C.D.

Treated with Bituguard, the new ducting will complete the network of exhaust ducts from the fume cupboards included in the design of the most up-to-date science laboratory in Ireland.

The consulting engineers for the project are Messrs. J. Varming and S. Mulcahy of Dublin, the specifying body on this particular project.

OFFICIALLY APPROVED



OFFICIALLY APPROVED

A NEW CONCEPT OF ROOF DRAINAGE WITH ONLY TEN P.V.C COMPONENTS

Available in Grey, Stone and Black.

Terrain roof drainage represents the systematic approach. Ten basic units in the Terrain Range have been designed to take the best advantage of the particular characteristics of P.V.C.—rather than to produce copies of standard units—and to combine maximum efficiency with ease of erection.

**TERRAIN P.V.C. SOIL AND WASTE SYSTEM
TERRAIN P.V.C. VENTILATION SYSTEM**

* Please avail of our advisory service

Terrain Systems are based on the use of unmodified, unplasticised P.V.C.

UNIDARE LIMITED

FINGLAS, DUBLIN 11

Phone 71801 (13 lines)



AN IRISH PLUMBER & HEATING CONTRACTOR SPECIAL SURVEY

1 ROOFING MATERIALS AND TECHNIQUES

THEY ARE NOW SEEKING MORE PERMANENCY, LESS TROUBLE

ROOF weathering formed a major part of plumbers' work in olden times. Indeed, until comparatively recent times the only available covering for a flat roof surface was sheet lead. How many plumbers to-day spend time on lead roofwork, or on any kind of roofwork for that matter?

Except for weathering details at chimneys and perhaps an odd dormer now and then, the plumber has sadly neglected this useful part of plumbers' work. The trade may well regret this as time goes by. It is all so very easy, sometimes perhaps it seems all too convenient, to let an enquiry for plumbing services on a large roofing contract go begging. As a result the jobs get taken up by roofing "specialists." Very soon, roofwork will no longer be regarded as the plumber's job unless the trade as a whole awakens to this thoughtless loss of work from the craft.

New techniques

Looking for something more permanent and trouble free, the forward looking architect looks for other roof coverings. More and more, flat roofs are being specified in lead, copper, aluminium, zinc, or "Nuralite."

Will the architect look in vain for his friend the plumber to apply these plumber's materials for him? Not if the trade shakes itself, shows a will to master the newer, easier and quicker techniques. Given the will to obtain new "know-how" there is no roofing jobs the plumber could

not do just as well, and as profitably, as the "specialists."

Lead working techniques do not lag. Recent developments, especially in lead-boring application to roofing details, offer good, productive, and interesting methods of working. The durability of lead is well known. Its appearance suits many types of building, even modern ones. If in evidence of faith in its values, the roof of the vast Shell Centre on South Bank, London, is lead covered. The building, the last word in building technology and practice, is kept dry by lead, the oldest of the plumbers' metals.

A new hollow roll technique was developed for this roof and lead-burning figures largely in its execution. The whole is explained in the latest Lead Development Association booklet, "Leadwork For Plumbers," Vol. 3, No. 2. This is free to all who write for it to 34 Berkeley Square, London, W.1.

Copper in roofwork may seem new and too difficult to bother with. In fact, the working techniques are very simple—a few basic applications of seam and fold being sufficient to give ample confidence to those who wish to gain more experience in this so-called "hard metal."

Light, clean, easy to handle, the material in "Dead Soft" strip, 2ft. wide, grows in popularity with plumbers who have bothered to master its methods of application.

It has a pleasing appearance and offers a presentable, craftsmanlike finish, easily attained by any competent plumber in a very short time.

A notable example of copper roofing in the grand manner is the recent covering of the dome-shaped Plant-

tarium in Baker St., London. Readers may not be anticipating work of this scale very often, if at all. But they should be in on this material—it has a lot to offer the plumber of to-day.

Write to the Copper Development Association, 55 South Bodley St., London, W.1, for the free book, "Copper Roofing." No plumber can afford to be without a copy for reference and practical guidance.

Aluminium too is not to be denied. This lightweight material employs techniques very like those used for sheet copper.

A help

Aluminium is used in conveniently handled coils of 2ft. wide strips. It may be obtained in "Dead Soft" temper for flashing in short pieces and for securely fixed details like chimney flashings, ridge pieces, etc.

For work in larger areas, $\frac{1}{4}$ Hard material is recommended. Much stiffer, but of similar composition and purity as the softer material, it might appear to the feel to be too difficult to work with. One very soon realises that this is a mistaken impression and that the slight extra stiffness is a help rather than a hindrance in working. The metal "lays" better and the finish is very pleasing.

Eton College Chapel roof has just been re-covered in aluminium—by plumbers—and a splendid job it is too.

The British Aluminium Company of Norfolk House, St. James Square, London, will gladly provide free illustrated literature which explains, step by step, just how the material is simply formed to the most awkward details.

Continued overleaf



This special survey—another in a series on important aspects of the plumbing and heating trades—has been compiled by technical expert A. L. Townsend, M.R.S.H., M.I.P.

Lock-Roll Roofing is a rather special development in aluminium roofing techniques. It is, in fact, a patented system of roofing. Pre-fabricated sheets are used and these lock to-gether in a most ingenious manner. On site work details are reduced to an absolute minimum and large areas can be covered in very short time. Its appearance is pleasantly modern and it blends most happily with all forms of up-to-date domestic building.

Costs and illustrated literature on this exciting new plumber's roofing material are free from the British Aluminium Company, address as above.

Techniques

Zinc Roofing techniques vary but little. This testifies to the care and forethought which went into development many years ago. The "Roll

SPECIAL SURVEY

from previous page

Cap" method is still to be recommended although it is possible to get softened zinc sheets which can be joined by standing seam technique as used for copper and aluminium.

The "Roll Cap" method is decidedly more difficult to understand in pictorial form than it is in practice. Really, it is a very simple job—and a sound one.

Zinc roofing is specified with consistent regularity for all kinds of new buildings. Why not get the booklet which shows you how it is done? It is free from the Zinc Development Association at 34 Berkeley Square, London, W.1. Having studied the

"Know-how," why not get a few square feet of zinc—it's cheap enough—and "have a go." Given that, you make up a suitable forming block as shown in the "Roll-Cap Roofing" booklet, you will be pleasantly surprised to find how simple the job is in practice.

Economic

"Nuralite" roofing is a comparative newcomer to this branch of plumber's work. An up-to-date material for up-to-date plumbers, it was developed to provide an economic roof covering, of light weight and good durability.

"Nuralite" is a non-metallic roofing material made from fusing asbestos fibre and bitumen to a homogeneous and dense sheet of about 1/10th inch thickness. In no



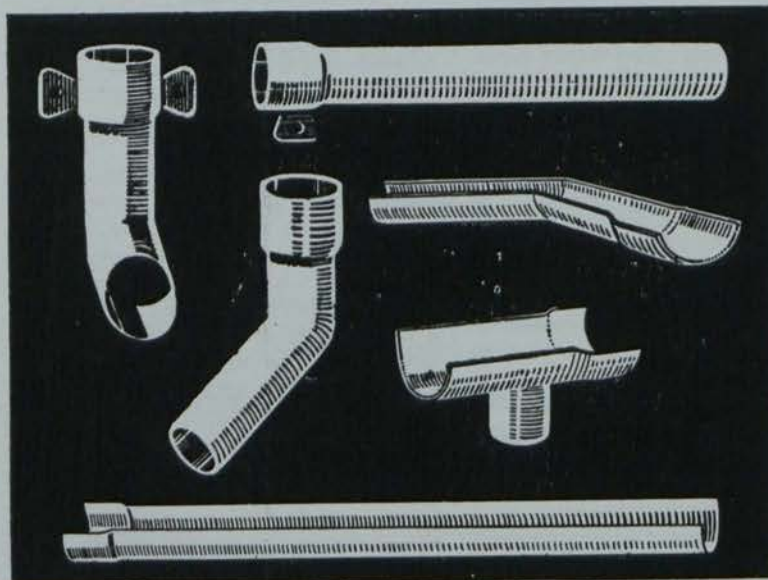
I. S. - 59 GUTTERS

IRISH STANDARD SPECIFICATION 59 : 1953

AND FITTINGS

4", 4½", 5" x 14 GAUGE

Hot Dip Galvanised after manufacture



IN THE ENTIRE PRESSED STEEL RANGE THE I.S. 59 IS THE ONLY GUTTER APPROVED BY THE DEPT. OF LOCAL GOVERNMENT FOR USE IN

Grant Type Houses

NO BREAKAGES ●
EASY TO ERECT ●
MADE IN IRELAND ●

CARTHORN

(1949) LTD. Commercial Buildings
Dome Street, Dublin
Tel. 73475

SPECIAL SURVEY

from previous page

circumstances can it be likened to a roofing felt, which it is not. It is, indeed, a modern material purpose prepared for present day needs, and to be worked with inherent craft skills as possessed by any competent plumber. No special training is needed to make first-class jobs with "Nuralite" but a little practice on odd pieces, preferably in the presence of a "Nuralite" demonstrator, will quickly provide the "feel" and appreciative working properties of this thermo-plastic, heat formed on bench or in situ, material.

The services of demonstrators is freely available. Messrs. Thos. Dockrell, Sons & Co. Ltd., are the Irish agents of "Nuralite" and will be glad to have enquiries.

Vital necessity

Eaves Gutters will remain as an item of plumbers' work. The repair and replacement of broken or otherwise defective gutters will still be a long-term want for existing houses.

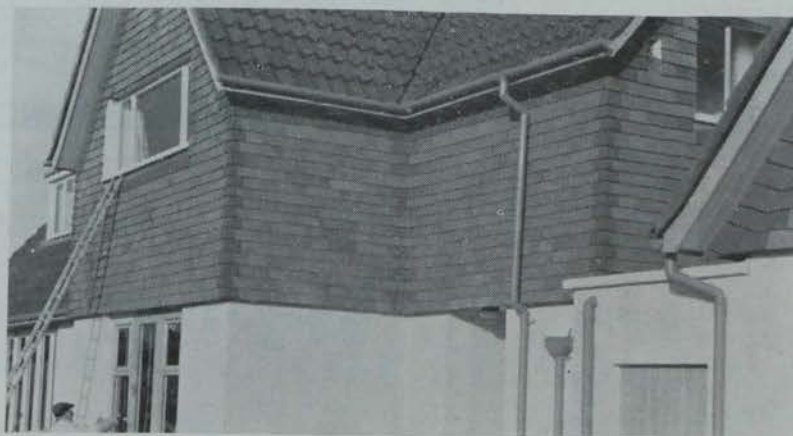
Gutters of cast iron in one coat of paint ex works, or in more durable vitreous enamel, have long "held the floor." They now have zinc, cast aluminium and galvanised mild steel gutters and R.W.P.'s as serious competitors. Making fair bid to beat the lot are the newer plastic rainwater goods.

All of these will be represented by advertisements in this issue. Each has its advantages and disadvantages as to cost, durability, maintenance cost, appearance, ease of fixing and so on.

The latest

Readers will do well to seek latest information on all these products. Rainwater drainage work is not always the most enjoyable of plumbing jobs. Nevertheless it is a vital necessity in the maintenance of a healthy, dry home. It is a job which has tended to become very "traditionalised" and if we are to move with the times, and reap the benefit of doing so, we must be prepared to examine all latest developments and methods in all materials. Only in this way can the most advantageous choice be made, with sound reason based on informed, unbiased, assessment of material properties and usage.

PRODUCT REVIEW



A typical installation of Terrain P.V.C. rainwater system. (Builders: Wates & Co. Ltd., Dublin).

In the design of rainwater goods, Terrain roof drainage represents the systematic approach. Of particular interest is the design of the components, which have been made, not as copies of conventional units, but to take full advantage of the special properties of unplasticised P.V.C.

Ten basic units comprise the Terrain range; and these 10 combine maximum efficiency with minimum cost of erection. Gutter and down pipe is supplied in straight, plain lengths without sockets. This enables any length of gutter or down pipe to be cut without wastage of material.

From within the range, complete rainwater systems may be built up by comparatively unskilled labour; indeed one man can complete an installation without assistance.

Terrain gutter is four inches true, half round, having a flow capacity of 11 gallons a minutes when laid level and 15½ gallons a minute when laid to a fall of one inch in 50 ft.

The special design of the system's joint support bracket eliminates the need to use mastic in jointing lengths of gutter. Gutter ends are simply inserted into semi-circular slots at each side of the support bracket, where they are securely held. Space within the bracket leaves adequate room for thermal expansion.

Both the joint and ordinary support brackets are designed complete with a nickel plated fixing screw which is securely held in a tapered hole.

Down pipes are cut to requisite length and have either eared or plain sockets solvent cemented to the top of them. They are then assembled with the necessary bends, branches

and shoes. Offsets are made from bends and pipe offcuts, jointed with a solvent weld cement.

When assembling the pipe or fitting, it is a push fit into the socket of a fitting below it, thus allowing for thermal expansion and contraction.

The material is chemically inert, and, in addition to being resistant to acids and alkalis, is resistant to degradation by sunlight. The complete system is available in black, grey (graphite) and stone (putty) colour. No paint protection is needed; 120 ft. of gutter weighs only 60 lbs.

The Minister for Local Government has approved of the use of the Terrain P.V.C. Rainwater System in houses, the subject of grants under the Housing Acts, and in houses erected by housing authorities.

★ ★ ★

THE IRISH ALUMINIUM Co. Ltd., Nenagh, Co. Tipperary, produce a variety of rainwater goods and builders' castings. All castings are guaranteed to be produced from metal to British standard specification.

For details of further rainwater goods see the Northern Notes report on the introduction of the Aspect System there.

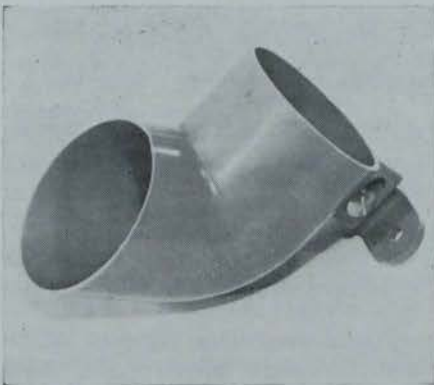
PRODUCT REVIEW—continued on following page

PRODUCT REVIEW

from previous page

HAMMOND LANE INDUSTRIES, Ltd., Dublin, are well-known makers of galvanized tanks and copper cylinders and their products are giving excellent service in many fields. The firm has all sizes and capacities in stock.

★ ★ ★



PICTURED HERE from the Osma Plastics range are (above): The Osma injection moulded P.V.C. shoe and fixing bracket, which allows for both adjustment of pipework away from the wall face, and permits a $\frac{1}{2}$ " vertical adjustment to absorb any expansion or contraction. Below: The Osma injection moulded P.V.C. running outlet has been designed to comply with the recommendations of the Building Research Station. This fitting incorporates two union clips for gutter connection, bracket support and a spigotted nozzle to simplify direct pipe connection.

Irish agent is Victor H. Campbell, 11 University Road, Belfast.



ASSOCIATED METAL WORKS (Glasgow), produce a wide range of stainless steel sinks, sink units, and sink ranges from standard types or specially made to fit. They are made for hospitals, laboratories, residences, schools, canteens, hotels and ships.

★ ★ ★

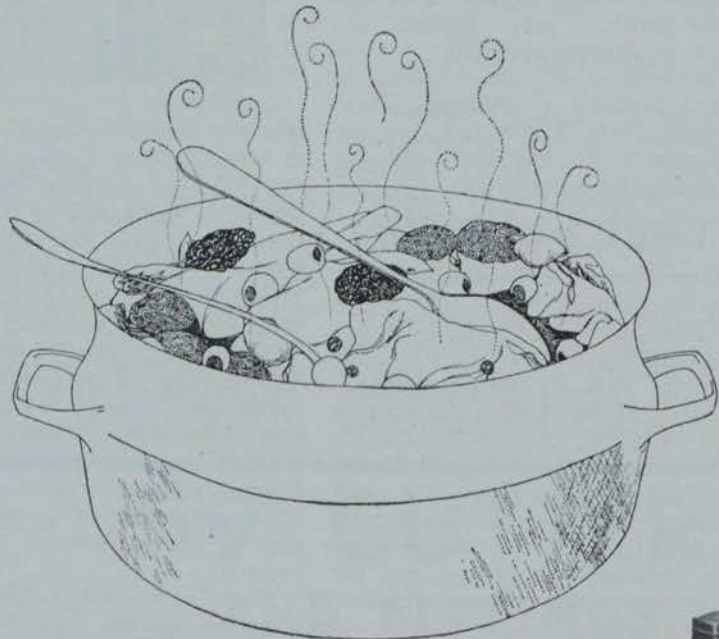
AT LONDON SHOW

AT the London International En-

★ ★ ★

gineering Exhibition and the International Welding Exhibition at Olympia from April 23 to May 2, the three members of the Vokes Group of Companies who will be exhibiting are Vokes Limited, Vokes Genspring Limited, and Stream-Line Filters Limited. Their stand is No. 77 in the Grand Hall on the ground floor.

pipng hot-or cold?



If it involves pumping—be it hot or cold water—we can supply the suitable pump for the job from a comprehensive range of pumps designed for the heating and plumbing industries. 'Monobloc' pumps, for instance, are ideal for air conditioning, boiler feed, boosting, circulating systems, condensate, filtering, fresh water, heating systems, refrigeration, sprinkling, sump service, transferring, washing, water softening and many other duties. They range in size from 1" to 5" diameter delivery, covering capacities up to 1200 g.p.m., and heads up to 210 feet. 'Vortex' pumps, with heads up to 600 feet, are especially suitable for boiler feed duties. Automatic domestic water supply sets are also available. Illustrated below are typical models from our range of 'Monobloc' pumps.

Send now for fully descriptive literature.



Worthington - Simpson Ltd

20 HERBERT PLACE DUBLIN

PUMPS • COMPRESSORS • HEAT EXCHANGE EQUIPMENT

P8847



2 INDUSTRIAL, COMMERCIAL AND HOSPITAL SANITARYWARE

THE CURRENT EMPHASIS IS ON GOOD DESIGN

CURRENT emphasis on good design in all things appertaining to industrial and public buildings has had marked effect in recent years on the design of sanitaryware for public use in those buildings.

Once it was deemed sufficient for the architect to indicate on his plans the position of each piece and include in his specifications a p.c. item to cover the total. To-day, however, the architect pays considerable attention to the designated use of each item of sanitaryware, and to its design and sitting bearing in mind the number of users to be catered for, the frequency of use, and the resistance of various materials to every foreseeable hazard. He also takes into consideration the degree of atmospheric pollution and the various substances with which sanitaryware is likely to be in frequent contact. In many cases, too, special thought is devoted to the actual methods of connecting that sanitaryware to the plumbing system and the difficulties the plumber might encounter.

And where once there was no choice and fireclay sanitaryware just had to be used, to-day increasing use is being made of other materials. Nevertheless, in spite of competition, to-day's ceramic glazed fireclay sanitaryware is more than holding its own.

Manufacturers of fireclay sanitaryware spend a great deal of time and money on improving the designs of their products, not just for the sake of devising something new, but with the main purpose of producing sani-

Due to reasons beyond our control, illustrations which were to have appeared in conjunction with this Survey were delayed in transit and arrived too late for inclusion in this issue. They will appear instead with this article's continuation next month.

taryware to serve its purposes with the utmost efficiency and without the need for constant attention or maintenance work.

In this they are—perhaps unconsciously—playing a vital role in helping to maintain industrial production at the high levels essential under present economic condition. A well designed washroom equipped with equally well designed sanitaryware, not only eliminates congestion, but by its clean, attractive appearance and hygienic condition, reduces the possibilities of spreading infectious complaints and consequent absenteeism. Moreover, it subconsciously induces in the users a pride in personal cleanliness.

It is, of course, dangerous to generalise on the type of equipment which should be installed, but it is well to consider the modern alternatives to established custom. Washbasins, for instance, whether placed in rows against the wall or built in "island" units, can be superseded in many cases by the installation of washing troughs and circular island "fountain" troughs. With each of these, less pipework is involved, fewer fittings are needed, and there is a

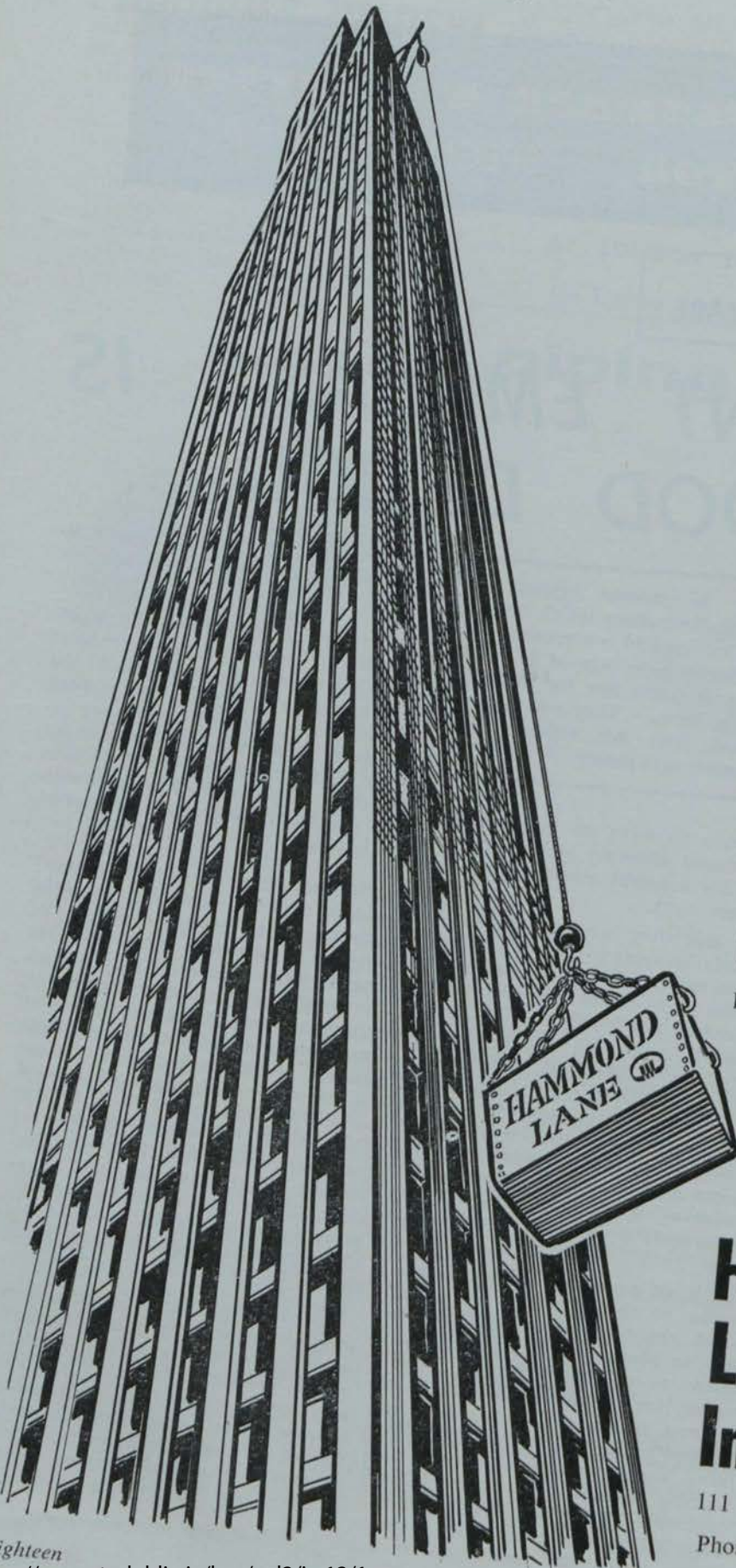
consequent reduction in the possibilities of trouble through blocked or burst pipes.

In spite of this, however, a washroom so equipped frequently reduces the time spent in the washroom by the same number of people, even at peak periods; and washing troughs are invaluable where the need is for more than just perfunctory hand or face washing. They provide the user with far greater facility than the normal wash basin.

Showers, too, are becoming more widely used for removing industrial grime. The great advantage of showers is, of course, economy in the use of water. Three to five gallons is usually ample for a shower, in strong contrast to the twenty-five or so which is about the average when using a normal bath. With the use of an efficient thermostatic control valve (like the Leonard 72 by Walker Crossweller), the reduced quantity of hot water used can make a most impressive difference to fuel bills. Fireclay shower trays are, of course, made in various sizes to cater for either individual or collective use of shower facilities.

Possibly the greatest improvements in sanitaryware for public usage is apparent in the style of modern urinals and water closets. Undoubtedly such progress has been easier because manufacturers and designers do not encounter the same resistance to purely functional purpose needs as they do in making domestic

Continued page nineteen



ROOM at the Top —

for galvanized tanks
with a good name
behind them :

HAMMOND LANE have years of
experience in making galvanized tanks
and copper cylinders—your guarantee
of quality ! All sizes and capacities
now available from stock.

**Hammond
Lane
Industries Ltd.,**

111 PEARSE STREET, DUBLIN, 2.

Phone 75861 (9 lines).

sanitaryware when aesthetic appeal must be taken into account.

Relatively few houses, for instance, could be safely equipped with a corbel-type closet, yet, because of its many advantages, this type is installed in ever-increasing numbers of hospitals, industrial premises and other public buildings. Being clear of the floor, and with the cistern concealed in or behind the wall, the corbel type water closet greatly simplifies the labours of cleaning staff. One such, recently marketed, makes cleaning even easier by the use of a "hinged hinge" for the seat. This Patented device enables the seat to be lifted

the best of attention, are far from hygienic and which until now were the only alternative to constant seat replacement.

Hospital Sanitaryware.—Ignoring the aspect of functional suitability for designated purposes, the pre-eminent requirement for hospital sanitaryware is that it should be completely hygienic and capable of being maintained in that condition at all times. It should be completely sterile and as free from the danger of carrying cross-infection as are the surgeon's instruments. It should, moreover, be so designed that not only is cleaning simple and easy, but also in such a

central drainage channel. This, it is claimed, gives much better drainage. It also has what is virtually a "built-in" sluice sink, big enough to take the largest anatomical specimens. Supply pipes are concealed in the fireclay supports which have covered edges at the bottom to facilitate cleaning.

The surgeon's scrub-up unit has for long comprised some form of sink or specially capacious wash basin, usually equipped with elbow action fittings. A radical departure from this style is evident in the most recent unit. Consisting of a flat wall slab with integrally moulded end pieces—similar to

SPECIAL SURVEY—from page seventeen

TIME AND MONEY SPENT IN THE IMPROVEMENT OF PRODUCT DESIGN

normally, and when required, the complete seat and hinge is raised clear of the pan so that the whole top surface can be wiped.

That same firm has produced a closet with an open rim which is wide enough to allow for the insertion of a cleaning rag or brush without any reduction of the force, direction, or "spread" of the flush. Another closet from that works is equipped with an inspection cover to the trap. This cover—of solid brass, chrome plated, is so designed, however, that its inner circumference fits exactly flush with the inner wall of the trap. Thus there is no possible internal projection to initiate soil or other incrustation.

The enormous annual cost of replacing damaged toilet seats has been taken into account by another manufacturer with considerable success. Using his normal "industrial" model w.c. as a basis, this manufacturer made several with integrally moulded pottery seat lugs projecting upwards from the top edge of the pan. These lugs were moulded to take fixing screws which, fully concealed in the seat, hold the seat immovably in position. Arduous testing proved the efficiency of this method, and the closets are now in production.

This is obviously a tremendous improvement on the familiar hardwood seat pads, which, even with

way that over-zealous use of abrasive or other cleansing agents cannot have any harmful effects.

Babies' baths for hospital maternity ward use are based on the original concept of the rectangular fireclay sink, although in course of time they have been altered and amended to incorporate all manner of special features applicable to their particular purposes. The modern baby's bath, for instance, is not necessarily rectilinear in outward shape; in most cases it is so designed that water supplies enter the bath through a separate compartment. Mixer fittings, fitted on the front or end face of the bath eliminate the risks of temperature extremes and avoid every chance of the infant being brought into contact with hard metal.

One recently marketed baby's bath incorporates an integrally moulded small washbasin at the side for use by the nurse before handling an infant. This is a further example of the care exercised by sanitaryware manufacturers in maintaining hygienic use of these products. The provision of this washbasin helps to ensure a reduction in the risk of hand-borne cross infection.

At the other end of the scale, a new post-mortem table with foot-operated water supply fittings, has side channels instead of the more usual

a urinal slab—fitted above a drain channel, this unit is equipped with glass screens pivoted to slope inwards at the bottom towards the slab. With such a unit, scrubbing-up can be carried out as vigorously as personal inclination dictates, the glass panels ensuring that all used and splashed water is directed on to the slab. Thus the danger of water-borne cross infection is eliminated. Swinging the screens back simplifies cleaning of the slab after use.

There is a marked trend to-day towards the installation of sanitary equipment built-in to the supporting walls wherever possible. There is much to commend in this practice for the joint between wall and fixture can be sealed and made water-tight, and it dispenses with exposed portions of brackets which are sometimes unsightly and always difficult to clean; some sanitaryware, of course, will always require additional support even when built-in.

If the equipment must be "self-supporting," however, it is often advisable to have it installed a few inches away from the wall to facilitate thorough cleaning.

To be continued—see product review page twenty-one

**THOSE WHO
SPECIFY IT...**



THE ARCHITECT with an eye for efficiency also sees in the Lynx's clean-cut lines contemporary styling at its very best.

**THOSE WHO
INSTALL IT...**



THE PLUMBER finds it easiest of all to fit; the concealed fixing is neat and simple.

**THOSE WHO
OWN IT...**



THE CUSTOMER is delighted to discover that such a handsome cistern also has the most discreetly quiet and dependable mechanism she's ever encountered.

...All acclaim the

Shires **LYNX**

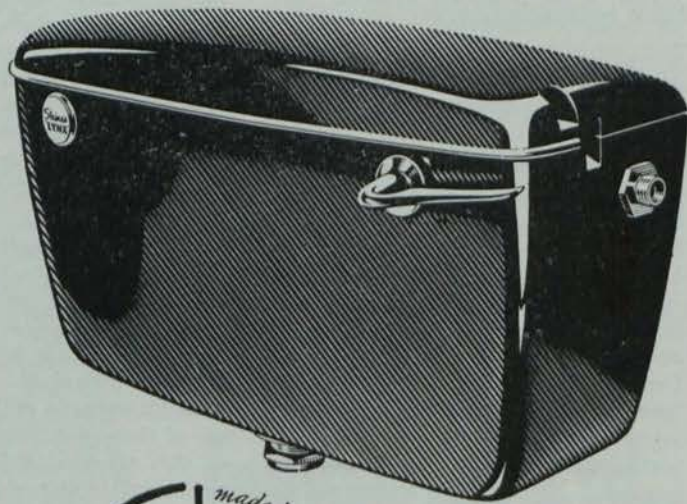
MADE IN IRELAND

Shires Lynx is today's most popular cistern, for replacements or new installations. Lynx high and low level cisterns are made of black Duranite — tough and durable, non-crazing, non-corrosive. The Kingfisher syphon mechanism gives a powerful flush: made of polythene — non-corrosive, non-ageing and unbreakable — it can be used in hard or soft water areas. It conforms to BSS 1125 and Water Works specifications. Capacities: 2, 2½ and 3 gallons.

EVERY GENUINE LYNX HAS THE NAME ENGRAVED ON THE CISTERN

Other Shires' products are the Uni-Lynx close-coupled suite, cistern fittings and the Polyfloat cold water cistern float.

Available from all recognised builders' providers in the Republic



made by
Shires
for your convenience

SHIRES (IRELAND) LIMITED, STANNAWAY DRIVE, CRUMLIN, DUBLIN

We review here products from the leading ranges. All claims made are those of the manufacturers.

SHIRES (IRELAND) LTD. (Crumlin, Dublin) market a range of flushing cisterns and toilet seats. Prominent among these are the "Lynx" cistern and the "Continental" seat.

Incorporating a Shires "Kingfisher" siphon mechanism, the "Lynx" gives an efficient, full, powerful flush first time every time. Made from non-corroding polythene, the "Kingfisher" is virtually everlasting, yet quiet in operation, and unaffected by climatic conditions, acids, alkalis or salt water.



Attractively designed in glossy black Duranite by a leading industrial designer, the "Lynx" is suitable for any installation, high or low-level, right- or left-hand, in bathroom or toilet. Fixing brackets are concealed and its streamlined contours have no dust-collecting ledges or crevices, making it easy to keep clean. Duranite, the plastic material from which the cistern is moulded, is non-resonant, non-corroding, and never needs painting. Shires "Lynx" cisterns are available in 2, 2½, and 3 gallon capacities, and are fitted with a "Polyfloat" corrosion-resistant polythene ball float. A flush pipe made of rigid plastic, in either black

NEXT MONTH

Watch next month for the second part of this Special Survey. It will be fully illustrated.

NEXT MONTH

SPECIAL SURVEY

from page nineteen

or white, can be supplied for fitting with the high-level cistern.

The "Continental" seat is made of a black plastic material specially designed to overcome the disadvantages of distortion, splitting and breakage, the inherent disadvantages of plastic seats.

★ ★ ★

A WIDE range of stainless steel hand basins is produced by W. G. Sissons, Ltd., the well-known Sheffield firm. Catering and industrial sink bowls can be made to any size and required shape. These bowls may have such features as 1" horizontal flange for incorporation in working top or bench, or they may be supplied as a unit complete with supporting stand or brackets.

Sterilizing Units.—Any stainless steel sink can be made as a sterilizing unit heated by gas, electricity or steam. Bowls are usually 15" deep. The gas unit is thermostatically controlled, and has safety devices. Electric sterilizing is usually by means of a 4 kw. or 6 kw. element fitted in a protected sump.

This company also specialises in preparation benches and tables and dishwater tabling.

Irish agent: C. B. Sheridan, 10 Herbert Place, Dublin.

★ ★ ★

FORDHAM of Wolverhampton have now produced an entirely new high level cistern. The "Fabula" is of plastic throughout—shell, syphon, ball float, "Acquasave" ball valve, and overflow. It is robust, light weight, easy to handle and instal, and can be transported and stored without risk of damage. The material—the latest thermo-plastic—is also sound deadening.



This two-gallon high level cistern is completely reversible, and can be

readily switched for right or left-hand supply and operation. The new high-gloss finish ensures easy maintenance and cleaning. Fordham also offer a four-piece telescopic high level plastic flush pipe. This can be packed inside the "Fabula," simplifying packing and delivery, and avoiding loss in transit.

Irish agents: R. T. Large & Son, Stephens Place, rere 47 Merrion Sq., Dublin.

★ ★ ★

PARTICULARS of the wide range of Royal Doulton sanitary ware are to be had in the various illustrated leaflets produced by Doulton Sanitary Potteries, Ltd., Whieldon Pottery, Stoke-on-Trent, Staffordshire, and available through their Irish agent, S. M. Jones, 47 Wellington Quay, Dublin.

★ ★ ★

THE NO. 412 produced by John Steventon & Sons, Ltd., Cledford Works, Middlewich, Cheshire, is a large flat-back wall urinal with lip. It is supplied with No. 941 brass inlet



and 1¼" waste outlet. It is in white only. Method of fixing—two No. 501 wall hangers and two concealed screw holes. Note: measurements may vary up to ¼".

★ ★ ★

THE SPECIAL design introduced by Alfred Goslett & Co., Ltd., Charing Cross Road, London, in the production of the Swanlyne wall-hung urinal incorporates a downward sweep skirt below the base of the cistern.

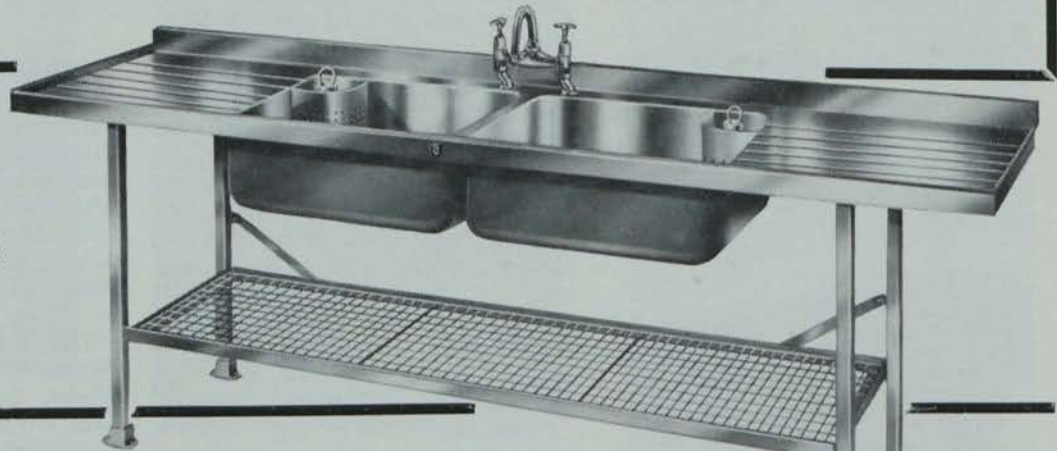
Dust collecting brackets and clumsy unions are concealed. Integral divisions on bowl give a good degree of privacy. In the flushing system specially designed internal waterways carry jets of water to the front of the bowl. The whole bowl is also washed.

For industrial, commercial and hospital kitchens

SISSONS STAINLESS STEEL SINKS

and waste disposal units

**STANDARD OR
'CUSTOM-BUILT'
CATERING SINKS**



**STERILISING
SINKS**

heated by gas, elec-
tricity or steam.

WHIRL-A-WASTE CATERERS' FOOD WASTE DISPOSERS

Five sizes ranging from 3 h.p. to
 $\frac{1}{2}$ h.p., free-standing or for incor-
poration into drainers, tabling, etc.
Write for descriptive literature.



*Write for full details of Sissons
products—including domestic sinks
and kitchen furniture to:*

W. & G. SISSONS LTD.
ST. MARY'S ROAD, SHEFFIELD 2.
TELEPHONE 22118.

Dublin firm introduce new space heater

THE KHAMSIN portable farm heater provides heat when and where it is wanted. This space heater, which is entirely new to these islands, provides hot air at the touch of a switch. Either paraffin or fuel oil can be used. An area of 2,000 to 3,000 square feet is covered by the circulating warm air.

There are no exposed flames or fumes and it can be used in workshops, implement sheds, barns, calf pens, cowsheds, dairies, farrowing units, poultry houses, etc., and to warm engines, dry hay or grain, thaw out water pipes and equipment.

Irish representatives are Simplex Dairy Equipment Co. of Ireland Ltd., Bluebell Works, Bluebell, Dublin, 12.

WILL WITHSTAND HIGHER PRESSURES

THE SAUNDERS type R diaphragm valve is a new valve designed to withstand working pressures higher than those normally recommended for the standard type A.

The construction is of cast steel, flanged to A.S.A. B16-5/1957—Class 300 of equivalent European flange tables. Overall lengths are to D.I.N. 3300. The bonnet assembly is sealed and has a rising spindle with position indicator and limit stop and ball thrust. Padlocking facility can be provided.

Bodies can be Penton-lined. Maximum working pressure, 400 p.s.i. Maximum working temperature, 100°C.

Irish agent: P. J. Casey, Esq., 38 The Rise, Mount Merrion, Dublin.

Mr. Albert B. Potterton, whose death at the age of 89 occurred on 22nd February, was the elder son of the late Thomas Potterton, the inventor of the gas-fired central heating boiler. Albert joined his father's firm at the age of 16. With his brother, Mr. T. F. C. Potterton, he was a joint managing director of the firm.

TRADE TOPICS

Items for inclusion in Trade Topics should reach us by the fifteenth of the month for publication in the following month's issue. All claims made in this column are those of the manufacturers.



New controller

A vapour-pressure on/off self-contained temperature controller has been produced by the British Rototherm Co. Ltd., Merton Abbey, London, S.W.19. The new instrument supplements the company's range of vapour-pressure indicator-control thermometers. The complete unit is contained, for the first time, in one case which can be wall or panel mounted. The controller, which has a 4 in. dial, is accurate to within 2 per cent. of the maximum scale readings. Standard ranges of the new controller are within the limits of minus 30°F to plus 500°F and minus 35°C to plus 260°C. Other ranges can be supplied. The instrument can be produced to make or break contact on rise or fall of temperature, or with an additional contact pointer for maximum-minimum temperatures. It can be wired to give audible and visible warning.

Irish agents: Rototherm Precision & Instrument Co. Ltd., 17 Merchants Quay, Dublin.

DIPLOMAT AT THE IDEAL HOMES EXHIB.

THE NEW room-sealed Diplomat gas-fired small-bore boiler and the new Potterton wall-mounted Programme Controller were among the exhibits which Thomas Potterton Ltd. presented at the 1963 Ideal Home Exhibition at Olympia, London.

The room-sealed unit has been designed specifically for use where a conventional flue or chimney cannot be used or is not wanted. With the combustion process totally sealed off from the room where the boiler is installed (hence "room-sealed"), such units can be installed in a kitchen cabinet or airing cupboard. Because of the increasing demand for the room-sealed unit for blocks of flats, Thomas Potterton offers it in Se-Duct version as well as Balanced Flue. The Se-Duct is a central rectangular flue passing through the building, open at top and bottom, to which room-sealed appliances are connected.

Irish agent: W. P. F. Hume, Ltd., 6-12 Hyndford St., Belfast, 5.

FOOD WASTE DISPOSER FROM IDEAL-STANDARD

IDEAL-STANDARD LTD. expect a fast expanding market for their new "Ensign" Food Waste Disposer. The "Ensign" food waste disposer features durable die cast aluminium alloy body and reversible stainless steel cutting teeth. A powerful $\frac{1}{2}$ h.p. electric motor allows continuous operation. In the event of jamming, the motor cuts out automatically. The unit will fit sinks with a 3½" waste aperture.

Irish agent: E. J. Cocker, Esq., Stoneygate, Granville Road, Blackrock, Co. Dublin.

LONDON DEMONSTRATION BY CAPE INSULATION

AT THE London International Engineering Exhibition, from April 23 to May 2 next, Cape Insulation and Asbestos Products Ltd. will be demonstrating their comprehensive range of insulating materials and illustrating various applications on

Continued overleaf

INTRODUCING THE NEW KHAM SIN PORTABLE SPACE HEATER

- ★ ★ ★ **HOT AIR**—at the touch of a switch
- ★ ★ ★ **ECONOMICAL**—uses paraffin or fuel oil
- ★ ★ ★ ★ **CIRCULATING WARM AIR**
—covers 2,000-3,000 sq. ft.
- ★ ★ ★ **SAFE**—no exposed flames or fumes



Illustrated:

KHAM SIN MODEL 85

Output 75,000 B.T.U.'s, equivalent 24 Kw.
Entirely automatic. Fully portable.

- ★ Available in two models—Model No. 85, 75,000 B.T.U.'s/24 Kw, £97; Model 120T, 120,000 B.T.U.'s/40 Kw, £135.

Sole Agents for Ireland:

**Simplex Dairy Equipment Co.
Of Ireland Ltd.
Bluebell Works, Inchicore, Dublin.**

Telephone 503288.

TRADE TOPICS

from previous page

their stand at Olympia.

Demonstration units showing a method of stress relieving pipes and a method of insulating and veneer-casing a water tube boiler will be on view.

PLASTIC TRAP FROM DU BOIS

THE DU BOIS Co. Ltd., of Britannia St., Kings Cross, London, state that their H.D. Black plastic trap is made of black Rigidix plastic and has a joint of unique design in the outlet leg of the seal enabling this to be turned to right or left through 220°. The trap is the subject of provn. patent No. 38070/60 and is made in 1½" diameter x 1½" seal both in "S" and "P" shapes. The "P" trap, without cleaning screw, forms a simple bath trap. With the "S" trap, if the outlet is turned towards the inlet as closely as possible, a form of bottle trap is given which has a distinct advantage over the ordinary pattern of bottle trap in that the through-bore prevents the trap being stopped up.

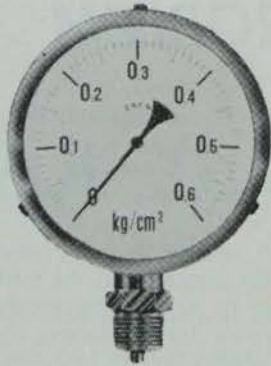
1¼" bore, also 3" seals in this and 1½" bore, will be produced in due course. Meantime 1½" x 1½" adaptors can be supplied to enable the 1½" trap to be used between 1¼" wastes and waste piping. The outlets are supplied either male or with compression fittings for 18 gauge copper tube and to connect either Polythene or lead waste it is necessary to use only a short length of copper tube.



The traps are suitable for chemical purposes in general. Another feature of the design is that it gives a two-piece trap at one-piece price.

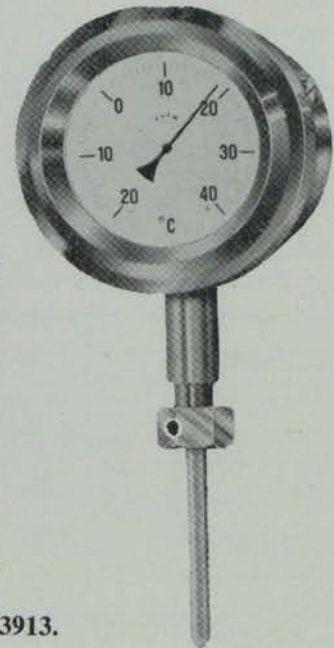
Packing is in cartons of 12 pieces and the trap being of extremely light weight, transportation charges are cut to the minimum.

Irish agents: Kenneth M. Reynolds Ltd., 26 Essex Quay, Dublin.



● A complete line of Gauges always in stock.

Investigate the Manotherm Range of Gauges and Corrosion Resistant Thermometers —



MANOTHERM LTD.,

14 CORN EXCHANGE BUILDINGS, BURGH QUAY, DUBLIN. Tel. 73913.

When a plumber is looking for a



pump...

...for CENTRAL HEATING

he cannot buy better than the

SIGMUND THERMOPAK or SILENTFLO

and the prices are very competitive. Why not buy the best at practically no extra cost?

SPECIAL FEATURES:

- Super Silent and self-lubricating.
- Being glandless, is free from leaks and needs absolutely no attention whilst operating.
- Special silicon-impregnated winding—no starter protection needed.
- Precision-ground sleeve bearings—for long life.

PRICES AND ILLUSTRATED LITERATURE SENT ON APPLICATION.

ONLY AVAILABLE FROM THE SOLE AGENTS FOR REPUBLIC OF IRELAND:

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FULLY GUARANTEED AND COMPLETE AFTER SALES SERVICE AVAILABLE.

A VERY SIMPLE, low-cost but efficient method of providing old property with essential water heating and washing amenities is being pioneered by the Plymouth District of the South Western Gas Board, in collaboration with Plymouth Corporation.

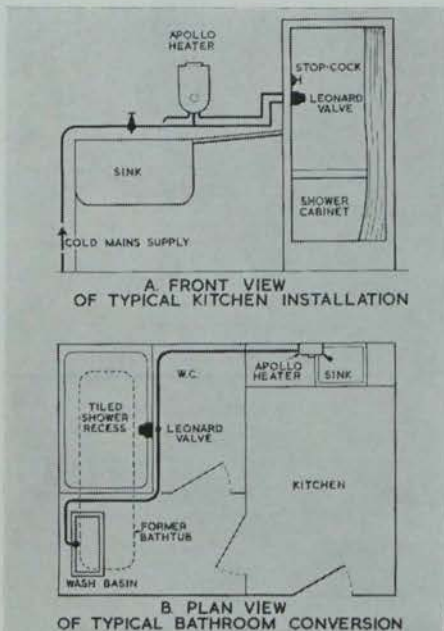
Basically the idea is the use of a Main "Apollo" multi-point gas instantaneous water heater arranged to supply the kitchen sink and a self-contained shower cabinet (or shower recess) as well as a wash handbasin. An essential part of the scheme is the provision of a Leonard thermostatic mixing valve for the shower so that

the user has control over the shower temperature, independently of the heater itself.

As an example of cost, those installations involving a shower cabinet, as distinct from a shower recess, are being carried out at a total cost of about £100 each and (because of the compactness of the arrangement) avoiding extensive additions to the properties concerned which would

have been prohibitively costly. The Corporation has also taken the opportunity to equip several sports pavilions in its municipal playing parks with similar shower facilities.

Although essentially a Plymouth project at the present time, the method would seem to have merits justifying its consideration for other areas where similar problems exist.



Schematic diagram showing the two basic forms of conversion of old properties in Plymouth to provide essential hot water amenities in limited space and at minimum cost.

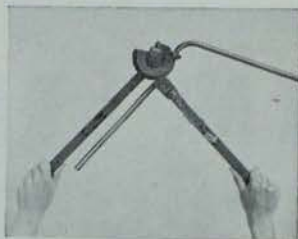
Top: For properties with no former bathroom; shower cabinet sited in kitchen next to sink and gas heater arranged to feed both.

Bottom: For properties with former bath but no washbasin or adequate hot water supply at kitchen sink; former bath area divided into tiled shower recess and hand washbasin with gas heater feeding all three points.

Leonard thermostatic shower valves, which provide safe and independent control over shower temperature, were used in the project. Modern Plant Ltd. (Crumlin Road, Dublin) are agents here for this Walker Croweller product.

SOLVING A PROPERTY CONVERSION PROBLEM

PORTABLE TUBE BENDERS



LIGHTWEIGHT BENDING TOOLS

Types GL.O and GL. Minor

Compact machines to produce good quality sets, compound bends, etc., in non-ferrous tube. Robustly built, they can be carried in tool bag and are particularly suitable for small bore heating and similar types of installation.

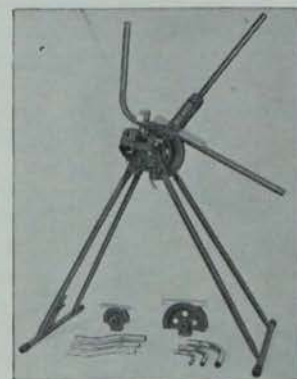
CAPACITY: GL. O— $\frac{1}{4}$ ", $\frac{3}{8}$ " and $\frac{1}{2}$ " dia. copper tube.
GL. Minor— $\frac{1}{4}$ " and $\frac{1}{2}$ " dia. copper tube.

FOLDING STAND MODELS

Types GL. 2B and GL. 3B

The original and most efficient portable benders made for bending light gauge copper tube. Require no fixing or bolting down and produce good quality bends, cold and unfilled, to exact measurement on standard radii.

CAPACITY: GL. 2B— $\frac{1}{4}$ ", $\frac{3}{8}$ " and 1" dia. copper tube.
GL. 3B— $\frac{1}{4}$ ", $\frac{3}{8}$ ", 1", 1 $\frac{1}{2}$ " and 1 $\frac{1}{2}$ " dia. copper tube.



EASY-WORK RATCHET BENDER

Type RP. 5B

A machine of new design with a rotary bending action through a powerful ratchet operated screw. Completely portable, produces good quality bends speedily, accurately and with minimum of manual effort.

CAPACITY: $\frac{1}{2}$ " to 2" dia. copper tube.
 $\frac{1}{2}$ " to 1 $\frac{1}{2}$ " o.d. conduit.
 $\frac{1}{2}$ " to 1 $\frac{1}{2}$ " nom. bore gas and steam.

SEE OUR PERMANENT EXHIBITION AT THE BUILDING CENTRE OF IRELAND, DUBLIN.

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MADE

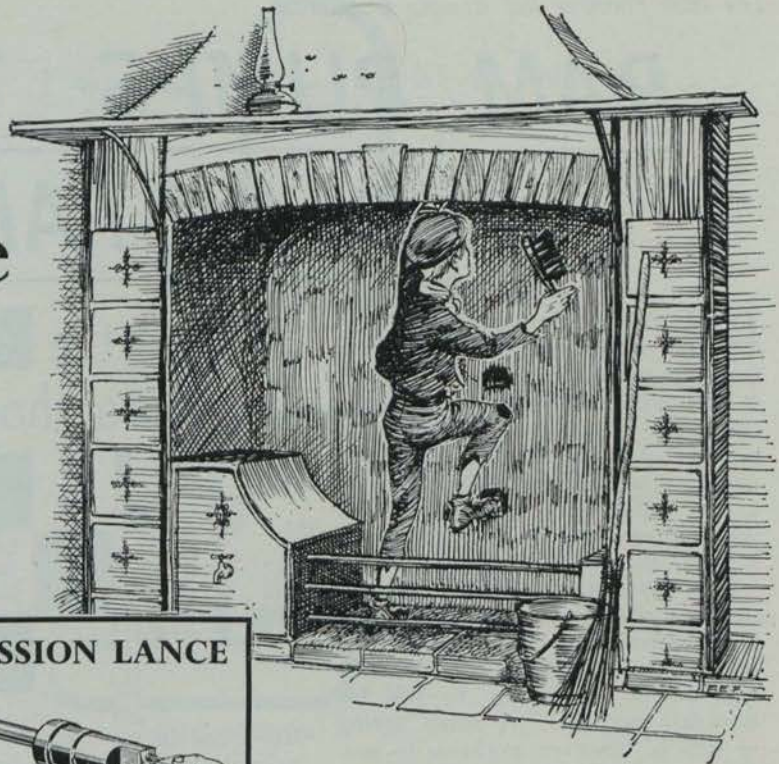


FINEST
MADE

For details of range of hand-operated, hydraulic and motorised machines handling up to 8" dia. tube, apply to local stockist or write to:—
Dept. F, HILMOR LTD. (Sales and Service), CAXTON WAY, STEVENAGE, HERTS.

Not any more

They never did use small boys for cleaning boiler tubes—
and the idea is as dated as hand brushing
now that Airnesco brush automation is available
**for water tube boilers, waste heat boilers,
and economic type boilers.**



FERRET

*Walks' along the tube—no pushing or pulling—the operator stands still and waits for the 'Ferret' to push itself up the tube and return to him.

PERCUSSION LANCE

Cleans a 300 tube fire tube boiler in 30 mins—without brushing—by air puffs alone.

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For further details of these and other Airnesco Products, and for a free demonstration in your own works, write now to

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We extend a hearty invitation to our many friends in the plumbing trade and all those interested in modern kitchen and bathroom furniture and fittings to visit our extensive showrooms.

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DOCKRELLS of Georges St., Dublin

TRADE ENQUIRIES INVITED.

RAM PUMPS: THEIR USE AND INSTALLATION

LAST month, the use and installation of the hydraulic ram as a water pumping unit was discussed. It was indicated that where suitable conditions existed—such as a stream or river of sufficient volume—the appliance could be expected to provide a very satisfactory and economical way of providing a water supply to a farm, etc.

It is now proposed to consider a situation where a suitable stream or river is available, but the water, unfortunately, is not of a sufficiently high degree of purity to use for domestic purposes. A small spring or well is, however, available to provide a source of pure water, and our problem is to pump this water to the dwelling or farm buildings.

In this case, a pumping-ram—more familiarly called in the trade a “clean and dirty water ram”—can be used, the impure water acting as a source of power to raise the clean water from the spring and pump it to its destination.

Working principles

THE working principle of this type of ram is as follows. (Fig. 1).

Water flows down the drive pipe (A) into the ram body and flows out of the dash or pulse valve (B) until sufficient velocity develops to close the valve suddenly. When this happens, the water, in recoiling, will be seen to strike the head of the piston (C) with a momentum equal to the velocity and weight of the water within the body of the ram. The piston, having received this upward thrust or blow, is at once moved upwards, so pushing the smaller cup-leathered piston against the adjustable spring (D) which, in turn, immediately exerts a downwards pressure, so returning the piston to its original position.

With each beat of the ram, the piston moves up and down in exactly the same way as the bucket in an ordinary jack or suction pump, thereby causing alternately a partial vacuum and a pressure in the cylinder

the
author

John G. Bolton

Lecturer in Plumbing and Heating at the College of Technology, Bolton Street, Dublin.

(E). This, in turn, causes the opening and closing of the valves (F) and (G), which act as inlet and delivery ports, respectively.

The pumping action of the piston causes the water to be drawn up from the spring and forced into the rising main via the air chamber, and thence to the store tank.

The design of this type of ram is such that the possibility of impure driving water from the river coming into contact with the clean spring water is completely eliminated, even though the valves may, after a time, wear.

It must, of course, be borne in mind that the suction lift of the ram on the clean water inlet cannot be more than 25ft. as with the ordinary pump. In fact, it is advisable to keep as much below this figure as possible to ensure satisfactory working.

Twin installations

WHERE the water flow is abundant, and large quantities of water are required for farming or industrial use, two or more rams can be connected to the same rising main. Separate drive pipes must, however, be connected to each ram.

The use of multiple rams in this fashion enables one to be shut off for cleaning or adjustment while still leaving the others to continue pumping.

Perhaps, having read this and the previous article, one of our readers decides to instal a ram. Before, however, selecting any particular model it would be advisable for him to supply the following data to the manufacturers so that they will be in the position to recommend the correct appliance for the particular job.

1. **The Fall** likely to be obtained from a river or stream by means of a dam, etc.

The greater the fall obtainable, the less water will be required to work the ram—an important point where water is scarce. On the other hand, however, a small fall in conjunction with a larger ram may prove less costly from the installation point of view.

2. **The Vertical Height and Distance** to which the water has to be pumped.

Measured

THE vertical height must be measured from the level of the ram to the top of the store tank into which the water is to be delivered. It is important to note that the higher the water has to rise, the more powerful must be the ram. The horizontal length of the rising main is not normally of great importance except where long runs are involved. In such cases it is advisable to instal a larger diameter pipe to reduce friction. The addition of extra air chambers on the pipe may also be helpful. Ram manufacturers will give advice on this aspect when supplied with measurements.

from previous page

RAM PUMPS

3. Quantity of Driving Water. The method of measuring this was described in our last article.

It will be recalled that the quantity of water passing through the drive pipe will depend largely on the velocity or speed of flow. This, in turn, depends on the head pressure.

4. Delivery Required from Ram. This should be stated in gallons required for 24 hours. As a help in deciding this, it will be found that the consumption on an average farm should be about 600 to 700 gallons per day, or perhaps somewhat more if there is a large number of livestock involved. For a two-storied house with, say, six people, about 250 to 350 gallons storage should suffice. In cases where a number of houses are supplied from the same storage tank, a good average would be about 25 to 30 gallons per occupant.

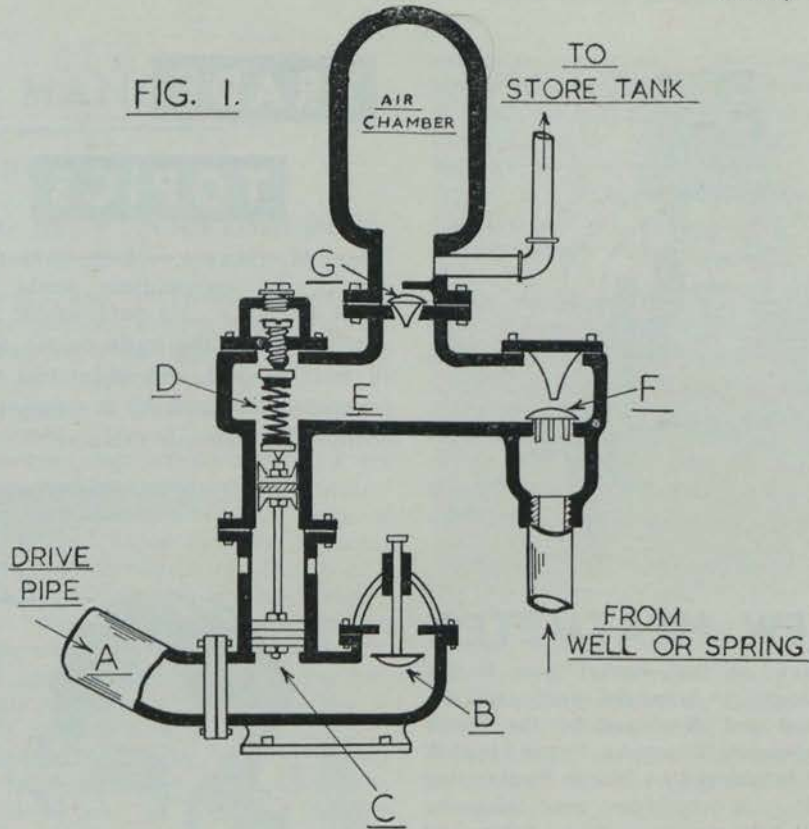
Pump installations

AS this article concludes our present series on rural water supplies and pumping units, it is perhaps a suitable time to recall some of the main points to bear in mind when dealing with the installation of such appliances and equipment.

It will be found that most complaints and troubles originate on the suction side of a pumping unit. This, of course, is due to the fact that a pump, unless completely submerged, as may be the case in a tube well, depends on the atmospheric pressure to push the water into the pump body.

This "sucking" or "lifting" of the water by the pump is caused by the air pressure in the suction pipe being reduced to a partial vacuum, so that the external air, by its pressure on the surface, causes the water to flow through the strainer and tail-valve into the suction pipe, thereby filling the vacuum.

It is essential, of course, that air cannot leak into the suction pipe and so nullify the vacuum, or that air locks do not form through loops on any horizontal section of the pipe, otherwise very erratic action of the pumping unit will result. A clear example of this type of defect is the necessity to "charge" old pumps by pouring a bucket of water down the



PUMPING OR DOUBLE-ACTING RAM

OLD DODGE WILL OFTEN FIND AIR LEAKAGE

pump barrel to try and seal the valves before water can be pumped.

Air leak

IF an air leakage into the suction pipe is suspected, the old dodge of placing an ear against the pipe wall will often indicate if a pinhole or leaking coupling is the source of the trouble. This is particularly evident after vigorous pumping.

It is very important, also, to keep the strainer and foot valve clear of mud or leaves. Normally, it should be about 12 inches over the well bottom, but often, through an influx of silt, the valve gets choked, hence causing a terrific drag on the pump bucket—usually indicated by a tendency for the handle or lever to fly back when released. Where a centrifugal pump is involved, the pump impellor will continue to rotate with out drawing water.

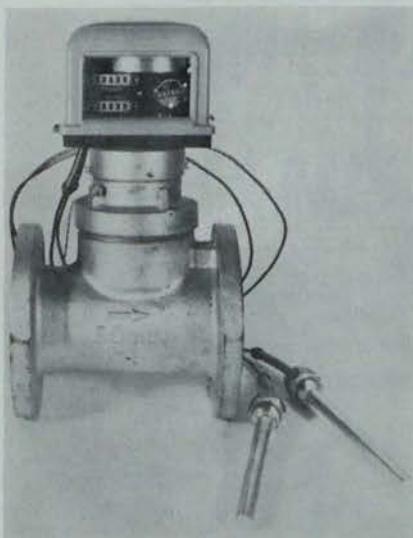
The inlet and outlet connections on pumps are designed to take a definite size of pipe and it is important,

therefore, that this be not diminished or reduced in size. If, however, a long horizontal run of suction pipe is involved, it is an advantage to increase its diameter by one size larger than that required at the pump inlet to reduce friction. Indeed, this can be applied to the average suction pipe to reduce any possibility of energy losses.

Total head

SOME pump manufacturers use the expression "Manometric head" instead of total head, but it will be found that this simply means the head measured from the lowest possible water level up to the point of discharge, and in addition includes an allowance for losses due to friction, sharp bends, valves, etc.

In some calculations, these friction losses are shown as equivalent lengths in feet of straight pipe.



NEW HEATMETER

New on the market here is this domestic or industrial heatmeter, designed and developed by the Dutch Engineering Company, Pegus Limited, and introduced by Norco Engineering Ltd. It combines two integrally built instruments, a flow meter and B.t.u. computer, encased in a compact and aesthetically designed casing, adapted for simple installation in hot water piping systems.

Norco Engineering Ltd., Haywards Heath, Sussex, are making arrangements to be represented in the Twenty-Six Counties.

Apprentices competitions will cost £50,000

THE International Trade Competitions for Apprentices will be held in the College of Technology, Bolton St., Dublin, from July 8 to 13.

Apprentices from the following countries will take part:—Austria, Belgium, Britain, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Portugal, Spain, Switzerland, Ireland, and possibly Denmark. The U.S. is considering sending a team of observers.

The Minister for Education, Dr. Hillery, at a Press conference last month, in the Shelbourne Hotel, Dublin, said that they would like to make the occasion a memorable one for their visitors.

TRADE

TOPICS

Mr. M. Gleeson, C.E.O., said the cost of the competitions would be about £50,000. He paid tribute to employers and the trade unions for all their support, and added that his committee was making a substantial contribution towards the cost.

LINK UP

ALLIED IRONFOUNDERS LTD. and the Universal Asbestos Manufacturing Co. Ltd, announce that they are to have a common range of p.v.c. plastics rainwater and soil goods.

The Metrex p.v.c. soil system was introduced by Allied Ironfounders early last year. U.A.M. have marketed their Aspect system of rainwater goods since the autumn of 1961.

From March 1, 1963, each company will sell both systems, thus bringing about a degree of standardization and interchangeability unique in this field.



*And wish me that
FRY'S Solder...*

He's a regular FRY'S stockist and he knows he's missing sales when he can't supply off the shelf.

FRY'S solders are popular. Customers like them for quick action and superb results. Retailers prefer them for their rapid sales and their certain satisfaction bringing repeat business.

How are your stocks? Why not phone your usual wholesaler now.

FRY'S Metal Foundries Limited

197 Pearse Street, Dublin. Telephone: DUBLIN 74243

And at: LONDON - MANCHESTER - KIDDERMINSTER - GLASGOW

Continued from previous issue.

THE PLUMBER'S HANDS

Protection and prevention

THERE are always new materials to handle for the plumber, and they contain occasionally substances which may injure the skin of hands and forearms. Sometimes it is hard to discover the irritating material. In such cases a patch test is carried out with the material suspected—a procedure which may take time and patience. A small quantity of the suspected material is brought on a healthy part of the skin and left for 24 hours or shorter. If a positive reaction occurs, the skin gets reddened or blisters develop.

Some plumbers may be sensitive to certain materials; they suffer from an inflammation of the hands or fingers when touching them. Other plumbers who handle the same material have no trouble at all. The hand irritation disappears quickly when the sensitive plumber or steam fitter has been shifted to another kind of work where he can avoid the suspicious material.

Infections

Industrial statistics have shown that infections of the hand generally form the major injuries which lead to

By **DR. W. SCHWEISHEIMER**

partial and permanent disabilities. The plumber cannot help to be exposed to small injuries which later may become infected.

Injuries of the hand form the most common type of accidents among plumbers, but serious infections are rare when there is proper medical care immediately after occurrence of the injury. Good first aid treatment consists in immediate application of a sterile dressing, and nothing more.

It has been stressed that an experience-won fact is that, obviously, the best treatment of injuries is prevention of further harm, and this is only attainable as the result of permanent co-operation and the sharing of responsibility by the employer, the employee and the doctor. In more severe infections of the hand the use of the modern chemical sulfa compounds and of penicillin is a remarkable progress in modern therapy.

Pustules

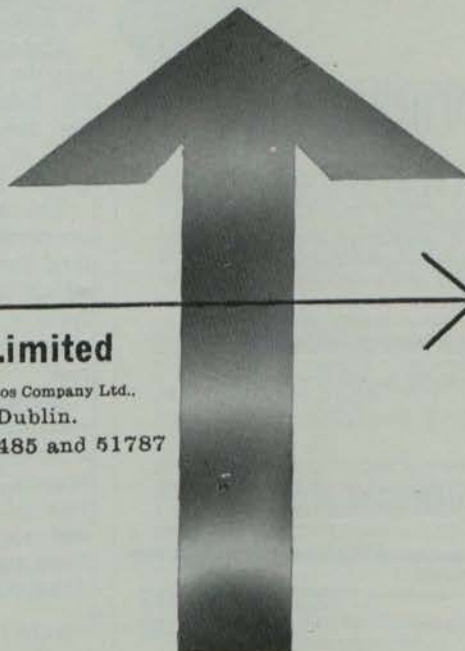
Most pustules on the hands of plumbers and steam fitters are not of

dangerous infectious origin, but simple furuncles, boils. As far back as 1862 a study on special signs of workers' hands was published by Vernois in Paris. He mentioned already the frequency of furuncles, pustules, eczemas, etc., among workers who handle metal.

This inflammation often takes its start from a sebaceous gland in the skin or from a sweat gland or the shaft of a hair. It is usually due to inoculation with a germ. The infections occur mainly on those parts of the skin that are exposed to friction or injury. A furuncle may become very painful.

After a few days the boil is "ripe." The pustule ruptures and its yellowish-white content is extruded or may be removed mechanically. The general condition of a plumber may well predispose to the infection; unhygienic working conditions surely have influence on its growth and frequency. In cases of repeated boils and especially in extended general furunculosis the urine should be tested for sugar, as a diabetic condition favours the predisposition to furuncles. However, even a diabetic plumber, with the help of insulin, retains his full working efficiency and his inclination to furunculosis will disappear under insulin treatment.

Thermal Insulation



M. A. Boylan Limited

A subsidiary of The Cape Asbestos Company Ltd.,
50a Harcourt Street, Dublin.
Telephone: 52397, 54485 and 51787



We are the foremost insulation specialists in the country with many important insulation contracts to our credit. The huge Oil Refinery at Whitegate and the Derrinlough Briquette factory are recent examples. If you have any heat-loss problem, discuss it with our highly experienced technical staff. Our recommendations are offered free and without obligation.

Sole agents and stockists for:

'Rocksil' rock wool

Rigid Sections

Flexible Sections

Blankets

Mattresses (wire-mesh-backed)

Loose Wool

'Caposite' amosite asbestos

moulded blocks and pipe sections

Also full range of plastic materials and hard-setting compositions.

The Irish Plumber and Heating Contractor.

NORTHERN NOTES

Looking forward to heat-wave —Haden director in Belfast

“WE are looking forward to a heat-wave in London early this summer.”

So said Mr. G. Smith, director of Messrs. G. N. Haden & Sons, heating and ventilating engineers, London,

to an audience of consultants, architects and civil engineers in the Midland Hotel, Belfast, last month.

The reason why Mr. Smith hopes for a heat-wave is to enable his company to test the effectiveness of the

air conditioning system which the company installed in one of the tallest buildings in London, the Shell Centre of the Royal Dutch Shell Group.

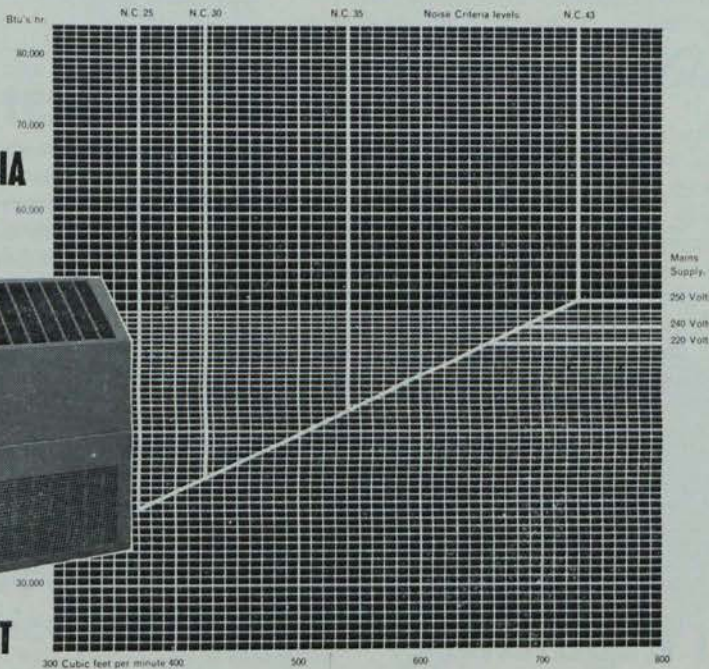
This vast building presented Messrs. Haden with many problems when they designed the mechanical services. Many of the answers to those problems are now common practice, but at the time of designing of the Shell Centre were unique.

The film was made by Mr. M. H. W. Joyce and another executive of Messrs. Haden. Mr. Joyce is now deputy manager of Messrs. Haden's Belfast branch and introduced Mr. Smith.

GUARANTEED NOISE CRITERIA LEVELS



AND THE HEAT REQUIRED!



New Forceflo—with Convectorgraph selection

Only the new Biddle Forceflo Convectors guarantee *low noise criteria levels. Only the trim, compact Forceflos give quiet power—Convectorgraph selected. Each unit has a performance graph showing specific NC ratings relative to air, heat and voltage factors. Even where a heating demand is exceptionally high, a low noise level can be assured by selective planning from a wide range of unit capacities.

FORCEFLO CONVECTORGRAPH SELECTION means all the quiet heat you require—specifically!

Compact centrifugal fan types—28" high by 9" deep free standing models. Complete range of sizes, designs and ancillary equipment. 29,500-62,000 BTU/hr. outputs at 60°F E.A. and 180/160°F water. Rotary switch speed control. Hot water or steam heating medium.

*Tests conducted independently and certificated by a leading Acoustics research company

Technical data is available from any of the addresses below

BIDDLE Quality controlled products

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Hyde Park 0532

TECHNICAL REPRESENTATIVES
D. H. BUTLER, 7 Blackwood Crescent, Helen's Bay, Belfast
Telephone: Helen's Bay 2119
QUADRANT ENGINEERS, 6 Mount Street Crescent, Dublin
Telephone: Dublin 61492

Dublin firm opens first Belfast office

THE WELL-KNOWN Dublin firm of Messrs. Tedcastle, McCormick & Co., Ltd., opened its first Belfast branch at 63 High Street, on March 1, under the management of Mr. George H. Edmonston.

Present at the opening ceremony was the managing director of the firm, Mr. John P. Reihill, junr. His father, Mr. John P. Reihill, senior, is chairman of the firm, which became a private company in 1950.

The Belfast branch has the sole concessionary rights in Northern Ireland for the sale of the Potez heater, which is manufactured in Galway from a French design and which is claimed to cost only 1d. an hour to run.

Mr. Edmonston is available for consultation on the heating problems of a firm or private individual. The branch will be able to supply every type of solid fuel, oil or gas heater and some of the latest examples of these are on display at the attractively-fitted out branch premises.

NORTHERN NOTES continued
on opposite page

NORTHERN NOTES from previous

page

ASPECT SYSTEM INTRODUCED IN THE NORTH

THE ASPECT P.V.C. rainwater system is now available in Northern Ireland. Manufactured by Allied Structural Plastics Ltd., an associate company of the U.A.M. Group, the Aspect rainwater system is to be distributed in the North through John McNeill Ltd. solely, a subsidiary of the McNeill Group (Northern Ireland) Ltd. The system was introduced in Belfast at a conference attended by about 160 architects, local authority officials and builders.

Mr. Patrick Talbot-Smith, Sales Director of the U.A.M. Group (Watford), said that the Aspect system had been launched in England fifteen months ago, and that its sales already equalled those of its competitors in the same field. He attributed this to the fact that Aspect was specially designed to take full advantage of all the material and characteristic benefits of P.V.C.

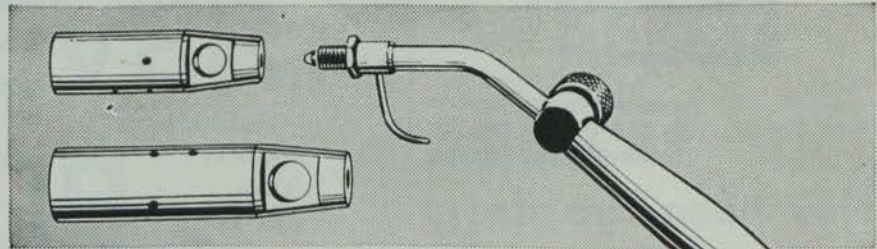
The conference was opened by Mr. W. J. Doran, Sales Director of the McNeill Group, who said that he was confident that plastics would play a big part in the future of the building industry. A practical demonstration of the installation of the Aspect system was given by Mr. M. R. Thomas, Aspect Sales Division, Allied Structural Plastics Ltd., and questions were answered by Mr. Talbot-Smith and Mr. R. B. Benians, a Director of U.A.M. Overseas Ltd.

NEW NAMES

THE FOLLOWING business names have been registered:—

The Central Heating, Plumbing and Electrical Contractors, 157 York St., Belfast. Proprietor: Patrick Doherty, 77 Donagall Park Avenue, Belfast.

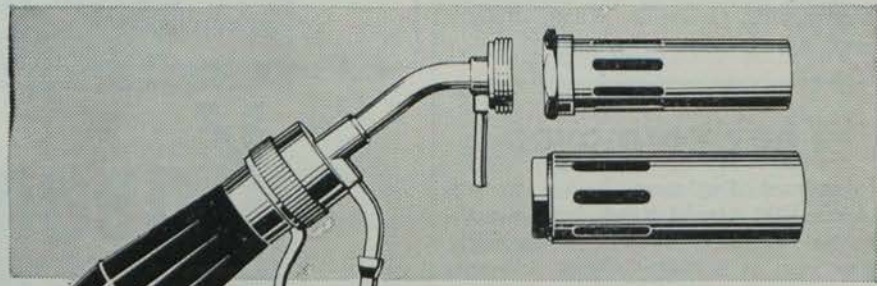
The Home Insulation Co. (to insulate and draught exclude private homes), 10 Mill Street, Newtownards, Co. Down. Partners: John Brett, 10 Mill Street, Newtownards; William McDonald, 32 Culmore Avenue, Newtownards.



(TH3) (TH4) Kosangas High Pressure Blow Torch. Wooden handle. Needle control valve, for gas adjustment. Supplied with large or medium burner heads.

Kosangas Blow Torches

for every plumbing job!



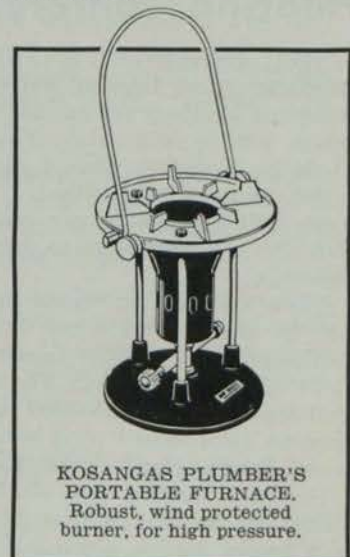
Bullfinch Mark II Blow Torch. New, patented, trigger valve, leak-proof, never needs adjustment. Micrometer bye-pass, saves £££'s on gas. Complete range of burners.

Make full use of the wide range of Kosangas blow torches, available for plumbing work. They're much more efficient than the conventional type.

The Kosangas TH3 and TH4 are designed for paint burning, pre-heating and soldering. The Bullfinch Mark 2 has a wide variety of heads, including soldering attachment. In conjunction with the small portable Kosangas cylinder, use Kosangas blow-torches for:

PAINT BURNING · PRE-HEATING
SOLDERING · ROOF FELTING
JOINTING OF PLASTIC PIPES
ANY OTHER HEATING NEEDS

The Kosangas plumber's portable furnace, with wind protected burner, is excellent for outdoor plumbing and cable work, requiring liquid asphalt, pitch, zinc, lead, tin and other fusible materials.



KOSANGAS PLUMBER'S PORTABLE FURNACE. Robust, wind protected burner, for high pressure.

Send for fully descriptive lists and leaflets to:
McMullans Kosangas Ltd., 1, Upper O'Connell St., Dublin. Tel. Dublin 40761-4.

TRADE

TOPICS

New open fire has powerful back boiler

IDEAL-STANDARD Limited have introduced a new open fire with a high powered back boiler. Called the "Titan" Fire, it will heat a living-room, warm other rooms with radiators, and provide hot water.

The "Titan" Fire's back boiler supports up to 80 square feet of radiator surface (including piping). Alternatively the "Titan" Fire will heat up to 40 square feet of radiator surface (including piping), e.g., 2 or 3 radiators and a generous hot water supply from an "Ideal" 25/30 gallon indirect cylinder.

Irish agent: E. J. Cocker, Esq., Stonegate, Granville Road, Blackrock, Co. Dublin.

They've moved

Quadrant Engineers have a new address—167 Strand Road, Sandymount, Dublin (Phone 693940/3). Formerly they were at 6 Mount Street Crescent, Dublin.

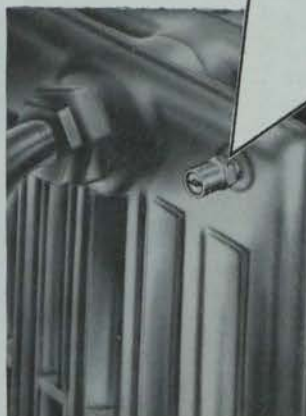
Heating conference

THE HEATING CENTRE, 34 Mortimer Street, London, W.1, is now accepting bookings for its conference, which will be held at the Piccadilly Hotel on April 29, when a panel of noted speakers will attend. Delegates will be able to put questions and also give expression to their own opinions.

More attention to home heating will be given at the third HEVAC Exhibition to be held from April 15-24, 1964, at Olympia. The Grand Hall there has been booked, the two previous exhibitions having been held in the Empire Hall, a smaller venue.

The home heating side of the exhibition is expected to be in the form of a special section which will make a direct appeal to the public and local installers.

THE MIL AIR ELIMINATOR REMOVES AIR FROM HOT WATER SYSTEMS

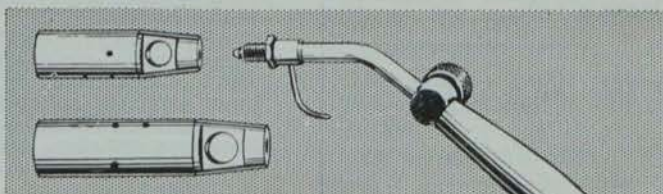


The removal of air from hot water heating systems, either by installing air vent pipes or fitting mechanically-operated automatic air eliminators, can be a costly job. The MIL air eliminator does this work very well at small cost and is suitable for low pressure hot water systems up to 80ft. head.

MIDLAND INDUSTRIES LIMITED
HEATH TOWN WORKS, WOLVERHAMPTON, Tel. 23901

Kosangas Blow-Torches

for every plumbing job!



There's a wide range of Kosangas blow-torches, for all types of plumbing work. They're far more efficient than the conventional types.

The Kosangas TH3 and TH4 high pressure blow-torches are specially designed for *paint-burning, pre-heating and soldering*.





The Bullfinch Mark II has a full range of heads, including soldering attachment. Use Kosangas blow-torches, with the small Kosangas portable cylinder, also for *roof-felting, jointing of plastic pipes, and other heating needs*.

A plumber's portable furnace with wind protected burner is available.

Send for details to: McMullans Kosangas Ltd., 1 Upper O'Connell St., Dublin. Tel: Dublin 40761-4.

WHATEVER THE JOB...

Boilers	Pipes	Tanks	Ducting
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Fibreglass Flexible insulation	Fibreglass rigid sections	Fibreglass Crown 200	Fibreglass Filmed insulation
			

there's a special
FIBREGLASS INSULATION
that's made for it

Fibreglass has a very high insulation value. It is simple to handle, fire-safe, vermin and rot-proof. You can get these forms of insulation delivered in the quantities you want when you want them. The sole distributors of Fibreglass heat insulation products in the Republic of Ireland are

Monsell Mitchell & Co. Ltd., 67/73 Townsend St., Dublin, 2

**Fibreglass
Limited**

21 MERRION SQUARE DUBLIN

from page nine

DOMESTIC WATER SUPPLY: PIPES

and thus reduces its diameter. This process is repeated, using a smaller die each time, until a tube of the required diameter and wall thickness, or gauge, is obtained.

Examined

THE finished tubes are carefully examined, straightened if necessary, and tested for bore truth by passing steel balls through the tubes. They are then cut to random lengths of 18 to 20 feet, bundled, and stacked for delivery.

It is interesting to notice how this cold working affects the physical properties of the copper and causes it to become work hardened. You will remember that work hardening increases the tensile strength of a material but reduces its ductility or "stretchability." During the cold drawing process the part-worked tubes are annealed or restored to a soft state by the application of heat. Light gauge copper tubes are finished in $\frac{1}{2}$ Hard Temper.

Light gauge copper tubes well-known property of rigidity is developed during the carefully controlled process of manufacture. The final cold draws are allowed to impart the right degree of hardness to give the tube rigidity and improve its strength.

Copper tubes to be buried underground are generally accepted for water services if they comply with the requirements of B.S. 1386.

These tubes are made by the same drawing process as L.G. copper tubes, but longer drawbenches are used so that tubes of up to 120 feet in length can be drawn.

"Soft" temper

FOR underground water services B.S. 1386 copper tube is used in

Continued overleaf

"soft" temper, and one of the final processes of manufacture is the annealing process. The tube is supplied in 60 or 120 feet coils which are easily manipulated and make possible quick installation, with a minimum number of joints below ground.

The outside diameters of B.S. 1386 and B.S. 659 copper tubes are the same, so that standard copper tube fittings can be used with either. You may have noticed some slight variation in the inside diameters of these

from previous page

Domestic Water Supply: Pipes

tubes. The B.S. 1386 has a bore of exactly half an inch, whereas the B.S. 659 tube bore is slightly larger. The wall thickness, or gauge of the soft B.S. 1386, is accordingly greater than that of the "half hard" B.S. 659 tube, and this extra thickness makes the burst resistant strength of the two comparable.

Mild steel tube is generally included in the list of materials suitable for water services, but it does not find universal favour with water supply engineers for use in cold water services. It is sometimes used, where the water authority permits, because it is said to be cheaper than copper or lead, but careful comparison of the cost of labour and material will show that in any sizeable installation mild steel tube is no cheaper, and is indeed often more expensive, than other materials.

The durability of mild steel is not equal to that of copper or lead, and the Bye-Laws insist that every mild steel tube, and every fitting used in its jointing, shall be protected against corrosion. Generally, galvanised tubes and fittings are adopted to comply with this requirement.

Used extensively

MILD steel tubes are extensively used in the domestic hot water services where rigidity and mechanical strength are an advantage. Where used for water services, whether hot or cold, mild steel tubes must comply with B.S. 1387 and be of what is known as medium quality grade. Where used for underground cold water services, tubes to the same B.S. must be of heavy quality.

M.S. tubes are manufactured from strips or ribbons of mild steel bar

heated and shaped on the tube-making machine. The strip edges are prepared and butted, and sometimes lapped, for the automatic seam welding operation. The process is continuous and all operations, from heating the strip to cutting the final tube to length, are done automatically by the tube-making machine.

Polythene Tubes.—The material has low mechanical strength. It has a high co-efficient of expansion. It does tend to "creep," and in conse-

quence its fixing requires extreme care. It is a non-conductor of electricity and cannot be used as an earth for electrical appliances as the metal water service pipes which rise from the earth usually are.

However, polythene has many advantages, apart from its resistance to corrosion, which make it very suitable for the purposes already mentioned; it is also used for waste pipes from laboratory sinks, and it becomes more and more popular for this purpose.

Elastic

POLYTHENE is extremely elastic and it is a poor conductor of heat. These two properties make it resistant to frost bursts, because the tube does not lose heat as quickly as does a metal pipe, and therefore freezing is delayed; and because, if freezing does occur, the pipe will stretch, without bursting, to accommodate the expansion of the frozen water. When the ice thaws, the elasticity of the tube makes it possible for it to resume its normal bore and shape.

It is light (S.G.O.9) and can be obtained in coiled lengths of up to 500 feet. This, together with its resistance to frost burst, makes it very suitable for installation in isolated farm buildings or cattle troughs by mole plough.

A mole plough is a device which bores a tunnel under the ground, through which polythene and B.S. 1386 copper tubes can be drawn, thus saving the time and cost of digging pipe trenches.

The plough has a vertical blade which slices through the ground, and

at the bottom of this blade is fixed a pointed cylindrical "mole" which bores the tunnel.

A start

A STARTING hole is dug, and the plough blade, adjusted to bore at the required depth, is lowered into the hole. The plough, which travels on its own wheels, is then coupled to a farm tractor; the tube to be laid

is attached to the mole, and as the plough is pulled along the mole bores the tunnel, drawing the tube after it.

Intermediate holes have to be dug according to the length of the tube, to allow another tube to be connected to the mole and to make sure that the couplings of the tube are watertight.

Warning.—Unless you wish to see your newly laid polythene tube disappearing back into its hole like some frightened worm, you will make allowance for the fact that it is stretched by the "drag" imposed by long pulls. An allowance of nine inches at the end of each length is not too much to allow for the tube's contraction.

Polythene is manufactured from ethylene gas, which is obtained from coal or crude petroleum oils. Heat and pressure are applied to the gas, bringing about a physical change, and raw polythene is produced. This is then granulated into small chips, and melted in a hydraulic press. The molten material is extruded in the form of pipe. Polythene tube is available in two wall thicknesses or gauges for water services. Its light weight means that it can be made in easily transportable coils, up to 500 feet in length.

NEXT MONTH

A. L. TOWNSEND

WILL CONTINUE TO

DISCUSS WATER SUPPLY

NEXT MONTH

1963 DIRECTORY

of MANUFACTURERS AGENTS, REPRESENTATIVES and DISTRIBUTORS

★ The June 1963 Register of Manufacturers, Agents, Representatives and Distributors of Plumbing, Heating, Air Conditioning, Ventilation and Insulation materials and equipment available in the Republic of Ireland and Northern Ireland is now being prepared. The Directory this year will be greatly enlarged to accommodate the considerable number of additional entries which have been submitted for inclusion.

If you come under the heading of any of the categories listed in this, or the last two issues, we would ask you to submit complete details without delay. The fourth and final list will be published in our April issue. **A limited number of copies of last year's Directory are available should you wish to make alterations or amendments.** Names and addresses of Agents and/or Representatives should be included with all entries. If you require an agent, please indicate accordingly.

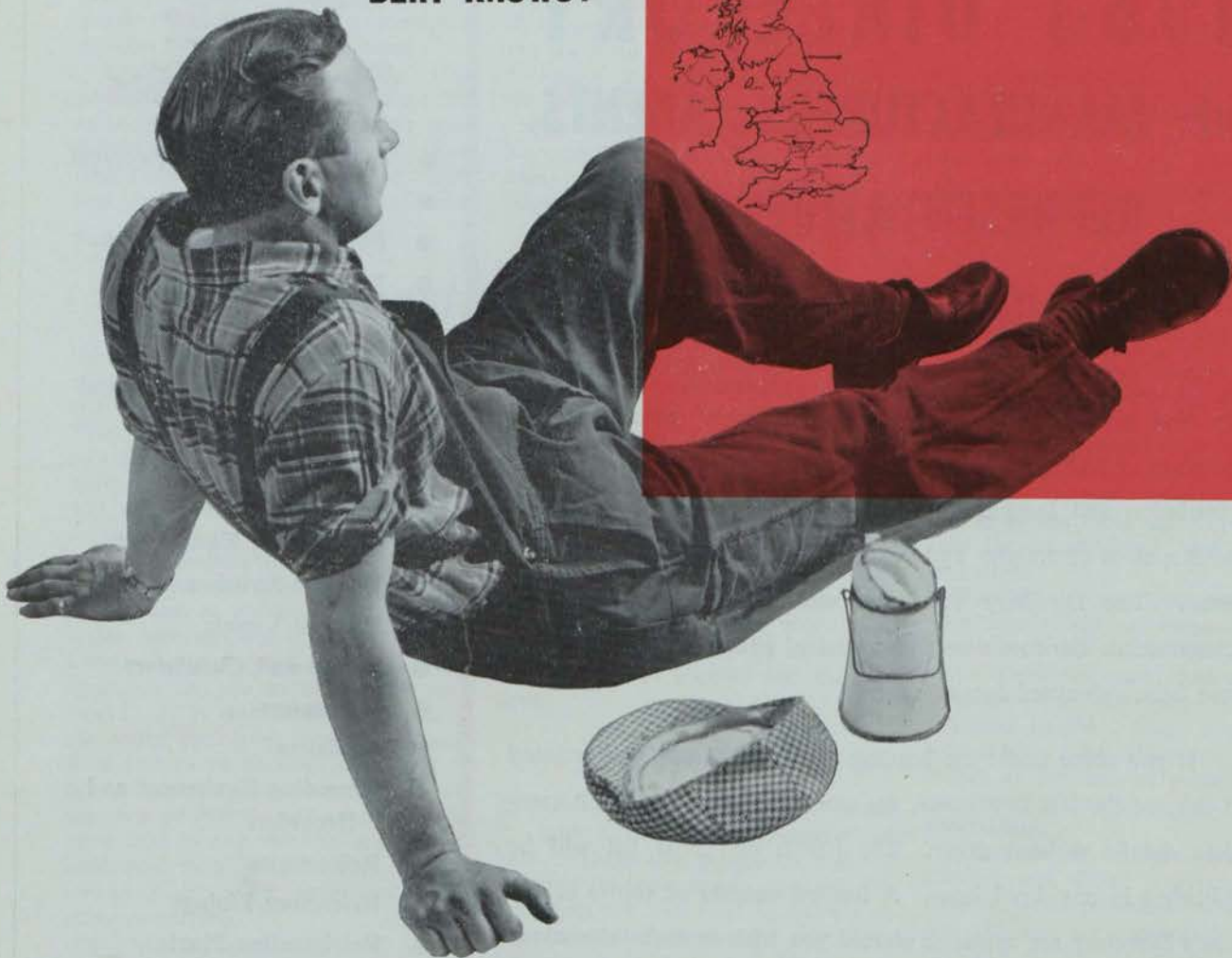
Please Note!!

CLOSING DATE
Saturday, 4th May, 1963

Please Check This List Of Categories

- Liquid Handling Equipment
- Lubricators
- Pipe Bending Equipment
- Pipes, Tubes and Pipe Fittings
- Pipes and Tubes, Plastic
- Pipes and Tubes, Soil and Drain
- Pressure Booster Sets
- Pressure Controllers
- Pressurising Equipment
- Pressure Switches
- Pressure Vessels
- Pumps and Circulators
- Pyrometers
- Radiators
- Recording Equipment and Recorders
- Refractories
- Refractory Linings
- Refrigeration Plant
- Regulators
- Roofing Copper
- Roof Drains, Waterheads, Cutters and Outlets
- Roof Units (Ventilation)
- Rustproofing
- Sealing Compounds
- Sewage Disposal
- Sight Glasses
- Silencers
- Steam Traps
- Stokers
- Tanks and Cylinders
- Taps, Mixers and Shower Units

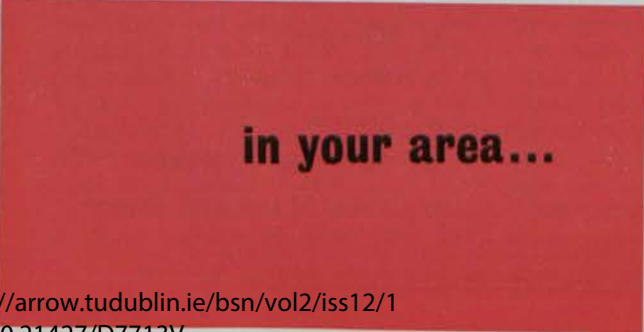
**BERT SAYS
OBC COVER THE COUNTRY
BERT KNOWS!**



It's everywhere! — and I say "Thank goodness." Means you can always get anything — nozzle, radiator, boiler—anything—practically by return. Bert says you can leave the rest of the crowd standing if you go to O.B.C. Simple too. Only one invoice. And by the way, they run a Mail Order service too. Did you know? You can get small parts by return generally. Means a lot on some of the jobs we handle. Haven't you got a copy of the new illustrated O.B.C. Catalogue? Mustn't be without **that**. Send for one now.



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Largest Heating Equipment Merchants
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| NEWCASTLE
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| MANCHESTER
Phone: Oldham Main 9488/9/90. | CARDIFF
Phone: 28613/4/5. |
| DROITWICH, Worcs. (Head Office and Works)
Phone: 2551 (10 lines). | |