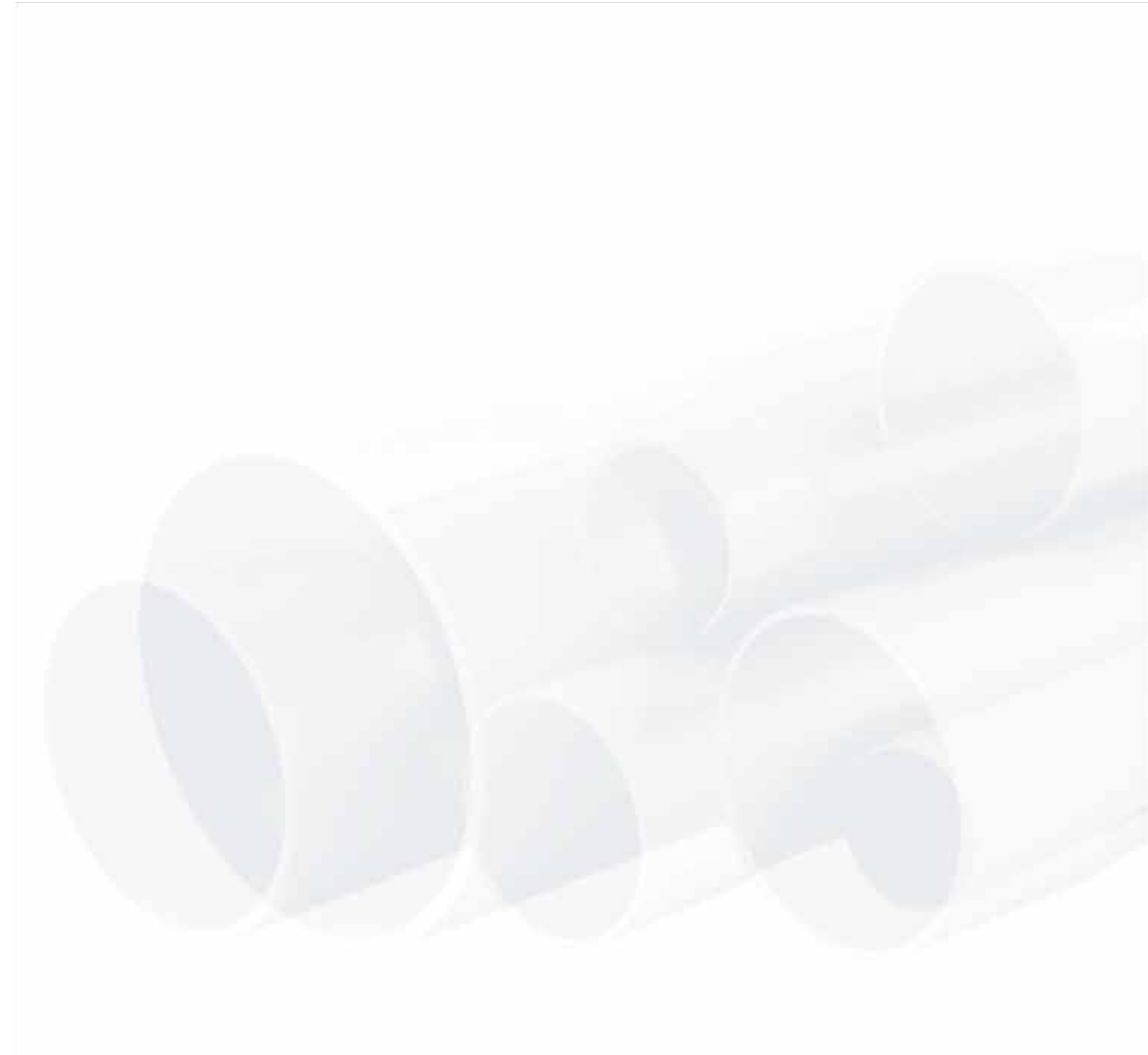


U.P.V.C PIPES



World Plastics
for Construction Industries
Advanced Piping Systems

www.advanced-piping.com



U.P.V.C
Advanced Piping Systems



The First Manufacturer Of Advanced Plastic Piping Systems In Middle East Region

Solar Photovoltaic System



As one of the leading companies in the Jordanian industrial sector, we believe in being part of the solution for its most irritating challenges , the prices of energy have been rapidly increasing in the past few years . We, at World plastics, have taken a major step towards facing this challenge and turning it into an opportunity; we have recently operated a 712 kW on grid solar photovoltaic system that covers 60% of our energy needs, the system consists of 2262 photovoltaic panels distributed on our warehouses rooftops, and will provide the factory with 1145 MWh of electricity annually, thus reducing our factory's environmental impact with up to 550 tons of CO2 emissions per year.



World Plastics

for Construction Industries
Advanced Piping Systems



Introduction

World Plastics is a leading company in the development and manufacture of advanced plastic piping systems since 1984. Our uniquely extensive range of large and small bore piping systems are capable of handling a wide variety of materials in industrial and domestic applications including water, fluid, waste water, gas and chemicals.

World Plastics, also produces piping systems for drainage and sewage networks installations. Pipes are made from high quality raw materials and are manufactured on some of the most advanced machinery in the world to the most exacting standards.

Our commitment to quality also extends to customer service. You will find us more than willing to help with the design of installations and can advise on the development of piping systems to meet particular needs.

So, and because of tremendous growth in the industrial, commercial, and housing sectors in all types of public amenities in Jordan, pipelines are needed to convey water and sewage, and to protect telecommunication and electrical cables. To fulfill this need, World Plastics Company was formed with the aim of producing, in Jordan, a full range of un-plasticized polyvinyl chloride (UPVC) pipes and fittings according to international recognized standards and Jordanian Standards.



Production of PVC-U pipes

PVC products are shaped through a thermal and pressure process of PVC resin powder. Two main processes in production are extrusion for continual products such as pipe, and molding for separate products such as fittings.

The modern process of PVC-U needs the use of technical-industrial ways to accurate control of processing variables. The used polymeric material is a free flow powder which needs adding of various stabilizers and lubricants. For this reason formulation and then mixing are two vital subjects for this process.

The polymer and additives (1) are weighed carefully (2) and sent to mixing unit (3). High speed mixers mix the raw materials to get a unique dry blend. In this step a temperature of 120°C is reached in mixer by friction and shear. After getting the suitable temperature the mixture is transferred to a cooling tank automatically and the temperature is reduced to about 50°C rapidly.

Extruder (4) is the heart of PVC-U pipe process, which has a barrel containing heat controllable elements in which turns precise screw/screws. The modern extruders are very complex machines which are designed precisely to control pressure and shear of the material during all parts of the process.



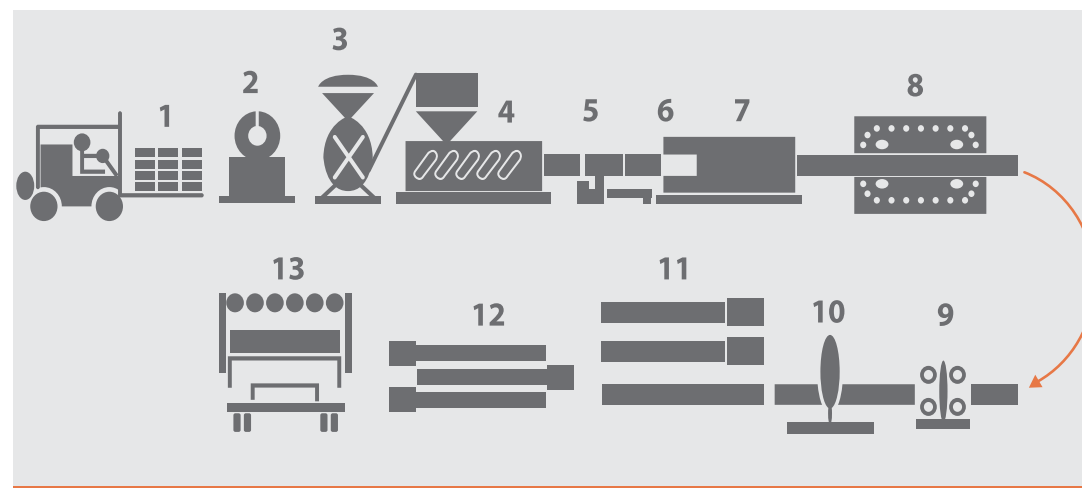
The product from previous stage is sent to screw and barrel to get the required melting shape by heat, pressure and shear. While passing the screw, the PVC particles pass different heating areas for compression, more mixing and gas removing of the melt. In the last area the pressure increases to pass the melt through the mold (5) and be shaped as the required size and specification. The mold design is very important as it has high effect on the final specification of the product.

The pipe gets the desired size by vacuum or air blow calibrator (6), after exiting the extruder. The calibrator length is about three times of pipe diameter. This length is necessary for fixing the pipe diameter before final cooling water bath with controlled temperature (7).

The pipe passes on a fixed speed through calibration and cooling unit by a caterpillar puller (8). The speed control is very important, because of the effect on the wall thickness of final product. A parallel printer (9) in constant distances marks the size, type, date , ... of the pipes and an automatic saw (10) cuts the pipes in specified length.

A belling machine (11) bells one side of each pipe. Generally there are two kinds of belling: power- seal and solvent cement.

After testing and laboratory quality controls, the final product is sent to the store (12) for delivery to the final destination (13).



MANUFACTURING STANDARDS

World Plastics UPVC Pipes are manufactured in accordance with :

- German Standards : DIN 8061 , DIN 8062 , DIN 19532 .
- British Standards : BS 3505 , BS 4660 , BS 5481 .
- NEMA Standards : TC – 2 , TC – 6 , TC – 8 .
- EN Standard : EN 1401-1 , EN 1401-2 , EN 1401-3 .
- American Standards : ASTM D-1785 , ASTM F-441 for SCH. (40 , 80) , ASTM D-2241 .
- International Standards : ISO 161/1, ISO 4422-2 .
- Jordanian Standard : JS 159 .

Product Development

World Plastics is adopting a policy of continuous research and development as an integral part of its operation .

New technologies are continually integrated in the manufacturing processes. New products are always been introduced to our range and we are always seeking excellence in terms of our products and services.

World Plastics have already started manufacturing its own molded PVC fittings in accordance to the best designs and techniques.





Fields of UPVC Pipes and Fittings Applications

World Plastics UPVC pipes and fittings are widely used in :

■ **Water Supplies**

Non-toxic World Plastics UPVC pipes will not affect the taste , color , or smell of drinking water .They will never corrode and are therefore extremely sanitary. Deposits and scales will not buildup inside as in the case for convention al steel pipes .Their strength is greater than that of asbestos pipes.

■ **Irrigation Systems**

World Plastics UPVC pipes are ideal for agricultural irrigation and sprinkler systems . Non-corrosive UPVC pipes are perfect for carrying water which contains chemical fertilizers and insect inhibitors .In thick wall and large diameter UPVC pipes liquids can be transported under high pressure ,which is convenient for the management of large farms .

■ **Industry**

Resistant to most chemicals , UPVC pipes have an important role to play in industrial plants . Light , noncorrosive , and easy to assemble , they allow more complex piping work than with steel or cast – iron pipes .

■ **Soil , Waste & Drainage Sewer Systems**

Waste lines for corrosive gases , ventilation for office buildings and factories ; drainage systems for private homes and elevated high ways these are a few of the many possibilities for UPVC pipes .

■ **Mining**

UPVC pipes particularly well suited for draining corrosive liquids found in mines. They make an ideal vent line for pits because they are easily installed in hard to reach places.

■ **Electrical & Telecommunications Lines (as Conduits for Cables and Fiber Optics)**

Since UPVC pipes are themselves for man integral insulator , there is an ever-increasing demand for them as electrical conduit . To facilitate work, a full line of fittings is available and fabricated from the same material as the pipes .

Range of Production

Water Supplies

Pipes are manufactured according to Jordanian , DIN Standards from 16 mm up to 250 mm outside diameter in various pressure classes , details of which are shown later in our catalogue .

UPVC pipes are available with spigot and solvent weld socket joints for Diameters less than 63 mm , Sizes of outside diameter 63 mm and larger are available with either mechanical rubber ring joints or solvent weld socket joints .

Pipes manufactured in accordance with ASTM , BS Standards or EN Standards are ranging from (½ inch) up to (8 inches) in various pressure ratings . Pipes are produced in 6 meters standard length (other lengths are available upon request) .

Standard colors are ; Grey, Yellow , and orange
(other colors are available upon request) .

Features of UPVC Pipes and Fittings

- Ease of handling , installation and maintenance .
- Chemical , corrosion and abrasion resistance .
- Low thermal expansion .
- Low bacteria build up .
- Fire Proof .
- Low friction loss .
- Resistance to Galvanic or Electrolytic attack .
- Noise reduction (compared to metallic pipes) .
- Cost Effectiveness .
- Thrust Resistance .



PROPERTIES OF UPVC PIPES



Mechanical Properties

	Unit	Values
Tensile Strength Ultimate	KGF/cm ² MPa	492 min 48.0 min
Modulus of Elasticity in Tension	KGF/cm ² MPa	28123 min 2758 min
Compressive Strength	KGF/cm ² MPa	638 min 62.0 min
Flexural Strength	KGF/cm ² MPa	1020 100.0 min
Izod Impact Strength	J / M of notch	34.7 min
Hardness	Durometer "D" Rockwell "R"	>70+- 3 110 - 120



Thermal Properties

	Unit	Values
Coefficient of Thermal Linear Expansion	mm/m °k	5.6
Thermal Conductivity	Wm / °k / m ²	0.18
Specific Heat	cal / °C Kcal /kg	0.23
Vicat Softening Temperature	°C	>80
Deflection Temperature	°C	>70 min
Elongation at Break	%	>40 min



Electrical Properties

	Unit	Values
Dielectric Strength	Volts / Mil	1100
Dielectric Constant	60 cps @ 30 °C	4
Specific Volume Resistivity	Ohm/cm	>10 ¹⁴
Power Factor	at 10 cycles	3



General Properties

	Unit	Values
Specific *gravity	-	1.42
Water Absorption	mg/cm ²	<4
Cell Designation	ASTM 1784	12454-B
Flame Spread E - 84	-	<25
Poison's Ratio @73 °F	-	0.35 - 0.38
Smoke Density	-	500
Friction Coefficient	Factor "C"	150

- UPVC is a non - conductor of electricity and also not subject to galvanic or electrolytic attack. Electrical equipments Should not be earth ended to (UPVC) pipes.
- All values are registered at 23 °C (73° F).



CHEMICAL RESISTANCE OF UPVC PIPES

UPVC & CPVC pipes and fittings have excellent chemical resistance to most mineral acids, bases, salts, and aliphatic hydrocarbons. When they are used within their allowable pressure and temperature ranges, they will provide a good alternative to metallic piping which corrodes when exposed to the same aggressive chemical solutions. The information contained in the following chemical resistance tables are based on data supplied to us by our raw material manufacturers and some actual field experience gathered from various sources. You must take into consideration the specific use conditions that will apply to your project. There will be variables that will affect the chemical resistance such as: temperature, pressure, chemical concentration, and external stresses that may exist in the design and construction of the system. Because of the wide variety and numerous use conditions that are found in the process chemical industry, the final decision to use thermoplastic piping should be based on in-service testing and evaluation by the responsible engineer and end-user.

INTERPRETATION OF THE DATA :

It is important to understand that an “R” rating does not necessarily imply that pipe, fittings, and joints can be used at their water pressure rating and be expected to have the same longevity when used with a particular chemical other than water. Generally, the chemical resistance of UPVC and CPVC will decrease with an increase in temperature and concentrations. This is also true for all other components in the system that will come in contact with the flow. Solvent cements, valves, instrumentation, o-rings, gaskets, and other such components should be evaluated and approved by their respective manufacturers.

R = Recommended For Use

NR = Not Recommended

..... = No Data Available, Check With Factory.

Chemical	uPVC		Chemical	uPVC		Chemical	uPVC	
	23 °F	60 °F		23 °F	60 °F		23 °F	60 °F
Acetaldehyde	NR	NR	Alum	R	R	Ammonium Phosphate	R	R
Acetamide	..	..	Alum, Ammonium	R	R	Ammonium Sulfate	..	..
Acetic Acid, %10	..	..	Alum, Chrome	R	R	Ammonium Sulfate	R	R
Acetic Acid, 20%	R	R	Alum, Potassium	..	..	Ammonium Thiocyanate	R	..
Acetic Acid, 50%	R	*	Aluminum Chloride	R	R	Ammonium Tartrate	..	..
Acetic Acid, 80%	R	*	Aluminum Fluoride	R	NR	Amyl Acetate	NR	NR
Acetic Acid, Glacial	NR	NR	Aluminum Hydroxide Solution	R	R	Amyl Chloride	NR	NR
Acetic Anhydride	..	..	Aluminum Nitrate	R	R	Aniline	NR	NR
Acetone, up to 5%	..	..	Aluminum Oxichloride	R	R	Aniline Chlorohydrate	NR	NR
Acetone, greater than 5%	..	..	Aluminum Sulfate Solution	R	R	Aniline Hydrochloride	NR	NR
Acetophenone	NR	NR	Amines	..	..	Anthraquinone	R	R
Acetyl Chloride	..	..	Ammonia	..	..	Anthraquinone Sulfonic Acid	R	R
Acetylene	NR	NR	Ammonia, Gas (Non-Pressure; Vent Only)	R	R	Antimony Trichloride	R	R
Acetyl Nitrate	NR	NR	Ammonia, Aqua, 10%	R	NR	Aqua Regia	*	NR
Acrylic Acid	NR	NR	Ammonia, Liquid	NR	NR	Aromatic Hydrocarbons	NR	NR
Acrylonitrile	NR	NR	Ammonium, Acetate	R	R	Arsenic Acid	R	R
Adipic Acid, sat'd	*	*	Ammonium Benzoate	..	..	Aryl Sulfonic Acid	R	R
Alcohol, Allyl	NR	NR	Ammonium Bifluoride	R	R	Asphalt Emulsion	NR	NR
Alcohol, Amyl	NR	NR	Ammonium Bisulfide	R	R	Barium Carbonate	R	R
Alcohol, Benzyl	NR	NR	Ammonium Carbonate	R	R	Barium Chloride	R	R
Alcohol, Butyl, Primary	R	R	Ammonium Chloride	R	R	Barium Hydroxide	R	R
Alcohol, Butyl, Secondary	R	NR	Ammonium Citrate	..	..	Barium Nitrate	R	..
Alcohol, Diacetone	..	..	Ammonium Dichromate	R	..	Barium Sulfate	R	R
Alcohol, Ethyl	R	R	Ammonium Fluoride, 10%	R	R	Barium Sulfide	R	R
Alcohol, Hexyl	R	R	Ammonium Fluoride, 25%	R	*	Beer	R	R
Alcohol, Isopropyl	R	R	Ammonium Hydroxide	R	*	Beet Sugar Liquors	R	R
Alcohol, Methyl	R	R	Ammonium Metaphosphate	R	R	Benzaldehyde	NR	NR
Alcohol, Propargyl	R	R	Ammonium Nitrate	R	R	Benzalkonium Chloride	NR	NR
Alcohol, Propyl	R	R	Ammonium Persulfate	R	R	Benzene	NR	NR
Allyl Chloride	NR	NR						

Chemical	uPVC		Chemical	uPVC		Chemical	uPVC	
	23 °F	60 °F		23 °F	60 °F		23 °F	60 °F
Black Sulfate Liquor	R	R	Chromic Acid, 50%	NR	NR	Ferrous Hydroxide	R	..
Bleach, Household (%5 Cl)	R	R	Chromium Nitrate	..	..	Ferrous Nitrate	R	..
Bleach, %12.5 Active Cl	R	R	Citric Acid	R	R	Ferrous Sulfate (Green Couperas Solution)	R	R
Bleach %5.5 Active Cl	R	R	Citric Acid, 10%	..	..	Fish Solubles	R	R
Bleach, Industrial (15% Cl)	..	..	Citrus Oils	..	..	Fluorine Gas	NR	NR
Borax	R	R	Coconut Oil	R	R	Fluoroboric Acid	R	R
Boric Acid	R	R	Coke Oven Gas (Non-Pressure; Vent Only)	NR	NR	Fluorosilicic Acid, 30%	R	R
Boric Acid, Saturated	..	..	Copper Acetate	..	..	Formaldehyde, 35%	R	R
Brine, Acid	R	..	Copper Carbonate	R	R	Formaldehyde, 37%	R	R
Bromic Acid	R	..	Copper Chloride	R	R	Formaldehyde, 50%	R	R
Bromine	..	..	Copper Cyanide	R	R	Formic Acid, up to 25%	R	NR
Bromine, Liquid	NR	NR	Copper Fluoride	R	R	Formic Acid, greater than 25%	..	..
Bromine, Vapor 25% (Non-Pressure; Vent Only)	R	R	Copper Nitrate	R	R	Freon F-11	R	R
Bromine, Water	R	R	Copper Sulfate (Blue Vitriol Solution)	R	*	Freon F-12	R	R
Bromobenzene	NR	NR	Corn Oil	*	*	Freon F-21	NR	NR
Bromotoluene	NR	NR	Corn Syrup	*	*	Freon F-22	NR	NR
Butadiene	R	R	Cottonseed Oil	R	R	Freon F-113	R	R
Butane	R	R	Creosote	..	..	Freon F-114	R	R
Butanol	NR	NR	Cresol	NR	NR	Fructose	R	R
Butyl Acetate	NR	NR	Cresylic Acid, 50%	R	R	Fruit Juices, Pulp	R	R
Butyl Alcohol	R	R	Crotonaldehyde	NR	NR	Furfural	NR	NR
Butyl Carbitol	..	..	Crude Oil	R	*	Gallac Acid	R	R
Butyl Cellosolve	R	..	Cumene	..	..	Gasoline, Leaded	*	NR
Butyl Phthalate	NR	NR	Cupric Fluoride	R	R	Gasoline, Unleaded	*	NR
Butylene	R	R	Cupric Sulfate	R	R	Gasoline, Sour	*	NR
Butyl Phenol	R	NR	Cuprous Chloride	R	R	Gelatin	R	R
Butyl Stearate	R	..	Cyclohexane	NR	NR	Gin	..	..
Butyne Diol	NR	NR	Cyclohexanol	NR	NR	Glucose	R	R
Butyric Acid, up to 1%	R	NR	Cyclohexanone	NR	NR	Glycerine	R	R
Butyric Acid, greater than 1%	..	..	D-Limonene	..	..	Glycerine, Glycerol	R	R
Cadmium Acetate	..	..	Desocyphephrine Hydrochloride	R	..	Glycolic Acid	R	R
Cadmium Chloride	..	..	Detergents	R	R	Glycols Ether	R	R
Cadmium Cyanide	R	R	Detergent Solution (Heavy Duty)	R	R	Grape Sugar (Juice)	R	R
Cadmium Sulfate	..	..	Dextrin	R	R	Green Liquor	R	R
Caffeine Citrate	R	..	Dextrose	R	R	Halocarbons Oils	..	..
Calcium Acetate	..	..	Diazo Salts	R	R	Heptane	R	R
Calcium Bisulfide	..	..	Dibutoxy Ethyl Phthalate	NR	NR	Hexane	R	*
Calcium Bisulfite Solution	R	R	Dibutyl Phthalate	NR	NR	Hydraulic Oil	*	*
Calcium Carbonate	R	R	Dibutyl Sebacate	R	NR	Hydrazine	NR	NR
Calcium Chlorate	R	R	Dichlorobenzene	NR	NR	Hydrobromic Acid, %20	R	R
Calcium Chloride	R	R	Dichloroethylene	NR	NR	Hydrobromic Acid, %50	R	*
Calcium Hydroxide	R	R	Diesel Fuels	NR	NR	Hydrochloric Acid, 18%	R	R
Calcium Hypochlorite	R	R	Diethylamine	NR	NR	Hydrochloric Acid, Conc. 37 % (Muriatic Acid)	R	..
Calcium Nitrate	R	R	Diethyl Cellosolve	..	..	Hydrocyanic Acid	R	R
Calcium Oxide	R	R	Diethyl Ether	R	..	Hydrocyanic Acid, 10%	R	R
Calcium Sulfate	R	R	Diglycolic Acid	R	R	Hydrofluoric Acid, Dilute	R	NR
Camphor Crystals	R	..	Dil Oil	..	..	Hydrofluoric Acid, 3%	..	..
Cane Sugar Liquors	R	R	Dimethylamine	R	R	Hydrofluoric Acid, greater than 3%	..	..
Caprolactam	..	..	Dimethylformamide	NR	NR	Hydrofluoric Acid, 30%	R	NR
Caprolactone	..	..	Dimethyl Hydrazine	NR	NR	Hydrofluoric Acid, 40%	R	NR
Carbitol	R	..	Diocetyl Phthalate	NR	NR	Hydrofluoric Acid, 50%	R	NR
Caprylic Acid	..	..	Dioxane	NR	NR	Hydrofluosilicic Acid, 30% (12OF-R)	R	R
Carbon Dioxide, Wet (Non-Pressure; Vent Only)	R	R	Dioxane, 1, 4	NR	NR	Hydrogen	R	R
Carbon Dioxide, Dry (Non-Pressure; Vent Only)	R	R	Disodium Phosphate	R	R	Hydrogen Cyanide (Non-Pressure; Vent Only)	R	R
Carbon Disulfide	NR	NR	Distilled Water	R	R	Hydrogen Fluoride, Anhydrous	NR	NR
Carbon Monoxide	R	R	Divinylbenzene	NR	NR	Hydrogen Peroxide, 30%	R	..
Carbon Tetrachloride	NR	NR	Dursban TC	..	..	Hydrogen Peroxide, 50%	R	*
Carbonic Acid	R	R	EDTA, Tetrasodium	..	..	Hydrogen Peroxide, 90%	R	R
Castor Oil	R	R	Epsom Salt	R	..	Hydrogen Phosphide	R	R
Caustic Potash	R	R	Esters	NR	NR	Hydrogen Sulfide, Dry (Non-Pressure; Vent Only)	R	R
Caustic Soda	..	..	Ethanol, up to 5%	..	..	Hydrogen Sulfide, Aqueous Sol.	R	R
Cellosolve	R	NR	Ethanol, greater than 5%	..	..	Hydroquinone	R	R
Cellosolve Acetate	R	..	Ethers	NR	NR	Hydroxylamine Sulfate	R	R
Chloracetic Acid	R	R	Ethyl Acetate	NR	NR	Hydrochlorous Acid	R	R
Chloral Hydrate	R	R	Ethyl Acetoacetate	NR	NR	Hypochlorous Acid	..	..
Chloramine	R	..	Ethyl Acrylate	NR	NR	Iodine	NR	NR
Chloric Acid	R	R	Ethyl Benzene	..	..	Iodine Solution, 10%	NR	NR
Chlorinated Solvents	NR	NR	Ethyl Chloride	NR	NR	Iron Salts	..	*
Chlorinated water, (hypochlorite)	..	..	Ethyl Chloroacetate	NR	NR	Isopropanol	*	*
Chlorine Gas, Dry	NR	NR	Ethyl Ether	NR	NR	Isopropyl Ether	NR	NR





Chemical	uPVC		Chemical	uPVC		Chemical	uPVC	
	23°F	60°F		23°F	60°F		23°F	60°F
Chlorine Gas, Wet	NR	NR	Ethylene Bromide	NR	NR	Isooctane	..	..
Chlorine, Liquid	NR	NR	Ethylene Chloride	NR	NR	Jet Fuel, JP-4	*	NR
Chlorine, trace in air (Non-Pressure; Vent Only)	..	..	Ethylene Chlorohydrin	NR	NR	Jet Fuel, JP-5	..	NR
Chlorine dioxide, aqueous, sat'd	..	..	Ethylene Diamine	..	*	Kerosene	NR	NR
Chlorine Water, Saturated	R	R	Ethylene Dichloride	NR	NR	Ketones	NR	NR
Chloroacetic Acid	R	NR	Ethylene Glycol, up to %50	R	R	Kraft Liquor	R	R
Chloroacetyl Chloride	R	..	Ethylene Glycol, greater than 50%	R	R	Lactic Acid, %25	R	R
Chlorobenzene	NR	NR	Ethylene Oxide	NR	NR	Lactic Acid, 85%	R	..
Chlorobenzyl Chloride	NR	NR	Fatty Acids	R	R	Lard Oil	R	R
Chloroform	NR	NR	Ferric Acetate	R	NR	Lauric Acid	R	R
Chloropicrin	NR	NR	Ferric Chloride	R	R	Lauryl Chloride	R	R
Chlorosulfonic Acid	R	NR	Ferric Hydroxide	R	R	Lead Acetate	R	R
Chromic Acid, %10	R	R	Ferric Nitrate	R	R	Lead Chloride	R	R
Chromic Acid, 30%	R	*	Ferric Sulfate Solution	R	R	Lead Nitrate	R	R
Chromic Acid, 40%	R	*	Ferrous Chloride	R	R	Lead Sulfate	R	NR
Linoleic Oil	R	R	Palmitic Acid, 70%	R	NR	Silicone Oil	R	NR
Linseed Oil	R	R	Paraffin	R	R	Silver Chloride	..	..
Linseed Oil, Blue	..	..	Peanut Oil	..	..	Silver Cyanide Solut ion	R	R
Liqueurs	R	R	Peracetic Acid, 40%	R	NR	Silver Nitrate	R	R
Lithium Bromide (Brine)	R	R	Perchloric Acid, 10%	R	*	Silver Sulfate	R	R
Lithium Chloride	R	R	Perchloric Acid, 70%	R	NR	Soaps	R	R
Lithium Sulfate	R	R	Perphosphate	R	..	Sodium Acetate	R	R
Lubricating Oil, ASTM #1	R	R	Petroleum Oils, Sour	R	*	Sodium Aluminate	..	..
Lubricating Oil, ASTM #2	R	R	Petroleum Oils, Refined	R	R	Sodium Arsenate	..	..
Lubricating Oil, ASTM #3	R	R	Phenol	*	NR	Sodium Alum	R	R

Chemical	uPVC		Chemical	uPVC		Chemical	uPVC	
	23°F	60°F		23°F	60°F		23°F	60°F
Sulfuric Acid, 100%	NR	NR	Tributyl Citrate	R	..	Water, Distilled	R	R
Sulfurous Acid	*	NR	Trichloroacetic Acid	R	R	Water, Potable	R	R
Tall Oil	R	R	Trichloroethane	NR	NR	Water, Salt	R	R
Tannic Acid, %10	..	..	Trichloroethylene	NR	R	Water, Sea	R	R
Tannic Acid, 30%	..	..	Triethanolamine	R	*	Water, Sewage	R	R
Tanning Liquors (Vegetable)	R	R	Triethylamine	R	R	Water, Swimming Pool	..	..
Tar	NR	NR	Trimethylpropane	R	NR	WD-40	..	..
Tartaric Acid	R	R	Trisodium Phosphate	R	R	Whiskey	R	R
Terpenes	..	..	Turpentine Oil	R	R	White Liquor	R	R
Tetraethyl Lead	R	*	Urea	R	R	Wines	R	R
Tetrahydroduran	NR	NR	Urine	R	R	Xylene	NR	NR
Tetrahydrofuran	NR	NR	Vaseline	NR	NR	Zinc Acetate	R	R
Tetrasodiumpyrophosphate	R	R	Vegetable Oils	*	*	Zinc Bromide	R	R
Texanol	..	..	Vinegar	R	R	Zinc Carbonate	..	..
Thionyl Chloride	NR	NR	Vinegar, White	..	..	Zinc Chloride	R	R
Thread Cutting Oils	R	..	Vinyl Acetate	NR	NR	Zinc Nitrate	R	R
Triphenol	*	*	Water	R	R	Zinc Phosphate	..	..
Titanium Tetrachloride	*	NR	Water, Acid Mine	R	R			
Toluene	NR	NR	Water, Deionized	..	..	
Toluene, Toluol	NR	NR	Water, Demineralized	R	R	Zinc Sulfate	R	R

Chemical	uPVC		Chemical	uPVC		Chemical	uPVC	
	23°F	60°F		23°F	60°F		23°F	60°F
Machine Oil	R	R	Phenylhydrazine	NR	NR	Sodium Benzoate	R	R
Magnesium Carbonate	R	R	Phenylhydrazine Hydrochloride	NR	NR	Sodium Bicarbonate	R	R
Magnesium Chloride	R	R	Phosgene, Liquid	NR	NR	Sodium Bichromate	R	R
Magnesium Citrate	R	R	Phosgene, Gas (Non-Pressure; Vent Only)	R	*	Sodium Bisulfate	R	R
Magnesium Fluoride	..	..	Phosphoric Acid, %10	R	R	Sodium Bisulfite	R	R
Magnesium Hydroxide	R	R	Phosphoric Acid, %25	R	R	Sodium Borate	R	..
Magnesium Nitrate	R	R	Phosphoric Acid, %45	R	R	Sodium Bromide	R	R
Magnesium Oxide	..	..	Phosphoric Acid, %70	R	R	Sodium Carbonate Solution	R	R
Magnesium Salts, inorganic	..	..	Phosphoric Acid, %85	R	R	Sodium Chlorate	R	..
Magnesium Sulfate (Epsom Salts)	R	R	Phosphorus, Yellow	R	*	Sodium Chloride	R	R
Manganese Sulfate	R	R	Phosphorus, Red	R	R	Sodium Chlorite	NR	NR
Maleic Acid	R	R	Phosphorus Pentoxide	R	*	Sodium Chromate	..	..
Maleic Acid, 50%	..	..	Phosphorus Trichloride	NR	NR	Sodium Cyanide	R	*
Maleic Acid	R	R	Photographic Solutions	R	R	Sodium Dichromate	R	R
Mercuric Acid	..	..	Picric Acid	NR	NR	Sodium Ferricyanide	R	R
Mercuric Chloride	R	R	Pine Oil	..	..	Sodium Ferrocyanide	R	R
Mercuric Cyanide	R	R	Plating Solutions, Brass	R	*	Sodium Fluoride	R	..
Mercuric Sulfate	R	R	Plating Solutions, Cadmium	R	*	Sodium Formate	..	..
Mercurous Nitrate	R	R	Plating Solutions, Chrome	R	*	Sodium Hydroxide, %10	R	R
Mercury	R	R	Plating Solutions, Copper	R	*	Sodium Hydroxide, %15	R	R
Methane (Non-Pressure; Vent Only)	R	R	Plating Solutions, Gold	R	*	Sodium Hydroxide, 25%	R	*
Methane Sulfonic Acid	..	..	Plating Solutions, Lead	R	*	Sodium Hydroxide, 30%	R	*
Methanol, up to 10%	..	..	Plating Solutions, Nickel	R	*	Sodium Hydroxide, 50%	R	*
Methanol, greater than 10%	..	..	Plating Solutions, Rhodium	R	*	Sodium Hydroxide, 70%	R	*
Methylene Chlorobromide	NR	NR	Plating Solutions, Silver	R	*	Sodium Hypobromite	..	..
Methoxyethyl Oleate	R	..	Plating Solutions, Tin	R	*	Sodium Hypochloride, 15%	R	*
Methylamine	NR	NR	Plating Solutions, Zinc	R	*	Sodium Hypochlorite	R	..
Methyl Bromide	NR	NR	Polyethylene Glycol	*	*	Sodium Iodide	..	..
Methyl Cellosolve	NR	NR	Polypropylene Glycol	*	*	Sodium Metaphosphate	R	..
Methyl Chloride	NR	NR	Potash	R	R	Sodium Nitrate	R	R
Methyl Chloroform	NR	NR	Potassium Acetate	..	..	Sodium Nitrite	R	R
Methyl Formate	..	..	Potassium Alum	R	R	Sodium Palmirate Solution, 5%	..	..
Methyl Ethyl Ketone	NR	NR	Potassium Aluminum Sulfate	R	..	Sodium Perborate	R	R
Methyl Isobutyl Ketone	NR	NR	Potassium Amyl Xanthate	R	NR	Sodium Perchlorate	R	R
Methyl Methacrylate	R	..	Potassium Bicarbonate	R	R	Sodium Peroxide	R	..
Methyl Sulfate	R	*	Potassium Bichromate	R	R	Sodium Phosphate, Alkaline	R	..
Methyl Sulfuric Acid	R	R	Potassium Bisulfate	R	R	Sodium Phosphate, Acid	R	..
Methylene BromideNR	NR	NR	Potassium Borate	R	R	Sodium Phosphate, Neutral	R	..
Methylene Chloride	NR	NR	Potassium Bromate	R	R	Sodium Silicate	..	..
Methylene Iodine	NR	NR	Potassium Bromide	R	R	Sodium Sulfate	R	R
Methylisobutyl Carbinol	..	..	Potassium Carbonate	R	R	Sodium Sulfide	R	R
Milk	R	R	Potassium Chlorate	R	R	Sodium Sulfite	R	R
Mineral Oil	R	R	Potassium Chloride	R	R	Sodium Thiosulfate	R	R
Molasses	R	R	Potassium Chromate	R	R	Sodium Tripolyphosphate	..	..
Monoethanolamine	NR	NR	Potassium Cyanate	R	R	Sour Crude Oil	R	R
Motor Oil	R	R	Potassium Cyanide	R	R	Soybean Oil	..	..
Muriatic Acid (see Hydrochloric Acid)	R	..	Potassium Dichromate	R	R	Stannic Chloride	R	R
Naphtha	R	R	Potassium Ethyl Xanthate	R	NR	Stannous Chloride, %15	R	R
Naphthalene	NR	NR	Potassium Ferricyanide	R	R	Stannous Sulfate	*	*
Natural Gas (Non-Pressure; Vent Only)	R	R	Potassium Ferrocyanide	R	R	Starch	R	R
Nickel Acetate	R	..	Potassium Fluoride	R	R	Stearic Acid	R	R
Nickel Chloride	R	R	Potassium Hydroxide	R	R	Stoddard's Solvent	NR	*
Nickel Nitrate	R	R	Potassium Hypochlorite	R	..	Strontium Chloride	*	*
Nickel Sulfate	R	R	Potassium Iodide	R	..	Styrene	..	..
Nicotine	R	R	Potassium Nitrate	R	R	Succinic Acid	R	R
Nicotinic Acid	R	R	Potassium Perborate	R	R	Sugar	..	..
Nitric Acid, up to 25%	..	..	Potassium Perchlorate, sat'd	R	R	Sulfamic Acid	NR	NR
Nitric Acid, 25-35%	..	..	Potassium Permanganate, %10, sat'd	R	R	Sulfated Detergents	..	..
Nitric Acid, greater than 35%	..	..	Potassium Permanganate, 25%, sat'd	..	..	Sulfate Liquors	..	..
Nitrobenzene	NR	NR	Potassium Persulfate, sat'd	R	R	Sulfite Liquor	R	R
Nitroglycerine	NR	NR	Potassium Phosphate	..	..	Sulfur	R	R
Nitrous Acid, 10%	R	NR	Potassium Sulfate	R	R	Sulfur Chloride	..	..
Nitrous Oxide (Non-Pressure; Vent Only)	R	*	Potassium Tripolyphosphate	..	..	Sulfur Dioxide, Dry (Non-Pressure; Vent Only)	R	R
Nitroglycol	NR	NR	Propane (Non-Pressure; Vent Only)	R	R	Sulfur Dioxide, Wet (Non-Pressure; Vent Only)	R	*
1-Octanol	..	..	Propanol, up to 0.5%	..	..	Sulfur Trioxide (Non-Pressure; Vent Only)	R	*
Oils, Edible	..	..	Propanol, greater than 0.5%	..	..	Sulfur Trioxide, Gas (Non-Pressure; Vent Only)	R	R
Oils, Vegetable	*	*	Propionic Acid, up to 2%	..	..	Sulfuric Acid, %10	R	R
Oils, Sour Crude	..	..	Propionic Acid, greater than 2%	..	..	Sulfuric Acid, %20	R	R
Oleic Acid	R	R	Propylene Dichloride	NR	NR	Sulfuric Acid, %30	R	R
Oleum	NR	NR	Propylene Glycol, up to 25%	R	..	Sulfuric Acid, %50	R	R
Olive Oil	..	..	Propylene Glycol, greater than 25%	R	..	Sulfuric Acid, %60	R	R
Oxalic Acid, Saturated	R	R	Propylene Oxide	NR	NR	Sulfuric Acid, %70	R	R
Oxalic Acid, 20%	..	..	Pyridine	NR	NR	Sulfuric Acid, 80%	R	R
Oxalic Acid, %50	R	R	Pyrogallia Acid	R	NR	Sulfuric Acid, 85%	R	NR
Oxygen (Non-Pressure; Vent Only)	R	R	Quaternary Ammonium Salts	..	..	Sulfuric Acid, 90%	R	NR



UPVC Technical Data Table - According to:

BS (3505 , 4660 ,5481) , EN (1401 - 1 / 2 / 3) , DIN (8061 , 8062 , 19532),
ISO (161 / 1 , 4422 - 2) , JS (159)

Nominal Outside Diameter	CLASS 1 - PN 2		CLASS 2 - PN 4		CLASS 3 - PN 6		CLASS 4 - PN 10		CLASS 5 - PN 16	
Diameter mm	Wall Thickness mm	Approx. Weight Kg / m	Wall Thickness mm	Approx. Weight Kg / m	Wall Thickness mm	Approx. Weight Kg / m	Wall Thickness mm	Approx. Weight Kg / m	Wall Thickness mm	Approx. Weight Kg / m
16									1.2	0.09
20									1.5	0.137
25							1.5	0.174	1.9	0.212
32							1.8	0.264	2.4	0.342
40					1.8	0.334	1.9	0.35	3	0.525
50					1.8	0.422	2.4	0.552	3.7	0.809
63					1.9	0.562	3	0.854	4.7	1.289
75			1.8	0.642	2.2	0.782	3.6	1.22	5.6	1.82
90			1.8	0.774	2.7	1.13	4.3	1.75	6.7	2.61
110	1.8	0.95	2.2	1.16	3.2	1.64	5.3	2.61	8.2	3.9
125	1.8	1.08	2.5	1.48	3.7	2.13	6	3.34	9.3	5.01
140	1.8	1.21	2.8	1.84	4.1	2.65	6.7	4.1	10.4	6.27
160	1.8	1.39	3.2	2.41	4.7	3.44	7.7	5.47	11.9	8.17
200	1.8	1.74	4	3.7	5.9	5.37	9.6	8.51	14.9	12.8
225	1.8	1.96	4.5	4.7	6.6	6.76	10.8	10.8	16.7	16.1
250	2	2.4	4.9	5.65	7.3	8.31	11.9	13.2	18.6	19.9
280	2.3	3.11	5.5	7.11	8.2	10.4	13.4	16.6	20.8	24.9
315	2.5	3.78	6.2	9.02	9.2	13.1	15	20.9	23.4	31.5
355	2.9	4.87	7	11.4	10.4	16.7	16.9	26.5	26.3	39.9
400	3.2	6.1	7.9	14.5	11.7	21.1	19.1	33.7	29.7	50.8
450	3.6	7.65	8.9	18.3	13.2	26.8	21.5	42.7		
500	4	9.37	9.8	22.4	14.6	32.9	23.9	52.6		
630	5	14.7	12.4	35.7	18.4	52.2	30	83.2		
710	5.7	18.9	14	45.3	20.7	66.1				

* Note : For PIPE Sizes in INCH :

50 mm ≡ 2 "

200 mm ≡ 8 "

75 mm ≡ 3 "

250 mm ≡ 10 "

110 mm ≡ 4 "

315 mm ≡ 12 "

160 mm ≡ 6 "

400 mm ≡ 16 "



UPVC Technical Data Table According to ASTM D 1785 (SCHEDULE 40 & SCHEDULE 80)

Nominal Pipe Size (Inch)	SCHEDULE 40		
	Minimum Wall Thickness (Inch / mm)	Nominal Weight (Kg / M)	Working Pressure (PSI)
1/2 "	0.109 / 2.77	0.248	600
3/4 "	0.113 / 2.87	0.329	480
1 "	0.133 / 3.38	0.483	450
1 1/4 "	0.140 / 3.56	0.652	370
1 1/2 "	0.145 / 3.68	0.779	330
2 "	0.154 / 3.91	1.040	280
3 "	0.216 / 5.49	2.160	260
4 "	0.237 / 6.02	3.070	220
6 "	0.280 / 7.11	5.410	180
8 "	0.322 / 8.18	8.143	160



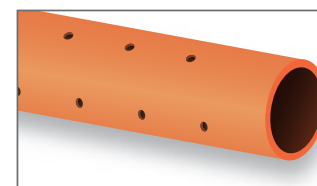
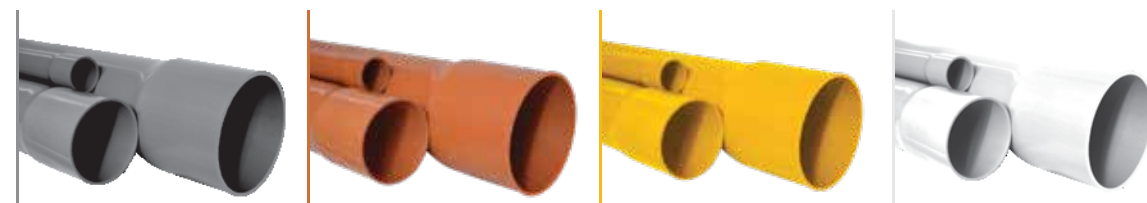
Nominal Pipe Size (Inch)	SCHEDULE 80		
	Minimum Wall Thickness (Inch / mm)	Nominal Weight (Kg / M)	Working Pressure (PSI)
1/2 "	0.147 / 3.73	0.309	850
3/4 "	0.154 / 3.91	0.418	690
1 "	0.179 / 4.55	0.614	630
1 1/4 "	0.191 / 4.85	0.850	520
1 1/2 "	0.200 / 5.08	1.030	470
2 "	0.218 / 5.54	1.430	400
3 "	0.300 / 7.62	2.910	370
4 "	0.337 / 8.56	4.260	320
6 "	0.432 / 10.97	8.130	280
8 "	0.500 / 12.70	12.400	250

** Pressure rating above is based on Water Temperature at : 23 °C (73 Degree F)
 ** 1 Bar = 14.50 PSI = 1.02 Kg / Cm² = 0.1 MPa

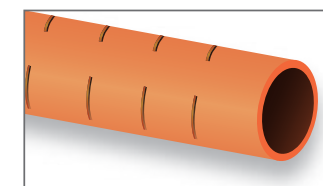
UPVC Pipes

(Sewage, Drainage & Telecommunication) NETWORKS

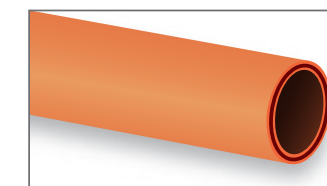
Available Colors     Available in: Rubber Ring / Solvent Socket



Perforated UPVC Pipe



Slotted UPVC Pipe



Silent UPVC Pipes

UPVC Fittings



Silent UPVC Pipes

• Noise Pollution:

We always associate Air Pollution with dust, industrial emissions and water pollution with effluent mix, etc.

We do not pay enough attention to noise pollution. Noise Pollution is a matter of great concern because of the serious discomfort. It is capable of causing, as well as its detrimental effects on health, human behavior and other activities.

Noise has adverse impact on the human health which degrades the quality of personal and social life.

In developed countries, several years ago, this issue was addressed and building regulation authorities had stipulated that none of the equipments in the building should generate noise level more than 30 decibels (Db). This includes pumps, vacuum cleaner, washing machine, air conditioners, etc.....

The study even added soil and waste pipe system in the house causes noise and this has to be controlled. These include provisions governing " Protection from Noise, in such a manner that; the noise perceived does not endanger the health of people and allows them to carry out their activities in a satisfactory way".

• Sources of Noise in a Piping System:

Noises is generated by moving parts or by flowing media. Waste water pipes are prone to vibration, particularly where water flows through down pipes, or is forced to change direction in joints and elbows. When soil and waste water flows in the system, it passes through bends, tees, reducers, etc. Whenever there is change in direction or change of size, the flow causes disturbance to the people in the adjacent rooms. The noise generated by plant and equipment providing services to the buildings may be classified as follows:

- 1 – Noise due to filling operations.
- 2 – Intake / Inflow noises.
- 3 – Discharge noise.
- 4 – Noise due to impact or shock.

So, there is a need to design a pipe that achieves noise protection.

SILENT Pipe is a specially designed pipe to reduce the noise that accompa-

nies the evacuation of wastewater to minimum. With its innovative three-layer structure, SILENT pipe is the latest technological innovation in sound insulation system. Basic construction regulation recommends that noise should not exceed 25 dB in a transmission between adjoining rooms.

SILENT pipe guarantees a noise level that is well below this limit.

• Material Specifications :

RESIDENCE PIPES AND FITTINGS are produced in 3 layers:

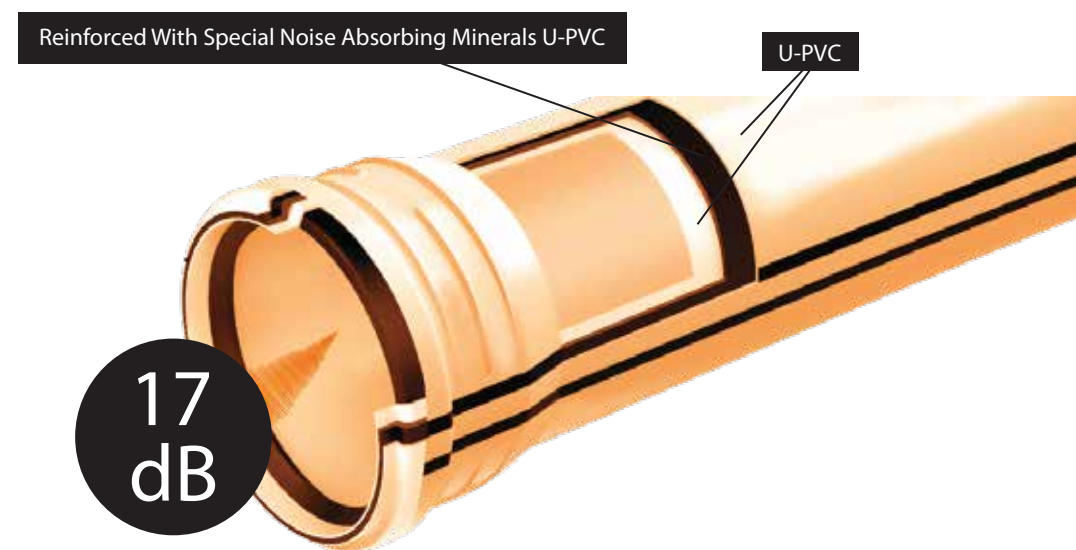
- **Inner Layer:** is made of U-PVC
- **Middle Layer:** is a special noise absorbing minerals
- **Outer Layer:** is made of U-PVC

• Silent Pipe Usage Areas:

Due to its characteristics of being ecological, economic and soundproof Residence Pipe and Fittings is a preferable choice to be used in villas and multi- story residences, hospitals, schools, hotels and industrial or sportive structures, etc. Silent pipes ensure for the sewage from the foundations and interior structures of buildings to be drained in an ideal and safe way without any leakage for long terms use (50 years).

SILENT pipe has been developed to ensure complete customer satisfaction.

World Plastics for Construction Industries Company
SUPPLY Silent UPVC Pipes for different uses.



INSTALLATION METHODS

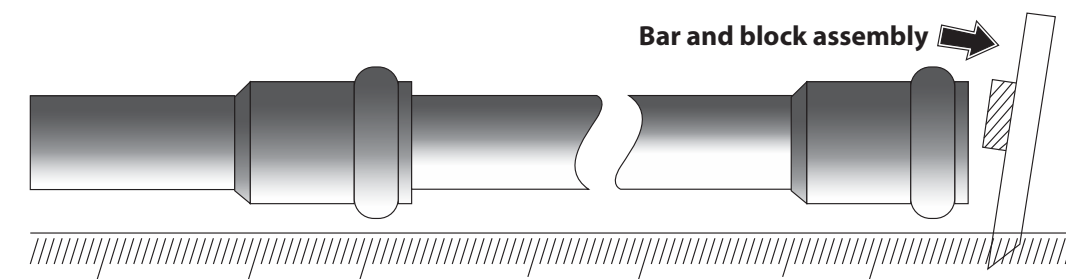


The following information are intended to assist Engineers and Contractors to take full advantages of the physical and mechanical properties of UPVC pipes and to achieve the desired results:

A) Method for rubber ring joint installation :

1. Ensure that the mating areas of spigot and socket are thoroughly clean.
2. Setting the rubber ring in grove.
3. Assess the full socket depth by simple measurement and mark spigot accordingly.
4. Apply lubricant to the spigot side and to the inside of the joint on rubber.
5. Accurate axial alignment of the spigot and socket prior to jointing is important, hand feed spigot into rubber joint until resistance from the inner sealing section is felt.
6. Bar and block assembly is recommended because a worker is able to feel the amount of force being used and whether the joint goes together smoothly.
7. If undue resistance to pipe insertion is encountered , disassemble the joint and check the position of the rubber ring.
8. Insertion.

Rubber Ring Jointing



Important Notice :

If pipes are cut on site, make sure that the new spigot ends are cut square with a fine toothed saw and are chamfered to half pipe thickness with a coarse file before jointing. For 100 joints use the following amounts of lubricant.

Pipe outside Diameter DN	Dia. / mm	Kg. Of Lubricant
DN 50	63	0,5
DN 80	90	0,85
DN 100	110	1,10
DN 125	125 / 140	1,35
DN 150	160	1,80
DN 200	200 / 225	2,40
DN 250	280	3,15
DN 300	315	3,85
DN 400	400	5
DN 450	450	6
DN 500	500	7



B) Method of solvent welded joint installation :

1. Joint Preparation - Cut Pipe square with the axis, using a fine - tooth saw with a miter box or guide. Remove all burrs and break the sharp lead edges.
2. Cleaning & Priming-Surface to be joined must be cleaned and free of dirt, Moisture ,Oil ,and other FOREIGN material Applying Weld-On primer. Mark on spigot the full length of the socket side to make sure that the spigot will fit exactly the socket length.
4. Application of solvent cement - PVC solvent cement is fast drying and should be applied as quickly as possible , consistent with good workman ship , Follow up the manufacturer's recommendation to both spigot and socket side with an adequate quantity of cement.
5. Joint Assembly - While both the inside socket surface and the outside surface of the spigot of the pipe are WET with solvent cement ,forcefully bottom the spigot in the socket .Turn the pipe or fittings 1/4 turn during assembly (but not after the pipe is bottomed) to distribute the cement evenly . Hold for a while until handling strength is developed. Assembly should be completed within 30 seconds after the last application of solvent cement.
6. After Assembly -Wipe excess cement from the pipe at the end of the socket . Gaps in the cement bead around the pipe perimeter may indicate a defective assembly Handle the newly, Assembled joints Carefully after 1 hour.



Important Points of Pipe Installation with Solvent Cement Joints :

1. The joining surfaces must be clean and dry
2. Sufficient cement must be applied to fill the gap between male and female ends.
3. The Assembly must be made while the surfaces are still wet and fluid.
4. Completed joints should not be disturbed until they have cured sufficiently to with stand handling.
- 5.Keep the solvent cement closed and shaded when not actually in use. Discard the solvent cement when a noticeable change in viscosity occurs, when the cement does not flow freely from the brush, or when the cement appears lumpy and stringy.

For 100 Joints use the Following Amounts of adhesive and primer.

Pipe outside Nominal Diameter- DN	O.D Dia. / mm	Primer - kg	Adhesive - Kg
25	32	Approx. 0.5	Approx. 0.8
32	40	Approx. 0.7	Approx. 1.1
40	50	Approx. 0.9	Approx. 1.6
50	63	Approx. 1.7	Approx. 1.7
60	75	Approx. 1.3	Approx. 2.2
80	90	Approx. 1.4	Approx. 4.0
100	110	Approx. 1.7	Approx. 8.0
125	125 / 140	Approx. 2.1	Approx. 13.0
150	160	Approx. 2.5	Approx. 19.0
200	200 / 225	Approx. 4.5	Approx. 26.0
250	280	Approx. 6.5	Approx. 38.0
300	315	Approx. 10.2	Approx. 52.0
400	400	Approx. 12.9	Approx. 62.0
450	450	Approx. 14.4	Approx. 69.75
500	500	Approx. 16.0	Approx. 77.50

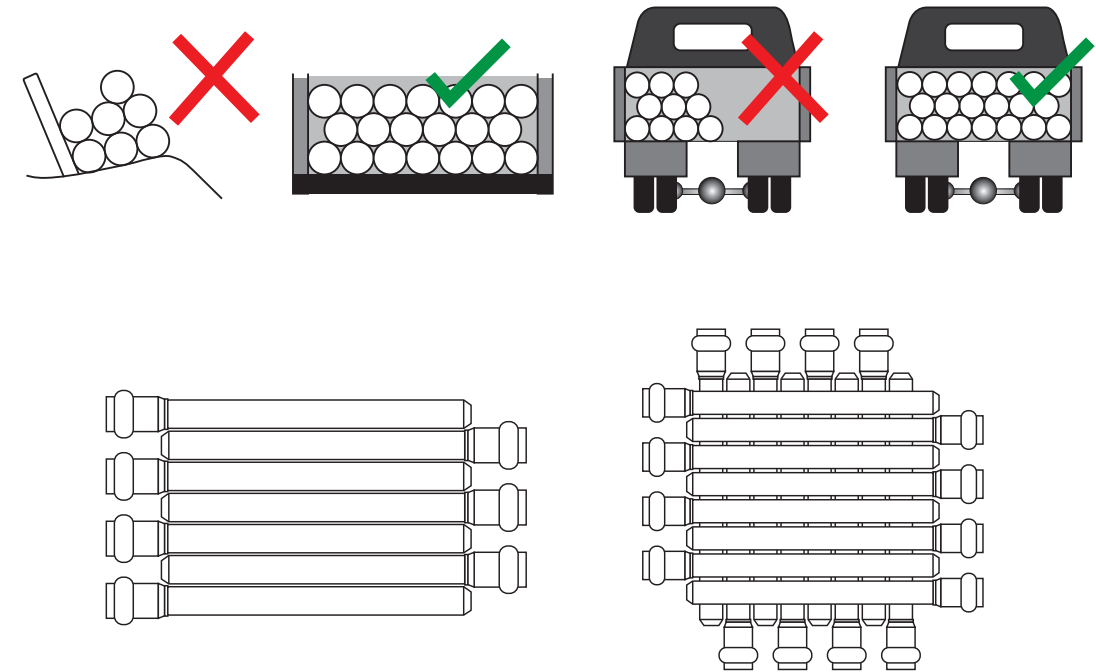
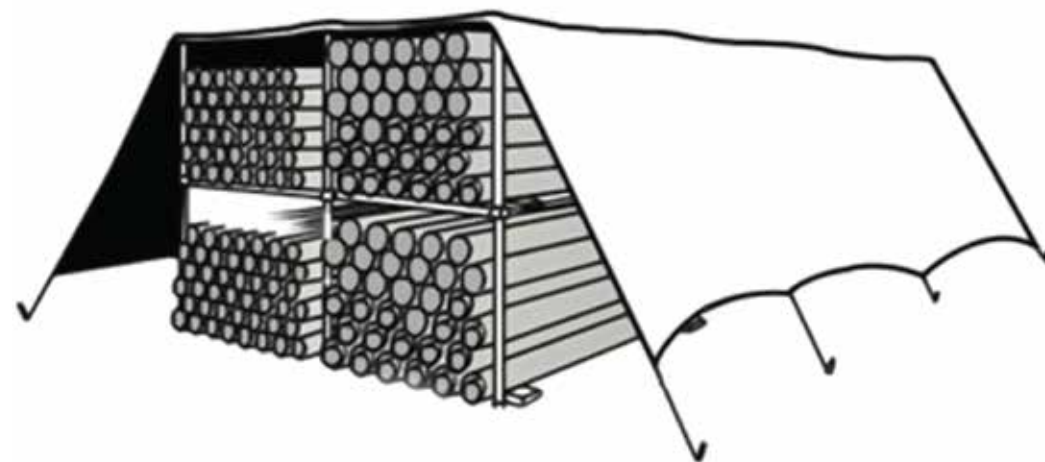


TRANSPORT , HANDLING & STORAGE

Un-plasticized PVC pipes are strong but light , its specific gravity being approximately one-fifth that of cast iron. As a result, these pipes are more easily handled than their metal counterparts. Reasonable care, however, should be exercised at all times, and when off loading, pipes should be lowered , not dropped to the ground.

Pipe 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 when joining and for pipe alignment. Any pipe with ends prepared for joining (socket and spigot joints, RR joints, etc.) should be stacked in layers with the socket, placed at alternate ends of the stack and with sockets protruding to avoid lop-sided stacks and the Imparting of permanent set to pipes. Particularly in the case of Ring pipe, rubber rings should not be exposed to solar radiation for any length of time if they are not coated. It is recommended to stock them in a cool and shady place. Rubber rings should not come in touch with chemicals, grease, oil and to be stored for too long a time.

NON - EXPOSURE TO DIRECT SUNLIGHT



For long-term storage, pipe racks should provide continuous support, but if this is not possible, timber of at least 75 mm bearing width at spacing not greater than 1 m centers for pipe sizes 150 mm and above, should be placed beneath the pipes and at 2 m centers 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 160 mm. In such pipe racks, pipes may be stored not more than seven layers or 1.5 m high, whichever is the lesser, but if different classes of pipe are kept in the same racks, then the thickest classes must always be at the bottom.

For temporary storage in the field, where racks are not provided, the ground should be level and free from coarse stones. Pipes stored thus should not exceed three layers high and should be staked to prevent movement.

Stack heights should be reduced if pipes are nested, i. e. pipes stored inside pipes of larger diameters. Reductions in height should be proportional to the weight of the nested pipe compared to the weight of the pipes normally contained in such stowage's.



Below Ground Installation



- As with all pipe jointing, cleanliness is of prime importance, and pipes, specially spigot ends, should be supported clear of the ground to prevent dirt being smeared on with the lubricant. Placing the pipes on blocks also reduces friction and consequently facilitates the making of the joint. THESE BLOCKS MUST BE REMOVED BEFORE BACKFILLING, AND EVERY CARE MUST BE TAKEN TO ENSURE THAT THE PIPE IS NOT BEDDED ON SUBMERGED ROCK.
- The pipeline should be tested initially after a few joints (certainly not more than 500 metres) to ensure that they have been made correctly, and subsequently at convenient intervals, preferably not exceeding 1000 metres.
- All changes of direction must be anchored. Concrete thrust blocks are suitable but the unit should only be haunched and a flexible membrane interposed between the concrete and the unit, to protect it against damage by abrasion.
- Before testing, the line must be backfilled leaving the joints exposed. If the joints must be covered, it is useful to mark their position.

- The pipe should be marked so that the spigot enters the socket to within 13 to 25mm of the bottom of the socket dimension. The depth of chamfer should be one third the wall thickness.
- Never cut the leg of a Ring Seal Joint bend. Some distortion of the shape may occur during processing which might cause a leak.
- If jointing above ground, observe the depth of entry after installation.
- UPVC Pipes may be cold flexed to accommodate ground contours and road curvatures in outside diameters up to 225mm. The bending radius (R) should not be less than approximately 300 times the outside diameter of the pipe (in mm).

Pipes larger than 225mm diameter should be regarded as rigid and changes in direction should be accommodated .



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الجمعية العلمية الملكية
Royal Scientific Society

الرقم العربي: ١٧/١٨٠١/٢٠٠٧-٣
رقم التقرير : ١١٦٦

فيما يتعلق وإزالة العيب حسب المواصفة الأمريكية ASTM رقم ٢٠٠٧-٢١٦٦ (١٠-١٦)

- طرف التمسك
- طرف النهاية
- طرف النهاية
- طرف التمسك
- طرف التمسك
- طرف التمسك

الطرف التمسك (م)

١٦٠

فيما يتعلق وإزالة العيب حسب المواصفة الأمريكية ASTM رقم ٢٠٠٧-٢١٦٦ (١٠-١٦)

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الطرف التمسك (م)

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- طرف التمسك
- طرف التمسك
- طرف التمسك

الطرف التمسك (م)

١٦٠

ملاحظة: " حسب المواصفات الواردة في ذلك بموجب مؤسسة المواصفات والمقاييس رقم (١٩٩٦) لسنة ١٩٩٦.

رئيس القسم : د. أحمد الطراونة

مستلزم المخرى : م. أماني عكر

ملاحظة (٤) (٥)

ملاحظة (٤) (٥)

FORM NO. RSSP/IMP2, Issue 3 REV.(1)

Client	World Plastics for Construction Industries
Client's Representative	Mr. Mohammed Hamdan
Project	Quality Control of Products of Factory

Date	February 14 th , 2018
Report No.	PVCP18026

UPVC Pipes (110mm*3.2mm)
(World Plastics)

Subject: Determination of Density & Impact Strength of One 110mm*3.2mm UPVC (Unplasticized Polyvinyl Chloride) Pipe Taken from the Mentioned Project.

Dear Sirs,

Our report for the above mentioned tests is enclosed with this letter according to your request No. PVCP18026 on February 13th, 2018.

Please contact our office if more information is needed. We would like to thank you for your confidence.

Sincerely Yours,
MAS CENTER FOR ENGINEERING TESTS

مركز ماس للفحوصات الهندسية
شماره ١٨٠٢٦ / ٢٠١٨

محرم ابراهيم دريس / ماس (الهندسة والكيمياء) وفئات مطابقة والمطابقة مع المواصفات والمواصفات للمنتجات الهندسية
masengineeringtests@yahoo.com - عمان ١١١١٨ - الأردن - البريد الإلكتروني: masengineeringtests@yahoo.com

Thermopex®
Cross Linked Polyethylene

APE®
ITALY FITTINGS

INTRODUCTION:

According to your request No. PVCP18026 on February 13th, 2018, one 110mm*3.2mm UPVC (unplasticized polyvinyl chloride) pipe was tested by February 13th, 2018 for the determination of its density & impact strength. This report presents tests results.

MATERIALS:

One 110mm*3.2mm UPVC pipe was brought to our laboratories on February 13th, 2018 by the client's representative, Mr. Mohammed Hamdan.

TESTS CARRIED OUT:

-Density, according to DIN 53479: "Testing of Plastics & Elastomers. Determination of Density".
-Impact Strength, according to DIN 8061: "Unplasticized Polyvinyl Chloride Pipes - General Quality Requirements and Testing".

TESTS RESULTS:

The results of the density & impact strength of the 110mm*3.2mm UPVC pipe are listed in the following tables.

Marking & Color:

	Pipe
Marking	WORLD PLASTICS عالم البلاستيك UPVC 110X3.2mm TEL-4711912 MADE IN JORDAN 12218 AN
Color	Grey

Density:

	Pipe
Test Method	A
Test Liquid	Distilled Water
Density of Test Specimens (g/cm ³)	1.433
	1.428
	1.431
Average Density (g/cm ³)	1.431
Required Density (g/cm ³)	1.35 - 1.45
Evaluation	Results Comply with Requirements of DIN 53479

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Impact Strength:

	Test Specimen (1)	Test Specimen (2)	Test Specimen (3)
Number of Tested Specimens	10	10	10
Number of Failed Tested Specimens	0	0	0
Percentage of Failed Tested Specimens	0	0	0
Maximum Percentage of Failed Tested Specimens	10 %	10 %	10 %
Evaluation	Results Comply with Requirements of DIN 8061		

EVALUATION:

The tabulated results of the mentioned tests indicate that the tested 110mm*3.2mm UPVC (unplasticized polyvinyl chloride) pipe complies with the requirements of the specified DIN standards.

(END OF PVCP18026)

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