

# TRUFLO<sup>®</sup>

by hindware

## TRU QUALITY TRU COMMITMENT

TRUFLO offers world-class pipes and fitting solutions inspired by the quality commitment of its flagship brand Hindware over decades



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ISO 9001 : 2015 certified

## About TRUFLO

**TRUFLO**, part of the Somany Impresa Group, offers comprehensive range of premium quality lead free pipes and fittings. **TRUFLO** reaffirms the commitment to quality of Hindware, the flagship brand of Somany Impresa Group, that has been built over six decades. It further strengthens Hindware's pursuit to provide complete bathroom solutions by complementing its exquisite range of sanitaryware. **TRUFLO** has become the fastest growing plumbing brand offering NSF-certified CPVC, lead free range of UPVC, SWR, PVC pipes and fittings, Column pipes developed using patented technology for borewell application and other allied products. In the quest to offer the best, **TRUFLO** now introduces in India, world-class, SharkBite Multilayer Composite Piping System. A premium range of pipes and fittings made to last long and provide superior performance. **TRUFLO** is the exclusive partner for India to provide SharkBite range of plumbing solutions.

At **TRUFLO** product development initiatives are consistently ongoing to enhance the range. **TRUFLO** is one of the fastest growing plumbing brand and aspires to continue offering the best in class range of products and create value for all its stakeholders.

**TRUFLO** range of products are manufactured at a facility that is:

## ISO 9001 : 2015 certified

GreenCo Platinum Rated  
for Sustainable Manufacturing



&

Green Platinum Rated  
Factory Building



**TRUFLO** products comply with best quality standards & are certified:



NSF,  
NSF/ANSI 14  
for CPVC Pipes & Fittings



CIPET  
(Central Institute of Plastics  
Engineering & Technology) -  
for CPVC, SWR, PVC Pipes & Fittings



CFTRI  
(Central Food Technological Research Institute) -  
for CPVC & UPVC Pipes & Fittings

## GOVERNMENT BODIES APPROVING TRUFL<sup>®</sup> (as on March 2023)

- AAI (Airports authority of India) - Coimbatore - Trichy Residential Project
- Andhra Pradesh State Schedule of Rates (SOR)
- APSIDC (Andhra Pradesh State Irrigation Development Corporation)
- Bhutan Standards Bureau, Bhutan
- CIDCO (City and Industrial Development Corporation), Maharashtra
- CPWD (Central Public Works Department), Bhubaneswar
- CPWD (Central Public Works Department), New Delhi
- CPWD (Central Public Works Department), Chennai, South DG
- CPWD (Central Public Works Department), Jharkhand
- GSRTC (Gujarat State Road Transport Corporation)
- HHB (Haryana Housing Board)
- HITES (Hill Infra Tech. Service Ltd., UP) for AIIMS, Patna
- HSCC Limited (Formerly Hospital Services Consultancy Corporation), UP
- KSPHIDCL (Karnataka State Police Housing & Infrastructure Development Corporation Limited)
- Maharashtra State Police Housing & Welfare Corp. Ltd.
- MCGM (Municipal Corporation of Greater Mumbai)
- MES (Military Engineering Services), South Western Command, Jaipur HO
- MES (Military Engineering Services), Southern Command
- MHADA (Maharashtra Housing and Area Development Authority)
- MMRCL (Maharashtra Metro Rail Corporation Limited)
- MPHIDB (Madhya Pradesh Housing & Infrastructure Development Board)
- NBCC (India) Ltd (National Buildings Construction Corporation)
- NMDC (National Mineral Development Corporation)
- NSSCDCL (Nagpur Smart and Sustainable City Development Corporation Limited)
- OBCC (Odisha Bridge & Construction Corporation Limited), Bhubaneswar
- P.H.E. (Public Health Engineering), West Bengal
- PWD (Public Works Department), Goa
- PWD (Public Works Department), UP
- PWD (Public Works Department), Tamil Nadu
- STCS (State Trading Corporation of Sikkim)
- Telangana State Schedule of Rates (SOR)
- TNPHC (Tamil Nadu Police Housing Corporation Ltd)
- TSPHCL (Telangana State Police Housing Corporation Limited)
- TTD (Tirumala Tirupati Devasthanams)
- UPRNN (Uttar Pradesh Rajkiya Nirman Nigam)
- Rajiv Gandhi Housing Corporation Limited, Govt. of Karnataka Rites Ltd, Bengaluru
- WBMSCL (West Bengal Medical Services Corporation Limited)

## CPVC PLUMBING SYSTEM FOR HOT AND COLD WATER



pw

- Assurance to last for generations
- Water quality retention

NSF / ANSI 14 CERTIFIED

### HIGHLIGHT OF THE PRODUCTS

- Ideal for hot and cold water applications
- Suitable for water temperature upto 93°C
- Wide range of pipes and fittings from 1/2" to 6" (15 mm to 150 mm)
- Pipes & Fittings upto 2" (50 mm) can withstand 28.1 kg/cm<sup>2</sup> pressure at 27°C and 6.93 kg/cm<sup>2</sup> at 82°C
- Safe for potable water
- UV stabilised
- No bacterial growth
- Ease of installation
- Designed for over 50 years life
- Pipes upto 2" (50 mm) are manufactured as per IS:15778:2007 and fittings as per ASTM 2846 standards
- Pipes above 2½" (65 mm) are manufactured as per ASTM F 441 & Fittings as per ASTM F 438 & 439





## PRODUCT AVAILABILITY, PRESSURE RATING AND STANDARDS

GRADE	DIAMETER	STANDARD		OPERATING PRESSURE KG/CM <sup>2</sup>	
		PIPES	FITTINGS	27°C	82°C
SDR 11	1/2" to 2" (15 mm to 50 mm)	IS:15778:2007	ASTM D 2846	28.1	6.93
SDR 13.5	1/2" to 2" (15 mm to 50 mm)	IS:15778:2007	-	22.23	5.55

GRADE	DIAMETER	STANDARD		OPERATING PRESSURE KG/CM <sup>2</sup>	
		PIPES	FITTINGS	23°C	82°C
SCH 40	2 1/2" (65 mm)	ASTM F 441	ASTM F 438	21.09	5.27
SCH 40	3" (80 mm)	ASTM F 441	ASTM F 438	18.28	4.57
SCH 40	4" (100 mm)	ASTM F 441	ASTM F 438	15.47	3.87
SCH 40	6" (150 mm)	ASTM F 441	ASTM F 438	12.66	3.16
SCH 80	2 1/2" (65 mm)	ASTM F 441	ASTM F 439	29.53	7.38
SCH 80	3" (80 mm)	ASTM F 441	ASTM F 439	26.01	6.33
SCH 80	4" (100 mm)	ASTM F 441	ASTM F 439	22.49	5.62
SCH 80	6" (150 mm)	ASTM F 441	ASTM F 439	19.69	4.92

## CPVC IS RESISTANT TO WATER TEMPERATURE

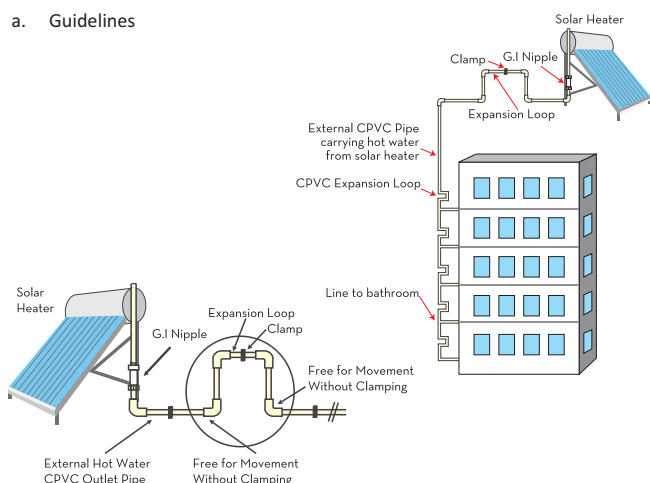
- 93°C for SHORT term application
- 82°C for CONTINUOUS application. It keeps hot water hotter and cold water colder as compared to GI and copper plumbing

## TEMPERATURE DE-RATING FACTOR FOR CPVC

WORKING TEMPERATURE	DE-RATING FACTOR
°C	
23 – 27	1.00
32	0.91
38	0.82
49	0.65
60	0.50
71	0.44
82	0.25
93	0.20

## INSTALLATION PROCEDURE

### a. Guidelines



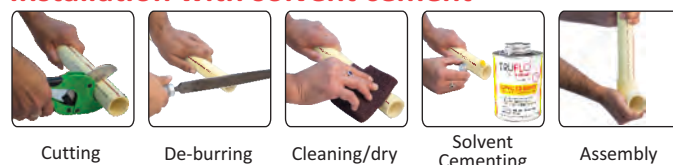
- ❗ Connect minimum 1 mtr. Length of metal pipe to the outlet of hot water tank.
- ❗ Ventilation-proper air-venting on the hot water outlet side is a must.
- ❗ Use of expansion loop is highly recommended to avoid snaking effect caused due to expansion & contraction of pipe.
- ❗ Although CPVC has the lowest thermal conductivity amongst all alternate plastic plumbing systems, however to maintain thermal efficiency, it is recommended that the pipes should be insulated. PE foam may be used over the pipe to provide adequate insulation.

### b. Horizontal and vertical spacing for pipe supporting (clamping of pipes)

NOMINAL PIPE DIA		SPACING							
INCH	MM	20°C		50°C		70°C		80°C	
		FT	MTR	FT	MTR	FT	MTR	FT	MTR
1/2" (15 mm)	12.00	5.50	1.70	4.50	1.40	3.00	0.90	2.50	0.80
3/4" (20 mm)	19.00	5.50	1.70	5.00	1.50	3.00	0.90	2.50	0.80
1" (25 mm)	25.00	6.00	1.80	5.50	1.70	3.50	1.10	3.00	0.90
1 1/4" (32 mm)	32.00	6.50	2.00	6.00	1.80	3.50	1.10	3.00	0.90
1 1/2" (40 mm)	40.00	7.00	2.10	6.00	2.00	3.50	1.10	3.50	1.10
2" (50 mm)	50.00	7.00	2.10	6.50	2.00	4.00	1.20	3.50	1.10
2 1/2" (65 mm)	65.00	8.00	2.40	7.50	2.30	4.50	1.40	4.00	1.20
3" (80 mm)	80.00	8.00	2.40	7.50	2.30	4.50	1.40	4.00	1.20
4" (100 mm)	100.00	9.00	2.70	8.50	2.60	4.50	1.40	4.50	1.40
6" (150 mm)	150.00	10.00	3.00	9.00	2.70	5.50	1.70	5.50	1.50

Do not clamp supports tightly, it restricts the movement of pipe caused because of expansion and contraction.

## Installation with solvent cement



## SOLVENT CEMENTED JOINTING

- Dry fitment-check joint of pipe to fitting without solvent cement, should fit up to 60 – 70%
- Cold fusion joint (cold welded joint)
- For diameters 1/2" to 2", single step solvent cement
- For diameters 2 1/2" to 6", 2 step solvent cement (primer + solvent cement)
- Primer helps to clean the surface of pipe & fitting and softens the material

AVERAGE INITIAL SET SCHEDULE FOR CPVC SOLVENT CEMENT			
TEMP RANGE	PIPE SIZE 1/2" – 1 1/4"	PIPE SIZE 1 1/2" – 3"	PIPE SIZE 3 1/2" – 6"
16° - 38°C	2 minutes	5 minutes	30 minutes
5° - 16°C	5 minutes	10 minutes	2 hours
-18° - -5°C	10 minutes	15 minutes	12 hours

**Note** Typical set schedule is required time before it is advisable to carefully handle joint. In wet or humid conditions, additional set time maybe required of up to 50% of amount listed. Use as general guidelines only.

- Cure time-Curing time is longer than the set time. Curing means the joint has completely matured
- The pressure test can only be performed after the joint is completely cured

AVERAGE JOINT CURE SCHEDULE FOR CPVC SOLVENT CEMENT					
RELATIVE HUMIDITY 60% OR LESS	PIPE Ø 1/2" – 1 1/4"		PIPE Ø 1 1/2" – 2"		PIPE Ø 2 1/2" – 6"
	BAR		BAR		BAR
	UP TO 11	11 TO 26	UP TO 11	11 TO 26	UP TO 11 11 TO 26
16° - 38°C	15 min	6 hrs	30 min	12 hrs	1 1/2 hrs 24 hrs
5° - 16°C	10 min	12 hrs	45 min	24 hrs	4 hrs 48 hrs
-18° - -5°C	15 min	48 hrs	1 hr	96 hrs	72 hrs 8 days

**Note** - Joint cure schedule is the necessary time to allow before pressurizing system. In damp or humid weather allow 50% more cure time.

In case of using paint on CPVC piping system, use only Latex based paints which are water based to make it workable and brushable. **No Oil/Solvent based paints** are to be used as these paints can drastically reduce the life of the systems.

## Colour Coding (Printing on Pipes)

Type of PIPE	Colour	Image
SDR 11	Red strip	TRUFLO by Hindware
SDR 13.5	Brown strip	TRUFLO by Hindware
SCH 40	Brown strip	TRUFLO by Hindware
SCH 80	Red strip	TRUFLO by Hindware

## UPVC PLUMBING SYSTEM FOR COLD WATER

### HIGHLIGHT OF THE PRODUCTS

- Ideal for cold water applications
- Safe for potable water
- Lead Free
- Environment-friendly
- Wide range of pipes and fittings from 1/2" to 6" (15 mm to 150 mm)
- UV stabilised
- No bacterial growth
- Ease of installation
- Cost-effective solution
- Pipes manufactured as per ASTM D 1785 and fittings as per ASTM D 2466 & 2467



## SUGGESTED MAXIMUM INTERNAL WORKING PRESSURE @ 73°F (23°C) for PVC SCHEDULE 40 AND SCHEDULE 80 FITTINGS

The following information should be used as a guide only. The working pressure may differ widely according to site conditions. While calculating the working pressure of the system, temperature de-rating factor at increased water temperatures need be taken into account.

## PRODUCT AVAILABILITY AND STANDARDS

VARIANTS	SIZES AVAILABLE	PIPE	FITTINGS
Schedule 40	½" – 6" (15 mm to 150 mm)	ASTM D 1785	ASTM D 2466
Schedule 80	½" – 6" (15 mm to 150 mm)	ASTM D 1785	ASTM D 2467

## PRESSURE RATING

PRESSURE RATING - UPVC PIPES SCH 40						
NOMINAL DIA		AVERAGE OUTER DIA. (MM)	MIN. WALL THICKNESS (MM)	MAX WORKING PRESSURE PIPES (KG/CM <sup>2</sup> ) @ 23°C	WORKING PRESSURE OF SOLVENT CEMENTED JOINTS (KG/CM <sup>2</sup> ) @ 23°C	BURST PRESSURE (KG/CM <sup>2</sup> )
INCH	MM					
½"	15	21.34	2.77	42.22	25.33	134.30
¾"	20	26.67	2.87	33.75	20.25	108.29
1"	25	33.40	3.38	31.61	18.96	101.26
1 ¼"	32	42.16	3.56	26.00	15.60	83.00
1 ½"	40	48.26	3.68	23.25	13.95	74.54
2"	50	60.32	3.91	19.68	11.81	62.61
2 ½"	65	73.02	5.16	21.11	12.66	68.22
3"	80	88.90	5.49	18.25	10.95	59.04
4"	100	114.30	6.02	15.50	9.30	49.97
6"	150	168.28	7.11	12.64	7.58	39.36

PRESSURE RATING - UPVC PIPES SCH 80						
NOMINAL DIA		AVERAGE OUTER DIA. (MM)	MIN. WALL THICKNESS (MM)	MAX WORKING PRESSURE PIPES (KG/CM <sup>2</sup> ) @ 23°C	WORKING PRESSURE OF SOLVENT CEMENTED JOINTS (KG/CM <sup>2</sup> ) @ 23°C	BURST PRESSURE (KG/CM <sup>2</sup> )
INCH	MM					
½"	15	21.34	3.73	59.76	35.85	191.30
¾"	20	26.67	3.91	48.54	29.10	154.69
1"	25	33.40	4.55	44.26	26.57	142.05
1 ¼"	32	42.16	4.85	36.61	21.93	116.76
1 ½"	40	48.26	5.08	33.04	19.82	106.15
2"	50	60.32	5.54	28.14	16.87	90.65
2 ½"	65	73.02	7.01	29.57	17.71	95.65
3"	80	88.90	7.62	26.00	15.60	84.33
4"	100	114.30	8.56	22.54	13.49	73.11
6"	150	168.28	10.97	19.68	11.81	62.61

## TEMPERATURE DE-RATING FACTOR FOR UPVC

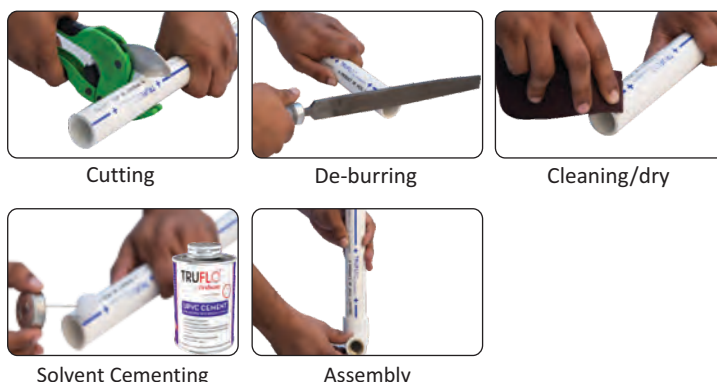
OPERATING TEMPERATURE CENTIGRADE (°C)	23	27	32	38	43	49	54	60
DE-RATING FACTOR	1.00	0.88	0.75	0.62	0.51	0.40	0.31	0.22

## INSTALLATION PROCEDURE

- a. Horizontal and vertical spacing in feet for pipe supporting (clamping of pipes)

NOMINAL PIPE DIA		SCHEDULE 40					SCHEDULE 80				
INCH	MM	15.5	TEMPERATURE °C				TEMPERATURE °C				
			26.6	37.7	48.8	60	15.5	26.6	37.7	48.8	60
1/2"	15	5	4 1/2	4 1/2	3	2 1/2	4 1/2	4 1/2	4	2 1/2	2 1/2
3/4"	20	5 1/2	5	4 1/2	3	2 1/2	5	4 1/2	4	2 1/2	2 1/2
1"	25	6	5 1/2	5	3 1/2	3	5 1/2	5	4 1/2	3	2 1/2
1 1/4"	32	6	6	5 1/2	3 1/2	3	5 1/2	5 1/2	5	3	3
1 1/2"	40	6 1/2	6	5 1/2	3 1/2	3 1/2	6	5 1/2	5	3 1/2	3
2"	50	7	6 1/2	6	4	3 1/2	6	5 1/2	5	3 1/2	3
2 1/2"	63	7 1/2	7 1/2	6 1/2	4 1/2	4	6 1/2	6	5 1/2	4	3
3"	75	8	7 1/2	7	4 1/2	4	7	7	6	4	3 1/2
4"	100	9	8 1/2	7 1/2	5	4 1/2	7 1/2	7	6 1/2	4 1/2	4
6"	150	10	9 1/2	8 1/2	6 1/2	5 1/2	8 1/2	8	7 1/2	5	4 1/2

- b. Installation with solvent cement



## SOLVENT CEMENTED JOINTING

- Dry fitment-check joint of pipe to fitting without solvent cement. Should fit up to 60 – 70%
- Cold fusion joint (cold welded joint)
- For diameters ½" to 2", single step solvent cement
- For diameters 2 ½" to 6", 2 step solvent cement (Primer + Solvent Cement)
- Primer helps to clean the surface of pipe & fitting and soften the material
- Set time-After application of solvent cement, it takes some time for the joint to set, subject the atmospheric conditions and pipe diameter
- Set time-After application of solvent cement, it takes some time for the joint to set, subject the atmospheric conditions and pipe diameter

AVERAGE INITIAL SET SCHEDULE FOR UPVC SOLVENT CEMENT			
TEMP RANGE	PIPE SIZE ½" – 1 ¼"	PIPE SIZE 1 ½" – 3"	PIPE SIZE 3 ½" – 4"
16° - 38°C	2 minutes	5 minutes	30 minutes
5° - 16°C	5 minutes	10 minutes	2 hours
-18° - -5°C	10 minutes	15 minutes	12 hours

**Note** - Typical set schedule is required time before it is advisable to carefully handle joint. In wet or humid conditions, additional set time maybe required of up to 50% of amount listed. Use as general guidelines only.

- Cure time-Curing time is longer than the set time. Curing means the joint has completely matured

AVERAGE JOINT CURE SCHEDULE FOR UPVC SOLVENT CEMENT						
RELATIVE HUMIDITY 60% OR LESS	PIPE Ø ½" – 1 ¼"		PIPE Ø 1 ½" – 2"		PIPE Ø 2 ½" – 4"	
TEMP. RANGES DURING ASSEMBLY & CURE PERIODS	BAR		BAR		BAR	
	UP TO 11	11 TO 26	UP TO 11	11 TO 22	UP TO 11	11 TO 22
16° - 38°C	15 min	6 hrs	30 min	12 hrs	1 ½ hrs	24 hrs
5° - 16°C	10 min	12 hrs	45 min	24 hrs	4 hrs	48 hrs
-18° - -5°C	15 min	48 hrs	1 hr	96 hrs	72 hrs	8 days

Note: Joint schedule is the necessary time to allow before pressurizing system. In damp or humid weather allow 50% more cure time.

- The pressure test can only be performed after the joint is completely cured
- Compressed air cannot be used for leakage test
- In case of using paint on UPVC piping system, use only Latex based paints which are water based paints wherein the paint concentrate is diluted with water to make it workable and brushable. **No Oil/Solvent based paints** are to be used as these paints can drastically reduce the life of the systems

## Colour Coding (Printing on Pipes)

Type of PIPE	Colour	Image
SCH 40	Blue strip	TRUFLO by Hindware
SCH 80	Red strip	TRUFLO by Hindware



## SWR PIPING SYSTEM FOR SANITARY WASTE WATER APPLICATION

### HIGHLIGHT OF THE PRODUCTS

- Perfect solution for discharge of soil, waste and rain water
- Lead Free
- Ventilation
- Available in 2 variants-Ring fit and Solvent cement jointing
- Fast and easy jointing
- 100% Leak-free joints
- UV stabilised
- Wide range of fittings
- Pipes manufactured as per IS:13592 and fittings as per IS:14735
- Ringfit joint is tested for leakage at water pressure of 5 kg/cm<sup>2</sup>





## PRODUCT AVAILABILITY AND STANDARDS

VARIANTS	SIZES AVAILABLE	PIPE	FITTINGS
Type A – Ring fit	75, 110, 160 mm	IS:13592:2013	IS:14735:1999
Type A – Selfit	40, 50, 75, 90, 110, 160 mm		
Type B – Ring fit	75, 110, 160 mm	IS:13592:2013	IS:14735:1999
Type B – Selfit	40, 50, 63, 75, 90, 110, 160 mm, 315 mm		

## ADVANTAGES OF TRUFLO SWR PIPING SYSTEM:

- UV stabilized
- Light weight-The low weight of the system makes it easy to install and reduces transportation handling and installation costs
- Smooth internal finish, no scale, no corrosion resulting in better flow rates
- 100% recyclable
- Accurate dimensions, ensuring perfect fit and leak free joints
- Ring fit joint allows for thermal expansion and contraction of pipe
- Unmatched strength and performance, high operating life
- Fast installation
- Cost-effective

## INSTALLATION PROCEDURE

### a. Installation for Ring fit joint system



Cutting



De-burring



Cleaning/dry



Check for rubber ring

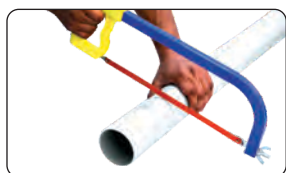


Apply Lubricant



Assembly

### b. Installation for Solvent cemented joint system



Cutting



De-burring



Cleaning/dry



Solvent Cementing



Assembly

## Colour Coding (Printing on Pipes)

Type of PIPE	Colour	Image
Type A	Blue strip	TRUFLO by hardware
Type B	White strip	TRUFLO by hardware

## Also Available: PAN CONNECTORS

### HIGHLIGHT OF THE PRODUCTS

- Pan Connectors are manufactured using EVA (Ethylene Vinyl Acetate) & TPE (Thermo- Plastic Elastomers) and are designed to be flexible
- The Pan Connector is used to connect WC Pan outlets to standard soil / waste water pipe.
- Provides flexibility
- Prevents Leaking & odour
- Available in straight, 18 mm offset, 40 mm offset and collapsible



### HOW TO CHOOSE THE RIGHT PAN CONNECTORS.....?

#### STRAIGHT



#### 18mm Offset



#### 40 mm Offset



#### Collapsible



## PVC PIPING SYSTEM FOR POTABLE WATER TRANSPORTATION

### HIGHLIGHT OF THE PRODUCTS

- Lead free, assuring water quality retention
- Smooth internal surface
- Hygienic and odour free
- Chemical resistance
- No corrosion
- Maintenance-free
- Long life
- Economical
- Pipes Manufactured as per IS:4985:2000, and Fittings as per IS:7834:1987

#### Fields of application:

- Irrigation    ○ Water Supply
- Industrial process lines
- Swimming pools
- Agriculture



**TRUFLO** by Hindware offers a wide range of PVC pressure pipes and fittings, manufactured as per IS 4985:2000 standards. Availability of sizes as per the table below.

## PRODUCT AVAILABILITY AND STANDARDS

VARIANTS	SIZES AVAILABLE	PIPE	FITTINGS
Pressure class 4 kg/cm <sup>2</sup>	63mm, 75mm, 90mm, 110mm, 140mm, 160mm, 180mm, 200mm, 225mm, 250mm, 280mm, 315mm	IS:4985:2000	IS:7834:1987
Pressure class 6 kg/cm <sup>2</sup>	40mm, 50mm, 63mm, 75mm, 90mm, 110mm, 140mm, 160mm, 180mm, 200mm, 225mm, 250mm, 280mm, 315mm	IS:4985:2000	IS:7834:1987
Pressure class 10 kg/cm <sup>2</sup>	20mm, 25mm, 32mm, 40mm, 50mm, 63mm, 75mm, 90mm, 110mm, 140mm, 160mm, 180mm, 200mm, 225mm, 250mm, 280mm, 315mm	IS:4985:2000	IS:7834:1987
Heavy pressure plumbing pipe	20mm, 25mm, 32mm, 40mm, 50mm	IS:4985:2000	IS:7834:1987

The **TRUFLO** PVC pipes and fittings can be used for a variety of applications like, irrigation, water supply, industrial process lines, swimming pools, firefighting mains, etc. This piping system is far better than CI, DI or RCC pipes, as it is light in weight, quick and easy to install, has excellent corrosion and chemical resistance properties, high flow rates, long life and economy.

## ADVANTAGES:

- Odourless and hygienic-These pipes are suitable for transportation of potable water as it does not allow any contamination in water.
- High corrosion resistance-This piping system is resistant to chemical corrosion, which gives these pipes much longer life.
- High chemical resistance-Pipes offer excellent resistance to acids, oxidizing agents, alkalis, oils and domestic effluents. here is no need for repeated painting or coating for surface protection.
- Smooth bore-Pipes have a smooth inner surface, resulting in a better flow compared to Cement, CI and GI pipes.
- Self-extinguishing quality-Does not support combustion.
- Long life-As these pipes are free from scale formation, rusting, weathering and chemical action, this results in a much long life.
- Economical-Light weight piping system, very easy to transport, install and highly economical compared to conventional piping systems.

## INSTALLATION PROCEDURE



Cutting



De-burring



Cleaning/dry



Solvent Cementing



Assembly

## Colour Coding (Printing on Pipes)

Pressure Rating	Class	Colour	Image
4 kg	2	Blue Strip	
6 kg	3	Green Strip	
10 kg	5	Yellow strip	
Heavy Pressure Plumbing	-	Pink Strip	



## UNDERGROUND DRAINAGE PIPE (SOLID WALL) SYSTEM

### HIGHLIGHT OF THE PRODUCTS

- Strong and light weight
- Fire resistant
- High strength and flexibility
- Leak free joints
- Maximum flow rate
- Resistance to chemical stress cracking
- Backed by Hindware trust of 6 decades
- Manufactured as per IS:15328:2003





**TRUFLO** underground drainage pipe system provides the solution for drainage and sewerage application. The joints are completely watertight, reduces the possibility of ingress or seepage of water and hence can be considered to be most hygienic.

Unlike conventional drainage products, it is free from pollution of underground water, soil or ill effects on building foundations.

## TECHNICAL SPECIFICATIONS:

IS 15328 : 2003		
RING STIFFNESS OF PIPES		
STIFFNESS CLASS	SDR	RING STIFFNESS kN/m <sup>2</sup>
SN 2	51	≤ 2
SN 4	41	≥ 4
SN 8	34	≥ 8

## BENEFITS:

- Ease of installation
- Dependable leak proof joints
- Economical, compared with conventional drainage products
- Minimum excavation cost - Because of simple jointing technique, trench width can be kept to a minimum.
- Smooth internal finish - Smoother bore of the pipe allows high flow rates at relatively flatter gradients.
- Longer life and overall economy - It is free from problems like corrosion and susceptibility to chemical reactions and strong enough to carry soil and traffic loads

## PRODUCT AVAILABILITY

Length	Product Sub-Category	MM	Category	Length	Product Sub-Category	MM	Category
3 Mtr	SN2	160	ISI	6 Mtr	SN2	160	ISI
		200	ISI			200	ISI
		250	ISI			250	ISI
	SN4	110	Not covered in ISI		SN4	110	Not covered in ISI
		125	ISI			125	ISI
		160	ISI			160	ISI
		200	ISI			200	ISI
	SN8	63	ISI		SN8	63	ISI
		75	ISI			75	ISI
		90	ISI			90	ISI
		110	ISI			110	ISI
		125	ISI			125	ISI
		160	ISI			160	ISI
		200	ISI			200	ISI

WALL THICKNESS						
DIA	SN2		SN4		SN8	
	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
63mm	-	-	-	-	2.70	3.10
75mm	-	-	-	-	2.80	3.30
90mm	-	-	-	-	2.90	3.40
110mm	-	-	-	-	3.20	3.70
125mm	-	-	3.20	3.70	3.70	4.40
160mm	3.20	3.70	4.00	4.60	4.70	5.40
200mm	3.90	3.96	4.90	5.60	5.90	6.70
250mm	4.90	5.60	6.20	7.00	7.30	8.30
315mm	6.20	7.00	7.70	8.70	9.20	10.40

## MULTILAYER COMPOSITE PIPES & FITTINGS

### HIGHLIGHT OF THE PRODUCTS

- Easy installation with push to connect fittings
- Light weight, Slim Profile & Durable
- Suitable for -20° C to +95° C at 10 bar pressure
- Quick installation & lesser joints compared to traditional plumbing systems
- Completely oxygen-impermeable – Prevents Oxidation
- Minimum linear expansion
- Chemical resistance to building materials allows this multilayer pipe to be embedded in walls & floors without the need for any additional protection.

### They comply with the following international standards:

- **ISO 21003** - Multilayer piping systems for hot and cold water installations inside buildings.
- **EN 485-2** - European standard that specifies the mechanical properties of wrought aluminium and wrought aluminium alloy sheet, strip and plate for general engineering applications.



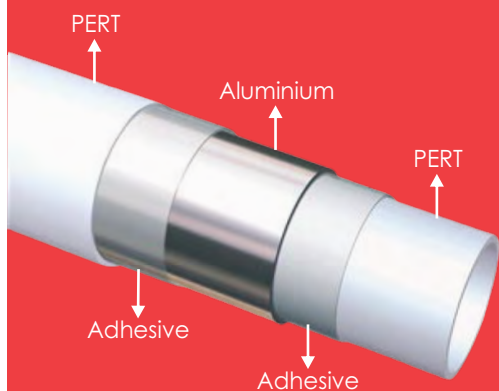
**A Patented (European)  
technology for jointing system**



**001/006677**



## PIPE CROSS SECTION



### Material Specification

- Polyethylene raised temperature resistance (PE-RT) Dowlex 2388 Type II
- Aluminium 8006 O - 8011 O

## TRUFLO SharkBite Multilayer Composite Piping System

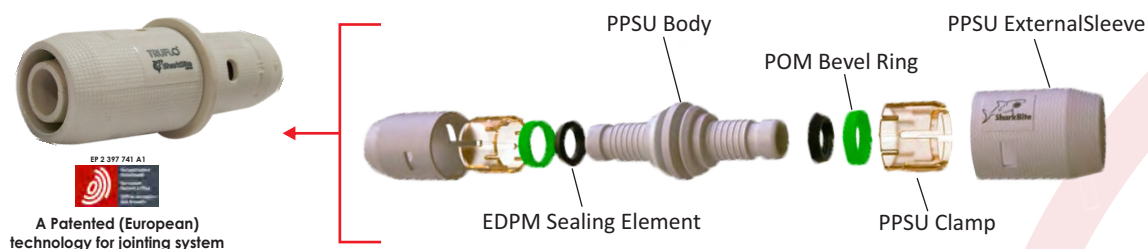
A light-weight, durable yet flexible plumbing system which is ideal for premium plumbing in all concealed applications for hot water, drinking water and chilled water. They are manufactured in Europe.

TRUFLO SharkBite pipe is composed of five layers, **PERT / ADHESIVE / ALUMINIUM / ADHESIVE / PERT**. Polyethylene (PERT type II) a temperature resistant polymer along with butt welded aluminium "head to head".

The performance of multilayer pipes is significantly impacted by the type of aluminium alloy, thickness of the aluminium, the position of the aluminium layer, the technology used in forming and welding the aluminium, the adhesion of the PERT to the aluminium. TRUFLO SharkBite assures the best quality & process integration to attain this.

## TRUFLO SharkBite Push to Connect Fittings

The Innovative, patented fittings are manufactured using Polyphenylsulfone (PPSU), a high performance techno polymer. The fittings have a conical sealing gasket made from EPDM Peroxide-70, which guarantees a tight fixation within the internal part of the pipe. These fittings are corrosion resistant and impervious to lime scale. These also have excellent resistance to hydrolysis and chemicals, even under long-term exposure to high temperatures.



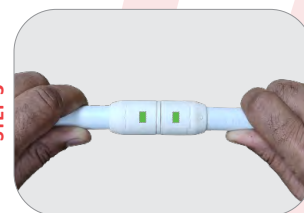
## EASY 3 STEP INSTALLATION



CUT



BEVEL & CALIBRATE



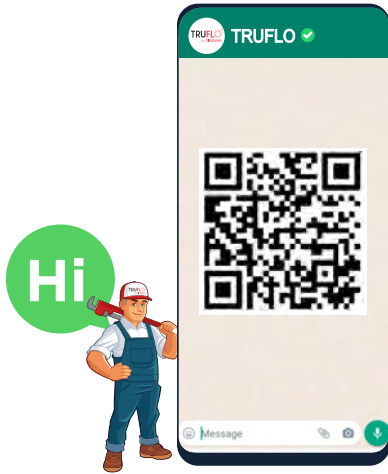
PUSH & CONFIRM WINDOW TURNS GREEN ASSURING A PERFECT JOINT

Technical Parameters (pipe) ↓	Sizes ⇒	16x2.0mm	20x2.0mm	25x2.5mm	32x3.0mm
Internal diameter (mm)		12	16	20	26
Volume of liquid (ltrs./min)		0.133	0.201	0.314	0.531
Max. Operating Temperature °C		95	95	95	95
Min. operating temperature °C		-20	-20	-20	-20
Max. Working Pressure at 95°C		10 bar	10 bar	10 bar	10 bar
Coefficient of thermal conductivity		0.004 W/mK	0.004 /mK	0.004 /mK	0.004 W/mK
Coefficient of thermal expansion		0.02 mm/mK	0.02 mm/mK	0.02 mm/mK	0.02 mm/mK
Min. bending radius (external spring) mm		5 x d	5 x d	5 x d	5 x d
Thickness of aluminium layer (mm)		0.20	0.20	0.25	0.30
Oxygen diffusion (mg/ltr)		0	0	0	0
Bursting pressure (bar)		72	68	71	65





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