

WATSAN ENGINEERING SERVICES

PP Compression Fittings HDPE Pipes

Accesorios de Compresión de PP
Tuberías de HDPE

PP компрессионные фитинги
Трубы из ПЭВД



APPLICATIONS

Irrigation, residential, commercial
& industrial piping systems



TRUSTED QUALITY

Engineered for long-lasting
performance you can rely on

Introduction

Введение

Watsan Engineering Services was established in 2010, as trading company of HDPE Pipes and fittings for Water, Wastewater, Gas, Compressed Air, Chilled/RO Water, Liquid Chemical i.e Acidic water and effluent water treatment plants as well as Agricultural drip irrigation pipes and fittings.

Watsan Engineering Establishment manufacturing facilities in 2016 for HDPE, PPR-C, UPVC Pipes & Fittings with state-of-the-art Pipes Production Machines with Injection Moulding Machines with ITALIAN PLAST Brand.

Our company is ISO 9001-2000 certified and also certified from PSQCA as approved with different government, Public Sector Organizations, Water Management Department as well leading Industries all over Pakistan as well serving with best quality products.

Manufacturing Capabilities

Производственные ВОЗМОЖНОСТИ

- HDPE (PP) Compression Fittings with Clamp Saddles (20mm-110mm) Drip irrigation part, accessories mould manufacturing
- HDPE (PE) Pipes & Fittings (20mm to 1200)
- PPR-C Pipes & Fittings (20mm to 160mm)
- UPVC Pipe & Fittings for Water/Sewerage & Drainage 1/2" (20mm) to 6" (160mm)
- LDPE Drip Irrigation Lateral (Plan/Integrated) 16mm-32mm with Fittings and Dripper (2LPH-16LPH) along with valves.
- HDPE/ MDPE gas pipes and fittings. 20mm (1/2") - 250 mm (10").

Our Vision

Наше видение

Our vision is to be the leading provider of innovative Plastic piping solutions, consistently developing premium-quality products that fulfill the market needs of Pakistan while expanding to achieve global standards. Watsan engineering have state of the art mould manufacturing unit to develop any type of pipe fitting and other accessories as per customer and projects requirements.

Characteristics & Advantages

Характеристики и достоинства

» CORROSION RESISTANT

PE is an inert material. Except for a few strong oxidants, this material can resist most chemicals. It does not suffer from electrochemical corrosion and doesn't need an antiseptic layer.

» HIGH DUCTILITY

PE pipe for water supply possesses high ductility. Its extension ratio at break can exceed 500%.

» GOOD CHEMICAL RESISTANCE

PE pipe is suitable for many chemical solutions. Natural corrosion in typical serving circumstances will not degrade the pipe.

Extraordinary flexibility and impact resistance, even under very low temperatures.

» TOUGHNESS

PE has low notch sensitivity, high tear strength, and excellent scratch resistance. Various connection options, which make installation convenient and easy.

» RESISTANCE TO IMPACT

PE pipe is so tough that it will not tend to rupture even if heavy pressure is applied directly to the pipe.

» LONG SERVICE LIFE

Based on international standards, the progression curves of PE pipe project a lifespan of 50 years under a service temperature of 23°C.

Applications

Приложения

Compression fittings can be used for several domestic, municipal, industrial and utility services. The following are the most used applications. Potable water supply networks

1. Sprinkler Irrigation Systems & Drip Irrigation Systems variety
2. Handling Saline Water, Sea water intake
3. Suction & delivery of Water with Pump sets
4. Bore well application for submersible pumps
5. Submarine & Underwater pipelines
6. Horizontal and Directional Drilling
7. Septic Tank/ Leach Bed Lines, Condensates, Aeration & Caustic Lines
8. Conveying corrosive effluents of chemical & other process industries like Petrochemicals, Dyestuff,
9. Paints, Rayon & Fertilizers

10. Water & Wastewater Treatment plants/Corrosive & Reclaimed Water
11. Handles edible oils, fruit juices & pulps, Milk and other Food Materials. S
12. Ducting for Air Conditioning, Ventilation, Fiber Optic and Electric cables
13. Sewer, Storm and Sanitary Pipelines
14. Diffuser, Outfalls & Dredging Applications
15. Treats Radio-active waste
16. Conveys acids, alkalis & other highly corrosive chemicals
17. Fish Farming
18. Hydro transport systems - Cement/ Clinker, Coal, Sand slurry & other abrasive slurries like ironer, fly ash conveyance, etc.

Mechanical Properties of Material Assembled Fittings

Механические свойства
собранных фитингов из
материала

Mechanical / Physical Properties of Material	Test Method Standard	Unit	Value
Specific Gravity (Co PP Block)	ASTM D792	g/cm3	0.9
Specific Gravity (Acetal)	ISO 1183	g/cm3	1.41
Melt Index (190°C, 2.16kg) (Co PP Block)	D1238	g/10min	0.30
Melt Index (190°C, 2.16kg) (Acetal)	ISO 1133	g/10min	27.0
Tensile Strength (Co PP Block)	D638	Kg/cm2	320
Tensile Strength (Acetal)	ISO 527-1/2	Mpa	65
Rockwell Hardness (Co PP Block)	D785	M Scale	95
Rockwell Hardness (Acetal)	ISO 2039-2	M Scale	95
Country of Origin	—	—	Pakistan

Note: Material physical Properties and values varies according to manufactures TDS.

PP COMPRESSION FITTINGS STANDARD AND COMPLIANCE	
Feature	Specification
Ref. Standard	ISO 17885 / DIN 8076
Complying Standard	ISO 4427, DIN 8074/8075, PS 3580: 1994
Type of Joint	Compression Type
Body	Polypropylene Copolymer (PP-B) - Black
Lock Nut	Polypropylene Copolymer (PP-B) - Blue
Spacer Ring	Polypropylene Copolymer (PP-B) - Black
Grip Ring	Polyacetal (POM) - White
O-Ring	Black Nitrile Rubber NBR, Shore Hardness 70
Pressure Rating	Standard 20mm - 110mm PN16 & PN10
Brand	Italian Plast Classic Blue Series
Country of Origin	Pakistan

TYPICAL PROPERTIES OF ACETAL MATERIAL (POM)

Типичные свойства материала ацеталь (POM)

Category	Property	Value	Unit	Method
Physical Properties	Polymer abbreviation	POM	—	—
	Density	1.4	g/cm ³	ISO 1183
	Injection moulding (M), Extrusion (E), Blow moulding (B)	M	—	—
Mechanical Properties	Yield stress, 50 mm/min	65	MPa	ISO 527
	Yield strain, 50 mm/min	7.5	%	ISO 527
	Elongation at break	24	%	ISO 527
	Tensile creep modulus, 1000 h	1350	MPa	ISO 899
	Tensile modulus	2800	MPa	ISO 527
	Charpy unnotched impact strength (23°C)	150	kJ/m ²	ISO 179-1eU
	Charpy unnotched impact strength (-30°C)	150	kJ/m ²	ISO 179-1eU
	Charpy notched impact strength (23°C)	5	kJ/m ²	ISO 179-1eA
	Charpy notched impact strength (-30°C)	4	kJ/m ²	ISO 179-1eA
Thermal Properties	Max. service temperature (short cycle operation)	100	°C	—
	UL94 rating at 1.6 mm thickness	HB	class	IEC 60695-11-10
	Coefficient of linear thermal expansion, longitudinal (23–55°C)	110	E-6/K	ISO 11359
Electrical Properties	Relative permittivity (1 MHz)	3.8	—	IEC 60250
Processing Guidance	Drying temperature	80	°C	—
	Drying time	2–4	hrs	—
	Melt volume-flow rate (MVR) at 190°C and 2.16 kg	25	cm ³ /10 min	ISO 1133

GENERAL DETAILS NBR-BLACK RUBBER

Общие сведения
NBR-черная
резина

NBR is a black Nitrile Butadiene Rubber, commonly referred to as NBR, Nitrile or Buna. Good physical properties and chemical resistance to the most common hydraulic fluids make NBR an excellent sealing material. NBR materials are one of the most commonly used elastomers in sealing applications.

STANDARDS

СТАНДАРТЫ

Dimensions, features and functional tests: ISO4427, DIN-8074, DIN-8075, DIN-8076.3, PS-3580:1994, ISO-3501, ISO-3503, ISO-3459 & ISO-3548. UNI 9561, EN712 - EN713 - EN715 & EN911, Pipe compatibility, PE-HD (PE63-80-100), PE-LD, PEX-a and PPR-C Pipes: Sealing threads (male and female): EN10226-1 (ex ISO7/1), DIN2999.1, BS21, AS/NZS1722.1 and Flange: ISO7005, DIN2501 – DIN8063.

WORKING TEMPERATURE (°C)

рабочая
температура (°C)

Minimum (-) 10 °C , & Maximum (+) 50 °C, For Gas & Air Maximum 30°C.

Temperature C°	-10 /+25°C	+26/+35°C	+36/+50°C
PN	16	12.5	10
PN	12.5	10	8
PN	10	8	6

PHYSICAL PROPERTIES OF RUBBER

Физические
свойства резины

Physical Properties	Standard	Unit	Value
Specific Gravity	DIN 53479	g/cm³	1.32
Hardness at 20°C	DIN 53505	Shore A	70
Tensile Strength	DIN 53504	N/mm²	>17
Elongation at break	DIN 53504	%	>155
Modulus 100%	DIN 53504	N/mm²	10.2
Compression set 22h / 70°C	DIN 53517A	%	7
Compression set 22h / 100°C	DIN 53485	%	9
Min Service Temperature	—	°C	-25
Max Service Temperature	—	°C	100
Country of Origin	—	—	Pakistan

Note: For Gas & Air Maximum Pressure Upto 3-4 Bars at 30 °C Temperature.

COMPRESSION FITTINGS ASSEMBLY INSTRUCTIONS

Инструкции по сборке обжимных фитингов

1. PIPE PREPARATION & CAP UNSCREW

Cut the pipe round and square and remove the burrs better to chamfer greater than 75mm. Unscrew the Cap to the last thread, leave it on the fitting while inserting the pipe.

2. PIPE INSERTION UP TO THE FIRST PIPE STOP

Twist the pipe into the fitting through the grip ring till the first stop: the pipe has reached the O Ring. Pipe insertion up to the first pipe stop Balance sealing system The O Ring has two opposite lips that allows easier pipe insertion. The right placing of the O Ring in the body round to avoid twisting. The better adaptability of the O Ring towards the body and the pipe wall (large contact pipe surface).

3. PIPE INSERTION UP TO THE BODY PIPE STOP

Push the pipe through the gasket till the second stop; you have reached the pipe stop ribs of the fitting. Balancing of O-Ring: The radial body site and the conical gasket are designed to keep the gasket lightly up in the site: after the pipe insertion, it doesn't reach the body pipe stop directly; it also remains a little raised from the pipe stop thanks to the internal ribs in the body.

4. SCREWING THE CAP

Tighten the Cap firmly by hand or standard tool up to 20-32mm, and by standard Pipe wrench for greater than 40mm; the pipe moves to the very final body stop

5. BALANCING OF O RING

By tightening the Cap it works on the thrust ring that push the O Ring, meanwhile the pipe is moving to the final stop in the body: the O Ring can deeply place in its site also moving radially and increasing its compression towards the pipe wall, as much as it's possible in relation to the dimensional. In this way, acting on the tightening level of the Cap, it is possible to realize a system able to balance pipe defects such as undersize and ovality in standard.



PP STRAIGHT COUPLER
PP EQUAL TEE
PP EQUAL ELBOW
PP END CAP

Acoplador Recto de PP
Té Igual de PP
Codo Igual de PP
Tapón Final de PP

PP TEE VALVE
PP EQUAL VALVE

Válvula en Té de PP
Válvula Igual de PP

PP FLANGE ADAPTER
PP MALE

Adaptador de Brida
de PP



Product Sizes

20mm
25mm
32mm
40mm
50mm
57mm
63mm
75mm
90mm
110mm

Dimensions

20mm x 20mm
25mm x 25mm
32mm x 32mm
40mm x 40mm
50mm x 50mm
63mm x 63mm
75mm x 75mm
90mm x 90mm
110mm x 110mm



Dimensions

40mm x 1-½"
50mm x 1-½"
50mm x 2"
63mm x 2"
63mm x 2-½"
75mm x 2-½"
75mm x 3"
90mm x 3"
90mm x 4"
110mm x 4"



PP MALE ELBOW
PP FEMALE ELBOW

Codo Macho de PP
Codo Hembra de PP


Dimensions	Dimensions	Dimensions
20mm x ½"	32mm x 1-½"	75mm x 2"
20mm x ¾"	40mm x 1"	75mm x 2-½"
25mm x ½"	40mm x 1-¼"	75mm x 3"
25mm x ¾"	40mm x 1-½"	90mm x 2-½"
25mm x 1"	50mm x 1-¼"	90mm x 3"
25mm x 1-¼"	50mm x 1-½"	110mm x 2-½"
25mm x 1-½"	50mm x 2"	110mm x 3"
32mm x ¾"	63mm x 1-½"	110mm x 4"
32mm x 1"	63mm x 2"	
32mm x 1-¼"	63mm x 2-½"	

PP MALE ADAPTER
PP FEMALE ADAPTER

Adaptador Macho de PP
Adaptador Hembra de PP


Dimensions	Dimensions	Dimensions
20mm x ½"	32mm x 1-½"	63mm x 3
20mm x ¾"	40mm x 1"	75mm x 2"
25mm x ½"	40mm x 1-¼"	75mm x 2-½"
25mm x ¾"	40mm x 1-½"	75mm x 3"
25mm x 1"	50mm x 1-¼"	90mm x 2-½"
25mm x 1-¼"	50mm x 1-½"	90mm x 2"
25mm x 1-½"	50mm x 2"	90mm x 3"
32mm x ¾"	63mm x 1-½"	110mm x 2-½"
32mm x 1"	63mm x 2"	110mm x 3"
32mm x 1-¼"	63mm x 2-½"	110mm x 4"

Note: Brass Threaded Male Female Fittings can be customized according to customer requirements

PP REDUCING TEE

Té Reductora de PP



Dimensions	Dimensions
25mm x 20mm	63mm x 40mm
32mm x 20mm	63mm x 50mm
32mm x 25mm	75mm x 50mm
40mm x 20mm	75mm x 63mm
40mm x 25mm	90mm x 50mm
40mm x 32mm	90mm x 63mm
50mm x 25mm	90mm x 75mm
50mm x 32mm	110mm x 63mm
50mm x 40mm	110mm x 75mm
63mm x 25mm	110mm x 90mm
63mm x 32mm	

PP REDUCING COUPLER

Acoplador Reductor de PP



Dimensions	Dimensions
25mm x 20mm	63mm x 40mm
32mm x 20mm	63mm x 50mm
32mm x 25mm	75mm x 50mm
40mm x 20mm	75mm x 63mm
40mm x 25mm	90mm x 50mm
40mm x 32mm	90mm x 63mm
50mm x 25mm	90mm x 75mm
50mm x 32mm	110mm x 63mm
50mm x 40mm	110mm x 75mm
63mm x 25mm	110mm x 90mm
63mm x 32mm	

**PP THREADED
PLUG**

Tapón Roscado de PP



Size (Inches)
1/2"
3/4"
1"
1-1/4"
1-1/2"
2"
2-1/2"
3"
4"

**PP FEMALE THREADED
BUSH**

Buje Roscado Hembra de
PP



Dimensions
40mm x 1-1/2"
50mm x 1-1/2"
50mm x 2"
63mm x 2"
63mm x 2-1/2"
75mm x 2-1/2"
75mm x 3"
90mm x 3"
90mm x 4"
110mm x 4"

PP CLAMP SADDLE

Abrazadera de Derivación de PP



Specification	Details
Product Name	PP Clamp Saddles (Standard & Metallic Transition).
Available Sizes	DN 25mm - 250mm (DN - Nominal Diameter HDPE Pipe)
Pressure Rating	25mm to 160mm PN16 & 180 to 315mm PN6 (PN-Nominal Pressure in Bars)
Material	Clamp Saddle material in Co PP Block, Bolts & Nuts Hot Dipped zinc galvanized steel, o-ring/gasket in NBR.
Color	Black/Grey (Or any OEM Specified Colour).
Standard	EN 712/713/715/911; ISO 3501/3503/3458/3459.
Marking	Manufacturer (WATSAN) Standard Marking

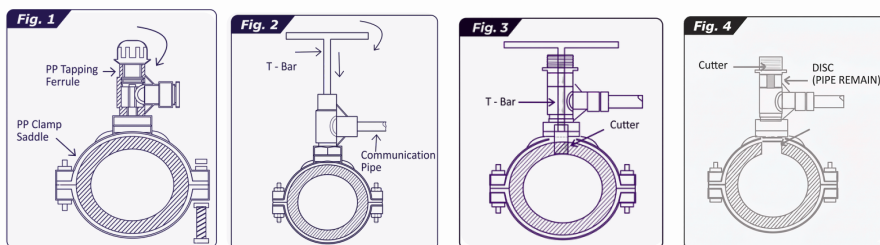
Note: Brass Threaded Male Female Fittings can be customized according to customer requirements

Dimensions	Dimensions	Dimensions	Dimensions	Dimensions	Dimensions
25mm x ½"	63mm x 1"	90mm x 1-½"	125mm x 2"	180mm x 3"	225mm x 2"
25mm x ¾"	63mm x 1-¼"	90mm x 2"	160mm x ½"	200mm x ½"	225mm x 3"
32mm x ½"	63mm x 1-½"	110mm x ½"	160mm x ¾"	200mm x ¾"	225mm x 4"
32mm x ¾"	63mm x 2"	110mm x ¾"	160mm x 1"	200mm x 1"	250mm x ½"
32mm x 1"	75mm x ½"	110mm x 1"	160mm x 1-¼"	200mm x 1-¼"	250mm x ¾"
40mm x ½"	75mm x ¾"	110mm x 1-¼"	160mm x 1-½"	200mm x 1-½"	250mm x 1"
40mm x ¾"	75mm x 1"	110mm x 1-½"	160mm x 2"	200mm x 2"	250mm x 1-¼"
40mm x 1"	75mm x 1-¼"	110mm x 2"	160mm x 3"	200mm x 3"	250mm x 1-½"
50mm x ½"	75mm x 1-½"	125mm x ½"	180mm x ½"	225mm x ½"	250mm x 2"
50mm x ¾"	75mm x 2"	125mm x ¾"	180mm x ¾"	225mm x ¾"	250mm x 3"
50mm x 1"	90mm x ½"	125mm x 1"	180mm x 1"	225mm x 1"	250mm x 4"
50mm x 1-¼"	90mm x ¾"	125mm x 1-¼"	180mm x 1-¼"	225mm x 1-¼"	315mm x 1"
63mm x ½"	"90mm x 1"	125mm x 1-½"	180mm x 1-½"	225mm x 1-½"	315mm x 2"
63mm x ¾"	90mm x 1-¼"	125mm x 2"	180mm x 2"		

PP TAPPING FERRULE

Collarín de Toma de PP

PP tapping ferrule is the easiest way to tap water lines from mains. NO DRILLING NECESSARY. PP tapping ferrule incorporates its own cutter which can easily bore into PE pipes without the need for power tools. Additionally, PP tapping ferrule has a built-in stopper, which can serve to open or close the water line.



Size	d (mm)	S (inch)	L (mm)
1" × 20mm with CS Cutter	20	1"	149
1" × 25mm with CS Cutter	25	1"	149
1" × 32mm with CS Cutter	32	1"	149
1¼" × 20mm with CS Cutter	20	1¼"	149
1¼" × 25mm with CS Cutter	25	1¼"	149
1¼" × 32mm with CS Cutter	32	1¼"	149

Note: Female threaded outlet size can be manufactured on customer request.

Customized Manufacturing Solutions

In addition to our standard product catalog, WATSAN Engineering Services specializes in custom manufacturing, including male and female threaded fittings, metallic transitions, brass fitting inserts, and custom sizes. Utilizing our state-of-the-art injection molding facilities, we can develop and produce specialized fittings and components exactly according to your unique project specifications and requirements.

PRODUCT	NEXOR Water Tap
APPLICATION	For tapping of service connection from water mains
TYPES	Injection molded and Compression type
INSTALLATION	Use of an open wrench and allen wrench or by Hand-tighten
SIZES AVAILABLE	1" & 1¼" outlet 20, 25 & 32mm (½", ¾").
NOTES	Easy to install. Live tapping can be done (no need to turn off the water line)

Date:

Date:

Date:

Date:

Date:

Date:

Date:

Date:

Date:

Date:

BUILDING THE FUTURE WITH RELIABLE INFRASTRUCTURE SOLUTIONS

Thank you for exploring our catalog. At WATSAN Engineering Services, our commitment goes beyond manufacturing; we aim to build lasting partnerships by delivering uncompromising quality, precision, and innovation. Whether you need robust compression fittings, complete piping networks, or customized manufacturing solutions, our team is ready to support your next project from concept to completion.

LET'S WORK TOGETHER

Contact our technical sales team today for product inquiries, bulk orders, technical support, or custom injection molding requirements. We ensure nationwide delivery and exceptional customer service.

Head Office

Office No A-323, Pirzada Market, City Saddar Road, Rawalpindi, 46000,
Pakistan

+92-51-5537777

Injection Mold Fitting Unit

Plot No. 3, Street No-W3, (RCC)Rawat
Industrial Estate, Rawalpindi, 46000, Pakistan

+92-321-8501925

Plastic Piping Unit

Plot No. 28, Street no-S2, (RCC)Rawat
Industrial Estate, Rawalpindi, 46000, Pakistan

+92-321-8501925

Bhalwal Factory

Industrial Estate BIE, Plot No. 2/19 & 20, Main
Boulevard, Bhalwal Bhera Road, Bhalwal,
Sargodha, 40100, Pakistan

+92-321-8500339



+92-51-5537777



wes@watsanengg.com.pk



www.watsanengg.com.pk

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