MARKED PIPES & FITTINGS

SKIPPER PIPES

INDIA'S SAFEST PIPES

PROGRESS IN THE PIPELINE

Precision in Every Joint, Excellence in Every Flow

ORR TECHNOLOGY
OPTIMUM RESIN RATIO

SKIPPER PIPES
INDIA'S SAFEST PIPES

DRAIN AWAY ALL WORRIES

Remove waste without leakage

Magik flow PLUS

SWR EXTERIOR PIPES

ADVANCED YELLOW RING FIT TECHNOLOGY

LEAK PROOF | UV RESISTANT | EASY TO INSTALL

SKIPPER
PIPES
INDIA'S SAFEST PIPES

ADVANCED YELLOW RING FIT TECHNOLOGY

SWR EXTERIOR DRAINAGE SYSTEM

ABOUT UPVC

uPVC stands for Unplasticized Polyvinyl Chloride, a rigid and durable type of plastic. Unlike regular PVC, uPVC does not contain plasticizers, making it stronger, more weather-resistant, and low maintenance. It is lightweight, resistant to rot, rust, chemicals, and sunlight and provides excellent thermal insulation, contributing to energy efficiency in buildings. It is also used for plumbing pipes and drainage systems due to its durability and resistance to corrosion.

Skipper's plumbing systems offer Solvent-fit and Push-fit systems for Soil, Waste, and Rainwater applications, Superior dimensional accuracy and stability and suitable for both commercial and domestic installations.

Skipper's manufacturing process involves

State-of-the-Art Extrusion: Pipes are extruded using advanced technology.

Precise Socketing: Online belling machines ensure accurate socketing.

High-Quality Fittings: Collapsible core moulds produce fittings with:

1. Straight, sharp finish, **2.** Higher dimensional accuracy, **3.** Improved fit, **4.** Extended product life, **5.** Enhanced product strength.

UPVC PROPERTIES

Density [g/cm^3]	1.3 - 1.45
Thermal conductivity[w/(m.k)]	0.14
Yield strength [MPa]	34 - 62
Young's modulus [psi]	3,90,000
Flexural strength (yield) [psi]	10,500
Compression strength [psi]	9500
Coefficient of thermal expansion (linear) [mm(mm"c)]	5 x 10^{-5}
Vicat [°c]	65 - 100
Resistivity [Qm]	1016

FIRE RESISTANT

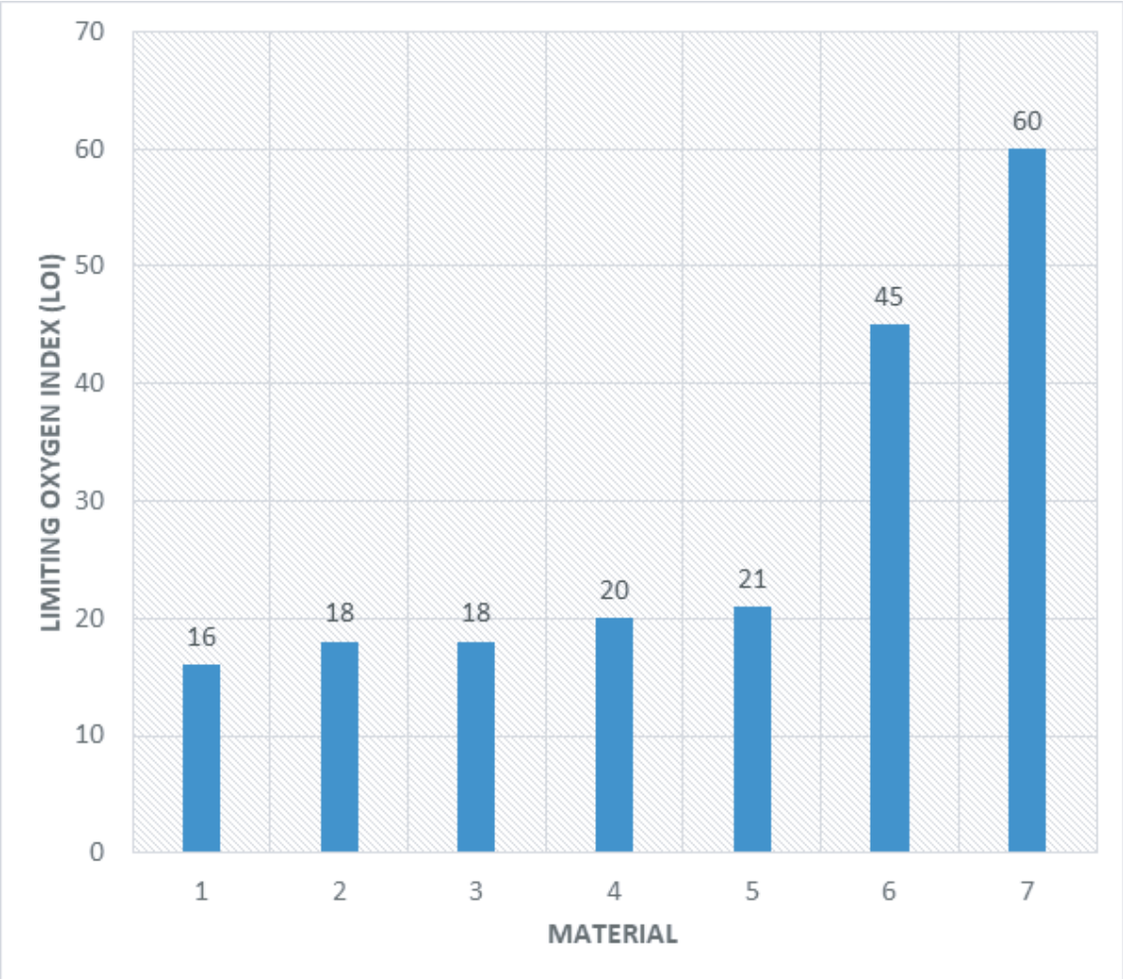
Fire-resistant properties of Skipper SWR Systems are as follows:

Self-Extinguishing: uPVC pipes don't support combustion.

High LOI: Requires 45% oxygen to burn, making it difficult to ignite.

Safe for Buildings: Ideal for use in residential and commercial structures.

SL NO	MATERIAL	LOI
1	Cotton	16
2	Polypropylene (PP)	18
3	Polyethylene (PE)	18
4	Wood	20
5	Atmospheric content of OXYGEN	21
6	PVC	45
7	CPVC	60



WHY SKIPPER SWR REQUIRED

Skipper SWR systems offer

Comprehensive Range: Extensive selection of Soil, Waste, and Rainwater Plumbing products.

Versatile Applications: Suitable for commercial, industrial, housing, and public sector developments.

Innovative Solutions: Solvent-weld and push-fit options for various drainage needs.

Industry-Leading Solutions: World-class range of solvent and push-fit soil and waste systems.

Unrivalled Installation Options: Flexible and efficient installation processes.

High-Quality Finish: Superior technology ensures durable and reliable products.

Versatility: Suitable for both commercial and domestic installations.

FEATURES AND BENEFITS OF SKIPPER PIPES

Easy to install with low assembly force: Skipper SWR systems are light in weight which reduces the transportation, Potential savings on labor and logistics cost.

Resistance to corrosion and abrasion: Skipper SWR pipes have excellent corrosion resistance ensures long-term performance and Reduced risk of damage or degradation over time.

Leak-proof joints: Prevents leaks and water damage.

Tough and reliable: Lighter than conventional C.I pipes but strong.

Cost effective: Skipper SWR system ensures a lower capital, installation, maintenance cost compared to other piping systems.

Chemical Resistance: PVC is resistant to chemical reactions from the chemical acids, alkalis & salt solutions present in soil and waste water.

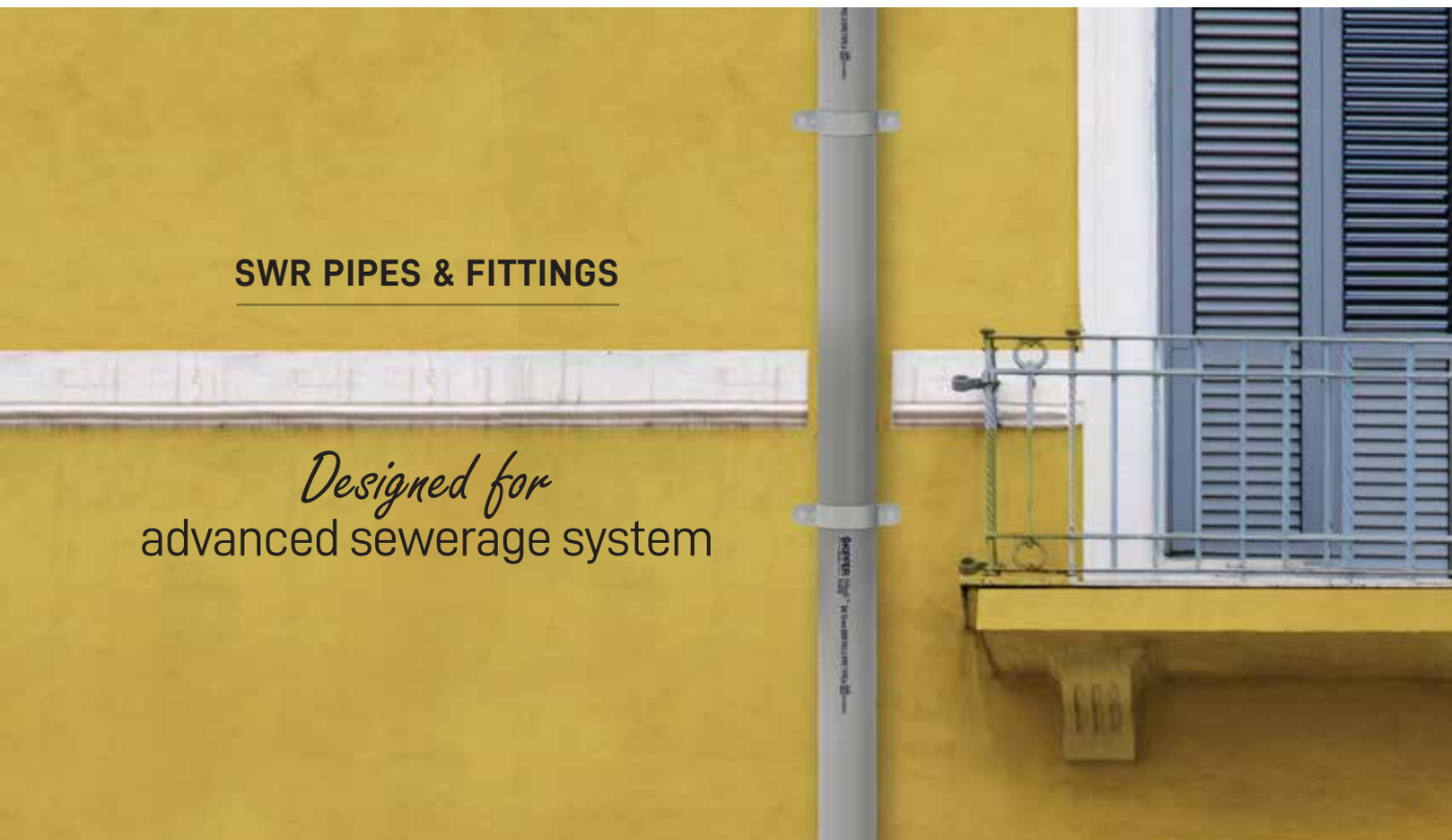
Compatible: Compatible with other drainage products

APPLICATIONS OF SKIPPER SWR SYSTEMS

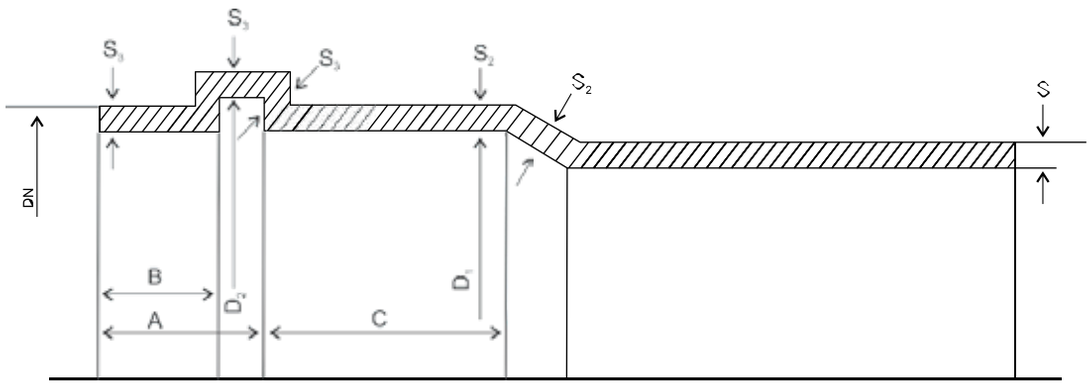
1. Inside & outside building drainage systems, including ventilation.
2. Rainwater discharge & harvesting for residential & commercial buildings.
3. Industrial buildings and public utilities

ABOUT YELLOW SEAL

Skipper introduces Yellow Seal, the advanced co-moulding technology in India. It consists of a plastic reinforced rubber ring which holds the Yellow Seal in the groove ensuring 100% leak proof joint, at the same time providing adequate scope for thermal expansion and contraction.



TECHNICAL SPECIFICATION FOR MAGIK FLOW PLUS SYSTEM



Dimensions of pipes

Nominal Outside Diameter DN	Mean Outside Diameter (mm)		Outside Diameter at Any Point (mm)		Wall Thickness, S Type A (mm)		Wall Thickness, S Type B (mm)	
mm	min.	Max.	min.	Max.	min.	Max.	min.	Max.
75	75	75.3	74.1	75.9	1.8	2.2	3.2	3.8
90	90	90.3	88.9	91.2	1.9	2.3	3.2	3.8
110	110	110.4	108.6	111.4	2.2	2.7	3.2	3.8
160	160	160.5	158.0	162.0	3.2	3.8	4.0	4.6

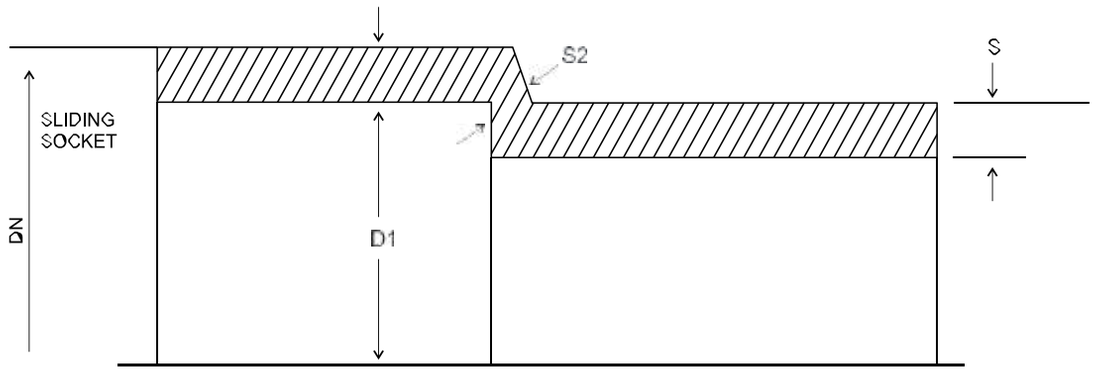
Minimum wall thickness of sockets of pipes

Nominal Outside Diameter DN	S2, Min (mm)		S3, Min (mm)	
mm	Type A	Type B	Type A	Type B
75	1.6	2.9	1.0	2.4
90	1.7	2.9	1.1	2.4
110	2	2.9	1.2	2.4
160	2.9	3.6	1.8	3.0

Dimensions of Grooved socket

Nominal Outside Diameter DN	Inside Diameter of Socket, D1 (mm)		Inside Diameter of of Beading, D2 (mm)		Length of Beading and Neck (mm)	Neck of Socket (mm)	Length Beyond Beading (mm)
					A	B	C
mm	min.	Max.	min.	Max.	Max.	Min.	Min.
75	75.3	76.4	84.5	85.5	20.0	5.0	25.0
90	90.3	91.4	99.5	100.5	23.0	5.0	28.0
110	110.4	111.6	120.3	121.3	26.0	6.0	32.0
160	160.5	161.5	173.8	175.0	32.0	9.0	42.0

TECHNICAL SPECIFICATION FOR MAGIK FLOW SYSTEM



Dimensions of pipes

Nominal Outside Diameter DN	Mean Outside Diameter (mm)		Outside Diameter at Any Point (mm)		Wall Thickness, S Type A (mm)		Wall Thickness, S Type B (mm	
mm	min.	Max.	min.	Max.	min.	Max.	min.	Max.
75	75	75.3	74.1	75.9	1.8	2.2	3.2	3.8
90	90	90.3	88.9	91.2	1.9	2.3	3.2	3.8
110	110	110.4	108.6	111.4	2.2	2.7	3.2	3.8
160	160	160.5	158	162	3.2	3.8	4	4.6

Minimum wall thickness of sockets of pipes

Nominal Outside Diameter DN	S2, Min (mm)		S3, Min (mm)	
mm	Type A	Type B	Type A	Type B
75	1.6	2.9	1	2.4
90	1.7	2.9	1.1	2.4
110	2	2.9	1.2	2.4
160	2.9	3.6	1.8	3.0

Dimensions for socket for solvent cementing

Nominal Outside Diameter DN	Socket Depth Min., C	Mean Inside Diameter of Socket at Midpoint, D1	
mm	mm	min.	Max.
75	40	75.1	75.3
90	46	90.1	90.3
110	48	110.1	110.4
160	58	160.2	160.5

QUALITY CONTROL PROCEDURES AT SKIPPER

The pipes and fittings manufactured at Skipper, follow a quality control process before being rolled out into the market, in order to supply a defect free system to its users. These processes follow the highest specifications of BIS (India).

PIPES:

HEAT REVERSION TEST: How much the pipe changes in length when heated in an oven and left to cool. This is a measure of residual stresses left in the pipe during production process.

DROP IMPACT TEST: Weights dropped onto pipe at 0oC. No cracks or failures are expected to be seen after testing.

HEAT REVERSION TEST: Pipe changes in length when heated in an oven and left to cool. Measure of residual stresses left in pipe from production process.

TENSILE STRENGTH: To find out the maximum stress that our pipe sample can withstand while being stretched or pulled before breaking or to check.

STRESS RELIEF TEST: Test test specimens pipe must not show blisters,excessive de-lamination or cracking or signs of weld line splitting after keeping under specified temperature (150 degree Celsius) and specified time duration in air oven or immersion method.

VICAT SOFTENING TEMPERATURE (VST): To find out the softening point of the material, it is the temperature at which the specimen is penetrated to a depth of 1 mm by a flat-ended needle with a 1 mm2 circular or square cross-section.

WATER TIGHTNESS OF JOINT: To ensure the pipe joints are free from leakage when applying internal hydrostatic pressure.

EFFECT OF SUNLIGHT: To check the effect of sunlight on pipes by expose the sample in sunlight for 1600 hours and compare the initial & exposed sample for any physical property changes.

RESISTANCE TO H_2SO_4: To check the resistance of pipes with concentrated sulphuric acid.

AXIAL SHRINKAGE: To check the percentage change in length or shrinkage of pipes and tested at 90^0 C. This testing only for Type B pipe.

FLATTENING TEST: Samples are compressed opposite walls are brought together without pipe cracking, Good measure of correct extrusion techniques during production.

RESISTANCE TO DICLOROMETHANE AT SPECIFIED TEMPERATURE: To check the gelation in pipes, after conducting this test sample should not show any sign of attack.

FITTINGS:

DIMENSIONS CHECK: To ensure that fittings dimensions ie, wall thickness, socket diameters and socket depth.

DROP IMPACT TEST: To check the mechanical property of fittings by dropping freely, in random position from a specified height and temp, on to a flat concrete floor.

STRESS RELIEF TEST: Test test specimens fitting must not show blisters,excessive de-lamination or cracking or signs of weld line splitting after keeping under specified temperature (150 degree Celsius) and specified time duration in air oven or immersion method.

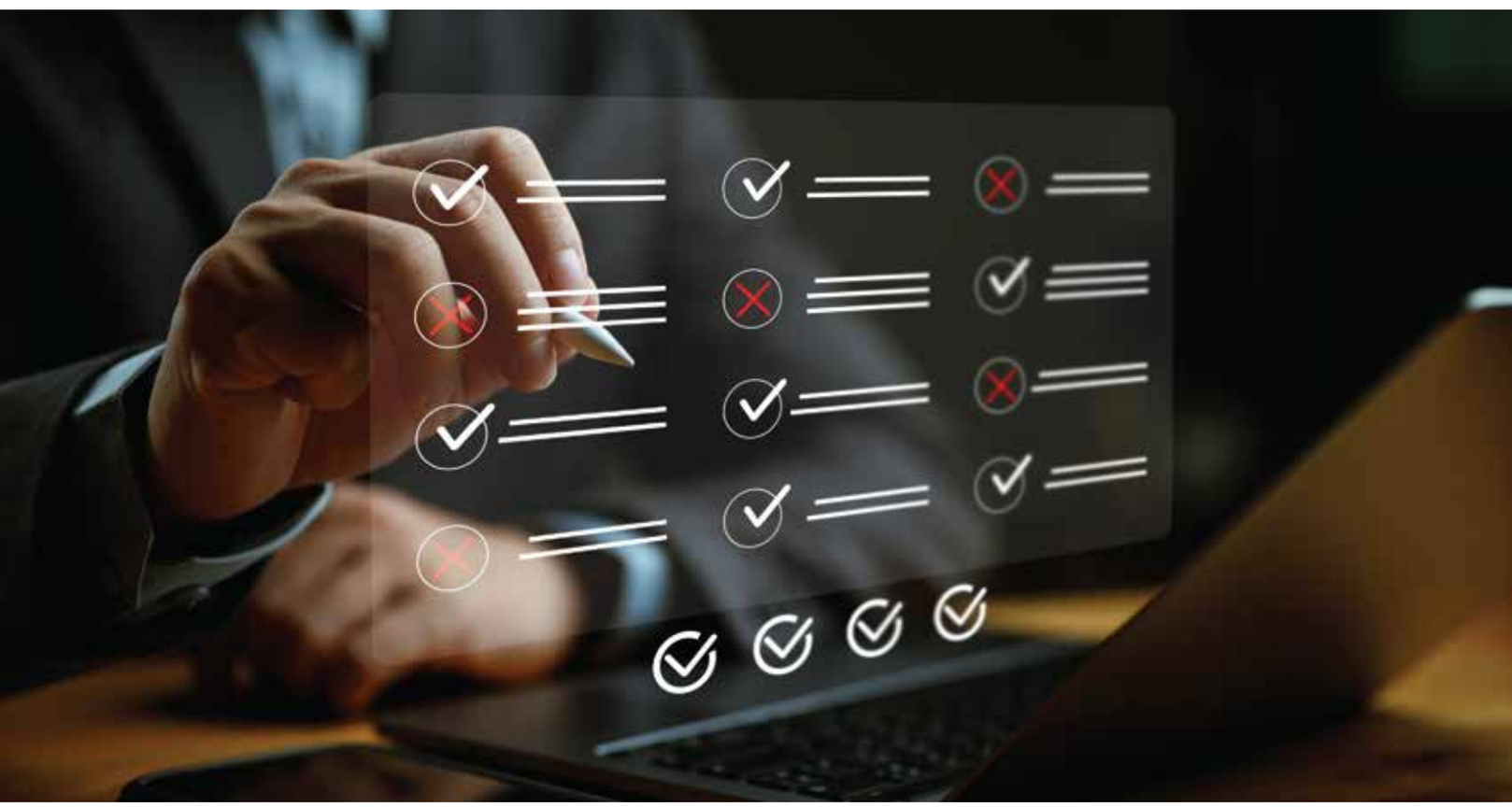
VICAT SOFTENING TEMPERATURE (VST): To find out the softening point of the material, It is the temp. at which the specimen is penetrated to a depth of 1 mm by a flat-ended needle with a 1 mm2 circular or square cross-section

RESISTANCE TO H_2SO_4: To check the resistance of fittings with concentrated sulphuric acid.

WATER TIGHTNESS OF JOINT: To ensure the fittings joints are free from leakage when applying internal hydrostatic pressure.

TITANIUM DIOXIDE CONTENT TEST: To determine the weathering property of fittings by checking the percentage of titanium dioxide present in fittings.

SULPHATED ASH CONTENT TEST: The sulfated ash test uses a procedure to measure the amount of residual substance from a sample when the sample is ignited in the presence of sulphuric acid.



HANDLING AND STORAGE

HANDLING OF PIPES

When receiving pipes, it's essential to inspect them for potential damage. Here are some key points to consider.

TRANSPORT DAMAGE: Check for signs of damage caused by shifting loads or improper handling during transportation.

VISUAL INSPECTION: Examine the pipe ends for cracks, dents, or other forms of damage.

HANDLING PRECAUTIONS: Avoid throwing, dropping, dragging, or pushing pipes, as this can cause damage.

PROTECTION FROM SHARP OBJECTS: Keep pipes away from sharp objects to prevent scratches or damage.

STORAGE OF PIPES

Proper storage is crucial for maintaining pipe quality. Key storage guidelines include:-

INDOOR STORAGE: Preferably store pipes indoors to protect them from environmental factors.

UV PROTECTION: If outdoor storage is necessary, cover bundles to prevent sunlight exposure and UV damage.

STACKING HEIGHT: Limit stacking height to 7 feet to prevent damage and instability.

STACKING TECHNIQUE: Alternatively, pipes can also be stacked with adjacent layers lying at right angles to each other to ensure stability and prevent damage.

LEVEL GROUND: Store pipes on level ground, free from sharp objects.

PIPE PLACEMENT: Store heavier pipes below lighter ones when stacking different classes together.

DRY SURFACE: Ensure the storage surface is dry to prevent damage or degradation.

INSTALLATION GUIDE OF SOLVENT CEMENT JOINT

Step 1: Cutting

Measure the pipe length accurately and make a visible marking using a felt tip pen. Ensure that the pipe and fittings are size compatible. You can easily cut with a plywood cutting saw/ ratchet cutter or a wheel cutter. Cutting the pipe as squarely as possible (at 90°) provides optimal bonding area within a joint. Inspect pipe ends thoroughly prior to making a joint. If a crack or splintering is noticed cut-off a minimum of 25 mm beyond the visible crack before proceeding.

Step 2: Deburring/Beveling

Burrs in and on pipe end can obstruct flow/proper contact between the pipe and socket of the fitting during assembly and should be removed from both in and outside of the pipe. A 15 mm dia half round file/a pen knife or a deburring tool are suitable for this purpose. A slight bevel on the end of the pipe will ease entry of the pipe into the socket of the fitting socket.

Step 3: Fitting Preparation

Using a clean dry rag, wipe the dirt and moisture from the fitting sockets and pipe end. Dry fit the pipe to ensure total entry into the bottom of the fittings socket and make a visible marking using a felt tip pen.

Step 4: Solvent Adhesive Application

Apply an even coat of solvent adhesive on the pipe and the socket end of the fitting. Do not use thickened or lumpy solvent adhesive. It should have a flow consistency like that of syrup or paint.

Step 5: Assembly

Immediately insert the pipe into the fitting socket, rotate the pipe ¼ to ½ turn while inserting. This motion ensures an even distribution of adhesive within the joint. Hold the assembly for 10 seconds to allow the joint to setup.

Skipper Magik flow Pipes and Fittings are joined with the help of Skipper SWR solvent adhesive, which is a single step fast setting solvent adhesive. The bonding takes place due to chemical fusion of the mating surfaces.

UPVC IS GENERALLY INERT TO MOST MINERAL ACIDS, ALKALIES & SALTS PLEASE REFER CHEMICAL RESISTANCE CHART FOR UPVC.

PLEASE NOTE THAT UPVC PIPING SYSTEMS ARE NOT SUITABLE FOR ESTERS, KETONES ETHERS AND AROMATIC OR CHLORINATED HYDROCARONS.

VENT WITH VERTICAL STACK

WHY VENTING IS IMPORTANT IN SWR SYSTEM?

Example, suppose if you try to quickly empty a plastic jar having a narrow mouth, jar will empty slowly with gurgle & glug. Now open the vent cap provided on plastic jar, now liquid flows smoothly & fast. This is because of vent hole of jar allow air to enter behind the flowing liquid, producing a quick glug free flow. That's how vent stack is important with drainage vertical stack in drainage system.

The air pressure in drainage stack is same through up and down the stack. When water flow moves through pipe, it compresses the air ahead of it, creating a positive pressure. The pressure build up in drainage stack must be released somehow or the positive pressure will push back on the water. If the air were allowed to push back, this would cause the waste water to back up through the plumbing fixture seals and come out of drain with a bad odor.

Similarly, if the air is not replaced which is behind the water as it moves, it would create negative pressure which cause sucking the water out of the traps.

Hence planning of vent at strategic location is necessary and important to prevent both negative and positive pressure phenomenon in drainage stack.

HORIZONTAL SUSPENDED PIPES

Plastic has subject to thermal movement, we recommend that the pipe sockets are held firmly by brackets to prevent them from moving.

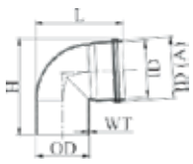
This ensures that any thermal movement is taken up in the expansion coupling, preventing buckling of the pipe between the supports. Please note that intermediate pipe brackets are for support only and must not restrict movement.

The British Standard BS EN 12056-2:2000 recommends that pipe should be supported at the following intervals.

Material	Pipe Diameter (mm)	Horizontal (m)	Vertical (m)
Unplasticized polyvinyl chloride (uPVC)	75	0.80	2.00
	90	0.90	2.00
	110	1.10	2.00
	160	1.60	2.00

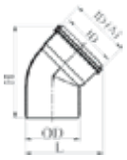
PRODUCT DIMENSIONS: SWR MAGIK FIT PLUS

PLAIN BEND 87.5°



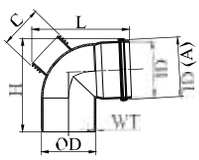
Size(inch)	Size(mm)	Socket ID	Groove ID	Spigot OD	WT
2½	75	76.20	84.50	75.30	3.20
3	90	91.20	100.50	90.30	3.20
4	110	111.30	121.30	110.40	3.20
6	160	161.50	175.00	160.50	4.00

PLAIN BEND 45°



Size(inch)	Size(mm)	Socket ID	Groove ID	Spigot OD	WT
2½	75	76.20	84.50	75.30	3.20
3	90	91.20	100.50	90.30	3.20
4	110	111.30	121.30	110.40	3.20
6	160	161.50	175.00	160.50	4.00

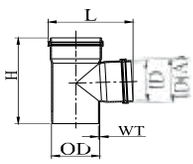
DOOR BEND 87.5°



Size(inch)	Size(mm)	Socket ID	Groove ID	Spigot OD	WT
2½	75	76.20	84.50	75.30	3.20
3	90	91.20	100.50	90.30	3.20
4	110	111.30	121.30	110.40	3.20
6	160	161.50	175.00	160.50	4.00
8	200	201.30	217.00	200.20	4.60

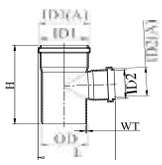
PRODUCT DIMENSIONS: SWR MAGIK FIT PLUS

SINGLE TEE



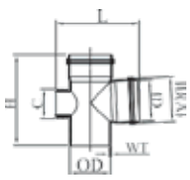
Size(inch)	Size(mm)	Socket ID	Groove ID	Spigot OD	WT
2½	75	76.20	84.50	75.30	3.20
3	90	91.20	100.50	90.30	3.20
4	110	111.30	121.30	110.40	3.20
6	160	161.50	175.00	160.50	4.00

REDUCING TEE PLAIN



Size(inch)	Size(mm)	Groove ID 1	Groove ID 2	Socket ID 1	Socket ID 2	WT
4x2½	110x75	121.30	84.50	111.30	76.20	3.20
6x4	160x110	175.00	121.30	160.10	111.30	4.00

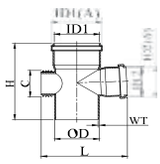
DOOR TEE



Size(inch)	Size(mm)	Socket ID	Groove ID	Spigot OD	WT
2½	75	76.20	84.50	75.30	3.20
3	90	91.20	100.50	90.30	3.20
4	110	111.30	121.30	110.40	3.20
6	160	161.50	175.00	160.50	4.00

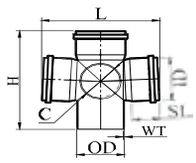
PRODUCT DIMENSIONS: SWR MAGIK FIT PLUS

REDUCING TEE DOOR



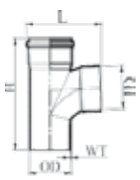
Size(inch)	Size(mm)	Groove ID 1	Groove ID 2	Socket ID 1	Socket ID 2	WT
4x2½	110x75	121.30	84.50	111.30	76.20	3.20
6x4	160x110	175.00	121.30	160.10	111.30	4.00

DOUBLE TEE DOOR



Size(inch)	Size(mm)	Socket ID	Groove ID	Spigot OD	WT
2½	75	76.20	84.50	75.30	3.20
4	110	111.30	121.30	110.40	3.20

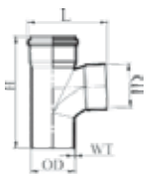
SWEPT TEE



Size(inch)	Size(mm)	Socket ID	Groove ID	Spigot OD	WT
21/2	75	76.20	84.50	75.30	3.20
4	110	111.30	121.30	110.40	3.20
6	160	161.50	175.00	160.50	4.00

PRODUCT DIMENSIONS: SWR MAGIK FIT PLUS

SWEPT REDUCING TEE

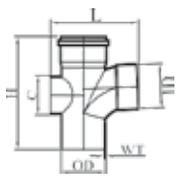


Size(inch)	Size(mm)	Groove ID 1	Groove ID 2	Socket ID 1	Socket ID 2	WT
4 X 21/2	110 X 75	111.30	76.20	121.30	84.50	3.20
6 X 4	160 X 110	161.50	111.30	175.00	160.50	4.00

SWEPT CROSS REDUCING TEE

Size(inch)	Size(mm)	Socket ID	Spigot OD	WT
6 X 4	160 X 110	161.50 X 111.30	160.50	4.00 X 3.60 X 3.20

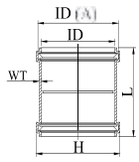
SWEPT REDUCING TEE DOOR



Size(inch)	Size(mm)	Socket ID	Groove ID	Spigot OD	WT
4 X 2½	110 X 75	111.30 X 76.20	121.30 X 84.50	110.40	3.20
6 X 4	160 X 110	161.50 X 111.30	175.00 X 121.30	160.50	4.00

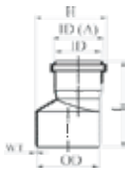
PRODUCT DIMENSIONS: SWR MAGIK FIT PLUS

COUPLER



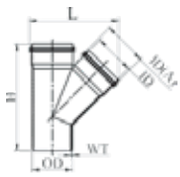
Size(inch)	Size(mm)	Socket ID	Groove ID	WT
2½	75	76.20	84.50	3.20
3	90	91.20	100.50	3.20
4	110	111.30	121.30	3.20
6	160	161.50	175.00	4.00

REDUCER



Size(inch)	Size(mm)	Groove ID	Spigot OD	Socket ID	WT
4x2½	110x75	84.50	110.40	76.20	3.20
6x4	160x110	121.30	160.50	111.30	4.00

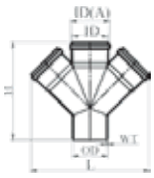
PLAIN Y



Size(inch)	Size(mm)	Groove ID	Spigot OD	Socket ID	WT
2½	75	76.20	84.50	75.30	3.20
3	90	91.20	100.50	90.30	3.20
4	110	111.30	121.30	110.40	3.20
6	160	161.50	175.00	160.50	4.00

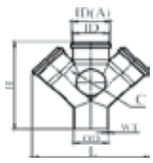
PRODUCT DIMENSIONS: SWR MAGIK FIT PLUS

DOUBLE Y PLAIN



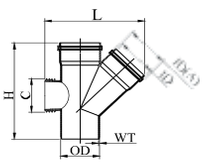
Size(inch)	Size(mm)	Groove ID	Spigot OD	Socket ID	WT
2½	75	76.20	84.50	75.30	3.20
3	90	91.20	100.50	90.30	3.20
4	110	111.30	121.30	110.40	3.20
6	160	161.50	175.00	160.50	4.00

DOUBLE Y WITH DOOR



Size(inch)	Size(mm)	Groove ID	Spigot OD	Socket ID	WT
2½	75	76.20	84.50	75.30	3.20
4	110	111.30	121.30	110.40	3.20

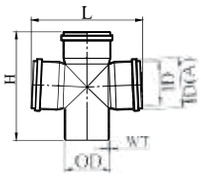
DOOR Y



Size(inch)	Size(mm)	Groove ID	Spigot OD	Socket ID	WT
2½	75	76.20	84.50	75.30	3.20
4	110	111.30	121.30	110.40	3.20

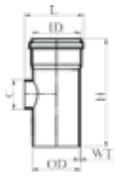
PRODUCT DIMENSIONS: SWR MAGIK FIT PLUS

DOUBLE TEE PLAIN



Size(inch)	Size(mm)	Socket ID	Groove ID	Spigot OD	WT
2½	75	76.20	84.50	75.30	3.20
4	110	111.30	121.30	110.40	3.20

CLEANING PIPE



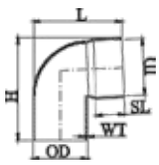
Size(inch)	Size(mm)	Groove ID	Spigot OD	Socket ID	WT
2½	75	76.20	84.50	75.30	3.20
4	110	111.30	121.30	110.40	3.20
6	160	161.50	175.00	160.50	4.00

RUBBER WASHER

Size(inch)	Size(mm)
2½	75
3	90
4	110
6	160

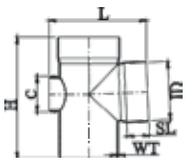
PRODUCT DIMENSIONS: SWR MAGIK FIT PUSH

PLAIN BEND 87.5°



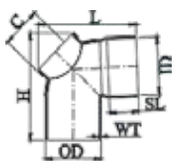
Size(inch)	Size(mm)	Socket ID	Spigot OD	WT
2½	75	75.30	75.30	3.20
3	90	90.30	90.30	3.20
4	110	110.40	110.40	3.20
6	160	160.50	160.50	4.00

DOOR TEE



Size(inch)	Size(mm)	Socket ID	Spigot OD	WT
2½	75	75.30	75.30	3.20
3	90	90.30	90.30	3.20
4	110	110.40	110.40	3.20
6	160	160.50	160.50	3.60

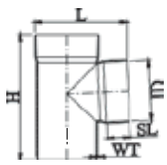
DOOR BEND 87.5°



Size(inch)	Size(mm)	Socket ID	Spigot OD	WT
4	110	110.40	110.40	3.20
6	160	160.50	160.50	4.00

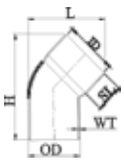
PRODUCT DIMENSIONS: SWR MAGIK FIT PUSH

PLAIN TEE



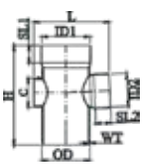
Size(inch)	Size(mm)	Socket ID	Spigot OD	WT
2½	75	75.30	75.30	3.20
3	90	90.30	90.30	3.20
4	110	110.40	110.40	3.20
6	160	160.50	160.50	4.00

PLAIN BEND 45°



Size(inch)	Size(mm)	Socket ID	Spigot OD	WT
2½	75	75.30	75.30	3.20
3	90	90.30	90.30	3.20
4	110	11O.4	110.40	3.20
6	160	160.50	160.50	4.00

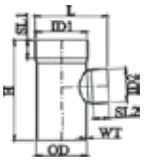
REDUCING TEE DOOR



Size(inch)	Size(mm)	ID-1	ID-2	Spigot OD	WT
4x2½	110x75	110.40	75.30	110.30	3.20
6x4	160x110	160.50	110.40	160.30	4.00

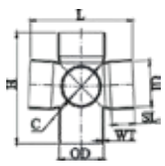
PRODUCT DIMENSIONS: SWR MAGIK FIT PUSH

REDUCING TEE PLAIN



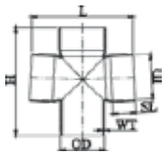
Size(in)	Size(mm)	ID-1	ID-2	Spigot OD	WT
4x2½	110x75	110.4	75.3	110.3	3.2
6x4	160x110	160.5	110.4	160.3	4

DOUBLE DOOR TEE



Size(in)	Size(mm)	SOCKET ID	Spigot OD	WT
2½	75	75.3	75.3	3.2
3	90	90.3	90.3	3.2
4	110	110.4	110.3	3.2

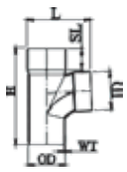
DOUBLE TEE PLAIN



Size(inch)	Size(mm)	Socket ID	Spigot OD	SL	WT
2½	75	75.30	75.30	40.00	3.20
3	90	90.30	90.30	46.00	3.20
4	110	110.40	110.30	48.00	3.20

PRODUCT DIMENSIONS: SWR MAGIK FIT PUSH

SWEPT TEE PLAIN

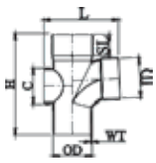


Size(inch)	Size(mm)	Socket ID	Spigot OD	WT
2½	75	75.30	75.30	3.20
4	110	110.40	110.40	3.20
6	160	160.40	160.40	3.60

SWEPT CROSS REDUCING TEE

Size(inch)	Size(mm)	Socket ID	Spigot OD	WT
6 X 4	160 X 110	160.50 X 110.40	160.4	3.6 X 3.2

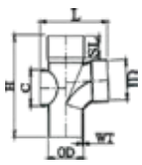
SWEEP TEE WITH DOOR



Size(inch)	Size(mm)	Socket ID	Spigot OD	WT
2½	75	75.30	75.30	3.20
4	110	111.40	110.40	3.20
6	160	160.50	160.40	3.60

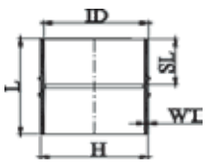
PRODUCT DIMENSIONS: SWR MAGIK FIT PUSH

SWEPT REDUCING TEE DOOR



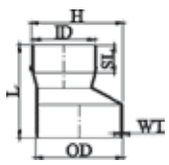
Size(inch)	Size(mm)	Socket ID	Spigot OD	WT	SL
4 X 21/2	110 X 75	110.40/75.30	110.30	48/40	3.20
6 X 4	160 X 110	160.50/111.40	160.40	61/48	3.60

COUPLER



Size(inch)	Size(mm)	Socket ID	WT
2½	75	75.30	2.90
3	90	90.30	2.90
4	110	110.40	2.90
6	160	160.50	3.60

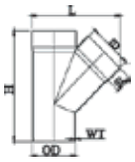
REDUCER



Size(inch)	Size(mm)	Socket ID	Spigot OD	WT
4x2½	110x75	75.30	110.40	3.20
6x4	160x110	110.40	160.50	4.00

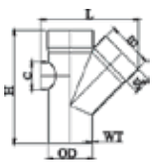
PRODUCT DIMENSIONS: SWR MAGIK FIT PUSH

PLAIN Y



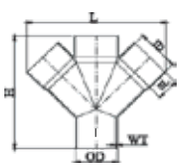
Size(inch)	Size(mm)	Socket ID	Spigot OD	WT
2½	75	75.30	75.30	3.20
3	90	90.30	90.30	3.20
4	110	110.40	110.40	3.20
6	160	160.50	160.50	3.60

DOOR Y



Size(inch)	Size(mm)	Socket ID	Spigot OD	WT
2½	75	75.30	75.30	3.20
4	110	110.40	110.40	3.20

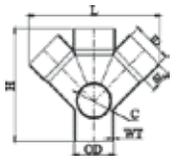
DOUBLE Y



Size(inch)	Size(mm)	Socket ID	Spigot OD	WT
2½	75	75.30	75.30	3.20
4	110	110.40	110.40	3.20

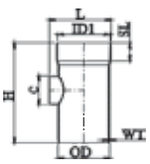
PRODUCT DIMENSIONS: SWR MAGIK FIT PUSH

DOUBLE Y WITH DOOR



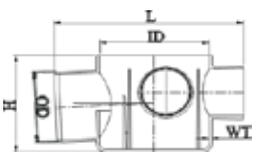
Size(inch)	Size(mm)	Socket ID	Spigot OD	WT
2½	75	75.30	75.30	3.20
4	110	110.40	110.40	3.20

CLEANING PIPE



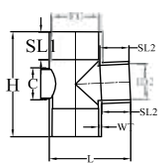
Size(inch)	Size(mm)	Socket ID	Spigot OD	WT
2½	75	75.30	75.30	3.20
4	110	110.40	110.40	3.20
6	160	160.50	160.50	3.60

MULTI FLOOR TRAP - HEIGHT 4" JALI



Size(mm)	ID	WT
110X75X40	110.4	3.20
110X75X50	110.4	3.20

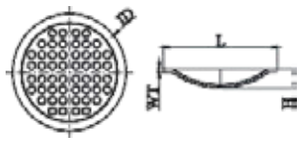
MULTI FLOOR TRAP - HEIGHT 7"



Size(mm)	ID	WT
110X90X 75X50	110.4	3.20
110X75X 50X40	110.4	3.20

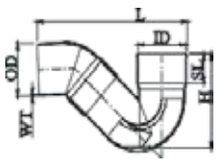
PRODUCT DIMENSIONS: SWR MAGIK FIT PUSH

JALI FOR NAHANI TRAP



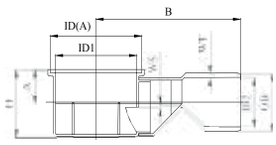
Size(inch)
4”

Q TRAP - RING & WITHOUT RING



Size(inch)	Size (mm)	Socket ID	Spigot OD	WT
5 X4	125 X 110	125.40	110.30	3.20
4 X 4	110 X 110	110.40	110.30	3.20

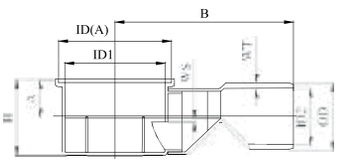
NAHANI TRAP (WITH JALI)



Size(inch)	Size (mm)	ID(A)	Socket ID	Spigot OD	WT
4x2½ (3” ht)	110x75	122.00	110.30	75.15	3.20
4x3 (3” ht)	110x90	122.00	110.30	-	3.20
4x4 (3” ht)	110x110	122.00	110.30	-	3.20

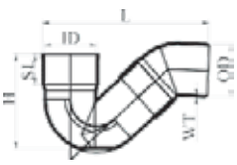
PRODUCT DIMENSIONS: SWR MAGIK FIT PUSH

NAHANI TRAP (WITHOUT JALI)



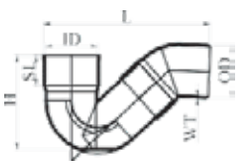
Size(inch)	Size (mm)	ID(A)	Socket ID	Spigot OD	WT
4x2½ (3" ht)	110x75	122.00	110.30	75.15	3.20
4x3 (3" ht)	110x90	122.00	110.30	-	3.20
4x4 (3" ht)	110x110	122.00	110.30	-	3.20

P TRAP



Size(inch)	Size (mm)	Socket ID	Spigot OD	WT
2½X2½	75	75.30	75.30	3.20
4x4	110x110	110.40	110.30	3.20
454	125x110	125.40	110.30	3.20

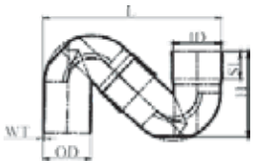
P TRAP WITH WC RING



Size(inch)	Size (mm)	Socket ID	SL	Spigot OD	WT
454	125x110	125.40	65.00	110.30	3.20

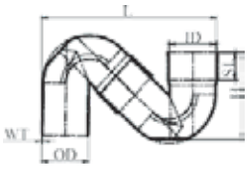
PRODUCT DIMENSIONS: SWR MAGIK FIT PUSH

S TRAP



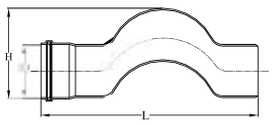
Size(inch)	Size (mm)	Socket ID	SL	Spigot OD	WT
4x4	110x110	110.40	60	110.30	3.20

S. TRAP WITH W.C. RING



Size(inch)	Size (mm)	Socket ID	SL	Spigot OD	WT
4x5	110x125	125.4	65	110.3	3.2

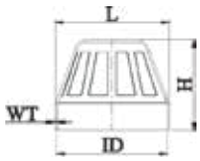
PASS OVER



Size(inch)	Size (mm)	Socket ID
2½	75	75.30
4	110	110.40

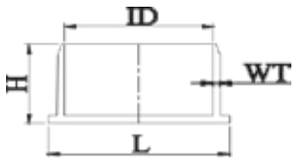
PRODUCT DIMENSIONS: SWR MAGIK FIT PUSH

VENT COWL



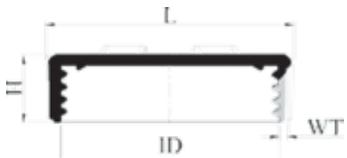
Size(inch)	Size (mm)	Socket ID	WT
4	110	110.40	2.34
6	160	160.50	2.34

SOCKET PLUG



Size(inch)	Size (mm)	Size (mm)	WT
2½	75	75.30	3.20
4	110	110.40	3.20
6	160	160.50	4.00

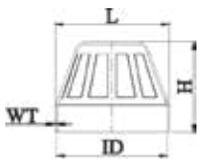
DOOR CAP



Size(inch)	Size (mm)	WT
2½	75	3.20
3	90	3.20
4	110	3.20

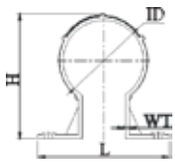
PRODUCT DIMENSIONS: SWR MAGIK FIT PUSH

W.C. CONNECTOR WITH W.C. RING



Size(inch)	Size(mm)
4 X 5	125
6 (Long)	110
9	110
18	110

PIPE CLIP



Size(inch)	Size(mm)
2½	75
3	90
4	110
6	160

SWR RUBBER LUBRICANT

Size (gm)
50
100
250

CHEMICAL RESISTANCE CHART OF UPVC

Chemical	23°C (73°F)	60°C (140°F)
A		
Acetaldehyde	N	N
Acetaldehyde, aq 40%	C	N
Acetamide - -	-	-
Acetic acid, vapor	R	R
Acetic acid, glacial	R	N
Acetic acid, 25%	R	R
Acetic acid, 60%	R	N
Acetic acid, 85%	R	N
Acetic anhydride	N	N
Acetone	N	N
Acetylene	N	N
Acetyl chloride	N	N
Acetylnitrile	N	N
Acrylonitrile	N	N
Acrylic acid	N	N
Adipic acid	R	R
Alcohol, allyl	R	C
Alcohol, amyl	N	N
Alcohol, benzyl	N	N
Alcohol, butyl (n-butanol)	R	R
Alcohol, diacetone	N	N
Alcohol, ethyl (ethanol)	R	R
Alcohol, hexyl (hexanol)	R	R
Alcohol, isopropyl (2-propanol)	R	R
Alcohol, methyl (methanol)	R	R
Alcohol, propyl (1-propanol)	R	R
Alcohol, propargyl	R	R
Allyl chloride	N	N
Alums	R	R
except Aluminim fluoride	R	N
Ammonia, gas	R	R
Ammonia, liquid	N	N
Ammonium salts	R	R
except Ammonium Dichromate	R	N
Ammonium fluoride, 10%	R	R
Ammonium fluoride, 25%	R	C
Amyl acetate	N	N

Chemical	23°C (73°F)	60°C (140°F)
Amyl chloride	N	N
Aniline	N	N
Aniline chlorohydrate	N	N
Aniline hydrochloride	N	N
Anthraquinone	R	R
Antimony trichloride	R	R
Anthraquinone sulfonic acid	R	R
Aqua regia	C	N
Arsenic acid, 80%	C	N
Aryl-sulfonic acid	R	R
B		
Barium salts	R	R
except Barium nitrate	R	N
Beer	R	R
Beet sugar liquor	R	R
Benzaldehyde, 10%	R	N
Benzene (benzol)	R	N
Benzene sulfonic acid, 10%	R	R
Benzene sulfonic acid, > 10%	N	N
Benzoic acid	R	R
Black liquor – paper	R	R
Bleach, 12% active chlorine	R	R
Bleach, 5% active chlorine	R	R
Borax	R	R
Boric acid	R	R
Brine	R	R
Bromic acid	R	R
Bromine, aq	R	R
Bromine, liquid	N	N
Bromine, gas, 25%	R	R
Bromobenzene	N	N
Bromotoluene	N	N
Butadiene	R	R

R - Generally Resistant

C - Less resistant than R but still suitable for some conditions

N - Not resistant

CHEMICAL RESISTANCE CHART OF UPVC

Chemical	23°C (73°F)	60°C (140°F)
Butane	R	R
Butynediol	R	N
Butyl acetate	N	N
Butyl stearate	R	N
Butyl phenol	R	N
Butylene, liquid	R	R
Butyric acid	R	N
C		
Cadmium Cyanide	R	R
Calcium salts	R	R
except Calcium bisulde	N	N
Calcium hypochlorite, 30%	R	R
Calcium hydroxide	R	R
Calcium Nitrate	R	R
Calcium Oxide	R	R
Calcium Sulfate	R	R
Camphor	R	N
Cane sugar liquors	R	R
Carbon disulfide	N	N
Carbon dioxide	R	R
Carbon dioxide, aq	R	R
Carbon monoxide	R	R
Carbitol	R	N
Carbon tetrachloride	R	N
Carbonic Acid	R	R
Castor oil	R	R
Caustic potash (potassium hydroxide) 50%	R	R
Caustic soda (sodium hydroxide) <40%	R	R
Cellosolve	R	N
Cellosolve acetate	R	N
Chloral hydrate	R	R
Chloramine, dilute	R	N
Chloric acid, 20%	R	R
Chlorine, gas, dry	C	N
Chlorine, gas, wet	N	N
Chlorine, liquid	N	N
Chlorine water	R	R
Chloracetic acid, 50%	R	R

Chemical	23°C (73°F)	60°C (140°F)
Chloroacetyl Chloride	R	N
Chlorobenzene	N	N
Chlorobenzyl chloride	N	N
Chloroform	N	N
Chloropicrin	N	N
Chlorosulfonic acid	R	N
Chromic acid, 10%	R	R
Chromic acid, 30%	R	R
Chromic acid, 40%	R	C
Chromic acid, 50%	N	N
Chromium potassium sulfate	R	N
Citric acid	R	R
Coconut oil	R	R
Coffee	R	R
Coke oven gas	R	R
Copper acetate	R	N
Copper salts, aq	R	R
Corn oil	R	R
Corn syrup	R	R
Cottonseed oil	R	R
Cresote	N	R
Cresol, 90%	N	N
Cresylic acid, 50%	R	R
Croton aldehyde	N	N
Crude oil, sour	R	R
Cupric Salts, aq	R	R
Cyclohexane	N	N
Cyclohexanol	N	N
Cyclohexanone	N	N
D		
Detergents, aq	R	R
Dextrin	R	R
Dextrose	R	R
Dibutoxyethyl phthalate	N	N
Diesel fuels	R	R
Diethylamine	N	N
Diethyl Ether	R	N
Disodium phosphate	R	R

CHEMICAL RESISTANCE CHART OF UPVC

Chemical	23°C (73°F)	60°C (140°F)
Diglycolic acid	R	R
Dioxane -1,4	N	N
Dimethylamine	R	R
Dimethyl formamide	N	N
Dibutyl phthalate	N	N
Dibutyl sebacate	R	N
Dichlorobenzene	N	N
Dichloroethylene	N	N
E		
Ether	N	N
Ethyl ether	N	N
Ethyl halides	N	N
Ethylene halides	N	N
Ethylene glycol	R	R
Ethylene oxide	N	N
F		
Fatty acids	R	R
Ferric salts	R	R
Fish Oil	R	R
Fluorine, dry gas	R	N
Fluorine, wet gas	R	N
Fluoboric acid	R	R
Fluosilicic acid, 50%	R	R
Formadehyde	R	R
Formic acid	R	N
Freon - F11, F12, F113, F114	R	R
Freon - F21, F22	R	N
Fructose	R	R
Furfural	N	N
G		
Gallic acid	R	R
Gas, coal, manufactured	N	N
Gas, natural, methane	R	R
Gasolines	C	C
Gelatin	R	R
Glucose	R	R
Glue, animal	R	R
Glycerine (glycerol)	R	R

Chemical	23°C (73°F)	60°C (140°F)
Glycolic acid	R	R
Glycols	R	R
Grape Sugar	R	R
Green liquor, paper	R	R
H		
Heptane	R	R
Hexane	R	N
Hexanol	R	R
Hydraulic Oil	R	N
Hydrobromic acid, 20%	R	R
Hydrochloric acid	R	R
Hydrofluoric acid, 30%	R	N
Hydrofluoric acid, 50%	R	N
Hydrofluoric acid, 100%	N	N
Hydrofluosilic acid	R	R
Hydrocyanic acid	R	R
Hydrogen	R	R
Hydrogen cyanide	R	R
Hydrogen fluoride	N	N
Hydrogen phophide	R	R
Hydrogen peroxide, 50%	R	R
Hydrogen peroxide, 100%	R	R
Hydrogen sulfide, aq	R	R
Hydrogen sulfide, dry	R	R
Hydroquinone	R	R
Hydroxylamine sulfate	R	R
Hydrazine	N	N
Hypochlorous acid	R	R
I		
Iodine, aq, 10%	N	N
J		
Jet fules, JP-4 and JP-5	C	C

R - Generally Resistant

C - Less resistant than R but still suitable for some conditions

N - Not resistant

CHEMICAL RESISTANCE CHART OF UPVC

Chemical	23°C (73°F)	60°C (140°F)
K		
Kerosene	R	R
Ketones	N	N
Ketchup	R	N
Kraft paper liquor	R	R
L		
Lctic acid, 25%	R	R
Lactic acid, 80%	R	N
Lard oil	R	R
Lauric acid	R	R
Lauryl acetate	R	R
Lauryl chlorie	R	R
Lead salts	R	R
Lime sulfur	R	R
Linoleic acid	R	R
Linoleic oil	R	R
Linseed oil	R	R
Liqueurs	R	R
Lithium salts	R	R
Lubricating oils	R	R
M		
Magnesium salts	R	R
Maleic acid	R	R
Malic acid	R	R
Manganese sulfate	R	R
Mercuric salts	R	R
Mercury	R	R
Methane	R	R
Methoxyethl oleate	R	N
Methyl acetate	N	N
Methyl amine	N	N
Methyl bromide	N	N
Methyl cellosolve	N	N
Methyl chloride	N	N
Methyl chloroform	N	N
Methyl ethyl ketone	N	N
Methyl isobutyl carbinol	N	N
Methyl isopropyl ketone	N	N

Chemical	23°C (73°F)	60°C (140°F)
Methyl methacrylate	R	N
Methyl sulfate	R	N
Methyl sulfuric acid	R	R
Methylene bromide	N	N
Methylene chloride	N	N
Methylene iodide	N	N
Milk	R	R
Mineral oil	R	R
Molasses	R	R
Monochloroacetic acid	R	R
Monochlorobenzene	N	N
Monoethanolamine	N	N
Motor oil	R	R
N		
Naptha	R	R
Naphthalene	N	N
Natural Gas	R	R
Nickel acetate	R	N
Nickel salts	R	R
Nicotine	R	R
Nicotinic acid	R	R
Nitric acid, 0 to 40%	R	R
Nitric acid, 50%	R	C
Nitric acid, 100%	N	N
Nitrobenzene	N	N
Nitroglycerine	N	N
Nitrous acid, 10%	R	R
Nitrous oxide, gas	R	N
Nitroglycol	N	N
O		
Oleic acid	R	R
Oleum	N	N
Olive oil	R	R
Oxalic acid	R	R
Oxygen, gas	R	R
Ozone, gas	R	R

CHEMICAL RESISTANCE CHART OF UPVC

Chemical	23°C (73°F)	60°C (140°F)
P		
Palmitic acid, 10%	N	N
Palmitic acid, 70%	R	N
Paraffin	R	R
Pentane	C	C
Peracetic acid, 40%	R	N
Perchloric acid, 15%	R	N
Perchloric acid, 70%	R	N
Perchloroethylene	R	N
Perphosphate	R	N
Phenol	R	N
Phenylhydrazine	N	N
Phosphoric anhydride	R	N
Phosphoric acid	R	R
Phosphorus pentoxide	R	N
Phosphorous trichloride	N	N
Photographic chemicals, aq	R	R
Phthalic acid	N	N
Plating solutions, metal	R	R
Potash	R	R
Potassium amyl xanthate	R	N
Potassium salts, aq	R	R
except Potassium iodide	R	N
Potassium permanganate, 10%	R	R
Potassium permanganate, 25	R	N
Propane	R	R
Propylene dichloride	N	N
Propylene oxide	N	N
Pyridine	N	N
Pyrogallic acid	R	N
R		
Rayon coagulating bath	R	R
S		
Salicylic acid	R	R
Salicyladehyde	N	N
Selenic acid, aq.	R	R
Silicic acid	R	R
Silicone oil	R	N

Chemical	23°C (73°F)	60°C (140°F)
Silver salts	R	R
Soaps	R	R
Sodium salts, aq	R	R
except Sodium chlorite	N	N
except Sodium chlorate	R	N
except Sodium hypochlorite	R	N
Stannic chloride	R	R
Stannous chloride	R	R
Starchy	R	R
Stearic acid	R	R
Stoddard solvent	N	N
Succinic acid	R	R
Sulfamic acid	N	N
Sulfate & Sulfite liquors	R	R
Sulfur	R	R
Sugars, aq	R	R
Sulfur dioxide, dry	R	R
Sulfur dioxide, wet	R	N
Sulfur trioxide, gas, dry	R	R
Sulfur acid, wet	R	N
Sulfuric acid, up to 80%	R	R
Sulfuric acid,90 to 93%	R	N
Sulfuric acid, 94 to 100%	N	N
Sulfurous acid	R	R
T		
Tall oil	R	R
Tannic acid	R	R
Tanning liquors	R	R
Tar	N	N
Tartaric acid	R	R
Terpineol	C	C
Tetrachloroethane	C	C
Toluene	N	N

R - Generally Resistant

C - Less resistant than R but still suitable for some conditions

N - Not resistant

CHEMICAL RESISTANCE CHART OF UPVC

Chemical	23°C (73°F)	60°C (140°F)
Tomato juice	R	R
Transformer oil	R	R
Tributyl phosphate	N	N
Tributyl citrate	R	R
Trichloroacetic acid	R	R
Trichloroethylene	R	N
Triethanolamine	R	N
Triethylamine	R	R
Trimethyl propane	R	N
Trisodium phosphate	R	R
Turpentine	R	R
U		
Urea	R	R
Urine	R	R

Chemical	23°C (73°F)	60°C (140°F)
V		
Vaseline	N	N
Vegetable oils	R	R
Vinegar	R	R
Vinyl acetate	N	N
W		
Water, deionized	R	R
Water, distilled	R	R
Water, salt	R	R
White Liquor	R	R
Whiskey	R	R
Wines	R	R
X		
Xylene	N	N
Z		
Zinc salts	R	R

DO'S

- Ensure clean and precise cuts using appropriate tools for SWR pipes.
- Ensure proper fitting alignment:
- Accurate alignment of pipes and fittings is crucial for a leak-free system.
- Proper ventilation is essential for preventing gas buildup and ensuring smooth wastewater flow.
- Use pipe & fitting from same manufacturer, this ensures compatibility and optimal performance.
- Maintain proper spacing, when using pipe clips, ensure correct spacing, especially for vertical stacks, to prevent misalignment.
- Consider thermal expansion, maintain a small gap (e.g., 10mm) at the socket bottom in RE joint systems to accommodate expansion and contraction due to temperature changes.
- If the system is exposed to sunlight, consider painting the pipes with a water-based paint.
- After cutting, chamfer and deburr the pipe ends to ensure smooth insertion and prevent damage during assembly.
- Before applying solvent cement, perform a dry fit test to ensure proper insertion depth.
- Apply lubricant evenly on the rubber ring before insertion, according.

DONT'S

- Don't use excessive force: Avoid forcing pipes and fittings together, as it can cause damage and leaks.

  Don't drop pipes or fittings: Avoid dropping pipes or fittings, especially on edges, as it can lead to cracks and breaks.

  Don't use incompatible fittings: Use only fittings that are specifically designed for SWR systems and from the same manufacturer.

  Don't overload the system: Ensure the system is not subjected to pressures or loads beyond its designed capacity.

  Don't expose to direct sunlight: Prolonged exposure to direct sunlight can weaken the PVC material.

  Don't create sharp bends: Avoid sharp bends in the pipe layout, as they can hinder water flow and cause blockages.

  Don't use low-quality adhesives: Always use manufacturer-approved solvent cement for bonding.

  Don't cut slant/ unevenly: Ensure clean and even cuts when preparing pipes for assembly.

  Don't add solvents to cement: Avoid adding thinners or other solvents to the solvent cement.

  Don't overtighten door caps: Be cautious not to overtighten door caps, as it can damage the threads.

  Don't use oil-based paints: Avoid using oil-based paints on SWR pipes, as they can react with the PVC material.

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