



Al-Amal Company For Plastic Pipes & Fittings

(AL-SHARIF)

UPVC NON PRESSURE PIPES SYSTEM (METRIC & INCH)



INTRODUCTION

AL-AMAL Company for Plastic Pipes and Fittings (AL-SHARIF) was formed in 1995 with the aim of developing a professional UPVC/CPVC/HDPE/PP-R/PP-H pipes and fittings industry.

Since the company has bought AL-AMAL's plastic pipes factories with their well known and trusted brand name and sign, AL-AMAL Co. is considered one of the largest leading companies in the plastic pipes and fittings field in the Middle East.

Since its foundation, AL-AMAL has a steady growth with high quality standards to fulfill the requirements of its customers specially for UPVC/ CPVC/HDPE/PP-R/PP-H pipes with more than 42000 Tons per year, Fittings with more than 8000 Tons per year, and it already started in 1st. September 2008 production of PP-R with capacity more than 3000 Tons pipes per year, and 1200 Tons of fittings per year, AL-AMAL's Pipes and Fittings are produced according to DIN, BS, ASTM, ISO and Egyptian standards demand.

There is also the facility of manufacturing products with special specifications according to customer requirements.

As AL-AMAL's target is to become the major producer in the field of plastic pipes and fittings, a strategic program has been carried out to improve the quality standards and increase the quality and variation of production by having its plant in the 10th of Ramadan City, equipped with new injection moulding machines and new moulds with advanced automated tooling and up-to date know how which permit high capacity of pipes and fittings with exceptionally high consistency in terms of dimensional accuracy, mechanical strength and surface finish.

AL-AMAL UPVC/CPVC/PP-R/HDPE/PP-H Pipes (AL-SHARIF) are well accepted and widely used in domestic water system, warming, cooling, all types of industrial process pipe works, water distribution and water treatment as well as irrigation systems.

A new range for the production of all systems required for AL-AMAL's customers has been taken into consideration in its near expanding plans.

The most highly advantage is the well equipped laboratory which is established according to the best international standards to control raw materials, final products and also for the research which is one of the important targets of AL-AMAL to update and develop its products.

Customers can depends completely on AL-AMAL and consider it their partner in the business.

UPVC DRAINAGE AND SEWAGE SYSTEMS PIPES AND FITTINGS

TECHNICAL DATA

PIPES DIMENSIONS

FITTINGS DIMENSIONS

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UPVC

FITTINGS PRODUCTS



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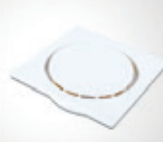
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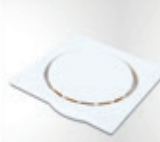
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THE ADVANTAGES OF UPVC PIPES SYSTEM

The group of materials known as unplasticized PVC is one of the most important developments of the last few decades as it reduces the cost and improves the reliability of pipeline installations. The properties can be varied by small additions of modifying agents which have definite and controlled mechanical properties. They can be fabricated to close dimensional tolerances, light without being weak. . Rigid without being brittle.

Furthermore, these materials can be converted into pipes and fittings by vary direct processes of extrusion or injection moulding even though these processes demand heavy elaborate machinery and very precise process.

The principal reason for the great economy of AL SHARIF pipes is not. So much their cost per meter as delivered to site but rather the dramatic reduction in installation costs which can be achieved by intelligent exploitation of their light weight. Higher availability in longer lengths. Their easy of jointing and their immunity from corrosion. These characteristics are of even greater importance to engineers now that the need to carry out water supply and sewerage schemes. Industrial plant installation . etc. at minimum cost and maximum reliability.

NON – CORROSION

UPVC pipes resist corrosion caused by acid, alkalis, Salts, oils, moisture and the media inside and outside the pipe.

NON – TOXIC

UPVC pipes are entirely non-toxic. It will not affect the taste, Smell or colour of water or liquid nor react with any liquid to cause precipitation.

LOW FLOW LOSSES

UPVC pipes have a mirror – smooth surface which minimize resistance and impede the build – up of deposits and corrosive scales.

MECHANICAL STRENGTH

UPVC pipes have great tensile strength yet they are flexible enough to with stand displacements in the pipe line. They will not dent or flatten under pressure.

LIGHT WEIGHT

UPVC pipes are incredibly light. Their specific weight is one fifth of steel pipe this cuts down transportation costs and facilitates the installation of pipe and reduces its cost.

EASY OF INSTALLATION

UPVC pipes are quick and easy to install, with a complete range of fittings using solvent cement or rubber joints are leakproof UPVC pipes can be cut easily for installation.

EASY OF MAINTENANCE

UPVC pipes can be quickly repaired with a minimum of complication or cost.

FIRE PROOF

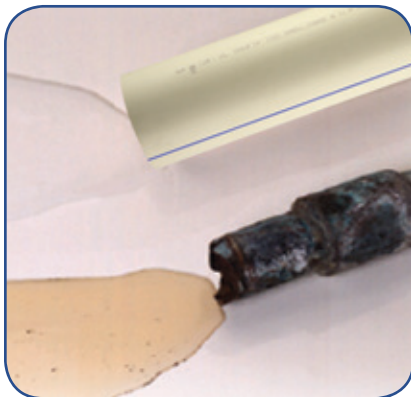
UPVC pipes will not support combustion. In the event of fire, flames are unable to travel along the pipe. It is self extinguishing.

INSULATOR

UPVC pipes are ideal for electric conduits. Because UPVC itself is an integral insulator, it eliminates the possibility of electrolytic corrosion which so often destroys underground piping.

PROVEN EXPERIENCE

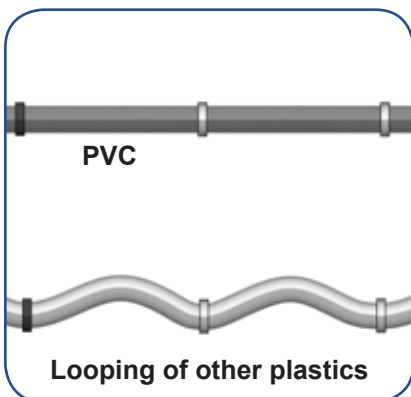
UPVC pipes have been used worldwide for 45 years in all climates. The experience of its many users have proved it is supreme quality, economy ease of installation, and its non – corrosive qualities.



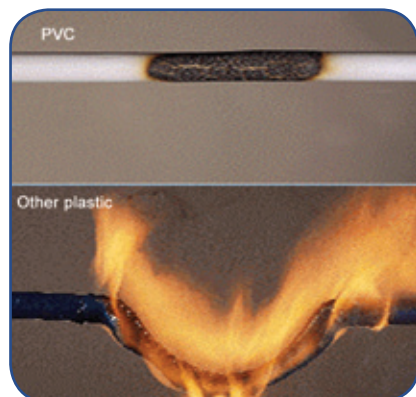
Resist scale build-up and corrosion



Ease of installation



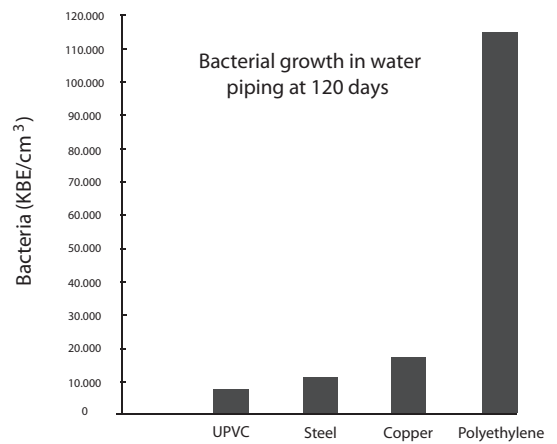
Looping of other plastics



THE ADVANTAGES OF UPVC PIPES SYSTEM

LOW BACTERIA BUILD UP

UPVC piping supports the lowest bacterial growth compared with traditional piping materials

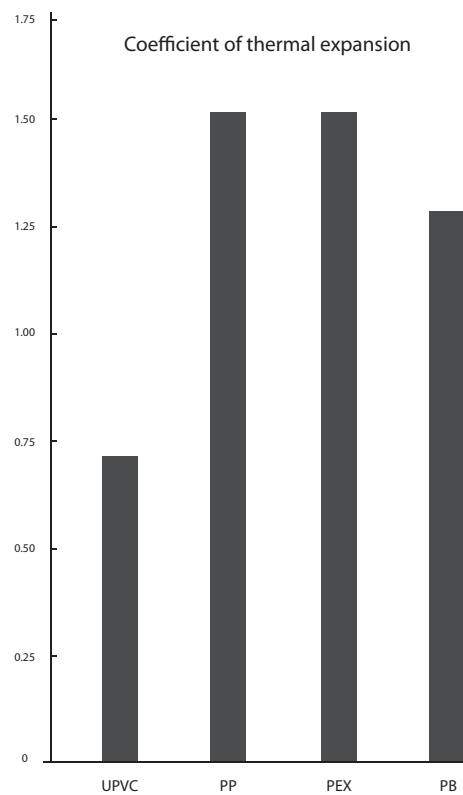


LOWER THERMAL EXPANSION COEFFICIENT

Less expansion of pipe when hot water runs

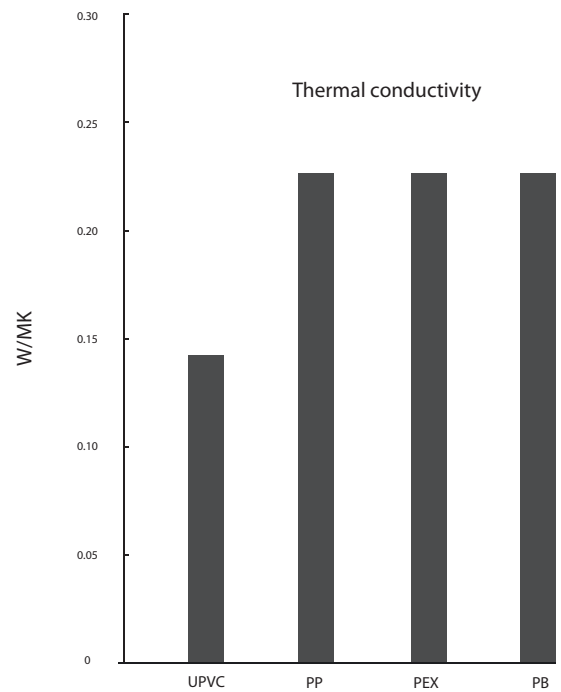


Less need for expansion loops, less “looping”



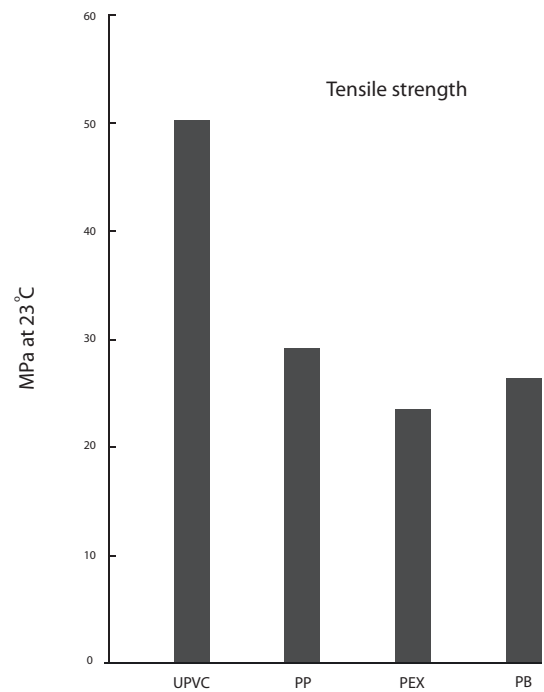
LOWER THERMAL CONDUCTIVITY

Reduced heat losses

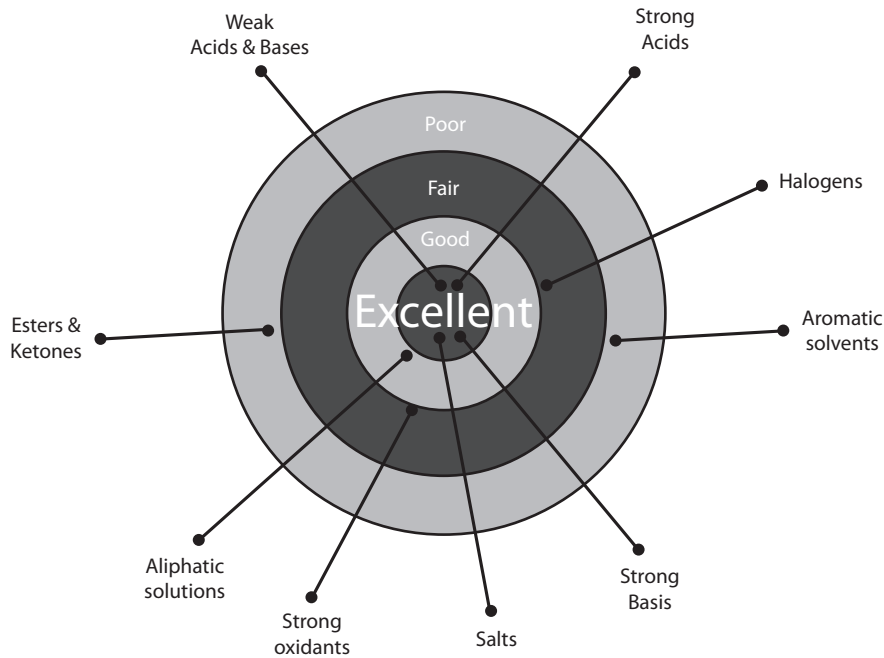


TOUGH, RIGID MATERIAL

UPVC has a much higher strength/modulus than other thermoplastics used in plumbing applications



PVC EXCELLENT CHEMICAL RESISTANCE



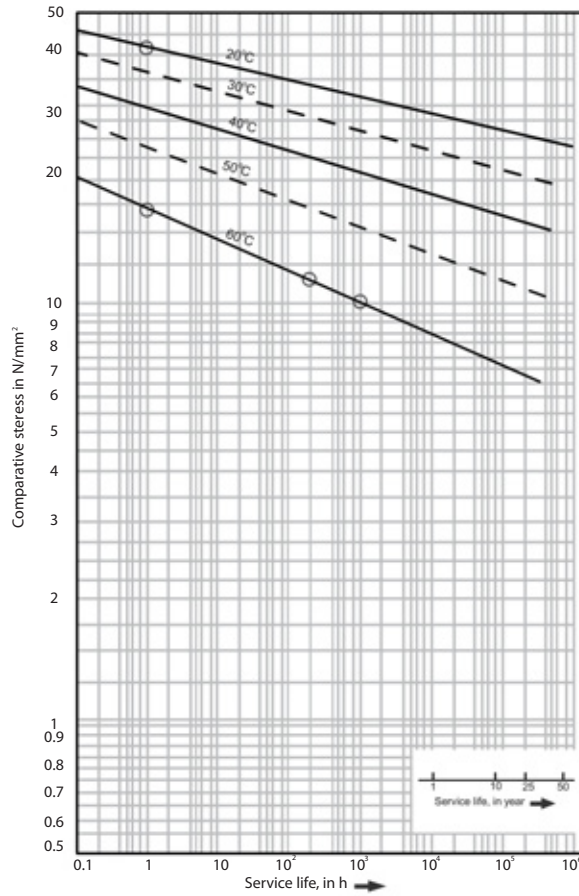
PROPERTY COMPARISONS OF THERMOPLASTIC PIPE

	UPVC	PPR	PEX	PB	CU
Tensile strength (MPa At 23 °C)	50	30	25	27	>300
Coefficient of thermal expansion ($\times 10^{-4} K^{-1}$)	0.7	1.5	1.5	1.3	0.2
Thermal conductivity (W/MK)	0.14	0.22	0.22	0.22	>400
LOI	45	18	17	18	
Oxygen Permeation ($cm^3/m.day.atm$) (at 70°C)	(not available) similar to CPVC	(not available) similar to PB-PEX	13	16	(not available) insignificant

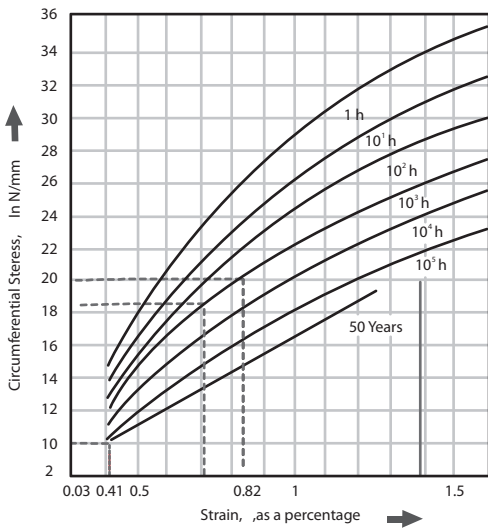
UPVC PIPES & FITTINGS DIAGRAMS

Behaviour of UPVC pipes under long-term stressing

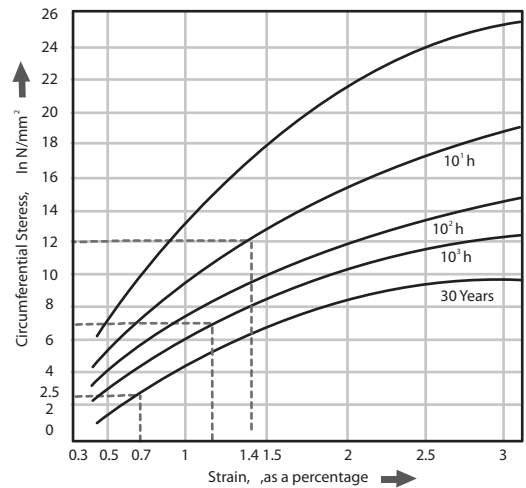
PIPES



FITTINGS



Stress-strain diagram for UPVC at 20°C

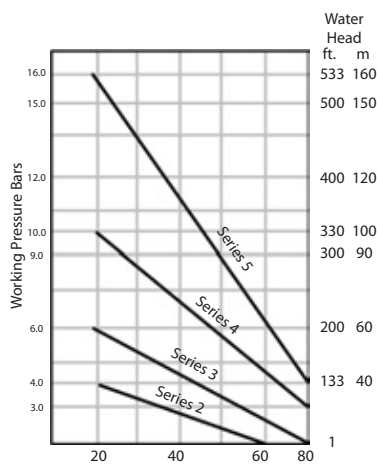


Stress-strain diagram for UPVC at 60°C

When UPVC pressure pipe operates at temperature other than the temperature at which the pipe is rated (20° - OR 23°C) pressure rating should be established on thermal design factors.

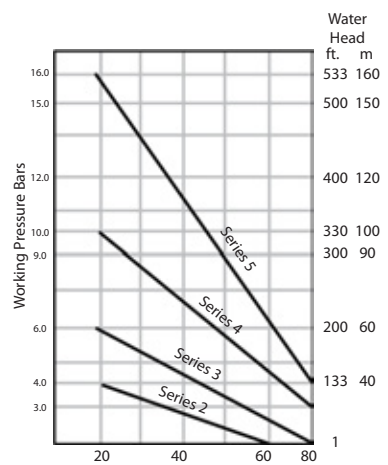
EXAMPLES GIVEN BELOW ARE FOR GUIDANCE ONLY.

PRESSURE TEMP. RELATIONSHIP
Ambient Variable Internal Temp. 20°



AMBIENT TEMPERATURE OF 40°C
required working pressure of 6.5 bars
use a 10 bar rated pipe

PRESSURE TEMP. RELATIONSHIP
Internal Variable Ambient Temp. 20°



Required Working pressure of 7.0 bars
use with a liquid temperature of 40°C
therefore a 10 bar rated pipe to be used.

MATERIAL PROPERTIES

MATERIAL

Unplasticized Polyvinyl Chloride (UPVC)

General Properties	UPVC VALUE	UNITS
Density	1.38	g/cm ³
Water absorption	<4	mg/cm ²
Flammability	Self extinguishing	
Mechanical Properties		
Ultimate Tensile Strength	492	Kg/cm ²
Compressive Strength	668	Kg/cm ²
Flexural Strength	950	Kg/cm ²
Modulus of Elasticity	2.7x10 ⁴	Kg/cm ²
Impact Strength (Charpy)	No Break > 10%	
Shore Hardness (Rockwell)	115	R
Thermal Properties		
Softening Point		
v.s.t. 5 Kg	Pipes ≥79°	Fittings ≥ 76°
		°c
Max. Operating temperature	60	°c
Coefficient of Thermal Expansion	3.0 x 10 ⁻⁵	In/In/°F
Specific Heat	0.25	Cal/g . °c
Thermal Conductivity	0.13	Kcal/m.h. °c
Electrical Properties		
Volume Resistivity	>10 ¹⁴	Ohm.cm
Surface Resistance	>10 ¹²	Ohm
Dielectric Strength	>40	Kv/mm
Power Factor (at 10 ⁶ cycle)	3.3	

UPVC are non-conductor of electricity and are not subjected to galvanic or electrolytic attack.

Note: All the above-mentioned values at 20°C.

UPVC CHEMICAL RESISTANCE

R: Recommended For use NR: Not Recommended #: Not Available * : Check with factory

Chemicals	UPVC		Chemicals	UPVC		Chemicals	UPVC	
	23°C	60°C		23°C	60°C		23°C	60°C
A.cetaldehyde	NR	NR	Antimony trichloride	R	R	Caprylic acid	#	#
Acetamide	#	#	Aqua regia	*	NR	Carbon dioxide.wet	R	R
A Acetic acid10%	R	R	Aromatic hydrocarbons	NR	NR	Carbon dioxide dry	R	R
Acetic acid20%	R	R	Arsenic acid	R	R	Carbon disulphide	NR	NR
Acetic acid50%	R	*	Aryl sulphoic acid	R	R	Carbon monoxide	R	R
Acetic acid80%	R	*	B Barium carbonate	R	R	Carbon tetrachloride	NR	NR
Acetic acid glacial	*	NR	Barium chloride	R	R	Carbonic acid	R	R
Acetic anhydride	NR	NR	Barium hydroxide	R	R	Caster oil	R	R
Acetone	NR	NR	Barium nitrate	R	#	Caustic potash	R	R
Acetophenone	NR	NR	Barium sulphate	R	R	Cellosolve	R	NR
Acetyl Chloride	#	#	Barium sulphide	R	R	Cellosolve acetate	R	#
Acetylene	*	*	Butyl phenol	R	NR	Cellosolve acetate	R	#
Acetyl Nitrile	NR	NR	Butyl stearate	R	#	Chloracetic acid	R	NR
Acrylic acid Ethyl ester	NR	NR	Butyne diol	R	NR	Chlorine gas wet	NR	NR
Acrylonitrile	NR	NR	Butyric acid	R	NR	Chlorine (Liq)	NR	NR
Adipic 105 acid	R	R	Butane	R	R	Chlorine water (Sat.)	R	R
Allyl alcohol	*	*	Beer	R	R	Chloracetic acid	R	NR
Amyl alcohol	NR	NR	Beer sugar liquors	R	R	Chloroacetyl chloride	R	#
Alcohol Benzyl	NR	NR	Benzaldehyde	NR	NR	Chlorobenzene	NR	NR
Alcohol 1 ry Butyl	R	R	Benzalkonium chloride	NR	NR	Chlorobenzyl chloride	NR	NR
Alcohol 2ry Butyl	R	NR	Benzene	NR	NR	Chloroform	NR	NR
Alcohol diacetone	#	#	Benzene. benzol	NR	NR	Chloropicrin	NR	NR
Alcohol Ethyl	R	R	Benzene sulphonic acid	NR	NR	Chlorosulphonic acid	R	NR
Alcohol Hexyl	R	R	Benzoic acid	R	R	Chromic acid 10%	R	R
Alcohol Isopropyl	R	R	Bismuth carbonate	R	R	Chromic acid 30%	R	*
Alcohol Methyl	R	R	Black liquor	R	R	Chromic acid 40%	R	*
Alcohol Propargyl	R	R	Bleach household	R	R	Chromic acid 50%	NR	NR
Alcohol Propyl	R	R	Bleach 12.5%active Cl2	R	R	Chromium nitrate	#	#
Allyl chloride	NR	NR	Bleach 5.5%active Cl2	R	R	Citric acid	R	R
Alum	R	R	Borax	R	R	Citric acid 10%	#	#
Alum Ammonium	R	R	Boric acid	R	R	Coconut oil	R	R
Alum. Chrome	R	R	Brine acid (sat.)	#	#	Coke oven gas	NR	NR
Alum. Potassium	R	R	Brine acid	R	#	Copper carbonate	R	R
Aluminum chloride	R	R	Bromic acid	R	R	Copper chloride	R	R
Aluminum Fluoride	R	NR	Bromine (Liq.)	NR	NR	Copper cyanide	R	R
Aluminum hydroxide	R	R	Bromine (vap. 25%)	R	R	Copper fluoride	R	R
Aluminum nitrite	R	R	Bromine water	R	R	Copper nitrate	R	R
Aluminum oxychloride	R	R	Bromobenzene	NR	NR	Copper sulphate	R	R
Aluminum Sulfate	R	R	Bromotoluene	NR	NR	Corn oil	*	*
Ammonia gas	R	R	Butadiene	R	R	Corn syrup	*	*
Ammonia (Aq. 10%)	R	NR	Butylacetate	NR	NR	Cotton seed oil	R	R
Ammonia Liq.	NR	NR	Butyl alcohol	R	R	Cresol	NR	NR
Ammonium acetate	R	R	Butyl Cellosolve	R	#	Cresylic acid 50%	R	R
Ammonium benzoate	#	#	Butyl phthalate	NR	NR	Croton aldehyde	NR	NR
Ammonium bifluoride	R	R	Butylene	NR	NR	Crude oil	R	*
Ammonium bisulphide	R	R	C Cadmium acetate	#	#	Cupric fluoride	R	R
Ammonium carbonate	R	R	Chloral hydrate	R	R	Cupric sulphate	R	R
Ammonium chloride	R	R	Chloramines	R	#	Cuprous chloride	R	R
Ammonium citrate	#	#	Chloric acid 20%	R	R	Cyclohexane	NR	NR
Ammonium dichromate	R	#	Chlorinated solvents	NR	NR	Cyclohexanol	NR	NR
Ammonium fluoride 10%	R	R	Chlorine Gas Dry	NR	NR	Cyclohexanone	NR	NR
Ammonium fluoride 25%	R	*	Cadmium chloride	#	#	D Desocyphehdrine hydrochloride	R	R
Ammonium hydroxide	R	*	Cadmium cyanide	R	R	Detergents	R	R
Ammonium metaphosphate	R	R	Cadmium sulphate	#	#	Detergent solution(Heavy duty)	R	R
A.rnrnorlium nitrate	R	R	Caffeine citrate	R	R	Dextrin	R	R
Ammonium persulphate	R	R	Calcium acetate	#	#	Dextrose	R	R
Ammonium phosphate	R	R	Calcium bisulphide	#	#	Diazo salts	R	R
Ammonium sulphamate	#	#	Calcium bisulphate	R	R	Dibutoxy ethyl phthalate	NR	NR
Ammonium sulphate	R	R	Calcium carbonate	R	R	Dibutyl phthalate	NR	NR
Ammonium Sulphide	R	#	Calcium chlorate	R	R	Dibutyl sebacate	R	NR
Ammonium thiocyanate	R	R	Calcium chloride	R	R	Dichlorobenzene	NR	NR
Ammonium tartrate	#	#	Calcium hydroxide	R	R	Dichloroethylene	NR	NR
Amyl acetate	NR	NR	Calcium hypochlorite	R	R	Diesel fuels	*	NR
Amyl chloride	NR	NR	Calcium nitrate	R	R	Diethylamine	NR	NR
Aniline	NR	NR	Calcium Oxide	R	R	Diethyl cellosolve	#	#
Aniline chlorohydrate	NR	NR	Calcium sulphate	R	R	Diethyl ether	R	#
Aniline hydrochloride	NR	NR	Camphor crystals	R	#	Diglycolic acid	R	R
Anthraquinone	R	R	Cane sugar liquors	R	R	Dimethylamine	R	R
Anthraquinone sulfonic acid	R	R	Carbitol	R	#	Dimethyl formamide	NR	NR

R: Recommended For use NR: Not Recommended #: Not Available * : Check with factory

Chemicals	UPVC		Chemicals	UPVC		Chemicals	UPVC	
	23°C	60°C		23°C	60°C		23°C	60°C
Dimethyl hydrazine	NR	NR	Hydrobromic acid 50%	R	R	Mercurous nitrate	R	R
Dioctyl phthalate	NR	NR	Hydrobromic acid 18%	R	*	Mercury	R	R
Dioxane	NR	NR	Hydrobromic acid conc20%	R	*	Methane	R	R
Dioxane .1,4	NR	NR	Hydrocyanic acid	R	R	Methanol	*	NR
Disodium phosphate	R	R	Hydrobromic acid 10%	R	R	Methylene chlorobromide	NR	NR
Dis. Water	R	R	Hydrofluoric acid dil.	R	NR	Methoxyethyl oleate	R	#
Divinylbenzene	NR	NR	Hydrofluoric acid 30%	R	NR	Methyl amine	NR	NR
E Epsom salt	R	#	Hydrofluoric acid 40%	R	NR	Methyl bromide	NR	NR
E Esters	NR	NR	Hydrofluoric acid 50%	R	NR	Methyl cellosolve	NR	NR
E Ethanol	#	#	Hydrofluosilicic acid	R	R	Methyl chloride	NR	NR
E Ethers	NR	NR	Hydrogen	R	R	Methyl chloroform	NR	NR
E Ethyl acetate	NR	NR	Hydrogen cyanide	R	NR	Methyl ethyl ketone	NR	NR
E Ethyl acetoacetate	NR	NR	Hydrogen fluoride.anhyd	NR	NR	Methyl isobutyl ketone	NR	NR
E Ethyl acrylate	NR	NR	Hydrogen peroxide 30%	R	#	Methyl methacrylate	R	#
E Ethyl chloride	NR	NR	Hydrogen peroxide 50%	R	R	Methyl sulphate	R	*
E Ethyl chloroacetate	NR	NR	Hydrogen peroxide 90%	*	*	Methyl sulphuric acid	R	R
E Ethyl ether	NR	NR	Hydrogen phosphide	R	R	Methylene bromide	NR	NR
E Ethylene bromide	NR	NR	Hydrogen sulphide, dry	R	R	Methylene chloride	NR	NR
E Ethylene chloride	NR	NR	Hydrogen sulphide(aq. Sol.n)	R	R	Methylene iodine	NR	NR
E Ethylene chlorohydrin	NR	NR	Hydroquinone	R	R	Methyl isobutyl carbinol	#	#
E Ethylene diamine	#	#	Hydroxylamine sulphate	R	R	Milk	R	R
E Ethylene dichloride	NR	NR	Hypochlorous acid	R	R	Mineral oil	R	R
E Ethylene glycol	R	*	Hydrazine	NR	NR	Molasses	R	R
E Ethylene oxide	NR	NR	I Iodine	NR	NR	Monoethanol amine	NR	NR
F Fatty acid	R	R	I Iodine solution 10%	NR	NR	Motor oil	R	R
F Ferric acetate	R	NR	Isopropanol	*	*	N Naphtha	R	R
F Ferric chloride	R	R	Isopropyl ether	NR	NR	Naphthalene	NR	NR
F Ferric hydroxide	R	R	Isodane	#	#	Natural gas	R	R
F Ferric nitrate	R	R	J Jet fuel. J P-4	*	NR	Nickel acetate	R	#
F Ferric sulphate	R	R	J Jet fuel. J P-5	*	NR	Nickel chloride	R	R
F Ferrous chloride	R	R	K Kerosene	R	*	Nickel nitrate	R	R
F Ferrous hydroxide	R	R	Ketones	NR	NR	Nickel sulphate	R	R
F Ferrous nitrate	R	#	Kraft liquor	R	R	Nicotine	R	R
F Ferrous sulphate	R	R	L Lactic acid 25%	R	R	Nicotinic acid	R	R
F Fish soluble	R	R	L Lactic acid 80%	R	R	Nitric acid 10%	R	*
F Fluorine gas. Wet	NR	NR	Lard oil	R	R	Nitric acid 20%	R	*
F Fluobric acid	R	R	Lauric acid	R	R	Nitric acid 30%	R	*
F Fluosilicic acid	R	R	Lauryl chloride	R	R	Nitric acid 40%	R	*
F Formaldehyde 35%	R	R	Lead acetate	R	R	Nitric acid 50%	R	*
F Formaldehyde 37%	R	R	Lead chloride	R	R	Nitric acid 70%	R	NR
F Formaldehyde 50%	R	R	Lead nitrate	R	R	Nitric acid 100%	NR	R
F Formic acid	R	NR	Lead sulphate	R	R	Nitrobenzene	NR	NR
F Formic acid(anhydrous)	#	#	Lemon oil	#	#	Nitroglycerine	NR	NR
F Freon F-11	R	R	Ligroin	#	#	Nitrous acid 10%	R	NR
F Freon F-12	R	R	Lime sulphur	R	R	Nitrous oxide	R	*
F Freon F-21	NR	NR	Llolic acid	R	R	Nitro glycol	NR	NR
F Freon F-22	NR	NR	Linoleic oil	R	R	O 1-octanol	#	#
F FreonF-113	R	R	Linseed oil	R	R	Oils Vegetable	*	*
F FreonF-114	R	R	Linseed oil blue	#	#	Oils Sour crude	#	#
F Fructose	R	R	Liqueurs	R	R	Oleic acid	R	R
F Fruit juices. Pulp	R	R	Lithium bromide	R	R	Oleum	NR	NR
F Furtural	NR	NR	Lithium sulphate	R	R	Olive oil	#	#
G Gallic acid	R	R	Lubrrcating oil ASTM#1	R	R	Oxalic acid	R	R
G Gas. Natural	R	R	Lubrrcating oil ASTM#2	R	R	Oxalic acid 20%	#	#
G Gasoline. leaded	*	NR	Lubrrcating oil ASTM#3	R	R	Oxalic acid 50%	R	R
G Gasoline. Unleaded	*	NR	M Machine oil	R	R	Oxygen gas	R	R
G Gasoline. Sour	*	NR	M Magnesium carbonate	R	R	Ozone	#	#
G Gelatin	R	R	M Magnesium chloride	R	R	P Palmitic acid	#	#
G Gin	#	#	M Magnesium citrate	R	R	Palmitic acid 10%	R	R
G Glucose	R	R	M Magnesium hydroxide	R	R	Palmitic acid 70%	R	NR
G Glycerin	R	R	M Magnesium nitrate	R	R	Paraffin	R	R
G Glycelin. glycerol	R	R	MagneSium sulphate	R	R	Peanut oil	#	#
G Glvcolic acid	R	R	Manganese sulphate	R	R	Peracetic acid 40%	R	NR
G Glycols	R	R	Maleic acid	R	R	Perchlone acid 10%	R	*
G Grape sugar	R	R	Maleic acid 50%	#	#	Perchlone acid 70%	R	NR
H Green liquor. Paper	R	R	Maleic acid	R	R	Perphosphate	R	#
H Heptane	R	R	M Mercuric chloride	R	R	Petroleum oils. Sour	R	*
H Hexane	R	*	Melcuric cyanide	R	R	Petroleum Oils. Refined	R	R
H Hydrobromic acid. 20%	R	R	M Mercuric sulphate	R	R	Phenol	*	NR

R: Recommended For use NR: Not Recommended #: Not Available * : Check with factory

Chemicals	UPVC		Chemicals	UPVC		Chemicals	UPVC	
	23°C	60°C		23°C	60°C		23°C	60°C
Phenyl hydrazine	NR	NR	Silic acid	R	R	Sulphur trioxide. gas	R	R
Phenyl hydrazine hydrochloride	*	NR	Silicic acid	R	R	Sulphuric acid 10%	R	R
Phosgene Liq.	NR	NR	Silicone oil	R	NR	Sulphuric acid 20%	R	R
Phosgene Gas	R	*	Silver cyanide	R	R	Sulphuric acid 30%	R	R
Phosphonic acid 10%	R	R	Silver nitrate	R	R	Sulphuric acid 50%	R	R
Phosphonic acid 25%	R	R	Silver sulphate	R	R	Sulphuric acid 60%	R	R
Phosphonic acid 50%	R	R	Soaps	R	R	Sulphuric acid 70%	R	R
Phosphonic acid 70%	R	R	Sodium acetate	R	R	Sulphuric acid 80%	R	*
Phosphonic acid 85%	R	R	Sodium arsenate	#	#	Sulphuric acid 90%	R	*
Phosphorus yellow	R	*	Sodium alum	R	R	Sulphuric acid 93.5%	*	NR
Phosphorus red	R	R	Sodium benzoate	R	R	Sulphuric acid 94%	*	NR
Phosphorus pentoxide	R	*	Sodium bicarbonate	R	R	Sulphuric acid 95%	NR	NR
Phosphorus trichloride	NR	NR	Sodium bichromate	R	R	Sulphuric acid 96%	NR	NR
Photographic solution	R	R	Sodium bisulphate	R	R	Sulphuric acid 98%	NR	NR
Picric acid	NR	NR	Sodium bisulphite	R	R	Sulphuric acid 100%	R	NR
Plating solution brass	R	*	Sodium borate	R	#	Sulphurous acid	R	NR
Plating solution cadmium	R	*	Sodium bromide	R	R	Tall oil	R	NR
Plating solution chrome	R	*	Sodium carbonate	R	R	Tannic acid	R	NR
Plating solution copper	R	*	Sodium chlorate	R	#	Tannic acid 30%	R	R
Plating solution gold	R	*	Sodium chloride	R	R	Tannic liquors	R	R
Plating solution lead	R	*	Sodium chlorite	NR	NR	Tar	NR	NR
Plating solution nickel	R	*	Sodium cyanide	R	*	Tartaric acid	R	R
Plating solution rhodium	R	*	Sodium dichromate	R	R	Tetraethyl lead	R	*
Plating solution silver	R	*	Sodium ferricyanide	NR	NR	Tetrahydrofuran	NR	NR
Plating solution tin	R	*	Sodium ferrocyanide	NR	NR	Tetrahydrofuran	NR	NR
Plating solution zinc	R	*	Sodium fluoride	NR	NR	Tetra sod. Pyrophosphate	R	R
Polyethylene glycol	*	*	Sodium formate	NR	NR	Thionyl chloride	NR	NR
Potash	R	R	Sodium hydroxide 10%	NR	NR	Tread cutting oils	R	#
Potassium alum	R	R	Sodium hydroxide 15%	R	R	Turpeneol	*	*
Potassium aluminum sulphate	R	#	Sodium hydroxide 25%	R	*	Titanium tetrachloride	*	NR
Potassium amyl xanthate	R	NR	Sodium hydroxide 30%	R	*	Toluene	NR	NR
Potassium bicarbonate	R	R	Sodium hydroxide 50%	R	*	Toluene toluol	NR	NR
Potassium bicarbonate	R	R	Sodium hydroxide 70%	R	*	Tomato Juice	R	#
Potassium bisulphate	R	R	Sodium hypochlorite 15%	R	*	Transformer oil	R	R
Potassium borate	R	R	Sodium hypochlorite	R	#	Transformer oil DTE/30	#	#
Potassium bromate	R	R	Sodium iodide	#	#	Tributyl phosphate	NR	NR
Potassium bromide	R	R	Sodium metaphosphate	R	#	Tributyl citrate	R	#
Potassium carbonate	R	R	Sodium nitrate	R	R	Trichloroacetic acid	R	R
Potassium chlorate.(Aq.)	R	R	Sodium nitrite	R	R	Trichloroethane	NR	NR
Potassium chloride	R	R	Sodium palmitate sol.n 5%	#	#	Trichloropentylene	NR	NR
Potassium chromate	R	R	Sodium perborate	R	R	Trithanolamine	R	*
Potassium chlorate	R	R	Sodium perchlorate	R	R	Triethylamine	R	R
Potassium cyanate	R	R	Sodium peroxide	R	R	Triethylpropane	R	NR
Potassium cyanide	R	R	Sodium phosphate. alk	R	#	Trisodium phosphate	R	R
Potassium dichromate	R	R	Sodium phosphate. acidic	R	#	Turpentine	R	R
Potassium ethyl xanthate	R	NR	Sodium phosphate neutral	R	#	Urea	R	R
Potassium ferricyanide	R	R	Sodium silicate	#	#	Urine	R	R
Potassium ferr cyanide	R	R	Sodium sulphate	R	R	Vaseline	NR	NR
Potassium fluoride	R	R	Sodium sulphide	R	R	Vegetables oils	*	*
Potassium hydroxide	R	R	Sodium sulphite	R	R	Vinegar	R	R
Potassium hypochlorite	R	#	Sodium thiosulphate	R	R	Vinegar. white	#	#
Potassium iodide	R	#	Sour crude oil	R	R	Vinyl acetate	NR	NR
Potassium nitrate	R	R	Stannic chloride	R	R	Water	R	R
Potassium perbmate	R	R	Stannous chloride	R	R	Water. acid mine	R	R
Potassium perchlorate sat	R	R	Stannous sulphate	*	*	Water. demineralized	R	R
Potassium permanganate sat	R	R	Starch	R	R	Water. disilled or flesh	R	R
Potassium permanganate 25%	#	#	Stearic acid	R	R	Water. Potable	R	R
Potassium persulphate sat	R	R	Stoddards solvent	NR	NR	Water. Salt	R	R
Potassium phosphate	#	#	Strontium chloride	*	*	Water. sea	R	R
Potassium sulphate	R	R	Succinic acid	R	R	Water. Sewage	R	R
Propane	R	R	Sulphamic acid	NR	NR	Whiskey	R	R
Propylene dichloride	NR	NR	Sulphated detergent	#	#	White liquor	R	R
Propylene glycol	*	*	Sulphate liquors	#	#	Wines	R	R
Propylene oxide	NR	NR	Sulfite liquor	R	R	Xylene (Xylo)	NR	NR
Pyridine	NR	NR	Sulphur	R	R	Zinc acetate	R	R
Pyrogallia acid	R	R	Sulphur chloride	#	#	Zinc chloride	R	R
Salicylic acid	R	R	Sulphur dioxide. dry	R	R	Zinc nitrate	R	R
Salicylaldehyde	NR	NR	Sulphur dioxide. wet	R	*	Zinc sulphate	R	R
Sea water	R	R	Sulphur trioxide	R	*			

TRANSPORT, STORAGE AND HANDLING

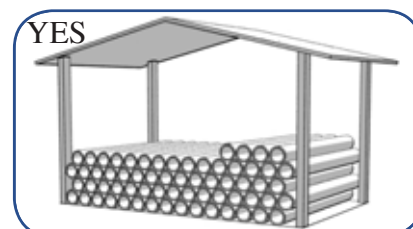
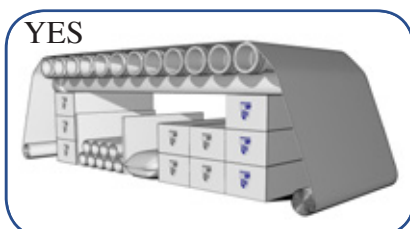
PIPES

On trucks the 6 or long pipes must be fully supported on the loading area. Avoid loading at the same time with sharp objects. Pipes should not be thrown or dragged along the ground.

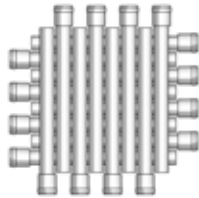
Pipes should be given adequate support at all times. Pipes should not be stacked in large piles, especially in warm temperature conditions as the lower layers may distort, resulting in difficulties in jointing and pipe alignment. Any pipe with ends prepared for jointing (sockets and spigot joints, A joints, etc.) should be stacked in layers with sockets placed at alternate ends of the stacks and with the sockets protruding to avoid unstable stacks and the possibility of imparting a permanent set to the pipes.

For long –term storage, pipe racks should provide continuous support, but if this is not possible timber of at least 3 in. (75mm) bearing width at spacing not greater than 3 ft.(915mm) centers for pipe sizes 160mm and above, should be placed beneath the pipes and at 6 ft. (1.8m) centres at the side, if the stacks are rectangular. These spacing apply to pipe size 160 mm and above. Closer supports will be required for sizes below 160mm in such pipe racks. Pipes may be stored not more than seven layers, or 6 ft.(1.8m) high, whichever is the lesser. But if different classes of pipe are kept in the same racks, than the thickness classes of largest diameter must always be placed at the bottom.

When loading pipes on to vehicles, care must be taken to avoid their coming into contact with any sharp corners such as cope irons, loose nail-heads, etc. as pipes may be damaged by being rubbed against these during transit. Whilst in transit . pipes shall be well secured over their entire length and not allowed to project unsecured over the tailboard of the lorry pipes may be off-loaded from lorries by rolling them gently down timbers, care being take to ensure that pipes do not fall one upon another, nor on to any hard or uneven surfaces.



YES



YES



Rubber sealing rings should not be stored in the open period, nor should they be exposed to sunlight.

It is recommended not to keep rubber sealing rings on stock for too long time it cannot be avoided to keep them in stock for several years, they should be kept free of tension in a cool place without radiation of light, if possible. In rooms where no electrical equipment is in operation.

Rubber sealing rings should not come into contact with chemicals, grease or fuels.

FITTINGS

Store fittings in their original packaging. If they must be removed from their boxes, separate them by geometric type and size. Never combine your plastic fitting inventory with metallic materials. Avoid storing Fittings near an open flame or source of extreme heat.




For CPVC Pressure Fittings



For Non Pressure Metric Fittings



For UPVC Pressure Fittings



For CPVC Pressure Inch Fittings

APPLICATION OF UPVC PIPES AND FITTINGS

SEWAGE SYSTEMS

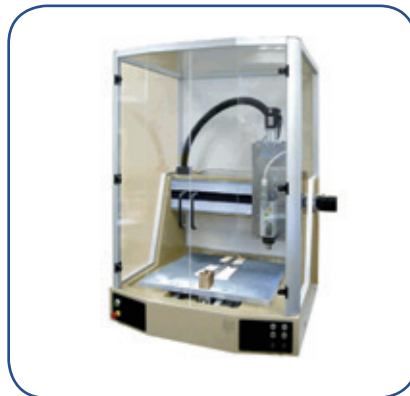
AL-SHARIF UPVC Pipes and Fittings are ideal for underground drainage and sewage systems. Noncorrosive and easy to assemble, they allow more complex piping work.

Lab. Q.C.



Internal hydrostatic pressure tester

Lab. Q.C.



Specimen milling machine for machining of plastic test specimens for tensile & impact tests

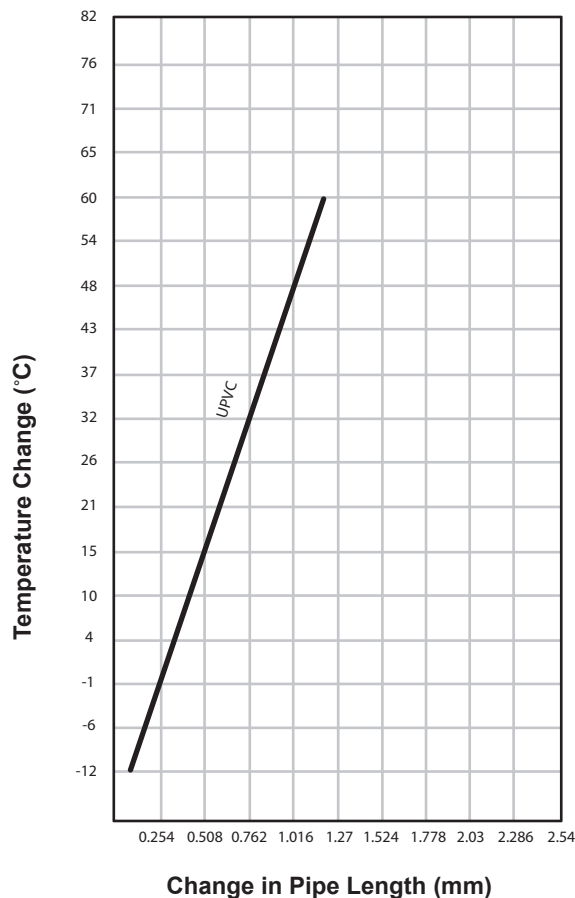
EXPANSION AND CONTRACTION

All piping products expand and contract with changes in temperature. Linear expansion and contraction of any pipe on the longitudinal axis relates to the coefficient of thermal expansion for the specific material used in the manufacturing of the product. Variation in pipe length due to thermal expansion or contraction depends on the coefficient of thermal expansion and the variation in temperature (T). It should be noted that change in pipe diameter or wall thickness with piping material properties remaining constant does effect a change in rates of thermal expansion or contraction.

Approximate coefficients of thermal expansion for different pipe materials are presented below. Expansion and contraction of PVC piping in response to change in temperature will vary slightly with changes in PVC compounds. However, these coefficients can be considered reasonably accurate.

COEFFICIENTS OF THERMAL EXPANSION

Piping Material	Coefficient of Linear Thermal Expansion (K^{-1})	Thermal Conductivity ($W. K^{-1}.M^{-1}$)
UPVC	0.8×10^{-4}	0.16



Length of run 10 meter

Temp. Change ΔT °C	Thermal Expansion(ΔL) in mm of UPVC
10	15
15	17
20	19
30	22
35	25
40	26

Length of run 15 meter

Temp. Change ΔT °C	Thermal Expansion(ΔL) in mm of UPVC
10	23
15	27
20	32
30	37
35	41
40	46

Length of run 20 meter

Temp. Change ΔT °C	Thermal Expansion(ΔL) in mm of UPVC
10	32
15	38
20	45
30	51
35	58
40	64

Length of run 25 meter

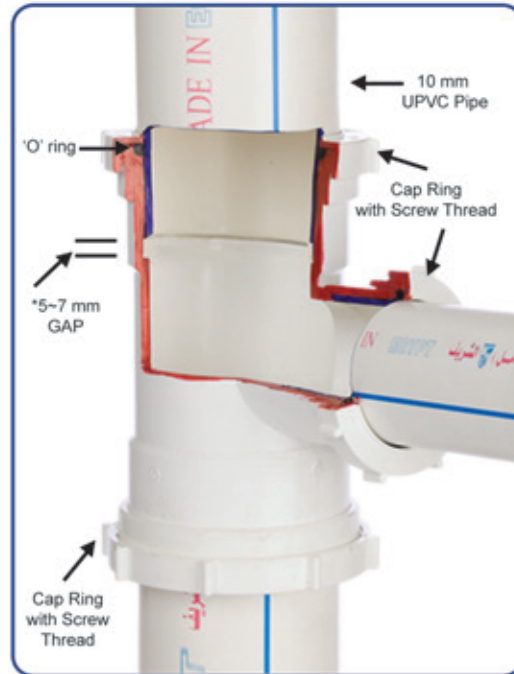
Temp. Change ΔT °C	Thermal Expansion(ΔL) in mm of UPVC
10	36
15	44
20	51
30	58
35	66
40	73

Length of run 30 meter

Temp. Change ΔT °C	Thermal Expansion(ΔL) in mm of UPVC
10	46
15	55
20	64
30	73
35	82
40	91

EXPANSION JOINT

Coefficient of Linear joint (5×10^{-5} m/m. °C)



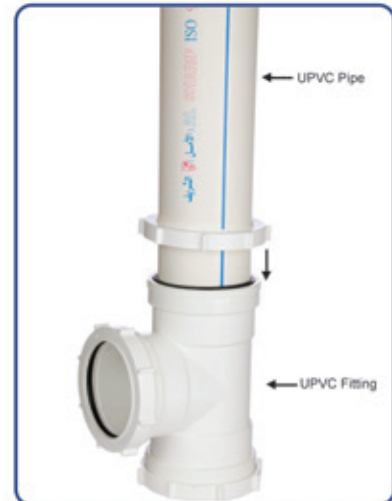
REMARK

APPROXIMATE, 5 - 7 mm GAP (INDICATIVE FIGURE) ALLOWANCE IN BETWEEN UPVC PIPE AND FITTING SOCKET MOUTH TO ALLOW FOR THERMAL EXPANSION.



STEP 1

Slip in the 'O' ring and the screw cap ring to the upper UPVC pipe

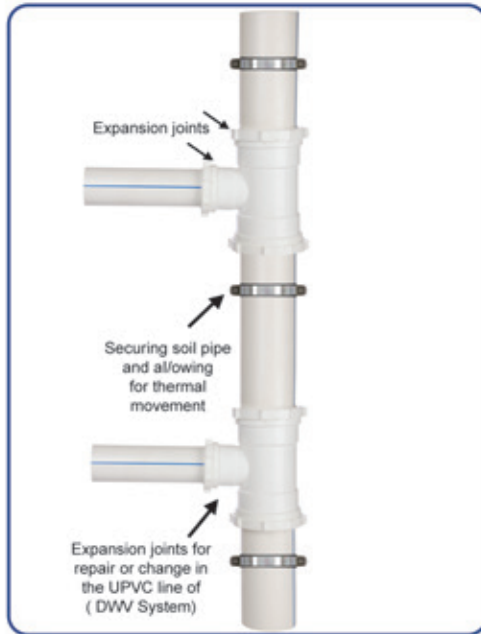


STEP 2

Push up the fittings and fits it to the UPVC pipe.

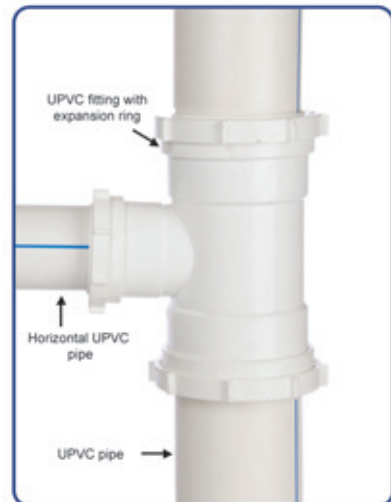
NOTE

Leave a small gap between the pipe and the socket mouth.



STEP 3

Push down the 'O' ring to the fitting socket mouth gently and then tighten it with the screw cap ring



STEP 4

Pull up the 'O' ring to the horizontal fitting socket mouth gently and then tighten it with the screw cap ring.

SOLVENT WELDING UPVC PIPES AND FITTINGS

CUTTING

Pipe must be squarely cut to allow for the proper interfacing of the pipe end and the fitting socket bottom. This can be accomplished with a miter box saw.



DEBURRING

Use file to remove burrs from the end of pipe. A slight chamfer about 15° should be added to the end to permit easier insertion of the pipe into the fitting. Failure to chamfer the edge of the pipe may remove cement from the socket, causing the joint to leak.



INSPECTION AND CLEANING

Visually inspect the inside of the pipe and fitting sockets and remove all dirt, grease or moisture with a clean dry rag. Measure the fitting socket depth and mark this distance on the pipe O.D. Clean the surface of the pipe and fitting socket by using a cleaner.



APPLICATION OF SOLVENT CEMENT

Apply the solvent cement evenly and quickly around the outside of the pipe at a width a little greater than the depth of the fitting socket. Apply a light coat of cement evenly around the inside of the fitting socket.



JOINT ASSEMBLY

Immediately insert the pipe into the socket up to the entry mark, align pipe and socket, hold in position for a few seconds.



CLEAN UP

Remove all excess cement from around the pipe and fitting with a dry cotton rag. This must be done while the cement is still soft.

AFTER JOINTING

Joints should not be moved or distributed for 10-15 minutes then the jointed pipe may be handled with care allow 4 hours if the jointed pipe lengths are to be laid in a trench.

TESTING

Allow 8 hours to elapse before applying working pressure or 24 hours for tests pressure with pipe sizes up to 50 mm, it is possible to reduce this time.

Allow 1 hour for each 3.5 atmospheres of pressure.



SOLVENT WELDING UPVC PIPES AND FITTINGS

IMPORTANT NOTICE

Close the open tin of solvent cement when not in use, do not work near a naked flame and do not mix. Cleaning fluid with the solvent cement.

CONSUMPTION OF CLEANER AND SOLVENT CEMENT (NO. - OF JOINTS PER KG)

Dia./mm	Cleaner-Kg	Solvent Cement-Kg
16	400	200
20	340	170
25	300	150
32	200	125
40	140	90
50	110	60
63	75	55
75	70	45
90	55	25
110	50	12
125	47	10
140	45	8
160	40	5
200	30	4
225	20	3.5
250	15	3
280	12	2.5
315	10	2

Brushes must be clean and dry before commencing solvent welding Brushes must be thoroughly cleaned after use by washing out in cleaning fluid.

Do not dilute solvent adhesive with cleaning fluid.

Use Solvent adhesive and cleaning fluid in a well ventilated area.

Keep away from naked flames and do not smoke. Always replace lids of containers, in any event, attention is drawn to the instructions printed on the containers.

When laying continues runs of pipe, joints may be made quicker than the setting times advised above. The joint will not be disturbed with long lengths, providing that the pipe is not twisted or the previously made joint lifted out of place.

TECHNICAL DATA OF AL-AMAL (AL SHARIF) UPVC PIPES FOR PLUMBING SYSTEMS (DWV)

According to ASTM D 1785 (sch 40)



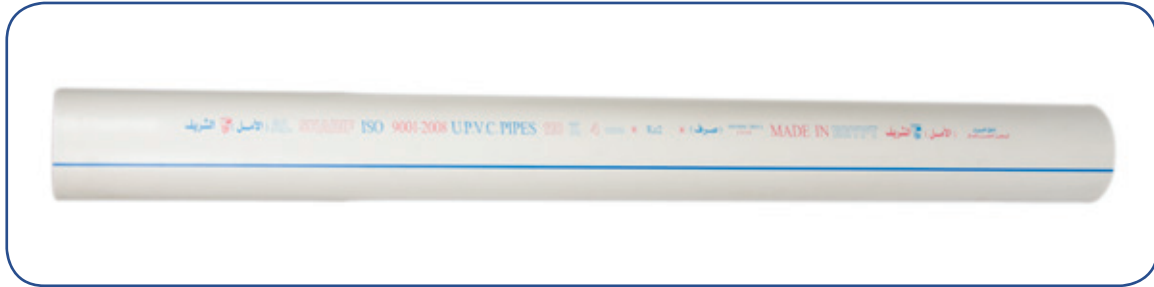
Item No.	Nomina Size (inch)	Outside dia(D) mm	Wall Thickness(S)
1	1/2"	21.34	2.77
2	3/4"	26.67	2.87
3	1"	33.40	3.38
4	1 1/4"	42.16	3.56
5	1 1/2"	48.26	3.68
6	2"	60.32	3.91
7	2 1/2"	73.02	5.16
8	3"	88.90	5.49
9	4"	114.30	6.02
10	6"	168.28	7.11
11	8"	219.08	8.18

According to ASTM D 2241 (SDR) Series

Item No.	Nominal Size (inch)	Outside (D) mm	Wall Thickness				
			SDR 21 (13.8 Bar)	SDR 26 (11.0 Bar)	SDR 32.5 (8.6 Bar)	SDR 41 (6.9 Bar)	SDR 64 (4.3 Bar)
1	1/2"	21.34	-	-	-	-	-
2	3/4"	26.67	1.52	-	-	-	-
3	1"	33.40	1.60	1.52	-	-	-
4	1 1/4"	42.16	2.01	1.63	1.52	-	-
5	1 1/2"	48.26	2.29	1.85	1.52	-	-
6	2"	60.32	2.87	2.31	1.85	-	-
7	3"	88.90	4.24	3.43	2.74	2.16	-
8	4"	114.30	5.44	4.39	3.51	2.79	1.78
9	6"	168.28	8.03	6.48	5.18	4.11	2.64
10	8"	219.08	10.41	8.43	6.73	5.33	3.43

METRIC UPVC PIPES FOR PLUMBING SYSTEM (DWV)

WHITE COLOUR WITH BLUE LINE



Outside Dia. (mm)	Thickness (mm)	Weight Kg/M
32	1.5	0.240
32	1.8	0.285
32	2.4	0.370
40	1.8	0.395
40	1.9	0.415
48	2.5	0.550
48	3.7	0.821
50	1.8	0.422
50	2.4	0.546
60	2.7	0.785
60	3.9	1.011
63	1.9	0.568
63	3	0.842
75	1.8	0.680
75	2.2	0.830
75	3	1.122
75	4	1.311
75	5	1.788
110	2.2	1.220
110	3	1.635
110	3.2	1.744
110	4	2.122
110	5	2.632
110	6	3.200
110	7	3.620
160	3.2	2.410
160	4.7	3.005
160	4	3.310
160	5	3.763
160	7	5.431

UPVC PIPES

WHITE COLOUR WITH BLUE LINE

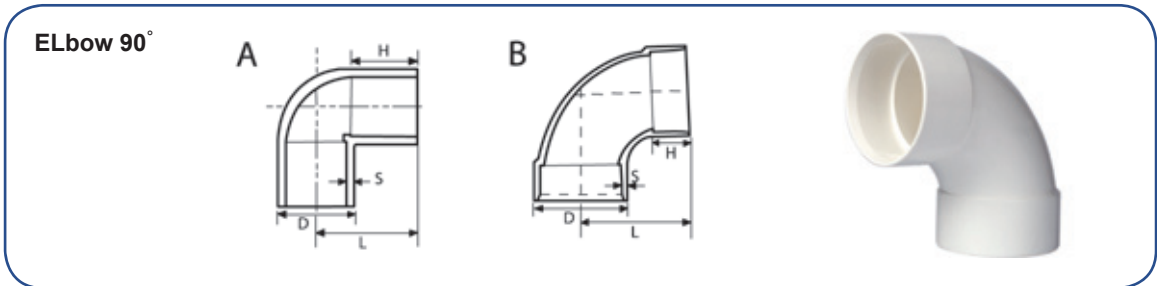


Size (Inch)	Outside Dia. (mm)	Thickness (mm)	Weight Kg/M
1/2"	21.2	2.5	0.242
3/4"	26.6	2.8	0.331
1"	33.4	3.5	0.522
1 1/4"	42.1	3.5	0.648
1 1/2"	48	2.5	0.570
1 1/2"	48	3.7	0.821
2"	60	2.7	0.836
2"	60	3.9	1.046
3"	88.9	3	1.305
3"	88.9	4	1.725
3"	88.9	5	2.090
4"	114.3	3	1.736
4"	114.3	4	2.250
4"	114.3	5	2.734
6"	168.3	3	2.505
6"	168.3	4	3.210
6"	168.3	5	4.056

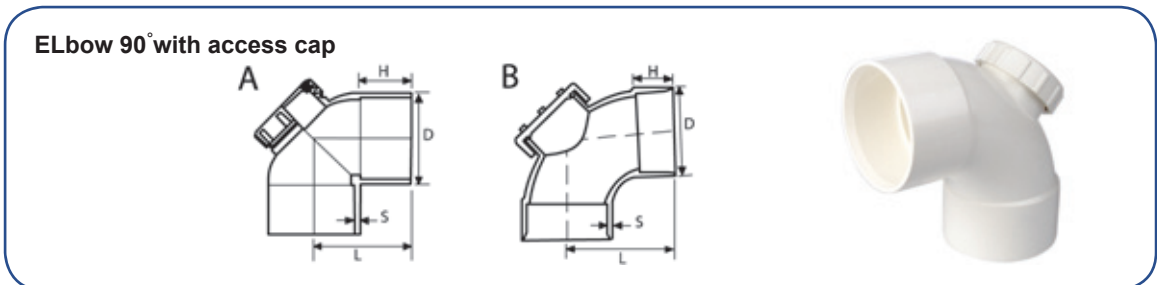
TECHNICAL DATA OF AL-AMAL (AL SHARIF) UPVC FITTINGS FOR PLUMBING SYSTEMS (DWV)

According to ASTM - D2466 & D3311 (Sch 40)

Dimensions :

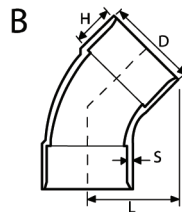
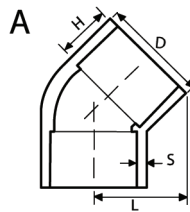


Item No.	Nominal size (inch)	D mm	S mm	H mm	L mm	Type
1	1/2"	27	2.8	16	27	A
2	3/4"	33	3.2	19	33	A
3	1"	41	3.8	22	39	A
4	1 1/4"	50	3.8	26	47	A
5	1 1/2"	56	3.7	31	58	A
6	2"	68	4.0	38	70	A
7	3"	100.5	5.5	48	126	B
8	3"	100.5	5.5	48	102	A
9	4"	127	6.1	51	149	B
10	4"	127	6.1	51	120	A
11	6"	183	7.5	76	168	A



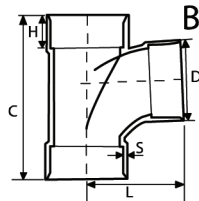
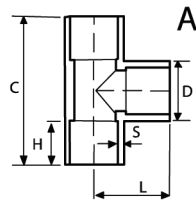
Item No.	Nominal size (inch)	D mm	S mm	H mm	L mm	Type
1	2"	68	4	38	70	A
2	3"	100.5	5.5	48	126	B
3	3"	100.5	5.5	48	102	A
4	4"	127	6.1	51	149	B
5	4"	127	6.1	51	120	A
6	6"	187	7.5	76	168	A

ELbow 45°



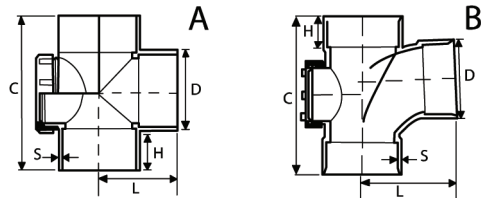
Item No.	Nominal size (inch)	D mm	S mm	H mm	L mm	Type
1	1/2"	29	3.75	22	32	A
2	3/4"	35	4.1	26	35	A
3	1"	44	5.2	29	40	A
4	1 1/4"	52	3.6	31	50	A
5	1 1/2"	56	3.7	31	54	A
6	2"	68	4	38	62	A
7	3"	100	5.5	48	100	B
8	3"	100	5.5	48	87	A
9	4"	127	6.1	51	120	B
10	4"	127	6.1	51	103	A
11	6"	183	7.5	76	160	A

Tee 90°



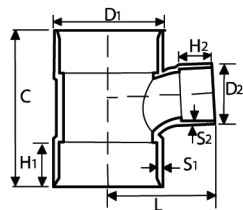
Item No.	Nominal size (inch)	D mm	S mm	H mm	L mm	C mm	Type
1	1/2"	28	3.3	16	27	54	A
2	3/4"	35	4	19	33	65	A
3	1"	42	4.2	22	39	78	A
4	1 1/4"	52	4.8	31	54	108	A
5	1 1/2"	56	3.7	31	58	116	A
6	2"	68	4.0	38	70	140	A
7	3"	100	5.5	48	126	220	B
8	3"	100	5.5	48	102	204	A
9	4"	127	6.1	51	149	257	B
10	4"	127	6.1	51	119	239	A
11	6"	183	7.5	76	168	336	A

Tee 90° with / cap



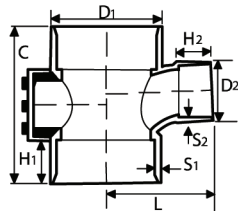
Item No.	Nominal size (inch)	D mm	S mm	H mm	L mm	C mm	Type
1	2"	68	4.0	38	70	140	A
2	3"	100	5.5	48	126	220	B
3	3"	100	5.5	48	102	204	A
4	4"	127	6.1	51	149	257	B
5	4"	127	6.1	51	119	239	A
6	6"	183	7.5	76	168	336	A

Tee Red. 90°



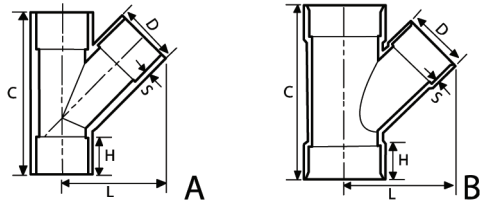
Item No.	Nominal size (inch)	D ₁ mm	D ₂ mm	S ₁ mm	S ₂ mm	H ₁ mm	H ₂ mm	L mm	C mm
1	3" - 2"	100	70	5	5.2	48	38	111	180
2	4" - 2"	127	70	6	5.2	51	38	122	183
3	4" - 3"	127	100	6	5.5	51	48	138	222
4	6" - 4"	183	126.5	7.5	6	76	51	168	280.5

Tee Red. 90° with / cap



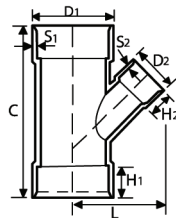
Item No.	Nominal size (inch)	D ₁ mm	D ₂ mm	S ₁ mm	S ₂ mm	H ₁ mm	H ₂ mm	L mm	C mm
1	3" - 2"	100	70	5	5.2	48	38	111	180
2	4" - 2"	127	70	6	5.2	51	38	122	183
3	4" - 3"	127	100	6	5.5	51	48	138	222
4	6" - 4"	183	126.5	7.5	6	76	51	168	280.5

Tee 45°



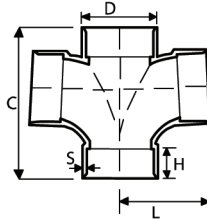
Item No.	Nominal size (inch)	D mm	S mm	H mm	C mm	L mm	Type
1	1 1/2"	56	3.7	31	141	91	A
2	2"	69	4.5	38	170	110	A
3	3"	100	5.5	48	264	161	B
4	4"	127	6.1	51	312	195	B
5	6"	181.3	6.5	76	421	354	A

Tee Red. 45°



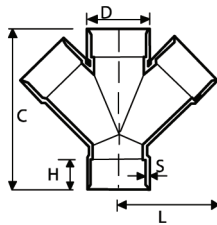
Item No.	Nominal size (inch)	D ₁ mm	D ₂ mm	S ₁ mm	S ₂ mm	H ₁ mm	H ₂ mm	C mm	L mm
1	4" - 2"	127	70	6	5.2	51	38	231	150
2	4" - 3"	127	100	6	5.5	51	48	270	175
3	6" - 4"	181.5	127	6.5	6	76	51	351	305

Double sanitary Tee 87.5°



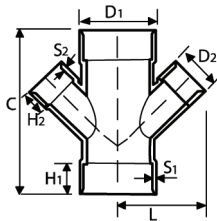
Item No.	Nominal size (inch)	D mm	S mm	H mm	C mm	L mm
1	3"	100	5.5	48	220	126
2	4"	127	6.1	51	257	149

Double branch Tee 45°



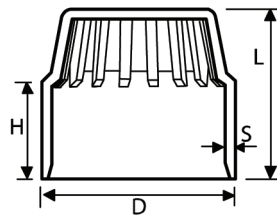
Item No.	Nominal size (inch)	D mm	S mm	H mm	C mm	L mm
1	3"	100	5.5	48	264	161
2	4"	127	6.1	51	312	195

Double branch Tee Red. 45°



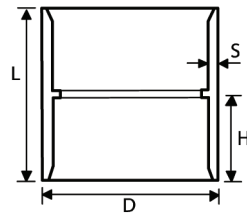
Item No.	Nominal size (inch)	D ₁ mm	D ₂ mm	S ₁ mm	S ₂ mm	H ₁ mm	H ₂ mm	C mm	L mm
1	4" - 2"	127	70	6	5.2	51	38	231	150
2	4" - 3"	127	100	6	5.5	51	48	270	175

Air vent



Item No.	Nominal size (inch)	D mm	S mm	H mm	L mm
1	3"	100	5.5	48	88
2	4"	127	6.1	51	100

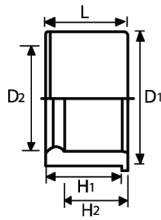
Coupling



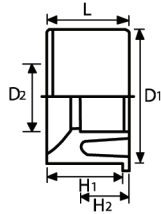
Item No.	Nominal size (inch)	D mm	S mm	H mm	L mm
1	1/2"	27	2.8	16	36
2	3/4"	33	3.2	19	41
3	1"	41	3.8	22	48
4	1 1/4"	50	3.8	26	56
5	1 1/2"	55	3.7	31	65
6	2"	68	4.0	38	80
7	3"	100	5.5	48	101
8	4"	127	6.2	51	108
9	6"	183	7.1	76	157.4

Reducing bush

A

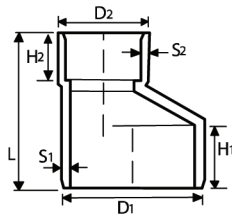


B



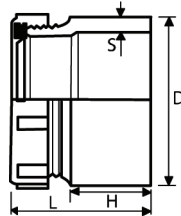
Item No.	Nominal size (inch)	D ₁ mm	D ₂ mm	H ₁ mm	H ₂ mm	L mm	Type
1	3/4" - 1/2"	26.7	21.5	25.5	22.5	25.5	A
2	1" - 1/2"	33.4	21.5	30	22.5	30	A
3	1" - 3/4"	33.4	26.85	30	22.5	30	A
4	1 1/2" - 1/2"	48.1	21.5	31	22.5	31	A
5	1 1/2" - 3/4"	48.1	26.85	31	22.5	31	A
6	1 1/2" - 1"	48.1	33.6	31	30	31	A
7	2" - 1/2"	60.3	21.5	38	22.5	46	B
8	2" - 3/4"	60.3	26.85	38	22.5	46	B
9	2" - 1"	60.3	33.6	38	22	46	B
10	2" - 1 1/2"	60.3	48.2	38	31	46	A
11	3" - 2"	88.9	60.5	48	38	58	B
12	4" - 2"	114.3	60.5	51	38	61	B
13	4" - 3"	114.3	89.1	51	48	61	A
14	6" - 4"	168.2	114.7	76	51	76.2	B

Eccentric Reducer



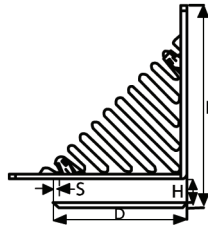
Item No.	Nominal size (inch)	D_1 mm	D_2 mm	S_1 mm	S_2 mm	H_1 mm	H_2 mm	H_2 mm
1	4" - 2"	114.3	70	7.5	5.2	55	38	127
2	4" - 3"	114.3	100	7.5	5.5	55	48	127
3	6" - 4"	168.2	114.7	6.1	6.1	76.2	51	168

Clean Out



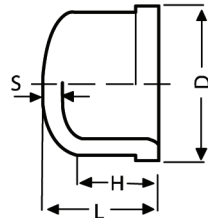
Item No.	Nominal size (inch)	D mm	S mm	H mm	L mm
1	1 1/2"	48.3	3.7	31	60
2	2"	60.3	4.0	38	69
3	3"	88.9	5.5	48	87
4	4"	114.3	6.1	51	94
5	6"	168.3	6	76	120

Roof drains



Item No.	Nominal size (inch)	D mm	S mm	H mm	L mm
1	3"	89	5.5	24.9	187.9
2	4"	114.3	4.6	24.9	187.9

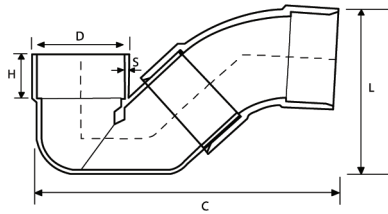
End Cap



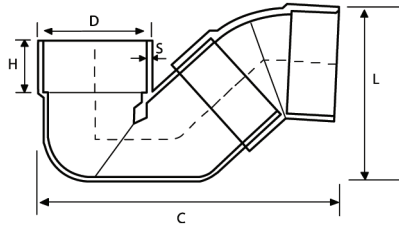
Item No.	Nominal size (inch)	D mm	D mm	D mm	D mm
1	1/2"	29.5	3.9	16	23
2	3/4"	35.5	4.5	19	28
3	1"	44	5.3	22	31
4	1 1/4"	54	5.3	26	34
5	1 1/2"	55	4.1	31	39
6	2"	68	5.1	38	45
7	3"	110	5.6	48	69
8	4"	130	7.5	61	85
9	6"	188	8.5	86	114

Syphon

**A
Long**

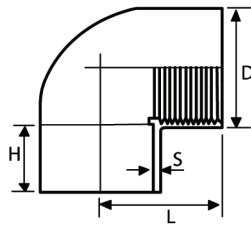


**B
Short**



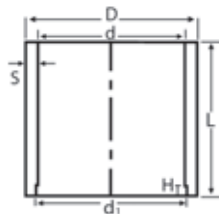
Item No.	Nominal size (inch)	D mm	S mm	H mm	C mm	L mm	Type
1	4"	120	6.1	51	370	230	A
2	4"	120	6.1	51	330	215	B

Elbow 90° SJXF.th



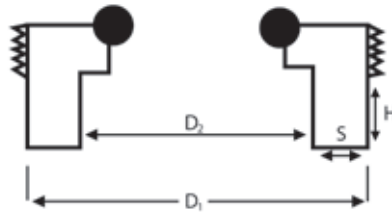
Item No.	Nominal size (inch)	D mm	S mm	H mm	L mm
1	1 1/2" - 1 1/2"	56	3.5	31	58
2	1 1/2" - 1 1/4"	56 - 50	3.5	31	58

Extension Sockets



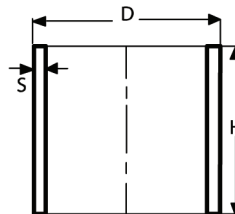
Item No.	Dimension	D mm	d mm	d ₁ mm	S mm	H mm	L mm
1	110mm	127	114.5	119	6	8	100
2	125mm	140	127	132	6.7	8	100
3	125mm	140	127	132	6.7	8	150

Expansion Joint



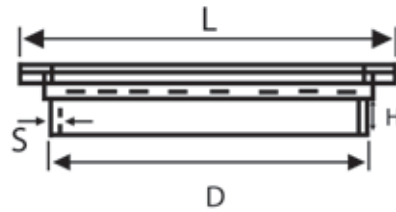
Item No.	Nominal size (inch)	D_1 mm	D_2 mm	S mm	H mm
1	3"	106	100	3	18
2	4"	132	127.5	3	20
3	6"	194	183	5	27

Repair Coupling



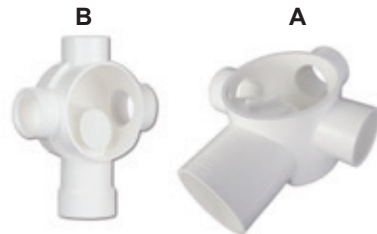
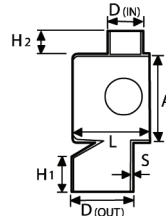
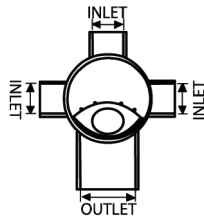
Item No.	Dimension	D mm	S mm	H mm
1	3"	100	5.5	101
2	4"	127	6.2	108
3	6"	183	7.1	157.1

Floor Trap Cover



Item No.	Dimension	D mm	S mm	H mm	L mm
1	110mm	109.5	3.5	7	147.5
2	125mm	124.5	3.5	7	147.5

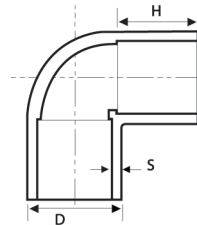
Floor Trap



Item No.	Nominal size (inch)	D mm	H1 mm	H2 mm	A mm	S mm	L mm	Type
1	outlet 3"	96.5	48		125	4.2	99	A
	inlet 1 1/2"	56.5		31				
2	outlet 3"	96.5	48		125	4.2	99	A
	inlet 2"	68.8		38				
3	outlet 2"	68.8	38		125 & 110	4.2	99	A
	inlet 1 1/2"	56.5		31				
4	outlet 2"	68.8	38		125 & 110	4.2	99	A
	inlet 2"	68.8		38				
5	outlet 2"	69.8	27.0		110	4.8	70	B
	inlet 1 1/2"	58.8		30.2				
6	outlet 1 1/2"	61.6	34		110	5.5	70	B
	inlet 1 1/2"	58.8		30.2				

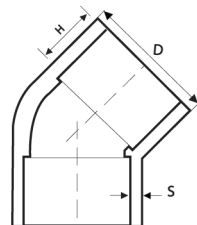
METRIC UPVC FITTINGS FOR PLUMBING SYSTEM (DWV) (WHITE COLOUR)

Elbow 87.5°



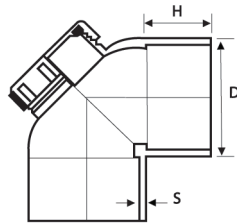
Item No.	Dimension	D mm	S mm	H mm
1	20mm	27	3.4	16
2	25mm	33	3.9	19
3	32mm	41	4.5	22
4	40mm	50	5	26
5	50mm	55	2.5	32
6	63mm	68	2.5	38
7	75mm	84.5	4.5	45
8	90mm	100	5.2	48
9	110mm	122.5	6	51
10	160mm	172.5	6	70

Elbow 45°



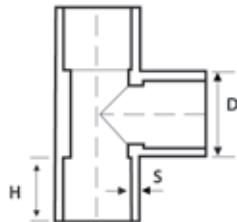
Item No.	Dimension	D mm	S mm	H mm
1	20mm	29	4.4	22
2	25mm	35	4.9	26
3	32mm	44	5.8	29
4	40mm	52	5.8	26
5	50mm	55	2.5	32
6	63mm	68	2.5	38
7	75mm	84.5	4.5	45
8	90mm	100	5.2	48
9	110mm	122	6	52
10	160mm	172	6	70

Elbow 87.5° w/cap



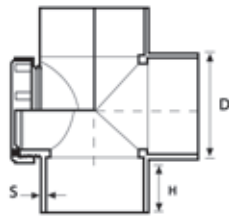
Item No.	Dimension	D mm	S mm	H mm
1	63mm	68	2.5	38
2	75mm	84.5	4.5	45
3	90mm	100	5.2	48
4	110mm	122.5	6	51
5	160mm	172.5	6	70

Tee 87.5°



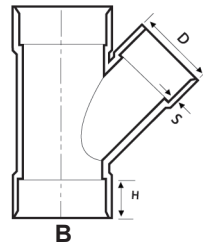
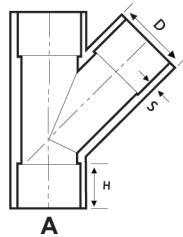
Item No.	Dimension	D mm	S mm	H mm
1	20mm	27	3.4	16
2	25mm	33	3.9	19
3	32mm	43	5.5	22
4	40mm	52	5.9	31
5	50mm	55	2.5	31
6	63mm	68	2.5	38
7	75mm	84.5	4.7	45
8	90mm	100	5.2	48
9	110mm	122	6	52
10	160mm	172	6	70

Tee 87.5° w/cap



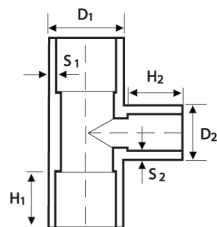
Item No.	Dimension	D mm	S mm	H mm
1	63mm	68	2.5	38
2	75mm	84.5	4.7	45
3	90mm	100	5.2	48
4	110mm	122	6	52
5	160mm	172	6	70

Tee 45°



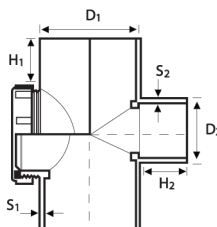
Item No.	Dimension	D mm	S mm	H mm	L mm
1	50mm	57.5	3.6	32	A
2	63mm	69	3.7	38	A
3	75mm	84.5	4.7	45	B
4	90mm	100	5.2	48	B
5	110mm	122.5	6	51	B
6	160mm	181	10.3	74	A

Tee Red. 87.5°



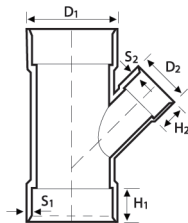
Item No.	Dimension	D mm		S mm		H mm	
		D ₁	D ₂	S ₁	S ₂	H ₁	H ₂
1	110/50mm	122	70	6	9.5	52	39
2	110/63mm	122	70	6	3.5	52	38
3	110/75mm	122	85	6	4.7	52	45
4	160/110mm	172	122	6	6	70	52
5	75/2"	85	70	4.5	5	45	38
6	110/2"	122	70	6	5	52	38

Tee Red. 87.5° w/cap



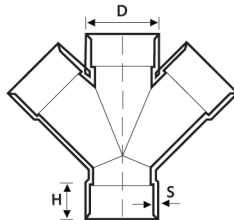
Item No.	Dimension	D mm		S mm		H mm	
		D ₁	D ₂	S ₁	S ₂	H ₁	H ₂
1	110/50mm	122	70	6	9.5	52	39
2	110/63mm	122	70	6	3.5	52	38
3	110/75mm	122	85	6	4.7	52	45
4	160/110mm	172	122	6	6	70	52
5	75/2"	85	70	4.5	5	45	38
6	110/2"	122	70	6	5	52	38

Tee Red. 45°



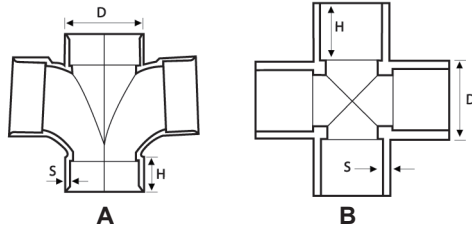
Item No.	Dimension	D mm		S mm		H mm	
		D1	D2	S1	S2	H1	H2
1	110/50mm	127	71	8	10	52	32
2	110/63mm	127	71	8	4	52	38
3	110/75mm	127	100	8	13	52	45
4	160/110mm	181	127	10.3	8.5	75	52
5	110/2"	127	71	8	5.5	52	38

Double branch 45°



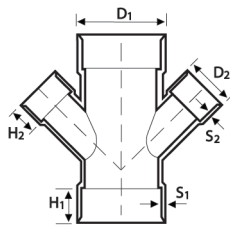
Item No.	Dimension	D mm	S mm	H mm
2	110mm	127	8.2	52

Double branch 90°



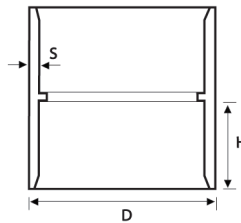
Item No.	Dimension	D mm	S mm	H mm	Type
1	75mm	84	4.5	45	A
2	90mm	100	5.2	48	B
3	110mm	121	5.3	51	A

Double branch Red. 45°



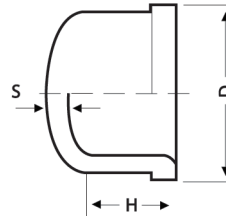
Item No.	Dimension	D mm		S mm		H mm	
		D1	D2	S1	S2	H1	H2
1	110/75mm	127	100	8	13	52	45
2	110/2"	127	71	8	5.5	52	38

Coupling



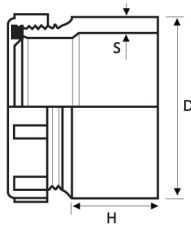
Item No.	Dimension	D mm	S mm	H mm
1	20mm	27	3.4	16
2	25mm	33	3.9	19
3	32mm	41	4.5	22
4	40mm	50	5	26
5	50mm	55	5.5	32
6	63mm	77	6.5	39
7	75mm	84	4.5	45
8	110mm	122	5.5	52
9	160mm	172	6	70

End Cap



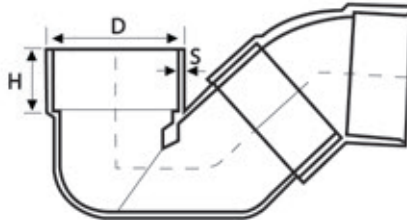
Item No.	Dimension	D mm	S mm	H mm
1	20mm	29.5	3.4	16
2	25mm	35.5	3.9	19
3	32mm	44	4.5	22
4	40mm	54	5	26
5	50mm	57	5	32
6	63mm	71	4.5	38
7	75mm	90	7	44
8	110mm	125	7	61
9	160mm	188	8.5	86

Clean Out



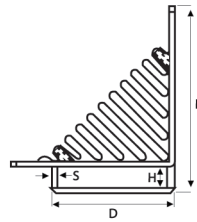
Item No.	Dimension	D mm	S mm	H mm
1	50mm	50	5	35
2	63mm	63	4.5	40
3	75mm	75	5	44
4	90mm	90	5	52
5	110mm	110	5	53
6	160mm	160	6	79

Syphon



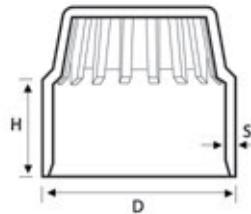
Item No.	Dimension	D mm	S mm	H mm
1	110mm	122	6	52

Roof Drain



Item No.	Dimension	D mm	S mm	H mm
1	75mm	75.1	4.6	25
2	110mm	110.2	4.6	25

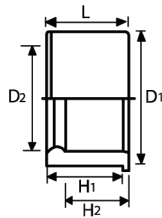
Air Vent



Item No.	Dimension	D mm	S mm	H mm
1	75mm	82	3	45
2	110mm	118	4	52

Reducing Bushes

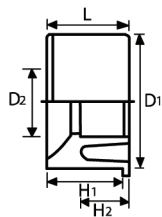
A



Item No.	Dimension	D mm		H mm		H mm
		D1	D2	H1	H2	
1	25 - 20mm	25	20.2	25.5	22.5	A
2	32 - 20mm	32	20.2	30	22.5	A
3	32 - 25mm	32	25.2	30	25.5	A
4	40 - 20mm	40	20.2	26	16	A
5	40 - 25mm	40	25.2	26	19	A
6	40 - 32mm	40	32.2	26	22	A
7	50 - 32mm	50	32.2	32	22	A
8	50 - 40mm	50	40.2	32	26	A
9	63 - 40mm	63	40.2	38	26	A
10	63 - 50mm	63	50.2	38	31	A
11	75 - 50mm	75	50.2	44	31	A
12	75 - 63mm	75	63.2	44	38	A
13	90 - 50mm	90	50.2	48	32	B
14	90 - 63mm	90	63.2	48	38	B
15	90 - 75mm	90	75.2	51	48	B
16	110 - 50mm	110	50.2	52	38	B
17	110 - 63mm	110	63.2	52	38	B
18	110 - 75mm	110	75.2	52	45	B
19	110 - 90mm	110	90.2	52	48	B
20	160 - 110mm	160	110.3	70	52	B

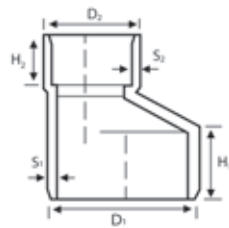
Reducing Bushes

B



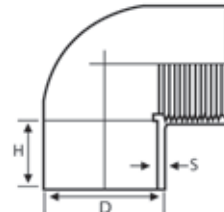
Item No.	Dimension	D mm		H mm		type
		D1	D2	H1	H2	
1	110 - 2"	110	60.2	52	38	B
2	75 - 2"	75	60.2	47	38	A
3	2" - 50mm	60	50.2	38	32	A

Eccentric Reducer



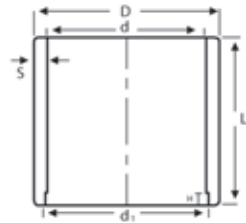
Item No.	Dimension	D ₁	D ₂	S ₁	S ₂	H ₁	H ₂
		D mm		S mm		H mm	
1	110/50	110	58	5.5	4	52	32
2	110/63	110	71.5	5.5	4	52	38
3	110/75	110	86	5.5	12	52	47
4	110/90	110	100	5.5	5	52	48
5	160/110	160	122	6	6	80	52
6	110/2"	110	71.5	5.5	4	52	38

Elbow 90° F.TH XSJ



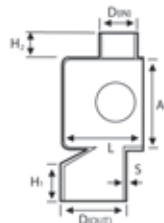
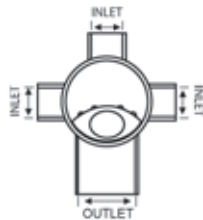
Item No.	Dimension	D	S	H
1	50 - 1 1/4"	55	3	32
2	50 - 1 1/2"	56	3	32

Extension Socket



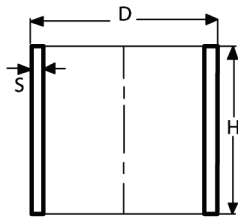
Item No.	Dimension	D mm	d mm	d1 mm	S mm	H mm	L mm
1	110mm	127	114.5	119	6	8	150
2	125mm	140	127	132	6.7	8	100
3	125mm	140	127	132	6.7	8	150

Floor Trap



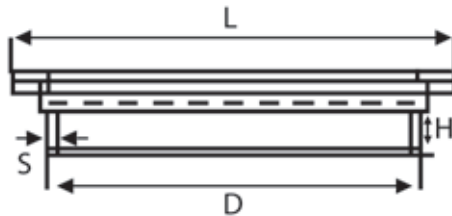
Item No.	Dimension	D mm		S mm		H mm		A mm	L mm
		D1	D2	S1	S2	H1	H2		
1	63 - 50mm	68	55	4	4	48	34	125	99
2	63 - 63mm	68	68	4	4	48	34	125	99
3	75 - 50mm	82	55	4	2.5	47	34	110	99
4	75 - 1 1/2"	82	55	4	4	38	34	125	99
5	75 - 1 1/2"	82	55	4	4	47	34	110	99
6	75 - 2"	82	68	4	4.5	47	38	125	99

Repair Coupling



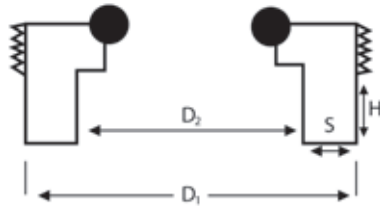
Item No.	Dimension	D mm	S mm	H mm
1	75mm	84	4.5	94
2	110mm	122	5.5	109

Floor Trap Cover



Item No.	Dimension	D mm	S mm	H mm	L mm
1	110mm	109.5	3.5	7	147.5
2	125mm	124.5	3.5	7	147.5

Expansion Joint



Item No.	Dimension	D		S mm	H mm
		D1	mm D2		
1	75mm	93.5	84	4.7	18
2	110mm	132	122	5	20
3	160mm	183	173	5	27

The background of the entire page is a vibrant blue sunburst pattern. Numerous thin, light blue lines radiate from a central point at the top, creating a starburst effect that fills the entire frame. The lines are evenly spaced and extend to the edges of the page.

CERTIFICATES

Registration Certificate

*This is to certify that
the Environmental Management Systems of*

**AL-AMAL COMPANY FOR PLASTIC PIPES AND
FITTINGS (AL-SHARIF)**

*have been assessed by AJA Registrars and registered
against the requirements of*

BS EN ISO 14001:2004

Certificate No. : **AJA10/AN/1453**

Date of Original Registration : **05/07/2010**

Date of Expiry : **04/07/2013**

Date of Re-Registration : **N/A**



Raymond Hinton *Timothy Dixon*
Joint Chief Executives, AJA Registrars



This Certificate has been issued by AJA Registrars Limited, Unit 6, Gordano Court, Gordano Gate Business Park, Serbert Close, Portishead, Bristol UK BS20 7FS

*This certificate is issued in respect of the locations & scope of registration detailed in the Associated Registration Schedule.
This certificate is the property of AJA Registrars and must be returned on request.*

Registration Certificate

*This is to certify that
The Occupational Health & Safety Management Systems of*

**AL-AMAL COMPANY FOR PLASTIC PIPES
AND FITTINGS (AL-SHARIF)**

*have been assessed by AJA Registrars and registered
against the requirements of*

OHSAS 18001:2007

Certificate No: AP/EG/10/HS/472

Date of Original Registration: 23:06:10

Date of Expiry: 22:06:13

Date of Re-Registration: N/A



Timothy Diacon
Chief Executive Officer



Registration Certificate

*This is to certify that
the Quality Management Systems of*

**AL-AMAL COMPANY FOR PLASTIC PIPES AND FITTINGS
(AL-SHARIF)**

*have been assessed by AJA Registrars and registered
against the requirements of*

BS EN ISO 9001:2008

Certificate No. : **AJA01/3823**

Date of Original Registration : **01/10/2001**

Date of Expiry : **03/01/2013**

Date of Re-Registration : **23/02/2010**



Reg. No. 059

Raymond Hinman *Timothy Dixon*
Joint Chief Executives, AJA Registrars



This Certificate has been issued by AJA Registrars Limited, Court Lodge, 105 High Street, Portishead, Bristol UK BS20 6PT

This certificate is issued in respect of the locations & scope of registration detailed in the Associated Registration Schedule.
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Ministry of Trade & Industry
Egyptian Organization for
Standardization & Quality



LICENCE OF QUALITY MARK

Company's Name: **Al - AMAL for plastic Pipes & Fitting Co
(AL-SHARIF)**

Address : **10th of Ramadan City - Industrial Zone.**

..... **No A3**

product(s) Certified : **Unplasticized Poly Vinyl Chloride . (PVC-U) Pipes
for Potable Water**

Standard(s) : **Es 848-1/2008**

Date of Issue : **1/10/2009**

Validity : **One year**

Chairman of EOS

(Hay Bawt)



Quality General Manager

(Omayer Di Assam)

Ministry of Trade & Industry
Egyptian Organization for
Standardization & Quality



وزارة التجارة والصناعة
الهيئة المصرية العامة للمواصفات والجودة

LICENCE OF QUALITY MARK

ترخيص بعلامة الجودة

Company's Name : بشركة الأمل للبواسير البلاستيك ولوازمها : اسم الشركة :
Address : بالمنطقة الصناعية الثالثة A3 - العاشر من رمضان : العنوان :
product(s) Certified : موابير. كلوريد. الفينيل. غير الملدن. لنقل مياه. : السلع المرخص لها بعلامة الجودة :
(P.V.C-U) الشرب

Standard(s) : م. ق. م. ٢٠٠٨ / ١ - ٨٤٨ : المواصفة القياسية :
Date of Issue : ٢٠٠٩ / ١٠ / ١ : تاريخ الاصدار :
Validity : عام : صلاحية الترخيص :

رئيس مجلس الإدارة

Chairman of EOS



Quality General Manager

مدير عام الجودة

()

()

National Organization

For Potable Water & Sanitary Drainage

Administration of Testing & Industry Supervision

الهيئة القومية

لمياه الشرب والصرف الصحي

إدارة الاختبارات والرقابة على الصناعة

ساري
حتى ٢٠١٤/٦/٣٠

شهادة اعتماد منشأة إنتاجية

رقم () / مجموعة (المواسير البلاستيك UPVC)

اسم المنشأة : شركة الامل للصناعات للمواسير البلاستيك ولوازمها
عنوان الادارة : ٨ش محمد تيمور ميدان سانت فاتيما - مصر الجديدة
عنوان المصنع : المنطقة الصناعية الثالثة - مدينة العاشر من رمضان
السجل التجاري : ٦٢٣ مكتب سجل تجاري : الاستثمار محافظة : القاهرة
بعض رقم تسجيل ضريبي : ٢٠٤-٩٧٦-٨٩٨ مأمورية : الاستثمار محافظة : --
سجل صناعي رقم : ٢٦٦٢٧ سنة الإصدار : ١٩٩٨ نوعية الصناعة : كيمياوية
رخصة : (دائمة) ملف رقم : ٨٣١ (مدينة) : العاشر من رمضان محافظة : -الشرقية
موافقة شئون البيئة : --- رقم القرار : ٧٥٦ التاريخ ٩٩/١/١١ الجهة : رئاسة مجلس الوزراء

أهم المنتجات المعتمدة لدى الهيئة :

- ١- المواسير البلاستيك UPVC المستخدمة في مشروعات المياه بضغط حتى ١٦ ض جوي حتى قطر ٧١٠ مم .
- ٢- المواسير البلاستيك UPVC المستخدمة في مشروعات الصرف الصحي حتى قطر ٧١٠ مم .
- ٣- القطع الخاصة البلاستيك upvc المنتجة بالحقن بضغط حتى ١٦ بار ض جوي حتى قطر ١٦٠ مم .
- ٤- البرايز المصنوعة من الحقن . upvc حتى ١٦٠ ض جوي ١٦ بار . وقطر ٢٢٥ مم ١٠ بار .

- طبقا للمواصفات القياسية المصرية والعالمية و القرار الوزاري رقم ٢٧٧ لسنة ٢٠٠٠ وتعديلاته و الإضافات بالقرار الوزاري ١٤ لسنة ٢٠٠٢
- يتم الالتزام بتعليمات الادارة و الموضحة خلفه وفي حاله مخالفتها يعتبر لاغي

المشرف العام

المصدق

" علاء الدين محمد الحميد "

صالح في ٢٠١٠/٤/٢٧
ساري حتى ٢٠١٤/٦/٣٠

٢٢٤
٢٠١٤/٤/٢٧

Note

Note



Note Note







www.alamalplasticpipes.com

Head Office

8 Mohamed Taimor St., Saint Fatima, Heliopolis, Cairo, Egypt
Tel. (+202) 224 062 57 - 5 Lines Fax. (+202) 263 717 13 - (+202) 263 747 13
E-Mail : Headoffice@alamalplasticpipes.com

Factories

10th of Ramadan - Ind. Zone A3
Tel & Fax (+2015) 411501-2-3-4-6
E-Mail : Factories@alamalplasticpipes.com

Hot Line

(+202) 264 314 10