SINGA PLASTICS LTD

UNIPLAS

PIPING SYSTEM

SS213 : 1998

UPVC PIPES FOR SOIL, WASTE AND VENT (S.W.V.)

Applications (Standard Colour : White)

Soil, waste, and vent uPVC pipes are commonly used for sanitary stack. They are largely utilized in HDB projects, private condominiums, industrial and commercial buildings. These pipes are also suitable as rainwater and other water discharge purposes above ground.

Nominal Size		Mean Outside ∅ (mm)		Thickness (mm)		20ft Cont. Load (Approx. Qty.)
INCH	MM	MIN	MAX.	MIN	MAX.	
1-1/4	32	36.2	36.5	2.1	2.4	4100
1-1/2	40	42.8	43.1	2.3	2.6	2950
2	50	55.7	56.0	2.4	2.7	1750
3	80	82.3	82.7	3.0	3.5	800
4	110	110.0	110.4	3.2	3.6	451
6	160	160.0	160.5	4.0	4.5	210
Standard length 5.8M $\begin{bmatrix}+10\\-0\end{bmatrix}$ mm						

SS272 : 2012

UPVC PIPES BELOW GROUND FOR DRAINLINE AND SEWER

(Standard Colour : Golden Brown)

Underground drainage pipes are commonly known as "Sewer" pipes, and they are highly suitable for all underground drainage. They are laid in the ground as sewer system or drainage connection, subsoil drainage for fields, parks and golf courses. Pipes are joined by either solvent cement welding or integrated rubber ring joint. This allows soil movement and minor deflection during installation.

Pipes are manufactured with one chamfered end. Socket end pipes are available for all sizes at additional cost.

Pipes are manufactured in golden brown colour, however it may be altered to other colour when agreed upon between the parties concerned.

Nominal Size		Mean Outside ∅ (mm)		Thickness (mm)		20ft Cont. Load (Approx. Qty.)
INCH	MM	MIN	MAX.	MIN	MAX.	
4	110	110.0	110.4	3.2	3.6	451
6	160	160.0	160.5	4.0	4.5	210
8	200	200.0	200.6	4.9	6.0	132
10	250	250.0	250.7	6.1	7.5	72
12	315	315.0	315.9	7.7	9.4	49
Standard length 5.8M $\begin{bmatrix}+10\\-0\end{bmatrix}$ mm/ Telecom 4" Pipe 6M $\begin{bmatrix}+10\\-0\end{bmatrix}$ mm						

Telecommunication Cable application

The 4" pipe is recommended by the telecommunication authorities for use in ducting of telephone and electrical cables. Upvc pipes are chosen as they provide good protection to the cables and for their di-electric and corrosion resistant properties. In addition, it is easy to handle, store and install them. The pipes are commonly required in grey. Separate coupling and spacer are also available.

SS141 : 2013

UPVC Pipes For Cold Water Services, Electrical ducting and Idustrial Uses (Standard Colour : Class B and C : Grey / Class D and E : White)

This series of pipes is categorized into various classes. Each class serves different purposes and have various thickness with the maximum sustained working pressure as follow:-

Class	Maximum Working Pressure		
PN6	0.6MPa*	6 Bar	(60m head of water)
PN9	0.9MPa	9 Bar	(90m head of water)
PN12	1.2MPa	12 Bar	(120m head of water)
PN15	1.5MPa	15 Bar	(150m head of water)
*1 MPa = 10 bars			

Class B & C pipes are manufactured in grey, while Class D & E pipes are manufactured in white. However other colour can be requested when agree upon between parties concerned, with a minimum order quantity.

Socket end pipes are available for certain size and class at additional cost.

Nominal Size		Mean Outside ∅ (mm)		Class B (PN6)		Class C (PN9)		Class D (PN12)		Class E (PN15)		20ft Cont. Load (Approx. Qty.)
INCH	MM	MIN	MAX.	MIN	MAX.	MIN	MAX.	MIN	MAX.	MIN	MAX.	
1/2	15	21.2	21.5	-	-	-	-	-	-	1.7	2.1	12000
3/4	20	26.6	26.9	-	-	-	-	-	-	1.9	2.5	7470
1	25	33.4	33.7	-	-	-	-	-	-	2.2	2.7	4700
1-1/4	32	42.1	42.4	-	-	-	-	2.2	2.7	2.7	3.2	2995
1-1/2	40	48.1	48.4	-	-	-	-	2.5	3.0	3.1	3.7	2300
2	50	60.2	60.5	-	-	2.5	3.0	3.1	3.7	3.9	4.5	1467
3	80	88.7	89.1	2.9	3.4	3.5	4.1	4.6	5.3	5.7	6.6	670
4	100	114.1	114.5	3.4	4.0	4.5	5.2	6.0	6.9	7.3	8.4	440
6	155	168.0	168.5	4.5	5.2	6.6	7.6	8.8	10.2	10.8	12.5	196
8	200	218.8	219.4	5.3	6.1	7.8	9.0	10.3	11.9	12.6	14.5	120
10	250	272.6	273.4	6.6	7.6	9.7	11.2	12.8	14.8	15.7	18.1	70

Standard length for Class B pipes is 6M $\begin{bmatrix}+10\\-0\end{bmatrix}$ mm Standard length for Class C, D and E pipes is 5.8M $\begin{bmatrix}+10\\-0\end{bmatrix}$ mm

S141 Class B / Class C

These pipes are commonly used as cable conduits and have excellent di-electric strength because of their insulation properties. They are produced with either plain end or socket end to facilitate ease of joining and installation. Both ends of these pipes are chamfered internally when required to prevent scratching when slotting high valued cable.

A special moulded end plug is also available for Class B 6" pipe only.

SS141 Class D / Class E

These pipes have the working pressure of 12 to 15 Bar, (1.2 to 1.5MPa).
This allows pipes to be fitted to mechanical equipment such as pumps, cooling towers, etc. They are also used in conjunction with mechanical machinery in factories. These pipes can be used for conveying cold water to household and for irrigation purposes because it does not import any odour, taste, colour or any toxic constituents in concentration that can be harmful to health.

These range of pipes are also in compliance to SS375 (Tested for Effect on Water for Portable Water Supply).




JIS K6741 : 2007
(JAPAN INDUSTRIAL STANDARD)

UPVC Pipes To Convey General Fluids (Standard Colour : Grey)

This series of pipes is classified into VP (AW), and VU(AE) based on the maximum working pressure of pipes used in the pressurized conveyance as follow :-

Pipe Standard	Maximum Working Pressure
Class VP(AW)	1.0Mpa (10kgfcm^2)
Class VU(AE)	0.6Mpa (6kgfcm^2)
*1 kgfcm^2 = 1 bar	

AW and AE uPVC Pipe.

Class VP(AW) pipes are commonly used for factory or industrial application in conjunction with pumps and mechanical plants. Class VU(AE) pipes are used as cable ducting flush pipes, air conditioning water discharge outlet and fume exhaust system.

Pipes are manufactured in grey colour, other colours are available upon request with a minimum order quantity. Socket end are available for certain size at additional cost.

These pipes may be suitable for underground sewer drainage and irrigation systems. The user should determine the suitability class of pipes by looking at the working pressure required for its intended use.

Nominal Size		Mean Outside ∅ (mm)		Thickness (mm)				20ft Cont. Load (Approx. Qty.)
				Class VP (AW)		Class VU (AE)		
INCH	MM	MIN	MAX.	MIN	MAX.	MIN	MAX.	
1/2	16	21.8	22.2	2.7	3.3	-	-	11000
3/4	20	25.8	26.2	2.7	3.3	-	-	7900
1	25	31.8	32.2	3.1	3.9	-	-	5200
1-1/4	30	37.8	38.2	3.1	3.9	-	-	3500
1-1/2	40	47.8	48.2	3.6	4.4	1.8	2.2	2200
2	50	59.8	60.2	4.1	4.9	1.8	2.2	1480
2-1/2	65	75.7	76.3	4.1	4.9	2.2	2.8	900
3	75	88.7	89.3	5.5	6.3	2.7	3.3	650
4	100	113.6	114.4	6.6	7.6	3.1	3.9	440
5	125	139.5	140.5	7.0	8.0	4.1	4.9	280
6	150	164.5	165.5	8.9	10.3	5.1	5.9	196
8	200	215.3	216.7	10.3	11.7	6.5	7.5	120
10	250	266.1	267.9	12.7	14.5	7.8	9.0	72
12	300	317.0	319.0	15.1	17.3	9.2	10.6	49
Standard length 5.8M $\begin{bmatrix}+10\\-0\end{bmatrix}$ mm								

RWDP (AEO)
CORRESPONDING TO LOCAL DEMAND
RAIN WATER DOWN PIPES

UPVC Pipes For Drainage And Sewer (Standard Colour : Grey)

Generally known as RWDP or AEO pipe. The pipe's outside diameter was made with reference to JIS K6741 and the thickness of these pipes have been modified to meet local requirement.

RWD pipes are generally used for less critical and non-pressure applications.

RWD pipes are commonly used as fluid drainage line, fume exhaust system and in the construction of concrete columns. They are also suitable as air-conditioning discharge water outlets.

Pipes are manufactured and tested according to in-house specification and correspondence to local requirement.

Socket end pipes are available for certain sizes 100mm and above at additional cost.

Nominal Size		Mean Outside ∅ (mm)		Thickness (mm)		20ft Cont. Load (Approx. Qty.)
INCH	MM	MIN	MAX.	MIN	MAX.	
3/8	13	17.8	18.2	1.6	2.0	16500
1/2	16	21.8	22.2	1.6	2.0	11000
3/4	20	25.8	26.2	1.6	2.0	7900
1	25	31.8	32.2	1.6	2.0	5200
1-1/4	38	37.8	38.2	1.8	2.2	3500
1-1/4	42	41.8	42.2	1.8	2.2	2860
4	100	113.6	114.4	2.2	2.4	440
6	150	164.5	165.5	2.5	2.8	196
8	200	215.3	216.7	4.0	4.5	120
10	250	266.1	267.9	4.0	4.5	72
12	300	317.0	319.0	4.5	5.0	49
Standard length 5.8M $\begin{bmatrix}+10\\-0\end{bmatrix}$ mm						

RWD Pipes-AEO user should determine the suitability for its intended use.

SINGA uPVC Pipes offer the following features that make them versatile in their field of applications

EASY OF LAYING

uPVC Pipes being lightweight facilitate ease in handling. This make transporting and unloading easier and thus minimize operating costs.

CORROSION- RESISTANT

Singa's uPVC Piping provides an effective corrosion resistant system that has absolute resistance against electrolytic corrosion and bacterial / fungal attack caused by domestic waste and other chemicals encountered on trade waste applications.

SOLVENT WELD JOINING

Components of the uPVC Soil, Waste & Vent System, Portable Water & Cold Water Services are readily joined by solvent welding. This provides the versatility in jointing and minimizing the obstructions of flow.

PERFORMANCE EFFICIENCY

Singa Plastics uPVC Piping System have been widely known among professionals and has proven its suitability and efficiency in performance.

INCREASED HYDRAULIC CAPACITY

The smooth bore provides greater hydraulic capacity and minimizes deposit build-up or roughening of the pipe walls.

The comprehensive range of Singa uPVC Piping Systems are regularly tested to ensure that products manufactured conform to the required specifications.

SS213 / SS272
Pipes & fittings are regularly tested under the Product Listing Scheme (PLS) by PSB.

RECOMMENDED JOINTING TECHNIQUES

Cleaning fluid

To clean all PVC pipe before using solvent weld cement.

Solvent weld cement

To apply all jointing parts with solvent cement

Lubricant

To lubricate pipe and seal ring joints. (For SS272 Underground pipes and fittings)

Cutting pipe

Use a fine tooth hand saw. All pipe must be cut square, To obtain a square guide line wrap a newspaper around pipe.

Alignment

Make marking on the pipe & fitting for alignment as necessary.

Chamfering pipe

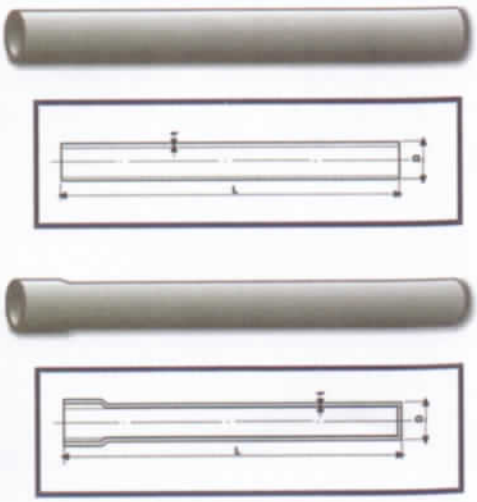
Use a medium file or rasp to remove swarf. End of pipe must be chamfered when used in seal ring or expansion sockets.

Solvent welded joints to uPVC soil and uPVC waste

All solvent cement must be used strictly in accordance with the instruction on the can labels as follows:
Do not dilute under any circumstances. Cut pipe square. Remove burrs. Clean all contact area. Thoroughly coat contacting surfaces with solvent weld cement, using a clean brush. Assemble joint immediately. Remove excess cement. Initial set 3-4 minutes. Final set 12 hours, then test as required.

CAUTION: Do not smoke. Do not inhale. Avoid direct skin contact. Ensure free ventilation. Petroleum mixture. Heavy flammable vapour. Replace cap immediately.

Drawing & Picture of pipe with SocketEnd and pipe without Socket End.



SINGA PLASTICS LIMITED

Singa Plastics, established in 1966, is one of the pioneers of Singapore's Plastics Industry. A member of a large group of plastics and related industries in the ASEAN region. Singa Plastics is a leading manufacturer of uPVC pipes and fittings, plastic industrial storage & packaging containers, household wares, custom mouldings, hospitality products, tooling & mouldmaking services.

Through the high level of consistency maintained in the standard and quality of its products and services over the years, the Company has acquired a favourable niche for itself in the local as well as regional Construction Industry. Today, we are a certified **ISO 9001** company.

To effectively meet up with the highly competitive demands of the industry, the Company is constantly researching and developing plastic pipes and fittings system to meet the ever-changing and diversified needs of its local and overseas markets. Moreover, all the products manufactured by the Company conform to the standards set by the Productivity and Standards Board (PSB) of Singapore formerly known as SISIR.

OUR FACILITIES


Extrusion Area


Laboratory


Hydrostatic Testing Machine


Storage Area


Manufactured Pipes


Organised Storage Area

TOTAL CUSTOMER SATISFACTION
In our quality through
continuous Improvement

ISO 9001 CERTIFIED

CERTIFICATION INTERNATIONAL 063 UKAS

The owner reserves the right to amend or make changes to what is described without prior notice. Features and specifications are subject to change. The owner makes no warranty expressed in this document.

Updated August 2014

新雅塑膠有限公司
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Food Safety System Certification 22000

TEST REPORT (IN-HOUSE)

Our Ref. : SPL/QC2/IHTR/21-130

Method Of Test

JIS K6741:2016 -Unplasticized poly (vinyl chloride) (PVC-U) pipes

1. Dimensional Measurement
2. Tensile Strength Test
3. Flattening Test
4. Vicat Softening Temperature Test
5. Pressure Resistance Test

Description Of Sample

Nominal Size	: Class VU 40mm (AE 1-1/2")
Colour Of Pipe	: Grey
Date Of Test	: 15/03/21

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Our Ref. : SPL/QC2/IHTR/21-130

1) DIMENSIONAL MEASUREMENT			1.	2.	3.	Requirements
Mean Outside Diameter	(mm)		48.0	48.0	48.0	Min. 47.8 Max. 48.2
Outside Diameter Inclusive Ovality	(mm)	Min.	47.9	47.9	47.9	Min.47.7
		Max.	48.1	48.1	48.1	Max.48.3
Wall Thickness	(mm)	Min.	1.88	1.89	1.92	Min. 1.8
		Max.	2.12	2.11	2.09	Max. 2.2

2) TENSILE STRENGTH TEST			Requirements
Mean Tensile Strength	(MPa)	**52.08**	Min. 45MPa

3) FLATTENING TEST		Requirements
Result Of Test	**PASSED**	Free from fissure and other defects

4) VICAT SOFTENING TEMPERATURE TEST			Requirements
Result Of Test	(°C)	**84**	Min. 76

5) PRESSURE RESISTANCE TEST			Requirements
Hydrostatic Test Pressure	(MPa)	**1.5**	1.5(+5,-0)%
Result Of Test		**PASSED**	Free from leakage and other defects

Inspected By : SINGA PLASTICS LTD. QC 1 DIV. 2

Approved By : SINGA PLASTICS LTD. QC DEPT. HEAD DIV 2

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Food Safety System Certification 22000

TEST REPORT (In-House)

Our Ref. : SPL/QC2/IHTR/21-110

Test Method	:	**RWDP (In-house Standard)**
Sample Reference	:	**16mm (AEO 1/2")**
Colour	:	**Grey**
Inspection Date	:	**15/02/21**

1) DIMENSIONAL MEASUREMENT			1.	2.	3.	Requirements
Mean Outside Diameter	(mm)		21.9	21.9	21.9	Min. 21.8 Max. 22.2
Outside Diameter Inclusive Ovality	(mm)	Min.	21.8	21.8	21.8	Min. 21.8
		Max.	22.0	22.0	22.0	Max. 22.2
Wall Thickness	(mm)	Min.	1.80	1.73	1.74	Min. 1.6
		Max.	1.96	1.90	1.92	Max. 2.0

2) VICAT SOFTENING TEMPERATURE TEST			Requirements
Result Of Test	(°C)	**84**	Min. 76

Inspected By : SINGA PLASTICS LTD. QC 1 DIV. 2

Approved By : SINGA PLASTICS LTD. QC DEPT. HEAD DIV 2

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Food Safety System Certification 22000

TEST REPORT (In-House)

Our Ref. : SPL/QC2/IHTR/21-111

Test Method	:	**RWDP (In-house Standard)**
Sample Reference	:	**20mm (AEO 3/4")**
Colour	:	**Grey**
Inspection Date	:	**19/01/21**

1) DIMENSIONAL MEASUREMENT			1.	2.	3.	Requirements
Mean Outside Diameter	(mm)		26.1	26.1	26.1	Min. 25.8 Max. 26.2
Outside Diameter Inclusive Ovality	(mm)	Min.	26.0	26.0	26.0	Min. 25.8
		Max.	26.2	26.2	26.2	Max. 26.2
Wall Thickness	(mm)	Min.	1.75	1.70	1.72	Min. 1.6
		Max.	1.94	1.90	1.91	Max. 2.0

2) VICAT SOFTENING TEMPERATURE TEST			Requirements
Result Of Test	(°C)	**84**	Min. 76

Inspected By : SINGA PLASTICS LTD. QC 1 DiV. 2

Approved By : SINGA PLASTICS LTD. QC DEPT. HEAD DIV 2

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Food Safety System Certification 22000

TEST REPORT (In-House)

Our Ref. : SPL/QC2/IHTR/21-112

Test Method	:	**RWDP (In-house Standard)**
Sample Reference	:	**25mm (AEO 1")**
Colour	:	**Grey**
Inspection Date	:	**25/01/21**

1) DIMENSIONAL MEASUREMENT			1.	2.	3.	Requirements
Mean Outside Diameter	(mm)		31.9	31.9	31.9	Min. 31.8 Max. 32.2
Outside Diameter Inclusive Ovality	(mm)	Min.	31.8	31.8	31.8	Min. 31.8
		Max.	32.0	32.0	32.0	Max. 32.2
Wall Thickness	(mm)	Min.	1.68	1.71	1.73	Min. 1.6
		Max.	1.86	1.89	1.90	Max. 2.0

2) VICAT SOFTENING TEMPERATURE TEST			Requirements
Result Of Test	(°C)	**84**	Min. 76

Inspected By : SINGA PLASTICS LTD. QC 1 DIV. 2

Approved By : SINGA PLASTICS LTD. QC DEPT. HEAD DIV 2

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Food Safety System Certification 22000

TEST REPORT (In-House)

Our Ref. : SPL/QC2/IHTR/21-113

Test Method	:	**RWDP (In-house Standard)**
Sample Reference	:	**38mm (AEO 1-1/4")**
Colour	:	**Grey**
Inspection Date	:	**09/03/21**

1) DIMENSIONAL MEASUREMENT			1.	2.	3.	Requirements
Mean Outside Diameter	(mm)		38.0	38.0	38.0	Min. 37.8 Max. 38.2
Outside Diameter Inclusive Ovality	(mm)	Min.	37.9	37.9	37.9	Min. 37.7
		Max.	38.1	38.1	38.1	Max. 38.3
Wall Thickness	(mm)	Min.	1.92	1.95	1.89	Min. 1.8
		Max.	2.04	2.15	2.09	Max. 2.2

2) VICAT SOFTENING TEMPERATURE TEST			Requirements
Result Of Test	(°C)	**84**	Min. 76

Inspected By : SINGA PLASTICS LTD QC 1 DiV. 2

Approved By : SINGA PLASTICS LTD QC DEPT. HEAD DIV 2