JAMAL
POLYMERS PVT. LTD

PVC PIPES & FITTINGS

www.jamalpolymers.com

CONTENTS

THE GROUP

JAMAL PIPE INDUSTRIES (Private) Limited
JAMAL POLYMERS (Private) Limited
JAMAL SEAMLESS (Private) Limited

PRODUCTS OFFERED UNDER ONE ROOF

High Density Polyethylene (Hdpe) Pipes & Fittings *From* 20mm To 1200mm	Unplasticized Polyvinyl Chloride (U-Pvc) Pipes & Fittings *From* 1" To 16" Diameters	M.S Steel Line Pipes (Machine Made) *From* ½" To 18" Diameters
M.S Steel Line Pipes Hand Made *From* 18" Onwards	High Tension Poles Steel Lighting Poles HDPE Lighting Poles	G.I Steel Pipes *From* ½" To 18" Diameters
Lighting Poles of All Types Like Tubular, Round Conical & Octagonal Poles	Guard Rails PPRC Pipes & Fittings *From* 20mm To 160mm	Ms Seamless Pipes & Ms Seamless Fittings

INTORDUCTION

It is our great pleasure; we would like to respectfully take the opportunity to introduce ourselves for the purpose of enlistment. The genesis of Jamal Group dates back to the 1970s with a humble shop on Brandreth Road. By the grace of almighty Allah, today, the name 'Jamal' has become synonymous with the word 'quality'. At present, the group constitutes of three principal businesses: (1) M/s. Jamal Pipe Industries (Pvt.) Ltd, (2) M/s. Jamal Polymers (Pvt.) Ltd, (3) M/s. Jamal Seamless (Pvt.) Ltd.

The former has been producing Steel Pipe-lines for over 50 years. Adding to the range of products over the years, our steel division now also produces Steel Tubular Poles, Scaffoldings and Guardrails amongst other things. The latter and the subject of this letter, our plastics division, started with the production of PVC Pipes in the early 2000s. We can proudly say that today we are one of the leading manufacturers of PVC pipes, Polyethylene (PE) pipes and PPRC pipes & fittings in Pakistan. We are not only known for our superior quality PVC, HDPE, PPRC Pipes Fitting & Electric Pole but also for setting industry standards. As a result, we have become the preferred choice of professionals in various fields that utilize PVC, HDPE, PPRC Pipes Fitting & Electric Pole. We would like to bring to your kind attention that our PVC, HDPE, PPRC Pipes Fitting & Electric Pole are duly manufactured as per international standards (ASTM, BS, DIN, ISO OHSAS and PS) with top of the line imported raw materials (PVC.PPRC & HDPE resins). To meet the specifications of our valued clients we regularly import raw materials from but not limited to the Middle East, Europe and the USA.

We like to think of our manufacturing unit as an “organism” that fuses hi-tech machines and human ingenuity, thus rendering the very high standards needed to produce a wide range of modern and hygienically tested products including HDPE Pipes (20mm to 1200mm), PVC pipes (1” to 16”) And PPRC Pipes (20mm to 160mm). Furthermore, we have a proper quality control system in place at our production site along with a state of the art testing laboratory to ensure the ISO standards. All this activity is carried out by our well-trained and experienced technical staff. Our real strength lies in our customer's delight that can only be achieved by providing quality products that meet their requirements. In our quest to lead by example, our efforts have led Jamal to ISO-9001, ISO-14001 and ISO-18001 certification, as well as the Pakistan standards & quality control authority (PSQCA) certification.

It is pertinent to mention here that our products are versatile and can be used for an array of reasons. Currently, our pipes are being used for water supply networks, gas, air and chemical distribution systems, hazardous waste management systems, sewerage, mining, fiber optical cables, various agriculture activities including irrigation, firefighting and in many other applications in various industries, departments and organizations of repute in Pakistan.

It is further submitted that our brand 'Jamal' PVC, HDPE, PPRC Pipes Fitting & Electric Pole is listed and pre-qualified in various NGOs. Government, and semi-government departments such as HUD & PHEDs, DHA, NESPAK, PAEC, MES., C&W, UNICEF, PWD etc. Keeping in view Jamal Polymers' profile, you are requested to consider us as a potential vendor with your prestigious organization for pre-qualification.

Hope to have your positive response in this regard.

OUR VALUED CUSTOMERS


IFAD
CGGC
Defence Housing Authority
DHA LAHORE
NISHAT
Nishat Mills Limited
Parks & Horticulture Authority
PHA
FIEDMC
BAHRIA TOWN
AL JALIL GARDEN
HOUSING SCHEME
中国通信服務
CHINA COMSERVICE
CREC
中国铁建
EIGHTEEN
LAKE CITY
LAHORE
CSCEC
CEEC
THE STRENGTH
KOHAT CEMENT
DESCON
WORLD BANK
MAPLE LEAF CEMENT
DG CEMENT
RYK
Sapphire
DADABHOY
BESTWAY
Fatima
LIBERTY
SADIQ POULTRY
MUGHAL STEEL
A TRADITION OF QUALITY
NSS
Nestlé
ZAHID
MPCL
ALI AKBAR
GROUP
PAKISTAN
PIONEER
CEMENT LTD.
NESPAK
NATIONAL
ENGINEERING
SERVICES PAKISTAN
HRL
HABIB RAFIQ (PVT.) LTD.
BUKHARI
ASSOCIATES
IZHAR
GROUP OF COMPANIES
MAAKSONS
ITTEFAQ
GROUP
Packages Mall

CERTIFICATIONS

ZERTIFIKAT | CERTIFICATE | CERTIFICAT | CERTIFICADO | СЕРТИФИКАТ | شهادة | 证书 | 인증서

CERTIFICATE

TÜV AUSTRIA

Management System as per
EN ISO 9001 : 2015

In accordance with TÜV AUSTRIA procedures, it is hereby certified that

JAMAL PVC PIPE (PVT) LIMITED
12 KM G.T. Road, Shahdara
LAHORE, PAKISTAN

Applies a Quality Management System in line with the above Standard for the following Scope

MANUFACTURING OF U-PVC & HDPE PIPE.

Certificate Registration No.: **20001210005029**

Valid until: 2024-04-29

Rashid Mehr
CEO
Certification Body
at TÜV AUSTRIA

Lahore, 2021-04-30

This certification was conducted in accordance with TÜV AUSTRIA auditing and certification procedures and is subject to regular surveillance audits.

TÜV AUSTRIA HELLAS
429, Mesogeion Ave.
GR-153 43 Athens, Greece
www.tuvaustriahellas.gr

IAF ESYD
MS Certification
No. of Certificate 236

002626-20-8

Engro Asahi Polymer & Chemicals Ltd.

TO WHOM IT MAY CONCERN

This is to certify that **M/s Jamal PVC Pipes (Pvt) Ltd.** is a regular customer of Engro Asahi Polymer & Chemicals Ltd. having their production facility at 12 Km G.T. Road, Lahore.

Issuing Authority

Adeeb Ahmed Malik
Regional Sales Manager (North)

Head Office: First Floor, Bahria Complex I, 24 M.T. Khan Road, Karachi-74000, Pakistan.
UAN: 111-411-411 PABX: 5610610 - 5610743 - 5610753 Fax: 92-21-5611690

ORIGINAL

FORM II
[Section-8(xiii)]
STANDARDS DEVELOPMENT CENTRE (SDC)
PAKISTAN STANDARDS & QUALITY CONTROL AUTHORITY (PSQCA)
Licence for the use of Standard Mark

Licence No. **CM/L-1868/2007(R)**

1. By virtue of the power conferred on it under Section 8(xiii) the PSQCA Act-VI of 1996, the Authority hereby grants to **M/S. JAMAL PVC PIPE (PVT.) LTD., LAHORE**, (hereinafter called 'the licensee') this licence to use the Standard Mark set out in the first column of the First Schedule hereto open or in respect of the article(s) / process set out in the second column of the said Schedules which is/are manufactured in accordance with / conforms to the related Pakistan Standard(s) or a standard of any other country recognized by the Authority referred to in the third column of the said Schedule as from time to time amended or revised.

2. This licence carries the rights and obligations stipulated in the rules and regulations made under the above Act. In pursuance of his obligations, the licensee shall pay in due manner and time the scheduled "Marking Fee" set out in the second Schedule hereto and maintain to the satisfaction of the Authority the Scheme of Testing and Inspection a copy of which is attached hereto.

3. This licence shall be valid from **15TH MARCH, 2008 TO 14TH MARCH, 2010**, and may be renewed as prescribed in the Rules and Regulations.

Signed, Sealed and Dated this **26th** day of **June**, 2008

DIRECTOR (CONFORMITY ASSESSMENT)
Standards Development Centre
Pakistan Standards & Quality Control Authority
Government of Pakistan
Karachi.

for **Standards Development Centre/PSQCA**
Seal of the Authority

THE FIRST SCHEDULE

Standard Mark	Article / Process	Pakistan Standard(s)
1	2	3
PS:3051-1991	UN-PLASTICIZED POLYVINYL CHLORIDE (U-PVC) PRESSURE PIPES FOR COLD POTABLE WATER "JAMAL" BRAND (SIZES & CLASSES AS PER ANNEXURE-A)	PS:3051-1991

THE SECOND SCHEDULE
Schedule of Marking Fee for Licence No. CM/L-1868/2007(R)

Article / Process	Unit	Marking Fee* Per Unit	Manner of Payment
1	2	3	4
UN-PLASTICIZED POLYVINYL CHLORIDE (U-PVC) PRESSURE PIPES FOR COLD POTABLE WATER "JAMAL" BRAND (SIZES & CLASSES AS PER ANNEXURE-A)	Quantum of Annual Production Value.	Till 31-03-2008 @ 0.25% of Production value and w.e.f. 01-04-2008 @ 0.1% OF EX-FACTORY PRICE	Through Bank Draft Quarterly

NOTE:

i. The Authority may, on one month's notice to a licencee, and during the period of the validity of the licence alter any terms and conditions subject to which the licence has been granted.
ii. Terms & Conditions to maintain C.M licence shall be applicable as attachment.
iii. In case of default the licencee shall be liable to pay the penalty of Rs.5000/- or @ of 10% of the out standing dues, whichever is higher.

No. SO(PH)-IV-136/2006
GOVERNMENT OF THE PUNJAB
HUD & PHE DEPARTMENT

Dated Lahore, the 3rd May 2019

RENEWAL OF REGISTRATION

M/s Jamal PVC Pipe (Pvt.) Ltd, Lahore is hereby renewed for the year 2018-19, in accordance with the notified Standard BS:3505-1991 (PS:3051-1991), as approved manufacturer / supplier of **uPVC Pipes** for sizes 3", 4", 5", 6", 8", 10", 12" & 16" i/d (B-Class), under the brand name of **"Jamal Brand"**, in HUD&PHE Department, as likely supplier of above mentioned sizes with the following conditions:

i). The manufacturer will provide the pipe delivery details supplied to the Public Health Engineering Department on quarterly basis.

ii). Monthly Sales Tax return and summary of sales submitted on line to Sales Tax collectorate must also be submitted to HUD&PHE Department and to the All Pakistan PVC Pipe Manufacturers Association for its verification.

iii). Any amendments in terms & conditions will be abided by the manufacturers.

2. The firm will be 100% responsible for the quality of the pipes supplied to the contractors and in case of any complaint from field regarding the quality / specifications of pipes supplied, the firm will be responsible.

3. The firm will be bound to supply a test report (alongwith other documents) of pipes supplied for each delivery to Contractors / HUD&PHED. Any short fall in quality will result an immediate legal action and blacklisting.

4. The case of further renewal will be considered after fulfillment of terms & conditions mentioned above.

5. The renewal letter can be withdrawn by the Department at any time.

6. The N. T. N. of the firm is **2544116-7**.

SECRETARY
HUD&PHE DEPARTMENT

DHA LAHORE

Defence Housing Authority
Projects Branch
DHA Office Complex
Y-Block Commercial Area, Phase-III
DHA, Lahore Cantt
Telephone No: 042-37185902
700/7/Enlistment/Mfrs/2021/Projs
June 2022

To, **M/s Jamal PVC Pipe (Pvt) Ltd**
(NTN No. 2544116)
88-Railway Road, Lahore - 54000
Tel: 042-37639900 / 37658707
Mob: 0308-4444948 (Faisal Ali)

Subject: **Renewal of Firms as Enlisted Manufacturer with DHA Lahore**

This office ltr no. 700/7/Enlistment/Mfrs/Projs dated 22 Apr 2022 ref.

1. It is intimated that DHA management has very kindly considered the renewal of your firm as approved manufacturer and placed on "Preferred List" from to date to **30 June 2023** for following Items:-
   a. HDPE Pipe & Fittings.
   b. PVC Pipe & Fittings.
2. Please provide rate list of your approved products with effect from 1st June 2022 and inform web site link to this office and ensure following:-
   a. Keep DHA Lahore informed about change in rates (if any) due to unavoidable circumstances.
   b. Avoid submittal of fake quotation or invoice to contractors, violation may lead to delisting of your firms.
3. You are directed to deposit Rs. 25,000.00 (Rupees Twenty Five Thousand only) on account of annual renewal fee for the next year before **31 May 2023** in DHA Main Office Complex, Ph-VI DHA Lahore (original deposit slip be submitted in this office). In case of non-deposit of renewal fee, the enlistment will be cancelled.
4. Forwarded for your information and necessary action, please.

Colonel
Director Projects
(Muhammad Rashid Abbasi, Retired)

PRODUCT APPLICATIONS & FEATURES

U-PVC.....The Material

U-PVC stands for Unplasticized Poly Vinyl Chloride, which is commonly known as vinyl.
It is the 2nd most important consumable thermoplastic in the world and its annual consumption growth is on a steady rise.

Material Characteristics

Following are the most important characteristics of PVC:

- Chemically Inert
- Water Resistant
- Corrosion Resistant
- Weather Resistant
- High Strength to weight Ratio
- Dent Resistant
- Electrical and Thermal Insulator
- Maintains properties over long period of time.
- Tough

U-PVC Pipes

U-PVC pipes are produced with scientific mixture and advance draft technology with poly vinyl resin and some other chemical raw materials additionally.

Applications

With excellent features, PVC pipes have diversified applications and few of which are mentioned as below:

- Cold water plumbing services.
- Drainage installation (Industrial & Domestic).
- Mining.
- Factory Supply Lines.
- Chemical Plant Installations.
- Electrical Conduits.
- Irrigation and agriculture use.
- Tube well casing and strainer.
- Paper mill installation alum and pulp carrying.
- Vent and ducting for power & communication cables.

ISO 18000 APPROVED

Features of PVC Pipes

The following features of PVC pipes has made it successful among the other pipes being used and is steadily replacing the other costly and ineffective pipe materials:

- High Strenght to weight Ratio.
- Light weight, Easy to handle and install.
- Smooth inner surface with lesser friction.
- Easy to bend and cut.
- Resistant to various alkalis, acids, Other chemicals and aggressive soils.
- Variety of colours.
- Fire Retardant properties.
- Corrosion and abrasion resistant.
- Insect and mouse proof.
- Low thermal conductivity.
- Shock Resistant.
- Aging Resistant.
- Pressure Resistant.
- Innocuous.
- Economical and Dependable.
- Environmentally Friendly.

POLICY STATEMENT

We are duly committed to achieve customer satisfaction by providing quality products & service according to their requirements & ultimately increase the sales. We shall achieve these targets by developing a Quality Management System, training of personnel, optimal using resources , timely delivery of products and continually improve the effectiveness of overall processes.

Our Quality Management System is regularly monitored to ensure its compliance with the standards. We review the Quality policy for continuing suitability. Our Quality policy is communicated and understood at all levels in our organization.

Production Plan / Process Flow Chart

Resin AU67R
CaCo3
L.T. Black
PVC Stablizer

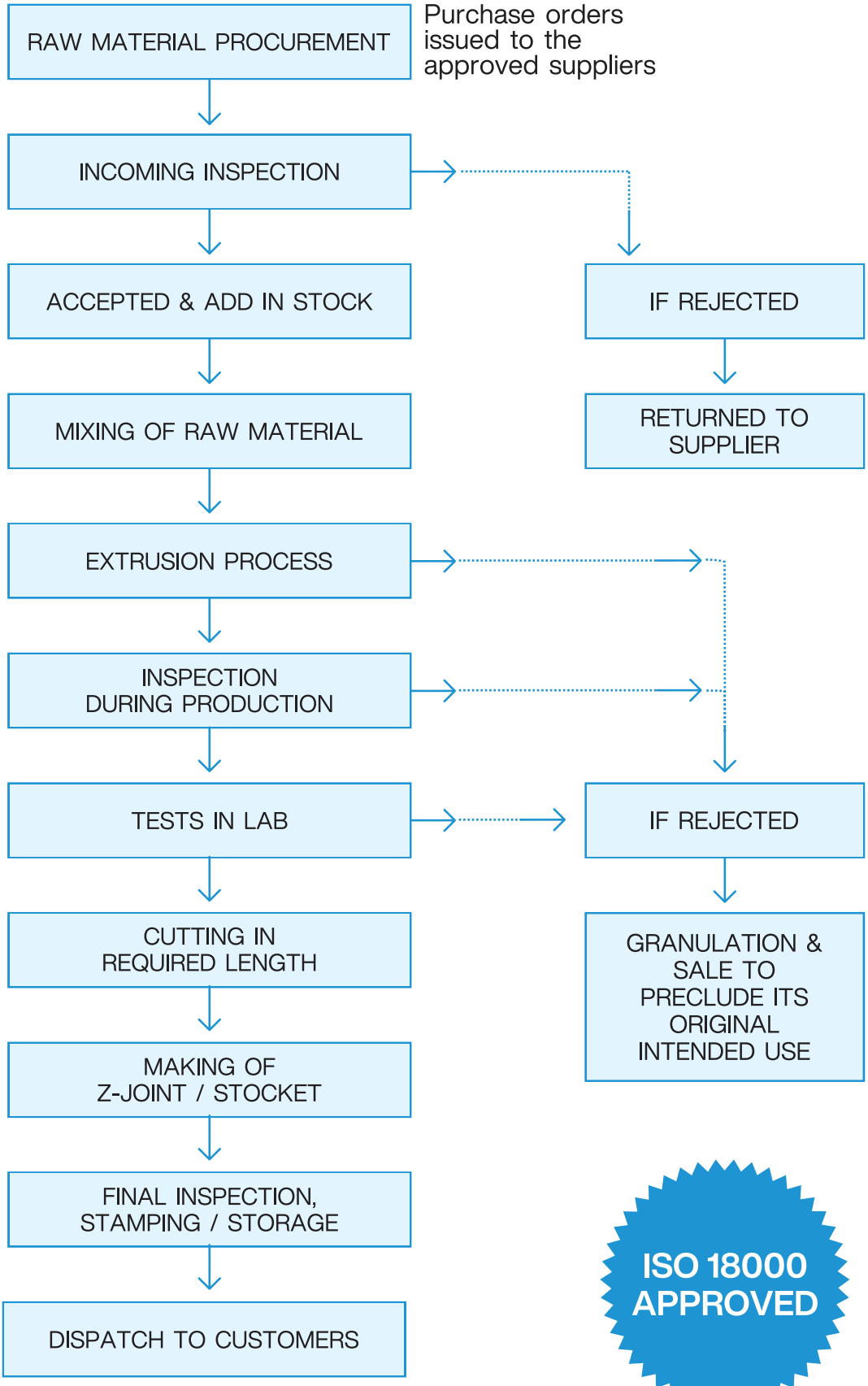
Recipe

1. PVC Resin A67R 100 kg
2. Stablizer 2 to 2.5 kg
3. Filler 0 to 2.0 kg
4. Color 0.05 kg

Put this mixture into Hopper.
This mixture Passes through Barrel at different temperatures & then from sizing dyes at different temperatures in order to make UPVC pipes in required size.

1-Visual Inspection
2-Outer Dia Inspection
3-Inspection of Weight of Pipe
4-Thickness of Pipe
5-Inspection of Ends/ Z-Joint

1-Pressure test
2-Impact test
3-Density test (Specific gravity test)
4-Longitudinal Reversion at 150°C
5-Delamination Resistance at 150°C
6-Fracture Toughness test
7-Opacity test



ISO 18000 APPROVED

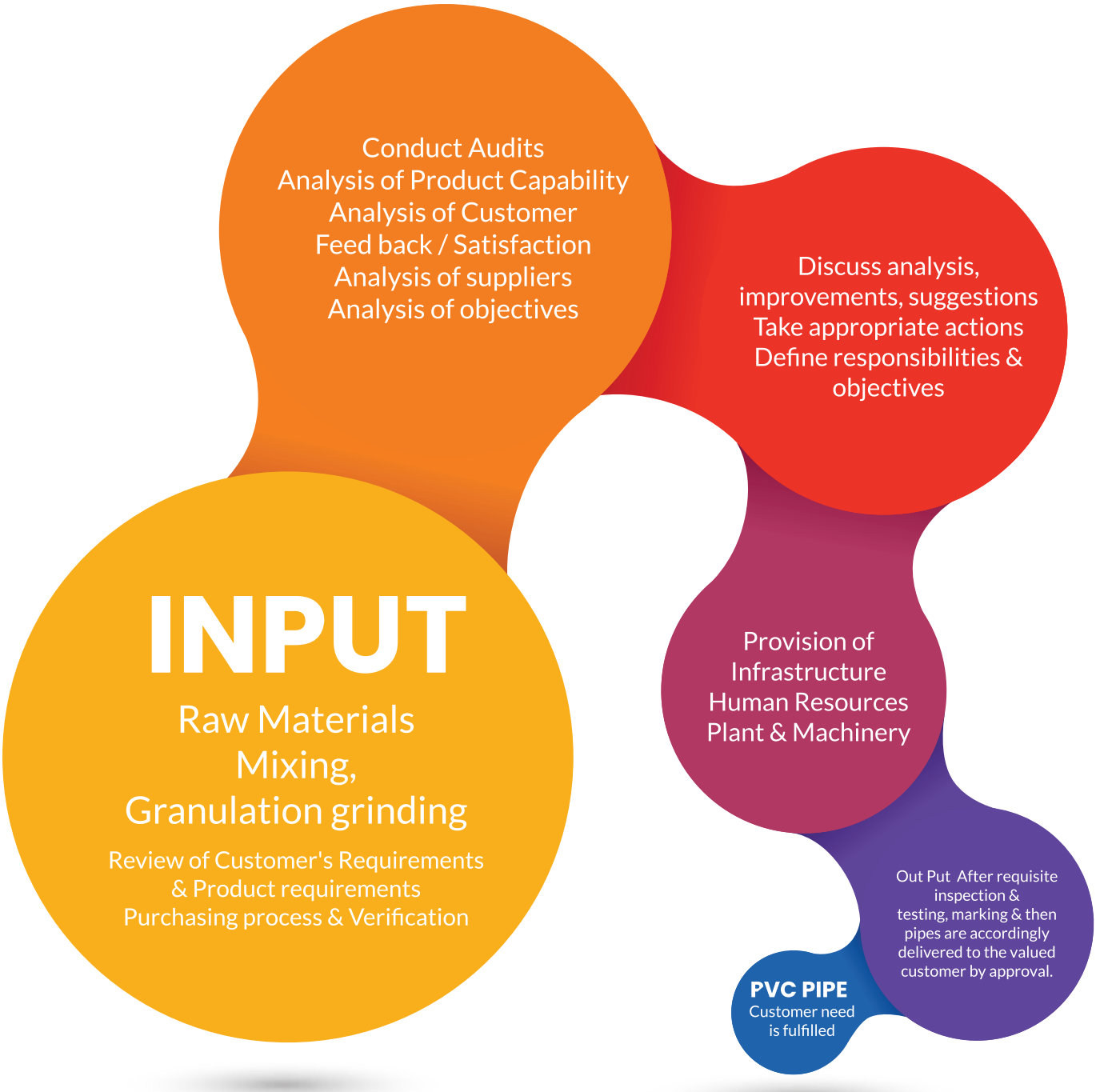
Jamal Polymers (Pvt) Ltd
Dimensions of PVC Pipe for
Class B, C, D, & E As per Ps-3051/91
Equivalent to BS-3505

WALL THICKNESS

WALL THICNESS (MM)			PRESSURE CLASS - B 200 FT. HEAD 87 PSI (6 BAR)		PRESSURE CLASS - C 300 FT. HEAD 130 PSI (9 BAR)		PRESSURE CLASS - D 400 FT. HEAD 173 PSI (12 BAR)		PRESSURE CLASS - E 500 FT. HEAD 217 PSI (15 BAR)	
Nominal. Size	Mean Outside Diameter O		Individual Value		Individual Value		Individual Value		Individual Value	
Inch	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
3/8	17.0	17.3	-	-	-	-	-	-	1.5	1.9
1/2	21.2	21.5	-	-	-	-	-	-	1.7	2.1
3/4	26.6	26.9	-	-	-	-	-	-	1.9	2.5
1	33.4	33.7	-	-	-	-	-	-	2.2	2.7
1-1/4	42.1	42.4	-	-	-	-	2.2	2.7	2.7	3.2
1-1/2	48.1	48.4	-	-	-	-	2.5	3.0	3.1	3.7
2	60.2	60.5	-	-	2.5	3.0	3.1	3.7	3.9	4.5
2-1/2	75.0	75.3	-	-	3.0	3.5	3.9	4.5	4.8	5.5
3	88.7	89.1	2.9	3.4	3.5	4.1	4.6	5.3	5.7	6.6
4	114.1	114.5	3.4	4.0	4.5	5.2	6.0	6.9	7.3	8.4
5	140.0	140.4	3.8	4.4	5.5	6.4	7.3	8.4	9.0	10.4
6	168.0	168.5	4.5	5.2	6.6	7.6	8.8	10.2	10.8	12.5
8	218.8	219.4	5.3	6.1	7.8	9.0	10.3	11.9	12.6	14.5
10	272.6	273.4	6.6	7.6	9.7	11.2	12.8	14.8	15.7	18.1
12	323.4	324.3	7.8	9.0	11.5	13.3	15.2	17.5	18.7	21.6
14	355.0	356.0	8.5	9.8	12.6	14.5	16.7	19.2	20.5	23.6
16	405.9	406.9	9.7	11.2	14.5	16.7	19.0	21.9	23.4	27.0
18	456.7	457.7	11.0	12.7	16.3	18.8	21.4	24.6	-	-
20	507.5	508.5	12.2	14.1	18.1	20.9	-	-	-	-
22	558.3	559.3	13.4	15.5	19.9	22.9	-	-	-	-
24	609.1	610.1	14.6	16.8	21.7	25.0	-	-	-	-

Management Activities For Quality Assurance

Jamal Polymers Pvt. Ltd. has established document quality system procedures which are implemented and maintained. Relevant section of the quality manual bear reference name of the applicable procedure. Jamal Polymers Pvt. Ltd. quality manual describes the interaction between the process of its quality management system which is being described as per the diagram shown here.



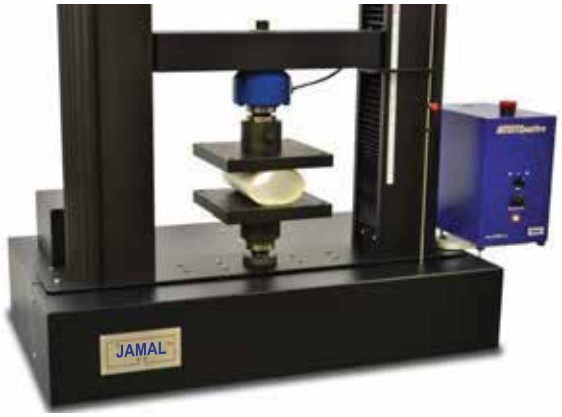
LATEST TECHNOLOGY PLANT

Jamal Polymers Pvt. Ltd. are Manufactured on Imported Twin-Screw Machines by using latest techniques of blending and Extrusion. Jamal Polymers Pvt. Ltd. are available in 4 & 6 meters lengths and made in plain, socket end and Z -Joint

QUALITY

Jamal Polymers Pvt. Ltd. maintains a continuous and strict control over quality of pipes through every stage of its process. The plant is laid out to permit careful supervision of the blending process as well as close production control. Trained engineers and a well-equipped testing laboratory help in regular quality checks in accordance with the established procedures to ensure conformity of the products to applicable specifications with respect to thickness, dimensional and other checks through the various stages of production. In this way, a product of high purity and, mechanical strength is ensured. The importance of this rigid control cannot be over emphasized, since the user is rarely in a position to carry out more than the most perfunctory tests or make simple visual comparisons. Some of the important tests conducted on the PVC Pipes during and after the production with the use of sophisticated machinery are as follows:

- Impact Resistance Test.
- Pressure Test. (Hydrostatic)
- Opacity Test.
- Dimension Checking.
- Fracture Toughness
- Superficial Appearance
- Longitudinal reversion (Heat reversion)
- Resistance to delimitation
- Specific Gravity Test
- Methylene chloride test (for controlling proper gelation)



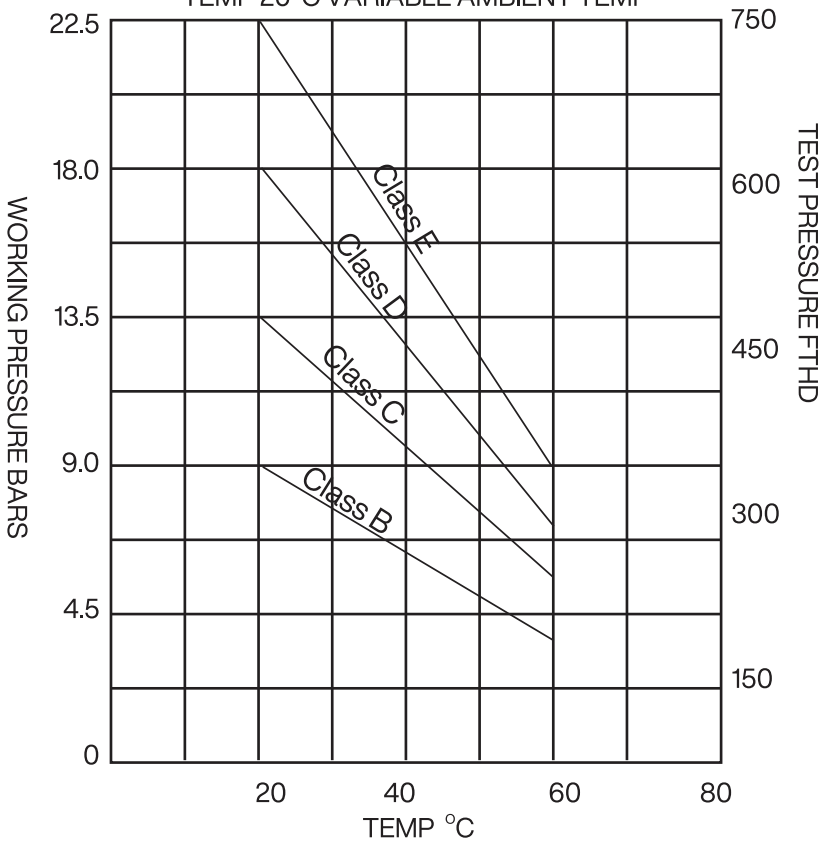
Verification Controls:

After 24 hours of production, samples are drawn as per required sampling plan and the same are tested for the presence of defects like flakes, chips, holes, irregular shapes, cracks, scratches, roughness etc.

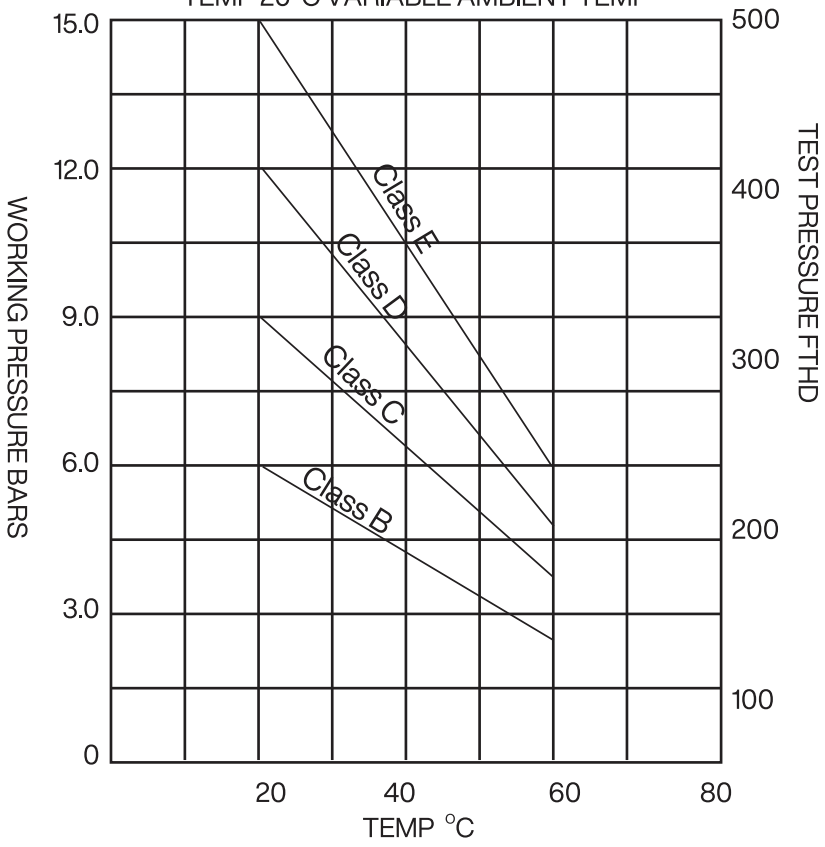
Pressure Temperature Relationship

PRESSURE TEMPERATURE RELATIONSHIP - INTERNAL TEMP 20°C VARIABLE AMBIENT TEMP

TESTING PRESSURE TEMPERATURE RELATIONSHIP-INTERNAL TEMP 20°C VARIABLE AMBIENT TEMP



WORKING PRESSURE TEMPERATURE RELATIONSHIP-INTERNAL TEMP 20°C VARIABLE AMBIENT TEMP



Physical Properties

Jamal Pipes hold tremendous Physical Mechanical, Thermal and Electrical properties.

PROPERTY	VALUE
SPECIFIC GRAVITY	1.42 1.46

MECHANICAL:

Tensile Strength At 20 °c	500-600	kgf/cm2
Modulus Of Elasticity At 20 °c Elongation At Break	30,000 >75%	kgf/cm2
Compress1ve Strength	650-750	kgf/cm2
Stiffness	1000	kgf/cm2

THERMAL:

Specific Heat At 20°C Upper Limit Service Temp.	0.23-0.35 Cal/gm/°C 75 °C
Softening Point	85 °C
Thermal Conductivity Coefficient Of Linear Expansion	0.12-0.14 k. Cal/mh°C 7-8x10-5 m/m/°C
Welding Temperature Moulding Temperature	180-182 °C 192-200 °C
Water Absorptions At 24 Hrs	<.05 %
Ambient Temperature	

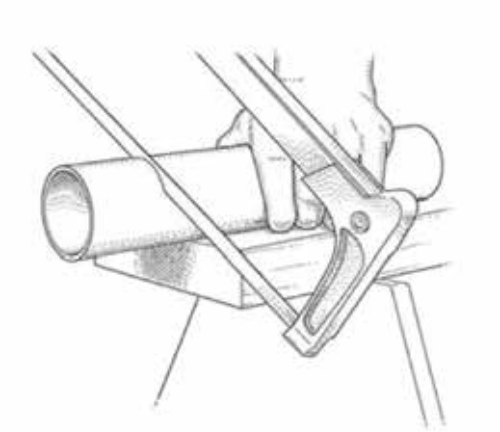
ELECTRICAL:

Dielectric Constant 1000 Cycle) Dielectric Strength	3.7 650 Volts/mil
Inflammability	Doesn't Support Combustion

COMPARISON OF UPVC AND OTHER MATERIALS REGARDING THE MECHANICAL STRENGTH

Material	Specific Gravity	Tensile Strength	Compressive Strength
Cast Iron	7.21	4000	5300
Mild Steel	7.85	4200	
Lead	1.34	1800	
Asbestos Cement	1.42-	250-300	
Jamal u-PVC	1.46	500-600	650-750

Directions for use:



All the joints in PVC piping whether it's used for the drains and vents in house plumbing or as a part of a central vacuum system, are literally welded together with a chemical solvent. The solvent cement, applied to both of the pieces being joined, temporarily melts a thin layer of PVC, which resolidifies in the seconds after the pieces are put together and forms a seamless, waterproof, airtight seal. The process is simple but unforgiving of errorонce the weld sets, the only way to change it is to cut it off. Here's how to keep mistakes to a minimum.

1. Measure and cut. To ensure that the pipe will be fully seated in its fittings, measure the distance between the shoulders on the fittings at each end of the pipe. Transfer that measurement to the pipe and make a straight cut with a hacksaw. Scrape the inside of the cut smooth with a utility knife.

2. Prime. Spread cement primer over the outside of the pipe and the inside of the fitting where they'll overlap. The primer softens and cleans the plastic.

3. Dry fit. Assemble everything to make sure the pipe is the correct length. On fittings such as elbows, position is critical, so make a reference mark from the pipe onto the fitting.

4. Glue. Apply the cement to the primed areas on the inside of the fitting and to the outside of the pipe.

5. Push and twist. Slide the pipe into the fitting until it bottoms out against the fitting's shoulder, then give it a ¼-inch turn to spread the glue and speed its cure. If you're attaching a fitting, push it in with the reference marks slightly out of register, and turn the fitting to align the marks.

Hold for 30 seconds, then wipe up any excess Cement with a dry rag.

Method of attachment using solvent

- Wall of the pipe socket should be clean along with the moisture free end of pipe
- Mark the pipe at that place where it would be in inserted into the socket.
- Use adhesive agent into the inner side of the pipe socket.
- Insert pipe into the pipe socket and take rest for 15 minutes.

1

Cut PVC pipe to length with a hacksaw or a reciprocating saw equipped with a fine-toothed blade.

2

Smooth the rough-cut pipe ends, inside and out, with fine-grit sandpaper.

3

Apply a 1-inch-wide band of PVC cement around the end of the pipe only not to the fitting.

4

Immediately push the fitting onto the pipe end, twist it slightly, and hold the joint for about 30 seconds.

Electrical Conduits

Jamal Polymers Electrical Conduits

Jamal electrical conduits are designed to protect cables in a range of buried and above ground installations. U-PVC is the most commonly used material for electrical conduits due to its lightweight, ease of assembly and non-conductivity.

Jamal Polymers Pvt. Ltd. manufactures a complete system of electrical conduits pipes (heavy gauge-light gauge) and fittings. Keeping in view of quality, Jamal Polymers electrical conduits are manufactured from UNPLASTICISED POLYVINYL CHLORIDE (U-PVC) in conformity with British Standard BS 6099 as equivalent to PS 1905 Specification. Jamal u-PVC conduit is one of the staple products for the electrical installation system for the majority of industrial and commercial installation, Jamal conduit pipe recommended & used by Consultants, Architects, Electrical Engineers & contractors, Buildings, Conditions & Power Plant Installation. Whether buried in concrete, lime or plaster at the construction state or extremely mounted for easy access.

Electrial Conduit pipes are available in

½",¾",1",1¼",1½",2",3",4"

Diameter and 3 meter lenghts.

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Jamal U-PVC Electrical Conduit Pipe Specification Bs-6099

Nominal Dia	Mean Outside Diameter mm		Wall Thickness mm	
	Min.	Max.	Min.	Max.
1/2	17.0	17.3	0.96	1.16
3/4	21.2	21.5	1.09	1.29
1	26.6	26.9	1.16	1.36
1-1/4	33.4	33.9	1.44	1.67
1-1/2	42.1	42.4	1.60	1.84
2	60.2	60.6	1.70	1.90
3	88.7	85.1	1.80	2.00
4	114.1	114.5	1.90	2.10

Advantages

- Jamal PVC conduit is one-third the weight of steel galvanized conduit.
- Cuts clean and no sharp edges.
- Conduit pipe is flexible enough to be bent into the desired shape; small sized be bent cold.
- Does not require painting. Its neat appearance complements any decor, but can be painted desired.
- Non-Conductive
- Elastic, Uniform & Smooth Surface
- Resistant To Most Acid & Building Chemicals
- Excellent Results By Concealing It In The Walls & Roofs
- Easy Installation
- No Change Comes In Winter & Summer Season
- Consistently reliable joints
- Small tool investment (cut and chamfering tool only)
- Substantial labor savings
- Elimination of torch use or welding machines
- Easier to work in tight places
- Greatly reduces condensation problems
- Full bore flow
- Quit than metal, insulates rather than resonates water flow noise

APPLICATIONS

- Buildings
- Housing Societies
- Plazas
- Industries / Factories
- Telecommunication
- Air conditioning
- Power Plant Installation

JAMAL PVC FITTINGS

1.1 What is difference between PVC schedule 40 and schedule 80

1- PVC - Schedule – 40 Pipes
2- PVC - Schedule – 80 Pipes

A schedule 80 pipe has thicker wall even though its exterior diameter, is similar to a schedule 40 pipe, having a same outside diameter is possible because the extra thickness of a schedule 80 PVC is inside the pipe.

PVC Schedule 40 Non-Pressure pipe and fittings:

PVC schedule 40 solid wall pipe and fittings are used in a sanitation, drainage waste and vent, applications, use in non-pressure applications, the maximum service temperature for upvc schedule 40 is 140OF = 60oC in temperature can be used for drainage and lower pressure water flow applications.

Available Sizes: 1” to 16”

Schedule 40 Standard:
ASTM –D-1785

ISO 18000 APPROVED

1.2 PVC Schedule 80 Pressure pipe and fittings:

PVC schedule 80 pressure pipe and fittings for water pressure application,
this system is intended for pressure pipe application, where the operating temperature will not be exceeded

140°F = 60°C, this pipe is also more effective in corrosion resistant and durable used for chemical processing

plants and industries etc.

Available Sizes: 1” to 16”

MANUFACTURING STANDARDS:

1- IPS Size - ASTM – D 1785

This is special usages for all applicable plumbing building and fire code requirement.

(ASTM D1785)						
NOMINAL SIZE (Inch)	OUTSISE DIAMETER (mm)		SCH-40		SCH-80	
			Wall Thickness (mm)		Wall Thickness (mm)	
	Min.	Max.	Min.	Max.	Min.	Max.
1.5	48.1	48.4	3.7	4.2	5.1	5.7
2	60.2	60.5	3.9	4.4	5.5	6.2
2.5	75.0	75.3	5.2	5.8	7.0	7.9
3	88.7	89.1	5.5	6.2	7.5	8.5
4	114.1	114.5	6	6.7	8.6	9.6
5	140.0	140.4	6.6	7.3	9.5	10.7
6	168.0	168.5	7.1	8	11	12.3
8	218.8	219.4	8.2	9.2	12.7	14.3
10	272.6	273.4	9.3	10.3	15.1	16.9
12	323.4	324.3	10.3	11.5	17.5	19.5
14	-	-	-	-	-	-
16	-	-	-	-	-	-

STRENGTH OF BURIED U-PVC PIPE

Burried pipe lines have to withstand the vertical loads due to weight of the soil and the surcharge loads to traffic.

Bearing Capacities of Soil

The bearing capacities of soils depend on the soil texture, and are generally:

Soil Texture	Bearing Capacity Vertical		Bearing Capacity	
	ton/m^2	(ib/in^2)	ton/m^2	(lb/in^2)
Soft silt slurry	1.4-4	(25.3)	0.4-1	(0.6-1.4)
Wet silt	10.20	(14.2-28.4)	2.5	(3.6)
Soft clay	10-15	(14.2-21.3)	2-5	(3.6)
Hard clay	20-25	(284-35.6)	5-6	(7.1-8.5
Wet Sand	30	(28.4)	5	(7.1)
Gravel containing stone	40-50	(56.9-71.1)	7.5	(10.7)
Gravel containing sand	50-60	(71.1-85.3)	10	(14.2)
Soft rock	70-100	(99.6-142.2)	10-25 50 and	(14.2-35.6)
Hard rock	200-400	(284.5-586.9)	over	(71.1&over)

COMBINED EXTERNAL LOAD

Combined external loads acting upon a buried pipe are expressed by: P = PE + Pt

P = Combined External Load, Kg/cm^2
PE= Static Earth Load, Kg/cm^2
Pt= Wheel Load, Kg/cm^2
Relationship between burial depth and combined external loads is given below,

DEPTH		Earth Load	Wheel Load	Combined Load
cm.	(ft)	Kg/cm^2	Kg/cm^2	Kg/cm^2
30	(1)	0.0493	1.226	1.2753
60	(2)	0.0905	0.546	0.6365
90	(3)	0.1248	0.313	0.4378
120	(4)	0.1533	0.204	0.3573
150	(5)	0.1771	0.144	0.3211
180	(6)	0.1969	0.107	0.3039
210	(7)	0.2135	0.083	0.2965
240	(8)	0.2272	0.066	0.2932

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PVC NON PRESSURE PIPES

Bs-3506

Nominal Size (Inch)	Outside Diameter mm		Wall Thickness mm	
	Min.	Max.	Min.	Max.
1.5	48.1	48.4	1.8	2.1
2	60.2	60.5	1.8	2.1
2.5	72.8	73.4	1.8	2.1
3	88.7	89.1	1.8	2.1
4	114.1	114.5	2.3	2.6
5	141.1	141.5	3.1	3.4
6	168.0	168.5	3.1	3.4
8	218.7	219.4	3.1	3.4
10	272.7	273.4	3.1	3.4
12	323.4	324.3	3.1	3.4
14	355.0	256.0	3.6	3.9
16	405.9	405.9	4.1	4.5

FITTING

We offer a complete line of fitting to be used with our NNP (Non Pressure Pipes).

- Bends - Short and long (1.5" to 16")
- Sockets (1.5" to 16")

CUSTOMER SATISFACTION

We are duly committed to achieve customer satisfaction by providing quality products & services according to their requirement & ultimately customer delight. We shall achieve Customer Satisfaction by developing a Quality Management System, Training of Personnel Optimal using resources, timely delivery of products and continually improve the effectiveness of over all processes.

Our Quality Management System is regularly monitored to ensure its compliance with the standards. We review the Quality policy for continuing suitability. Our policy is communicated and under stood at all levels in our organization.

SOIL, WASTE & VENT PIPING SYSTEM

Jamal SWV (Soil, Waste & Vent) is a complete piping system made of unplasticized polyvinyl chloride PVC compound. Jamal SWV piping system is manufactured in conformity with **BS-4514 & BS-5255.**

Jamal SWV innovative system has emerged as the most valuable piping system, especially in comparison to traditional and bulky cast iron piping system. Its unrivalled quality and ultimate customers experience has made it popular amongst architects, consultants, engineers, and plumbing contractors etc.

FIELDS OF APPLICATIONS:

The Jamal SWV system is recommended for all soil, waste and vent applications in residential and industrial buildings, such as sanitary systems, wastewater and rainwater.

RANGE:

Jamal Polymers soil, Waste & Vent (SWV) pipes and fittings are available in diameter range from 32mm to 160mm. The pipes are available in standard length of 13 to 20 feets.

Bs 4514:1983			
Nominal Size (Inch)	Outside Diameter mm		Minimum Wall Thickness (mm)
	Min.	Max.	
32	36.15	36.45	1.8
40	42.75	43.05	1.9
50	55.75	56.05	2.0
82	82.4	82.8	3.2
110	110.9	110.4	3.2
160	160.0	160.6	3.2

FEATURES & BENEFITS

- High quality of finish with smooth internal (preventing the build up of deposits) and external surface
- Excellent resistance to chemicals found in domestic effluent
- Light weight of the system makes it easy to install
- A complete plastic system resistance to organic growth and corrosion, allowing high flow speeds of transported liquids
- It provide reliable, effiecnet and durable connection
- Self-extinguishing
- Extensive utilisation – wide range of fittings offers multiple solutions.

INSTALLATION:

Being light weight, Jamal Polymers SWV piping system can be easily handled and installed without the use of sophisticated tools the techniques. Installation work can be done with efficient usage of labor in short time. It is very important to ensure that pipes and fittings are stored in shade and stacked as per the manufacturer guidelines.

For jointing with solvent cement, both parts are to be jointed must be initially cleaned using a priming fluid which not only cleanses the surface but also prepares for a reliable and durable joints. Follow it up by applying an even coating of solvent cement, using a brush provided with jamal solvent cement to the inside of sockets and on the spigot, then insert the pipe or a fitting spigot fully into the socket. Remove excess of solvent cement with a dry clean cloth. It is important to note that this is not a gluing process instead an adhesion mechanism achieved through the molecular bonding of resin solidification as and when the solvent evaporates.

The joint may be handled after 10 minutes and can be commissioned after 24 hours.

Bs-EN-1401-1:1998

Nominal Size (Inch)	Out Side Diameter (mm)		SN-2 (SDR-51)		SN-4 (SDR-41)		SN-8 (SDR-34)	
			Wall Thickness (mm)		Wall Thickness (mm)		Wall Thickness (mm)	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
110	110.0	110.3	Not Applicable		3.2	3.8	3.2	3.8
125	125.0	125.3	Not Applicable		3.2	3.8	3.7	4.3
160	160.0	100.4	3.2	3.8	4.6	4.6	4.7	5.4
200	200.0	200.5	3.9	4.5	5.6	5.6	5.9	6.7
250	250.0	250.5	4.9	5.6	7.1	7.1	7.3	8.3
315	315.0	315.0	6.2	7.1	6.7	8.7	9.2	10.4
335	335.0	335.7	7.0	7.9	8.7	9.8	10.4	11.7
400	400.0	400.7	7.9	8.9	9.8	11	11.7	13.1

*NORMAL STIFFNESS

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American Petroleum Institute

TÜV AUSTRIA

Pakistan Standards

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