

JET PLAST®

MADE IN PAKISTAN



Products of
SH INDUSTRIES

ISO Certificate 9001-2015

 WWW.JETPLAST.COM



A HUMAN BEING
IS AN INGENIOUS
ASSEMBLY OF
PORTABLE
PLUMBING

Christopher Morley

CEO's Message

I am very pleased to **welcome** you

Our progressive thinking and creative approach is what makes us proud in providing services related to water supply and fittings. I trust you'll find what you're looking for here.

The collection you are about to witness in this catalogue is a result of our commitment to excellence. It is an outcome of our constant focus on consumer preferences and dedication to resolve them according to their requirements.

We have a clear vision regarding what we want to be – A leader in this market; and we guide our business using nine core values respect, morality, equality, mutual-trust, integrity, honesty, progressiveness, performance and self-accountability. I'm proud of the work we do and give you my personal commitment that we will deliver what we promise.

Our teams evidently understand that how we operate is just as crucial as what we accomplish. It is through the spirit of teamwork and strong sense of vision that we step forward towards our goals. Our operating environment is expected to change dramatically over the coming years, but our dominant philosophy of placing customers at the heart of everything we do will remain unchanged. We will continue to transform ourselves and take on new challenges with the aim of creating a solid operating platform that can deliver consistent growth in any market environment.

It's not just our commitment and constant endeavors but your constant support and appreciation that have helped us to grow in our category in Pakistan.

I would love to hear from you both in terms of criticism and appreciation. That would be great help in future developing our ranges in a way that synchronizes well with your life and your lifestyle. We look forward to the challenges ahead and ask for your continued support.

CEO:
Mian Awais Habib

CEO:
Mian Harris Ali

Mian Mazhar Ali
(Founder of S H Industries)

TABLE OF CONTENT

→ COMPANY PROFILE

- Brief Introduction
- Company Profile
- Vision
- Mission

→ HDPE PRESSURE PIPE

- About
- Application
- Technical Specs
- Products Range
- Usage Instruction



→ PE COMPRESSION FITTINGS

- About
- Products Range
- Usage Instructions

→ BUTT FUSION FITTINGS

- About BUTT FUSION:
- Product Knowledge
- Usage Instructions
- Technical Specification



→ U-PVC PIPES & FITTINGS

- Introduction
- Applications
- Product range
- Electrical Conduct Pipes & accessories



→ PPRC PIPES & FITTINGS

- About
- Products Range
- Applications
- Usage Instructions

→ HDPE YELLOW PIPE

- About
- Products Range
- Applications
- Usages Instructions

→ PVC GARDEN HOSE PIPE

- Features
- Project Range

Brief Introduction

SH industries is Lahore Based industrial concern practicing modern principles of HDPE/PPRC pipe and fittings manufacturing. The company is equipped with state of the art latest machinery and highly skilled staff which is considered as vital company asset. The brand JETPLAST® is backed by the vision and expertise of the persons with a lifetime experience and services in sanitary items ,water supplies and related products with a vision to provide Pakistan a reliable, superior quality HDPE/PPRC pipes , fittings and related products which the market may never have experienced before.

Vision

“Our vision is to play our part in equipping the Pakistani Market with international standard products.”

Mission

“Our mission is achieve excellence in HDPE/PPRC/uPVC pipes , fittings and related items through utmost quality level.”

Company Profile

S.H INDUSTRIES is One Of the good manufacturers of **PPRC/uPVC Pipes & FITTINGS** and **HDPE PIPES**. in lahore city of Pakistan. Our annual production is more than 300,000 Kgs. We are equipped with imported machinery operated under very professional team and management hence making sure that every single production batch is according to international Standards DIN 8077 & 8078

S.H INDUSTRIES is FBR Registered and ISO 9001:2015 (UKAS) certified manufacturer with registered Trade Mark "**JET PLAST**". We supply our goods all over the Pakistan including provinces of Sindh, Balochistan, Punjab, KPK, Azad Kashmir, Gilgit Baltistan and Tribal Areas.

In the near future, we are extending our productions in the line of allied sanitary products.

S.H industries has following Sister Concern companies;

W.H TRADERS

This company was established in the year 2003 by **MIAN MAZHAR ALI** with aim to provide imported materials of international brands to local consumers in the construction industry in Pakistan. They import sanitary wares, Pipes & Fittings and other plumbing items which are mostly imported from the world's best companies.

We are **Sole Agent** of SOGUT PLASTIC VE KALIP (TURKEY) for PPRC Pipes & Fittings (**SPK**) Brand.

We are **Agent** of TIANJIN CHENYI HOISTIE INTERNATIONAL TRADE CO LTD (CHINA) for Malleable Iron Pipe Fittings (**HE**) Brand.

We are **Sole Agent** of Taizhou Tairi Fitting Company Limited (China) for HDPE Fitting (**TAIRI**) Brand.

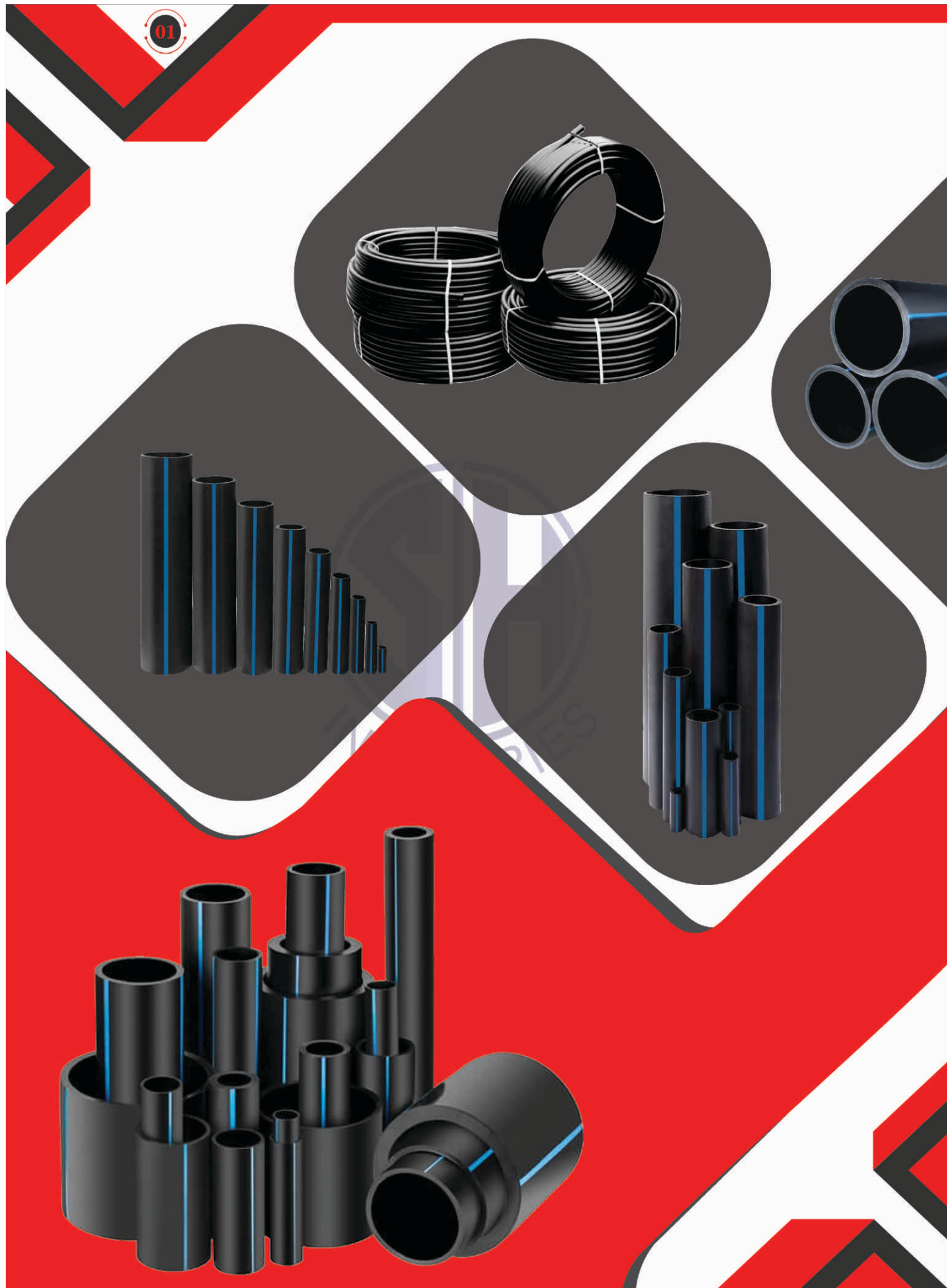
Haji Brothers is a sales point where we sell both imported and local sanitary products. They deals in Sanitary Items including G.I Pipes & Fittings, PPRC Pipes & Fittings, HDPE Pipes & Fittings, UPVC Pipes & Fittings, Brass Valves (Ball valve, Gate Valve, Check Valve, No Return Valve, Ball Cock etc) CP fittings, Bath Sets, Pipe wrapping tapes and other Plumbing items

For more information please visit our website www.whtraders.com

Our valuable clients



01



02

→ HDPE Pressure Pipe

About HDPE Pipe

Today's modern polyethylene resins are highly engineered for rigorous applications within a wide range of applications where a tough, ductile material is required to assure long-term performance. Polyethylene pipes provide a cost effective solution for a wide range of piping applications such as water supply, drainage and sewerage, gas distribution, industrial piping for slurry and abrasive materials, liner for petroleum flow lines, electrical and telecommunication cable ducting. One of the major factors that contribute to the growth of polyethylene as a piping material is the cost savings in installation. Polyethylene pipe is a tough and durable system whilst retaining its flexibility and leak proof characteristics thus ensuring lower maintenance costs and increased service life as compared to traditional piping materials. HDPE pipes produced by SH Industries under registered trade mark "JETPLAST" currently ranges from 20 mm to 250 mm in diameter which is still being expanded. The smaller sizes are available in coils whilst the bigger pipes are cut to pipe lengths (e.g. 6 m). The company provides transport for bulk purchases to our customer's destination.

Applications

- ▶ Fire Fighting (Underground)
- ▶ Irrigation
- ▶ Potable Water
- ▶ Drainage














Product of: SH INDUSTRIES

JET PLAST

→ HDPE System

Characteristics Of HDPE

The figure Summarizes many of the key Characteristics of the HDPE like

- 1 Impact Resistant 
- 2 Elastic 
- 3 Thermal Resistant 
- 4 Smooth Internal Wall 
- 5 Wear & Tear Resistant 
- 6 Weather-resistant / UV Resistant 
- 7 Poor Heat Conductivity 
- 8 Non-toxic 
- 9 Insulating 
- 10 Highly Suitable for Welding 
- 11 Homogeneous Welded Joints 
- 12 Prefabrication 
- 13 Light Weight 

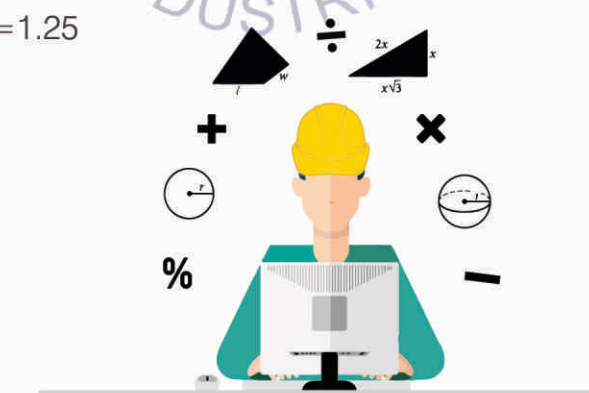
→ HDPE System

Design Stress & Safety factor:

Safety factors are into account for handing conditions, service conditions and other circumstances are directly considered in the design in terms of ISO 4427 the minimum safety factor is 1.25. This factor,when applied to the Minimum Required Strength (MRS),for theparticular material classification (e.g. PE 80, PE 100), gives the maximum allowable hydrostatic design stress for the designated material.

Designation of Material	MRS at 50 years & 20°C (Mpa)	Hydrostatic Design Stress (Mpa)
PE 100	10	8
PE 80	8	6.4

Formula: $\frac{MRS}{c}$, $c=1.25$



Pipe SDR & Pressure Relationships:

SDR is the standard dimensional ratio, it is the ratio between the O.D. (Outside Diameter) of the pipe & the wall thickness. E.g.:

As per ISO 4427, the SDR of 110mm 10 bar rated PE 100 pipe is $110/6.6 = 16.66$ i.e. SDR 17

As per ISO 4427, the SDR of 110mm 16 bar rated PE 100 pipe is $110/10 = 11$ i.e. SDR 11

As per ISO 4427, the SDR of 110mm 20 bar rated PE 100 pipe is $110/12.3 = 8.94$ i.e. SDR 9

HDPE PRESSURE PIPE

Dimension Ratio	SDR-11	SDR-13.6	SDR-17	SDR-21	SDR-27.7	Standard Length (m)
Working Pressure (Bar)	PN-16	PN-12.5	PN-10	PN-08	PN-06	
Outer Diameter (mm)	Min Wall Thickness(mm)	Min Wall Thickness(mm)	Min Wall Thickness(mm)	Min Wall Thickness(mm)	Min Wall Thickness(mm)	
20	2.0	1.8	-	-	-	100
25	2.3	1.9	1.8	-	-	100
32	3.0	2.4	2.0	-	-	100
40	3.7	3.0	2.4	1.9	-	100
50	4.6	3.7	3.0	2.4	-	100
63	5.8	4.7	3.8	3.0	-	100
75	6.8	5.6	4.5	3.6	-	50
90	8.2	6.7	5.4	4.3	3.3	50
110	10.0	8.1	6.6	5.3	4.0	06
160	14.6	11.8	9.5	7.7	5.8	06

HDPE PRESSURE PIPE

Dimension Ratio	SDR-11	SDR-13.6	SDR-17	SDR-21	SDR-27.7	Standard Length(m)
Working Pressure (Bar)	PN-16	PN-12.5	PN-10	PN-08	PN-06	
Outer Diameter (mm)	Min Wall Thickness(mm)	Min Wall Thickness(mm)	Min Wall Thickness(mm)	Min Wall Thickness(mm)	Min Wall Thickness(mm)	
200	18.2	14.7	11.9	9.6	7.2	06
225	20.3	16.6	13.4	10.8	8.2	06
250	22.7	18.4	14.8	11.9	9.1	06



07



08

PE Compression Fittings

About PE Compression Fittings

Polyethylene (PE) Compression fittings are approved for use in contact with drinking water. These fittings offer exceptional joint security for metric OD polyethylene (PE) pipes and form a seal without distorting the pipe or restricting the pipe bore. The PE Compression fittings range is suitable for potable water distribution mains and irrigation systems

Product Specification

Joints Body: Black Polyethylene

Lock-nut: Blue Polyethylene (RAL 5012)

Gasket: 75 Shore (NBR) nitric rubber

Locking ring: white polyacetale

Reinforced rings: Stainless steel AISI 430

Clamp Saddles Body and gasket: same as the joints

Advantages

Safe and durable

Fast and easily connected

Perfect water tightness

Locking nut for a clinching system

Simple insertion of the tube in the fitting

No special workforce required

High resistance to temperature and ultraviolet shocks



- 1 Body of Polyethylene
- 2 O-ring of NBR
- 3 Holder of Polyethylene
- 4 Clinching Ring of POM, acetal
- 5 Locking Nut of Polyethylene

Product Range

End Cap



COD.	D(mm)	Pack
705020	20	160
705025	25	112
705032	32	60
705040	40	36
705050	50	24
705063	63	10
705075	75	6
705090	90	4
705110	110	3

PE Compression x male bsp thread



COD.	SIZE	Pack
144020	20x1/2" M	160
144025	25x3/4" M	60
144032	32x1" M	50
144040	40x1-1/4" M	20
144050	50x1-1/2" M	20
144063	63x2" M	10
144075	75x2-1/2" M	8
144090	90x3" M	6
144110	110x4" M	4

Flanged Adapter



COD.	D(mm)	Pack
714040	40	20
714050	50	16
714063	63	12
714075	75	8
714090	90	6
714110	110	3

Female Adapter



COD.	D(mm)	F(BSP)	Pack
703020	20	G 1/2 (f)	300
703021	20	G 3/4 (f)	280
703024	25	G 1/2 (f)	200
703025	25	G 3/4 (f)	200
703026	25	G 1 (f)	160
703031	32	G 3/4 (f)	150
703032	32	G 1 (f)	120
703039	40	G 1 (f)	100
703040	40	G 1-1/4 (f)	100
703050	50	G 1-1/2 (f)	60
703063	63	G 2 (f)	30
703075	75	G 2-1/2 (f)	12
703090	90	G 3 (f)	12
703110	110	G 4 (f)	4

Product Range

90° Tee



COD.	D(mm)	Pack
709020	20	100
709025	25	60
709032	32	40
709040	40	20
709050	50	15
709063	63	7
709075	75	4
709090	90	4
709110	110	2

90° Tee Female Threaded Offtake



COD.	D(mm)	F(BSP)	Pack
710020	20	G 1/2 (f)	120
710021	20	G 3/4 (f)	120
710024	25	G 1/2 (f)	80
710025	25	G 3/4 (f)	80
710031	32	G 3/4 (f)	40
710032	32	G 1 (f)	48
710039	40	G 1 (f)	32
710040	40	G 1-1/4 (f)	32
710050	50	G 1-1/2 (f)	18
710063	63	G 2 (f)	10
710075	75	G 2-1/2 (f)	6
710090	90	G 3 (f)	6
710110	110	G 4 (f)	4

Compression Ball Valve Female



COD	D(mm)	Pack
141020	20	120
141025	25	50
141032	32	40

90° Reducing Tee



COD.	D(mm)	D(mm)	Pack
713025	25	20	72
713032	32	25	40
713040	40	32	25
713050	50	40	16
713063	63	50	12
713075	75	63	4
713090	90	75	4
713110	110	90	2

90° Tee Male Threaded Offtake



COD.	D(mm)	F(BSP)	Pack
711020	20	G 1/2 (M)	120
711021	20	G 3/4 (M)	120
711024	25	G 1/2 (M)	80
711025	25	G 3/4 (M)	80
711026	25	G 1 (M)	80
711032	32	G 1 (M)	48
711040	40	G 1-1/2 (M)	32
711050	50	G 1-1/2 (M)	30
711063	63	G 2 (M)	12
711075	75	G 2-1/2 (M)	6
711090	90	G 3 (M)	6
711110	110	G 4 (M)	4

Product Range

90 Elbow



COD.	D(mm)	D(mm)	Pack
706 020	20	20	160
706 025	25	25	112
706 032	32	32	60
706 040	40	40	36
706 050	50	50	24
708 063	63	63	10
706 075	75	75	6
706 090	90	90	4
706 110	110	110	3

90 Elbow with male Threaded offtake



COD.	D(mm)	F(BSP)	Pack
707 020	20	G 1/2 (M)	240
707 021	20	G 3/4 (M)	240
707 024	25	G 1/2 (M)	200
707 025	25	G 3/4 (M)	160
707 026	25	G 1 (M)	160
707 030	32	G 1/2 (M)	80
707 031	32	G 3/4 (M)	80
707 032	32	G 1 (M)	80
707 040	40	G 1-1/4 (M)	60
707 041	40	G 1-1/2 (M)	60
707 050	50	G 1-1/2 (M)	30
707 063	63	G 2 (M)	20
707 075	75	G 2-1/2 (f)	12
707 090	90	G 3 (M)	12
707 110	110	G 4 (M)	6

90 Elbow with Female Threaded offtake



COD.	D(mm)	F(BSP)	Pack
708 020	20	G 1/2 (f)	240
708 021	20	G 3/4 (f)	240
708 024	25	G 1/2 (f)	200
708 025	25	G 3/4 (f)	160
708 030	32	G 1/2 (f)	160
708 031	32	G 3/4 (f)	80
708 032	32	G 1 (f)	80
708 033	32	G 1-1/4 (f)	80
708 039	40	G 1 (f)	60
708 040	40	G 1-1/4 (f)	60
708 050	50	G 1-1/2 (f)	30
708 063	63	G 2 (f)	20
708 075	75	G 2-1/2 (f)	12
708 090	90	G 3 (f)	12
708 110	110	G 4 (f)	6

Coupling



COD.	D(mm)	D(mm)	Pack
701 020	20	20	160
701 025	25	25	120
701 032	32	32	80
701 040	40	40	50
701 050	50	50	40
701 063	63	63	18
701 075	75	75	10
701 090	90	90	6
701 110	110	110	4

Product Range

Reducing Coupling



COD.	D(mm)	D(mm)	Pack
702 025	25	20	140
702 031	32	20	80
702 032	32	25	80
702 039	40	25	70
702 040	40	32	60
702 049	50	32	30
702 050	50	40	30
702 062	63	40	20
702 063	63	50	20
702 074	75	50	10
702 075	75	63	10
702 089	90	63	6
702 090	90	75	6
702 110	110	90	4

Male Adapter



COD.	D(mm)	F(BSP)	Pack
704 020	20	G 1/2 (M)	300
704 021	20	G 3/4 (M)	300
704 024	25	G 1/2 (M)	280
704 025	25	G 3/4 (M)	200
704 026	25	G 1 (M)	180
704 030	32	G 1/2 (M)	120
704 031	32	G 3/4 (M)	120
704 032	32	G 1 (M)	120
704 033	32	G 1-1/4 (M)	120
704 039	40	G 1 (M)	100
704 040	40	G 1-1/4 (M)	100
704 041	40	G 1-1/2 (M)	100
704 049	50	G 1-1/4 (M)	72
704 050	50	G 1-1/2 (M)	725
704 051	50	G 2 (M)	48
704 063	63	G 2 (M)	24
704 074	75	G 2 (M)	15
704 075	75	G 2-1/2 (M)	12
704 076	75	G 3 (M)	12
704 090	90	G 3 (M)	10
704 110	110	G 4 (M)	10

Reinforced Clamp Saddle



COD.	DXG	BOLTS	Pack
7607 642	25xG ^{1/2} (F)	02	150
7607 643	25xG ^{3/4} (F)	02	150
7607 652	32xG ^{1/2} (F)	02	150
7607 653	32xG ^{3/4} (F)	02	150
7607 654	32xG1(F)	02	150
7607 662	40xG ^{1/2} (F)	02	150
7607 663	40xG ^{3/4} (F)	02	150
7607 664	40xG 1 (F)	02	150
7607 672	50xG ^{1/2} (F)	02	150
7607 673	50xG ^{3/4} (F)	02	150
7607 674	50xG1(F)	02	150
7607 675	50xG ^{1/2} (F)	04	80
7607 676	50xG ^{3/4} (F)	04	80
7607 682	63xG ^{1/2} (F)	04	80
7607 683	63xG ^{3/4} (F)	04	80
7607 684	63xG1(F)	04	60
7607 685	63xG1 ^{1/2} (F)	04	60
7607 686	63xG1 ^{1/2} (F)	04	60
7607 687	63xG2(F)	04	60
7607 692	50xG ^{1/2} (F)	04	60
7607 693	75xG ^{1/2} (F)	04	60
7607 694	75xG ^{3/4} (F)	04	60
7607 694	75xG1(F)	04	60
7607 695	75xG ^{1/2} (F)	04	60
7607 696	75xG ^{3/4} (F)	04	60
7607 697	75xG 2 (F)	04	30
7607 6A2	90xG ^{1/2} (F)	04	30
7607 6A3	90xG ^{3/4} (F)	04	30
7607 6A4	90xG1(F)	04	30
7607 6A5	90xG1 ^{1/2} (F)	04	30
7607 6A6	90xG ^{1/2} (F)	04	48
7607 6A7	90xG 2(F)	04	25
7607 6A8	90xG2 ^{1/2} (F)	04	36
7607 6B2	110xG ^{1/2} (F)	04	36
7607 6B3	110xG ^{3/4} (F)	04	36
7607 6B4	110xG1(F)	04	15
7607 6D2	160xG ^{1/2} (F)	04	15
7607 6D3	160xG ^{3/4} (F)	04	15
7607 6D4	160xG1(F)	04	15
7607 6D5	160xG1 ^{1/4} (F)	04	10
7607 6D6	160xG ^{1-1/2} (F)	04	08
7607 6D7	160xG 2(F)	04	05



→ BUTT FUSION

About BUTT FUSION:

The application of polyethylene or PE pipes has increased manifold in the construction sector and industry, due to its **low cost, versatility, corrosion resistance, and** lengths of PE pipe and pipe to PE fittings is by heat fusion of the pipe butt ends (butt fusion). This technique produces a **permanent, economical and flow-efficient connection.**



→ PRODUCT KNOWLEDGE

Butt fusion is a thermo fusion process

Butt fusion involves the simultaneous heating of the ends of two pipe/fitting components which are to be joined, until a molten state is attained on each contact surface. The two surfaces are then brought together under controlled pressure for a specific cooling time and a homogeneous fusion joint is formed. The **resultant joint is fully resistant** to end loads and has comparable performance under pressure to the pipe itself. The most common types of thermoplastic materials that are fusion welded are **HDPE, PP, PVC, PS, PETE, and PC.**

An electrical heater plate is used to raise the temperature of the pipe ends to the required fusion **temperature.**



→ Usage Instructions

Butt-fusion to join PE80 and PE100 and Fittings

Butt-fusion can be used to join both PE80 and PE100 materials for pipe sizes of 90mm and above of the same SDR. Butt fusion can also be used to fabricate fittings, reducers, tees, and bends. Using this method allows for the assembling of long lengths of pipe, which can also be cut, tapped, connected, or installed as any other PVC pipe. The butt welding machines used to weld PE pipes have controls to ensure the welding parameters are strictly adhered to.

The following parameters are controlled:

- Heater plate temperature
- Ovality and alignment
- Interface pressure
- Bead width
- Heat soak time
- Changeover time



Control of these is necessary to ensure premature failure of the weld does not occur. The field conditions under which PE pipe is welded have a considerable effect on the strength of the joint.

→ Technical specifications

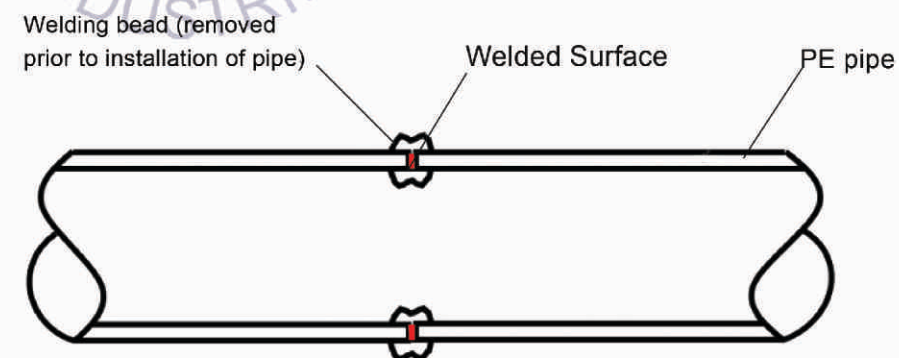
Tips for Controlling the Weld Process

In The order to achieve an acceptable weld three elements are essential:

- **Cleanliness:** Because contamination will ruin joints
- **Technique:** Most owners of PE pipe systems require that people performing butt welding of PE pipes are qualified by completing a recognized training course
- **Correctly designed equipment with proper maintenance:** Correct welding temperatures, welding procedures and pipe facing tools must be maintained in tolerance and in good condition.

The resulting joint, if it has been properly made, is as strong as the original pipe and can withstand all the loads applied during routine installation and operation.

During the fusion process internal and external 'weld beads' are formed. Techniques have been developed to minimize the size of the beads, however as they do not add anything to the overall strength they may be safely removed if required. The removed weld beads can be inspected as part of a quality control program.



Butt fusion Joint

Reference:

ISO 12176-1:2006 Plastics pipes and fittings - Equipment for fusion jointing polyethylene systems - Part 1: Butt fusion

Note:

Do not pressurize the joint for a minimum period of one hour

→ Welding Parameter

Table 1. Welding Parameter and control for calculation method and recommended values to be used

Description	Parameter	Calculation	Recommended Values
1. Heating temperature		200 - 220 °C	-
2. Alignment pressure (bar)	(P1)	0.15 ± 0.01 N/mm ²	$A1 / A2 \times 1.5$
3. Alignment time (Bead Created)	(T1)	Until bead created follow item 4	Until bead created follow item 4
4. Bead height (mm.)		$0.5 + (0.1 \times e)$	$0.5 + (0.1 \times e)$
5. Heating-up pressure (bar)	(P2)	≤ 0.02 N/mm ²	$A1 / A2 \times 0.2$
6. Heating-up time (sec.)	(T2)	$10 \times e$	$10 \times e$
7. Changeover time (sec.)	(T3)	$3 + (0.01 \times OD)$	$3 + (0.01 \times OD)$
8. Joining pressure built-up time (sec.)	(T4)	$3 + (0.03 \times OD)$	$3 + (0.03 \times OD)$
9. Joining pressure (bar)	(P3)	0.15 ± 0.01 N/mm ²	$A1 / A2 \times 1.5$
10. Minimum cooling time (min.)	(T5)	$3 + e$	$3 + e$
11. Minimum bead width (mm.)		$3 + (0.50 \times e)$	$3 + (0.50 \times e)$
12. Maximum bead width (mm.)		$5 + (0.75 \times e)$	$5 + (0.75 \times e)$

Remarks:

OD = Outside Diameter (mm.), e = Wall Thickness (mm.)

A1 = Pipe section area (mm²) by calculation formula: $[(OD^2 - ID^2)/4]$

A2 = Hydraulic cylinder section area (mm²) by calculation formula: $[(Number\ of\ hydraulic\ cylinder) \times [(ID_{Cylinder}^2 - OD_{Shaft}^2)/4]]$

➔ Alignment of pipe and gap width

The joining areas have to be plane with a clean and grease-free tool directly before the welding, so they are plane-parallel in clamped condition. The gap width and the misalignment have to be controlled. The misalignment of the joining areas on the pipe outside respect may not pass the permissible value of **0.1 x wall thickness** of pipe. The permissible gap width under alignment pressure is show on

Table 2

The maximum gap width is allowance between the treated welding zones.

Pipe outside diameter range (mm.)	Gap width (mm.)
< 355	0.5
400...< 630	1.0
630...< 800	1.3
800...< 1000	1.3
> 1000	2.0

➔ DIAGRAM

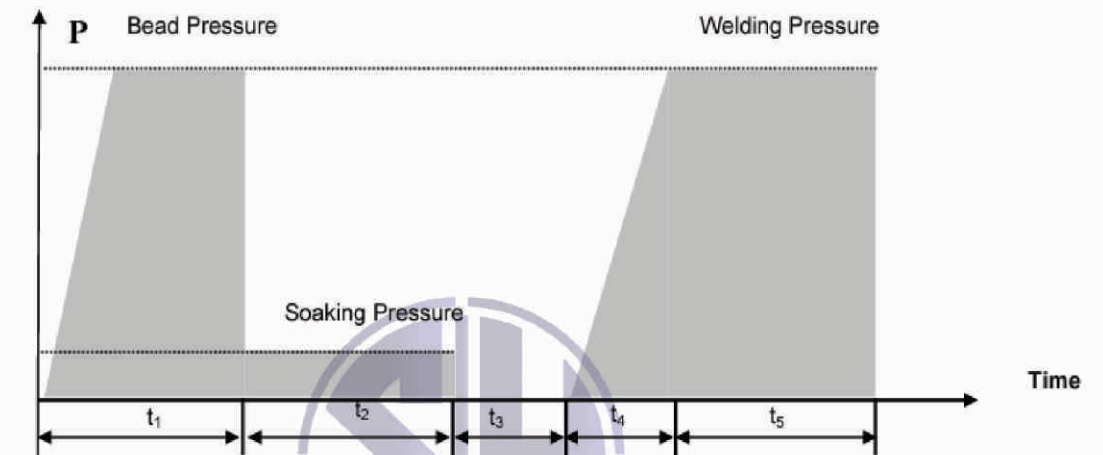


Table3. Recommended values for the heating tool butt-fusion welding of pipes and fittings from HDPE, at an ambient temperature of approximately 20 °C and moderate air flow (Interim values have to be interpolated).

1	2	3	4	5
Nominal wall Thickness (mm)	Alignment Bead height on heating tool at the end of the alignment time (alignment with 0.15 N/mm ²) (mm) minimum values	Heating-up (T2) Heating-up time =10 x wall thickness (heating-up with < 0.02 N/mm ²) (second)	Changeover (T3) (second) maximum time	Joining (T4) Joining Pressure build-up time (second) (T5) Cooling time under joining pressure P=0.15 N/mm ² + 0.01 (minute) minimum values

Solid and Corrugated Pipes

≤ 4.5	0.5	45	5	5	6
4.5... 7	1.0	45...70	5...6	5...6	6...10
7 ... 12	1.5	70...120	6...8	6...8	10...16
12 ... 19	2.0	120...190	8...10	8...11	16...24
19 ...26	2.5	190...260	10...12	11...14	24...32
26 ... 37	3.0	260...370	12...16	14...19	32...45
37 ... 50	3.5	370...500	16...20	19...25	45...60
50 ... 70	4.0	500...700	20...25	25...35	60...80

In most cases, the heating pressure and the jointing force can be obtained from reference plates that are to be found on the welding equipment itself. However, it is sometimes necessary to make supplementary calculations at the work site to account for additional factors such as drag or heating pressure.

Calculating specific heating pressure

First calculate the welding area of the pipe to be joined

$$A_{\text{pipe}} = \frac{(d_a^2 - d_i^2) \pi}{4}$$

Where

A_{pipe} = Pipe Surface Area in mm^2

d_a = Pipe Outside Diameter in mm

d_i = Pipe Inside Diameter in mm

π = Constant (3.142)



Example:

PE 100 pipe Diameter 110mm SDR 11/S-5/PN16 (10mm wall Thickness)

$$A_{\text{pipe}} = \frac{(d_a^2 - d_i^2) \times \pi}{4}$$

$$A_{\text{pipe}} = \frac{(110^2 - 90^2) \times 3.142}{4}$$

$$A_{\text{pipe}} = \frac{12568}{4}$$

$$A_{\text{pipe}} = 3142 \text{mm}^2$$

Next Multiply The value Of A_{pipe} By the Welding Pressures From The table above:

Alignment pressure = $3142 \times 0.15 \text{ N/mm}^2$ (From table) = 511.8 N/mm^2

Heating Pressure = $3142 \times 0.01 \text{ N/mm}^2$ (From Table) = 68.2 N/mm^2

Build-up and Cooling Pressure = $3142 \times 0.15 \text{ N/mm}^2$ (From Table) = 511.8 N/mm^2

Note: $1 \text{ N/mm}^2 = 10 \text{ Bar}$



Introduction

Quality is our First Priority. S.H Industries is the manufacturer of Plastic Works equipped with the "European Extrusion System" to produce quality PVC Pipes and Fittings in Pakistan under the brand name "JET PLAST".

JET PLAST Pipes and Fittings are based on advanced polymer chemistry made from a specialist Thermoplastic known chemically as Unplasticised Polyvinyl Chloride (uPVC). **JET PLAST** uPVC system design and standards incorporate significant engineering safety factors, which should translate to a long service life.

JET PLAST distribution systems made from superior quality uPVC are used in high rise applications, hotels/motels, and apartment buildings, single and multi-Family houses and also in the industrial commercial and also all type of public amenities in Pakistan. For these growth pipelines are needed to convey water and sewerage to protect telecommunication and electrical cables. In order to fulfil this need **JET PLAST** Plastic Works formed with an aim of producing a full range of quality uPVC Pipes & Fittings conforming to internationally recognized standards, i.e. ASTM D-2241 SDR-Series, D-1785 Sch-40 & Sch-80, BSS-3505 & BSS-4514, and Pakistan Standards PSS-3051. Our pipes and fittings are proven successful service history of trouble free performances assure the reliability of distribution system. Notable advantages of uPVC Pipes and Fittings supply water at temperatures upto 70 F (23 C) and it is not susceptible to corrosion, electrolysis or scale build-up in areas where water & atmospheric conditions are aggressive

Product Range

JET PLAST PRODUCTS

- U-PVC Electrical Conduit Pipes (Approved by IEC)
- Accessories
 - JET PLAST WALL BOXES
 - JET PLAST JOINT BOXES
 - JET PLAST LIGHT BOXES
 - JET PLAST FAN BOXES
 - JET PLAST BENDS & SOCKETS
- U-PVC Sewerage Pipe & Fittings
- U-PVC Pressure Pipes (BS-3505)
- Industrial Pressure Piping System (SCH-40 & SCH- 80)
- U-PVC Pressure Pipes (SDR Series) ASTM -D-2241



Electrical Conduit Pipes & Accessories

RIGHT CHOICE FOR YOUR PROJECT

U-PVC (Unplasticized Poly Vinyl Chloride) Pipes manufacturer for the construction industry of Pakistan. Our Super High Impact U-PVC Electrical Conduit Pipes, Manufactured from specially formulated PVC to fulfil the international requirements of BS-6099 & PS-1905 special formulation gives desired collapsible strength, flame resistance, bent to certain angle and ease in installation. Best for concealed wiring and external wiring of electrical cables. JET PLAST Electrical Conduits are tested in PCSIR Lab, with stand the insulation resistance test and electrical insulation strength test up to desired excellence of quality JET PLAST Electrical Conduits are tested in KEMA Netherland B.V (Fire and Smoko Test).

JET PLAST PIPES having unbeatable performance & strength.

The above range are manufactured on latest state of art extrusion machinery, imported Globally We believe that **"Quality is job that never ends"**. Through best quality, range. availability precision & customer satisfaction, we are acknowledged as one of the innovative and respected electrical conduit manufacturer in Pakistan.

JET PLAST UPVC ELECTRICAL CONDUIT PIPES AND ACCESSORIES

STANDARD SPECIFICATION (BS-6099)

NORMAL SIZE	OUTER DIAMETER (MM)		WALL THICKNESS (MM)	
	Min.	Max.	Min.	Max.
Inch				
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	33.7	1.44	1.67
1 ^{1/2}	42.1	42.4	1.60	1.84
2	60.2	60.5	1.70	1.90
3	88.7	89.1	1.80	2.00
4	114.1	114.5	1.90	2.10

Manufactured to BS-6099

1/2" to 2" Standard Length 10 Ft or 3 Meter.

3" to 4" Standard Length 13 Ft or 4 Meter.

Colour: Grey

Other Lengths are Available on special order

STANDARD SPECIFICATION BS-3505 EQUIVALENT TO PS-3051

Nominal Size	Outer Dia (MM)		Class "B" 6 BAR		Class "C" 9 BAR		Class "D" 12 BAR		Class "E" 15 BAR	
			Wall Thickness	Wall Thickness	Wall Thickness	Wall Thickness	MIN	MAX	MIN	MAX
INCH	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
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	48.8	-	-	-	-	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"	140.1	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
7"	193.5	194	5.2	6.0	7.7	8.9	10.1	11.7	12.4	14.3
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	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
18"	456.7	457.7	11.0	12.7	16.3	18.8	21.4	24.6	-	-

- Pipes Up to 12" Are Normally available from stock other large diameter Pipes can be Manufactured on request max 18"
- Standard length .4m (13FT) & 6m (20FT) Other length can be Manufactured on request
- Pipes of Normal or above 8" are normally socketed at one end (to suit either rubber ring or slovent cement joint)

STANDARD SPECIFICATION ASTM D-2241 (SDR SERIES)

Nominal Size	Outer Dia (MM)		STANDARD DIMENSION RATIO (SDR)											
			Wall Thickness (MM)											
INCH	MIN	MAX	41		32.5		26		21		17		13.5	
			MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
1/2"	21.24	21.44	-	-	-	-	-	-	-	-	-	-	-	-
3/4"	26.57	26.77	-	-	-	-	-	-	-	-	-	-	-	-
1"	33.27	33.53	-	-	-	-	-	-	-	-	-	-	-	-
1 1/4"	42.03	42.29	-	-	1.52	2.03	-	-	-	-	-	-	-	-
1 1/2"	48.11	48.41	-	-	1.52	2.03	1.63	2.13	-	-	-	-	-	-
2"	60.17	60.47	-	-	1.85	2.36	1.85	2.36	2.01	2.52	-	-	-	-
3"	88.70	89.10	2.16	2.67	2.74	3.25	2.31	2.82	2.29	2.80	2.87	3.38	3.56	4.06
4"	114.07	114.53	2.80	3.30	3.51	4.01	4.39	4.90	5.44	6.10	6.73	7.54	8.46	9.47
6"	168.00	168.56	4.11	4.62	5.18	5.79	6.48	7.26	8.03	9.00	9.91	11.10	12.47	13.97
8"	218.70	219.46	5.33	5.97	6.73	7.54	8.43	9.45	10.41	11.66	12.90	14.45	-	-
Pressure Rating at 23°C	Pipe-SDR	41	32.5	26	21	17	13.5							
Rating P.S.I	100	125	160	200	250	315								

Manufactured to ASTM D-2241-88
Standard Length: 5.8 & 6 MTR
Socket Type: Bell End, Colour, White

STANDARD SPECIFICATION ASTM D-1785 (SCH 40 & 80)

Nominal Size	Outer Dia (MM)		Wall Thickness (MM)				PRESSURE RATING AT 23 C		
			ASTM D-1785 SCH-40		ASTM D-1785 SCH-80		PRESSURE RATING (PSH)		
INCH	MIN	MAX	MIN	MAX	MIN	MAX	Size	SCH-40	SCH-80
1/2"	21.24	21.44	2.77	3.28	3.73	4.27	1/2"	600	850
3/4"	26.57	26.77	2.87	3.38	3.91	4.42	3/4"	480	690
1"	33.27	33.53	3.38	3.89	4.55	5.08	1"	450	630
1 1/4"	42.03	42.29	3.56	4.07	4.85	5.44	1 1/4"	370	520
1 1/2"	48.11	48.41	3.68	4.19	5.08	5.69	1 1/2"	330	470
2"	60.17	60.47	3.91	4.42	5.54	6.20	2"	280	400
3"	88.70	89.10	5.49	6.15	7.62	8.53	3"	260	370
4"	114.07	114.53	6.02	6.73	8.56	9.58	4"	220	320
6"	168.00	168.56	7.11	7.97	10.97	12.29	6"	180	280
8"	218.70	219.46	8.18	9.17	12.70	14.22	8"	190	250

Manufactured to: ASTM D- 1785-88 Schedule 40 & 80
Standard length 4,5,8 & 6 Meter

Colour: Schedule 40-White Schedule 80 Dark Gray
Solvent Weld & Plain end.



Applications Of U-PVC Pipes

- Tube well casing
- Sanitary
- Water Supply System
- Drainage System
- Chilled Water Line
- Air Conditioning Duct
- Electrical Conduits System
- Agriculture
- Horticulture
- Irrigation and Green Houses

JOINTING SYSTEM

- Solvent Cement
- Mechanical (Tapper Ring)
- Z-Joint Rubber Ring Joints
- Welded



PPRC Fittings

About The Product

Polypropylene Random (PPR) pipes and fittings are most reliable in plumbing and water supply pipelines inside the building, due to their chemical features and fusion welding, which ensures the plumber has a perfect seal tight system. The PPR type 3 used in the production of JET PLAST PPR system has a high molecular weight and excellent creep resistance fundamental characteristics for the transportation of hot fluids under pressure. It also has good resilience which ensures ease of installation even with temperatures under 0°C. JET PLAST pipes are made of 100% virgin material which guarantees they last long; durable and no deposits seen.

PPRC Pipes

PPRC Pipes



PN-16 SDR 7.4				PN-20 SDR 6			
SR#	D(mm)	Wall Thickness (mm)	Pack	SR#	D(mm)	Wall Thickness (mm)	Pack
1	20	2.8	30	1	20	3.4	30
2	25	3.5	25	2	25	4.2	25
3	32	4.4	20	3	32	5.4	20
4	40	5.5	15	4	40	6.7	15
5	50	6.9	10	5	50	8.3	10
6	63	8.6	5	6	63	10.5	5
7	75	10.3	5	7	75	12.5	5
8	90	12.3	3	8	90	15.0	3
9	110	15.1	2	9	110	18.3	2

PPRC Fittings

90° Tee with Female Threaded offtake



Sr#	D(mm)	F(BSP)	Pack
1	25	G 1/2 (f)	100
2	25	G 3/4 (f)	100
3	32	G 1/2 (f)	45
4	32	G 3/4 (f)	45
5	32	G 1 (f)	45

90° Tee



Sr#	D(mm)	Pack
1	25	100
2	32	60
3	40	40

90° Reducing Tee



Sr#	D(mm)	D(mm)	Pack
1	32	25	75
2	40	25	40
3	40	32	40
4	50	40	25

Socket



Sr#	D(mm)	Pack
1	25	200
2	32	175
3	40	75
4	50	45
5	63	30

PPRC Fittings

Reducing Socket



Sr#	D(mm)	D(mm)	Pack
1	25	32	150
2	25	40	100
3	32	40	100

Socket with female threaded offtake



Sr#	D(mm)	F(BSP)	Pack
1	25	G 1/2 (f)	200
2	25	G 3/4 (f)	150
3	32	G 1/2 (f)	150
4	32	G 3/4 (f)	150
5	32	G 1 (f)	60
6	40	G 1-1/4(f)	40

Socket with male threaded offtake



Sr#	D(mm)	F(BSP)	Pack
1	25	G 1/2 (m)	200
2	25	G 3/4 (m)	100
3	32	G 1/2 (m)	100
4	32	G 3/4 (m)	60
5	32	G 1 (m)	50
6	40	G 1-1/4(m)	40

90° Elbow with female threaded offtake



Sr#	D(mm)	F(BSP)	Pack
1	25	G 1/2 (f)	100
2	25	G 3/4 (f)	100
3	32	G 1/2 (f)	75
4	32	G 3/4 (f)	75
5	32	G 1 (f)	45
6	40	G 1-1/4(f)	30

PPRC Fittings

90° Elbow with male threaded offtake



Sr#	D(mm)	F(BSP)	Pack
1	25	G 1/2 (m)	100

90° Reducing Elbow



Sr#	D(mm)	D(mm)	Pack
1	25	32	100
2	32	40	60

90° Elbow



Sr#	D(mm)	Pack
1	25	150
2	32	100
3	40	60

90° Elbow with Double female threaded offtake



Sr#	D(mm)	D(mm)	Pack
1	25	G 1/2 (f)	30

PPRC Fitting

Gate valve



Sr#	D(mm)	Pack
1	25	17
2	32	12

Union



Sr#	D(mm)	Pack
1	25	75
2	32	50

Under Ground Valve



Sr#	D(mm)	Pack
1	25	17
2	32	12

Stop Cork



Sr#	D(mm)	Pack
1	25	17

End Cap



Sr#	D(mm)	Pack
1	25	400
2	32	200

Pipe Clamp



Sr#	D(mm)	Pack
1	25	600
2	32	400

Over Cross



Sr#	D(mm)	Pack
1	25	100
2	32	45

Plug with male threaded off take



Sr#	D(mm)	F(BSP)	Pack
1	25	G 1/2 (m)	600



→ Jet Plast PVC Garden Hose Pipes

Jet Plast offers an extensive range of PVC Garden Hose Pipes that are developed using premium grade base materials and heavily used for supplying water in gardens and lawns at homes, hotels and similar segments. These PVC Garden Pipes are provided in different colors, shapes, sizes and dimensions.

Features

- High strength
- Dimensional accuracy
- Crack-less and Leak Proof
- High flexibility and durable finish standards
- UV stabilized
- Strong and Durable
- With smooth internal surface it provides better flow characteristics
- Resistant to Corrosion, Rusting



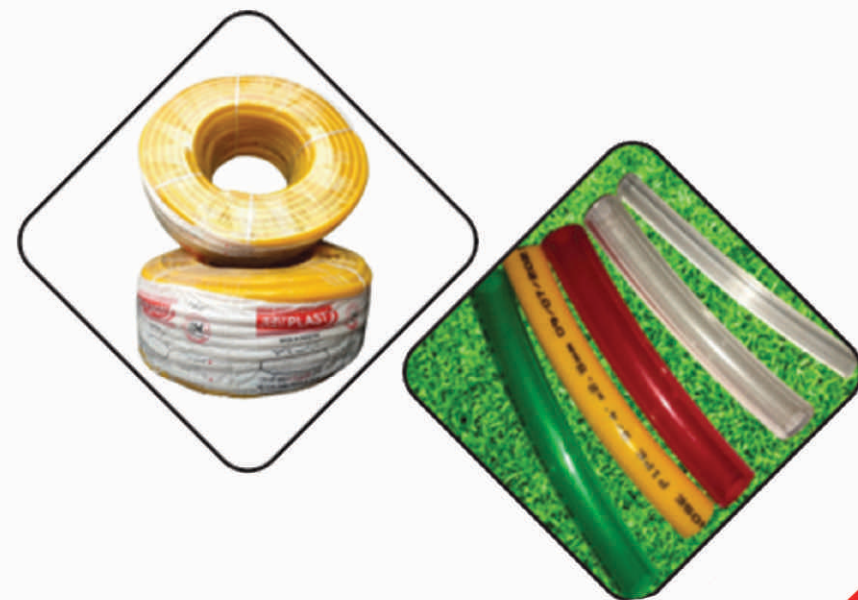
→ PRODUCT RANGE

Type: Transparant

Color: White, Green, Yellow and Red

Length: 250,300,500Ft

Sr#	Size	wall Thickness	Color	Rooll Size (FT.)	Rooll Weight (Kg)
01	Gass Pipe	2.00	Clear	500	11.200
02	Gass Pipe	2.50	Clear	500	14.000
03	Gass Pipe	3.00	Clear	500	16.000
04	3/4"	2.00	Green Yellow	300	13.500
05	3/4"	2.50	Red	300	16.500
06	3/4"	3.00	Clear	300	19.500
07	3/4"	2.00	Clear	300	13.500
08	3/4"	2.50	Clear	300	16.500
09	3/4"	3.00	Clear	300	19.500
10	3/4"	4.00	Clear	300	26.500
11	1"	2.50	Clear	300	23.000
12	1"	3.00	Clear	300	28.500
13	1"	4.00	Clear	250	30.000
14	water level pipe	1.80	Clear	400	4.0



→ HDPE YELLOW PIPE

About The product

This special product of JETPLAST HDPE Pipe series comes in royal yellow color available in sizes ranging from 1/2" inches to 2- 1/2" inches. The pipe is rolled in coils from 300ft to 500ft depending on diameter



Sr#	Pipe Size	Wall Thickness (mm)	Roll Size (ft.)
1	1/2 Inch	2.2	500
2	3/4 Inch	2.3	500
3	1 Inch	1.9	500
4	1 1/4 Inch	2.7	500
5	1 1/2 Inch	2.9	300
6	2 Inch	3.6	300
7	2 1/2 Inch	5.21	300

FBR Federal Board of Revenue

TAXPAYER REGISTRATION CERTIFICATE

Registration No: 8061338
Date of Registration: 02-Jun-2018
Type of Person: Association of Persons
Formation Date: 10-May-2018
Name: S.H INDUSTRIES
Address: S.H INDUSTRIES CAPTAIN ZAHID POLY FARM, KATAR BAND ROAD, THOKAR MAZAR, LAHORE
Tax Office: HTS LAHORE
Activity Type: Business

ISOQAR Certificate of Registration

This is to certify that the Management System of:

S.H Industries
Plot No 9 Captain Zahir Farms, Katar Band Road, Thokar Mazr Lahore, Pakistan

has been approved by 4 criteria ISO9001 and is compliant with the requirements of:

ISO 9001:2015

Scope of Registration: Manufacturing of uPVC, PVC Pipes and Fittings

S.H INDUSTRIES
(MANUFACTURER OF PPVC PIPES & FITTINGS, HDPE PIPES & FITTINGS AND OTHER PLASTIC PRODUCTS)

INITIAL ENVIRONMENTAL EXAMINATION (IEE)

Partners:
1) Mr. Mian Mazhar Ali SO Mian Muzafar Ali
2) Mrs. Sadia Mazhar W/O Mian Mazhar Ali

Prepared By:
BIO GREEN ENVIRONMENTAL CONSULTANT
340, Gulberg II, Lahore, 54000, Pakistan
Mail: bgec@bgec.com.pk
Tel: +92332-4420998

GOVERNMENT OF PAKISTAN
THE TRADE MARKS REGISTRY, KARACHI
CERTIFICATE OF REGISTRATION OF TRADE MARK (Section 23(1))

Trade Mark No: 016276
Class: 16
Registered on: 19/06/2021

Registered in the name of: **S.H INDUSTRIES**
Plot No: 09/12/20-26
Sheet 9, Captain Zahir Poly Farm, Katar Band Road, Thokar Mazr, Lahore, Pakistan
Tel: 0300-4425127

Subject: **Enlistment of Jet Plast**

Application number: 780-21-21 dated: 25-May-2021 (s/c)

Your item has been registered with Provisional & Purchas (P&P) Branch OHA Lahore as "Water & Sanitation Equip" (S/c). This registration is valid till 30 June 2022. Further "Wider" will be accepted subject to satisfactory performance with OHA, after approval of removal of provisional status.

DEFENCE HOUSING AUTHORITY
Water/Equip/Complex "Y" Block
Commonwealth Area, Phase - 18
Lahore, Cantonment
Tel: 042-111-940-677077
Case No: 532/2021
Date: 23 Sep 2021

To: **S.H INDUSTRIES**
Plot No: 09/12/20-26
Sheet 9, Captain Zahir Poly Farm, Katar Band Road, Thokar Mazr, Lahore, Pakistan
Tel: 0300-4425127

Subject: **Enlistment of Jet Plast**

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PROVISIONAL RECEIPT

Case No: 532/2021
23 Sep 21
To: For Branch

Pakistan Standards and Quality Control Authority
Licence for the use of the Pakistan Standard Mark

Number: 023451

Agreement No: 27943/1001

Address: 340, Gulberg II, Lahore, Pakistan

Validity: 20/06/21 to 20/06/24

THE FIRST SCHEDULE

PK Mark	Article / Process	Pakistan Standard
PK-1	Water Supply System - uPVC/HDPE Pipes	SSD 158/2004
PK-2	Water Supply System - uPVC/HDPE Pipes	SSD 158/2004

THE SECOND SCHEDULE

Article / Process	PK Mark	PK Mark	Mean of Payment
Water Supply System - uPVC/HDPE Pipes	PK-1	PK-2	PK-1
Water Supply System - uPVC/HDPE Pipes	PK-1	PK-2	PK-1



TEST REPORT

Year Ref. No: Nil
Date: 13-12-2022
Sample Received From: S.H Industries
Report Issue To: Head Office, Biomark S.C., Circular Road, LAHORE, PUNJAB - 54000 (PK)

Our Ref. No: QCCH/70/22-23(PT)
Date: 17-12-2022

No. of Samples: Three (03)
Specification against which Tested: PIS-1380-2014 (R)

Subject: **TESTING OF SAMPLES RELATED TO THE "JET PLAST" BRAND**
21.5 LITRE WATER SUPPLY SYSTEM

The above samples as mentioned have been tested with the following results:

Sr. No.	Description of Tests	Results Corresponding to Lab. Reg. No. & Identification		
		PEARF (118mm)	PEARF (118mm)	PEARF (118mm)
1	Density (g/cm ³)	0.952	0.954	0.951
2	Mean Outside Diameter (mm)	98.4	116.3	106.1
3	Wall Thickness (mm)	5.2	6.7	9.5
4	Mean Flow Rate at 10°C (L/min)	6.21	7.21	10.0
5	Hydraulic Strength at 20°C	--- Satisfactory ---		
6	Longitudinal Retention Test at 10°C (%)	-2.3	-2.0	-1.4
7	Tensile Strength (N/mm ²)	24.3	23.4	26.7
8	Elongation at Break (%)	716	637	667

QUALITY CONTROL CENTRE
PAKISTAN STANDARDS & QUALITY CONTROL AUTHORITY
MINISTRY OF SCIENCE AND TECHNOLOGY
GOVERNMENT OF PAKISTAN

Year Ref. No: NMC/02/2024
Date: 18-03-2024
Sample Received From: M. Mian Mazhar Mian, P.O. Biomark, Circular Road, LAHORE, PUNJAB - 54000 (PK)

Our Ref. No: QCCH/70/22-23(PT)
Date: 17-12-2022

No. of Samples: Three (03)
Specification against which Tested: PIS-1380-2014 (R)

Subject: **TESTING OF SAMPLES RELATED TO THE "JET PLAST" BRAND**
21.5 LITRE WATER SUPPLY SYSTEM

The above samples as mentioned have been tested with the following results:

Sr. No.	Description of Tests	Results Corresponding to Lab. Reg. No. & Identification		
		PEARF (118mm)	PEARF (118mm)	PEARF (118mm)
1	Density (g/cm ³)	0.952	0.954	0.951
2	Mean Outside Diameter (mm)	98.4	116.3	106.1
3	Average Wall Thickness (mm)	5.2	6.7	9.5
4	Hydraulic Strength at 20°C	--- Satisfactory ---		
5	Longitudinal Retention Test at 10°C (%)	-2.3	-2.0	-1.4
6	Tensile Strength (N/mm ²)	24.3	23.4	26.7
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Department of Polymer & Process Engineering
University of Engineering & Technology Lahore-Pakistan

Client Identity: Fawaz Anwar, Senior Resident Engineer, BSM Developments Pvt. Ltd.
Client Reference: NMC/02/2024, Date: 04-03-2024
Subject: per Client Member: Testing of PVC Pipes

Project: Development of New Water City Circle Area Rawalpindi

Break: As Per

Sr. #	Sample ID	Test	Minimum Value	Maximum Value	Average Value
1	10mm Dia PVC Pipe (PVC-U)	Tensile Strength	20.0	25.0	22.5
2	10mm Dia PVC Pipe (PVC-U)	Elongation at Break	100%	150%	125%
3	10mm Dia PVC Pipe (PVC-U)	Hydraulic Strength	10.0	15.0	12.5
4	10mm Dia PVC Pipe (PVC-U)	Longitudinal Retention	-2.0	-1.0	-1.5

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