HI High-Impact PVC-U Pipes and Fittings

NAN YA PLASTICS CORPORATION

Characteristies and application

Specification

Installation

Fitting Specification

Vinyl Adhesive

Certification

Nan Ya plastic PVC-U pipe and fitting, highly recognized internationally, are renowned for its super quality and complete specifications and have also won the honor of "CNS mark" firstly awarded by Bureau of Standards, metrology & inspection, M.O.E.A., Taiwan.

With large-scale equipment for manufacturing plastic pipes and fittings, we are more actively playing a role in promoting our products around the world. In addition, we will continue to expand our equipments and expect the massive production capacity, on time delivery, excellent quality and good service can be fully optimized.

1 Characteristics of HI high impact PVC-U Pipes and Fittings

Characteristics of HI high impact PVC-U Pipes and Fittings

1.Superb impact resistance, good flexibility, and excellent earthquake resistance (Up to a magnitude of 8 on the Richter scale through experiment)
2.It is light and the features of easy moving, loading and constructing save much labor force.
3.Suitable mountain and chilled water piping (0℃ ↑) with excellent impact resistance in low-temperature resistance
4.Applicable to various piping projects with excellent hydraulic and external pressure resistance.
5.No effect on water quality.

認證報告

南亞塑膠工業股份有限公司所生產之「耐衝擊管」經國立雲林科技大學化學工程與材料工程系先進材料實驗室以高溫加速老化方法測試，判斷南亞耐衝擊管耐用年限為 67 年。

中華民國 110 年 2 月 18 日

國立雲林科技大學

計畫主持人：

中心主任：

本報告僅供本次委託試驗提供證明，不作法律訴訟之用

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中華民國一零五年十二月五日

國立雲林科技大學

計畫主持人：

計畫共同主持人：

YunTech

1 Characteristics of HI high impact PVC-U Pipes and Fittings

Applications fo HI high impact PVC-U Pipe and Fitting

1. Tap water piping projects
2. Transportation of chilled water for air conditioning system
3. Chilled water piping
4. Tap water piping for architecture and column piping
5. Tap water piping in mountain area
6. Sprinkle and irrigation piping
7. Water pipe and electrical conduit used for seismic zone or high-pressure area (road)
8. Dynamic flow sewage piping


Tap water piping projects


Tap water piping for architecture and column piping


Water pipe and electrical conduit used for seismic zone or high-pressure area (road)


Transportation of chilled water for air conditioning system


Tap water piping in mountain area


Dynamic flow sewage piping


Chilled water piping


Sprinkle and irrigation piping

2 Chemical and Physical Properties of HI high impact PVC-U Pipe and Fitting

HI High Impact PVC-U Pipe

Test Items		Test Value	Test Standard
Tensile Strength Test		40 MPa↑(23℃)	CNS 14345 K3114
Water pressure resistance of PVC-U pipe		Non-broken	
[(a)]Water pressure resistance of joints		No Leakage	
Flattening Test		Non-broken	
Impact Test		Charpy 10kJ/m^2↑(0℃)	
Impact Test		Normal	
Weather Resistance		14kJ/m^2↑(23℃)	
Vicat Softening Temperature Test		76℃↑	
Material's VCM Content		1.0ppm↓	
Extraction Test	[(b)]Turbidity	0.2 NTU↓	
	Colourness	0.5度/degree↓	
	TOC	1.0ppm↓	
	Pb	0.005ppm↓	
	Zn	0.5ppm↓	
	Loss of Residual Chlorine	0.7ppm↓	
	Odor and Taste	Not Detectable	
	VCM	0.0015ppm↓	
Immersion Test	Distilled Water	±0.2mg/cm^2	
	10% Sodium Chloride Solution		
	30% Solfuric Acid Solution		
	40% Sodium Hydroxide Solution		
	40% Nitric Acid Solution		
(23℃) Specific Gravity		1.35~1.40	

Note: (a)The water pressure resistance of the joint is applicable to the tubes with loose bushes (VP) and adhesive sockets (VP and VU). This type of pipe should proceed the hydrostatic test of the joint.
(b) In Accordance with the turbidity method. (Unit: NTU)

Hydrostatic Test of HI High Impact PVC-U Pipe

Nominal Pipe Size		16	20	25	30	40	50	65	80	100	125	150	200	250	300	350	400
Test Pressure (MPa)	Drinking Water	4.0															
	General Use	2.5															
Working pressure at 20℃	Drinking Water	0.75↓															
	General Use	0.75↓															

Note: 1. After the hydrostatic test, water pressure of the joint (including loose pipe and adhesive pipe) is: 3.5MPa for tap water pipe and 2.5MPa for general pipe.
2. Pressure conversion: 1MPa = 10.2 kgf / cm^2

2 Chemical and Physical Properties of HI high impact PVC-U Pipe and Fitting

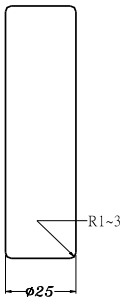
Falling Height and Weight Impact Test.

Nominal Pipe Size (mm)	16	20	25	30	40	50	65	80	100	125	150	200	250	300	350	400
Fall height (cm)	125	150	200	100	150	200	75	100	150	175	200	225	275	325	–	–
Shape	Flat Cylinder						Cone									
Falling weight				3±0.05			9±0.05									

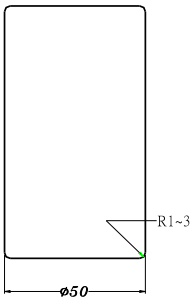
Note: The drop height of the weight (Nominal pipe size: 350 & 400) shall be agreed by mutual parties.

The form and weight of falling weight in impact test.

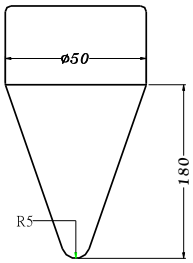
1kg Cylindrical Drop Hammer for Nominal Pipe Size 13~25



3kg Cylindrical Drop Hammer for Nominal Pipe Size 30~50



9kg Cylindrical Drop Hammer for Nominal Pipe Size 65~400



2 Chemical and Physical Properties of HI high impact PVC-U Pipe and Fitting

HI High Impact PVC-U Fitting (Water Supply)

Test Items		Test Value	Test standard
Tensile Strength Test		49MPa [500kgf/cm^2] ↑ (15℃)	CNS 15010 K3126
Hydraulic pressure		3.5MPa[35.7kgf/cm^2]	
Charpy Impact Test	Before Weathering	10kJ/m^2 ↑ (0℃)	
	After Weathering	14kJ/m^2 ↑ (23℃)	
Drop Weight Impact Test		Normal	
(Vicat) Vicat Softening temperature		72℃ ↑	
Material's VCM content		1.0 mg/L ↓	
Extraction Test	Turbidity	0.2 degree ↓	
	Colourness	0.5 degree ↓	
	$KMnO_4$ Consumption	1.5 mg/L ↓	
	Pb	0.005mg/L ↓	
	Zn	0.1 mg/L ↓	
	Loss of Residual Solution	0.7 mg/L ↓	
	Odor and Taste	Not Detectable	
	VCM	0.0015 mg/L ↓	
Immersion Test	Distilled Water	±0.20mg/cm^2	
	10% Sodium Chloride Solution		
	30% Sulfuric Acid Solution		
	40% Sodium Hydroxide Solution		
	40% Nitric Acid Solution		

2 Chemical and Physical Properties of HI high impact PVC-U Pipe and Fitting

Chemical Properties

Followings are terms of chemical resistance:

⊙ : Superb resistance; usable without chemical reaction
◯ : Usable with care.
× : Unusable.

CHEMICAL	23℃	60℃	CHEMICAL	23℃	60℃
Acetaldehyde	×	×	Barium salts	⊙	⊙
Acetaldehyde, aq 40%	◯	×	Beer	⊙	⊙
Acetamide	–	–	Beet sugar liquor	⊙	⊙
Acetic acid, vapor	⊙	⊙	Benzaldehyde, 10%	⊙	×
Acetic acid, glacial	⊙	×	Benzaldehyde, above 10%	×	×
Acetic acid, 20%	⊙	⊙	Benzene(benzol)	×	×
Acetic acid, 80%	⊙	◯	Benzene sulfonic acid, 10%	⊙	⊙
Acetic anhydride	×	×	Benzene sulfonic acid	×	×
Acetone	×	×	Benzoic acid	⊙	⊙
Acetylene	◯	◯	Black liquor-paper	⊙	⊙
Adipic acid	⊙	⊙	Bleach, 12.5% active chlorine	⊙	⊙
Alcool,allyl	⊙	◯	Bleach, 5.5% active chloride	⊙	⊙
Alcohol, butyl benzyl	×	×	Borax	⊙	⊙
Alcohol, butyl (n-butanol)	⊙	⊙	Boric acid	⊙	⊙
Alcohol, butyl (2-butanol)	⊙	×	Boron trifluoride	⊙	⊙
Alcohol, ethyl	⊙	⊙	Bromic acid	⊙	⊙
Alcohol, hexyl	⊙	⊙	Bromine ,liquid	×	×
Alcohol, isopropyl (2-propanol)	⊙	⊙	Bromine, gas, 25%	⊙	⊙
Alcohol, methyl	⊙	⊙	Bromine, aq	⊙	⊙
Alcohol, propyl (1-propanol)	⊙	⊙	Butadine	⊙	⊙
Allyl chloride	×	×	Butane	⊙	⊙
Alums	⊙	⊙	Butantetrol(erythritol)	⊙	×
Ammonia, gas	⊙	⊙	Butanediol	⊙	⊙
Ammonia, liquid	×	×	Butyl acetate	×	×
Ammonia, aq	⊙	⊙	Butyl phenol	⊙	×
Ammonium salts, except fluoride	⊙	⊙	Butylene	⊙	⊙
Ammonium fluoride, 25%	⊙	◯	Butyric acid	⊙	×
Amylacetate	×	×	Calcium Salts aq	⊙	⊙
Aniline	×	×	Calcium hypochlorite	⊙	⊙
Aniline chlorohydrate	×	×	Calcium hydroxide	⊙	⊙
Aniline hydrochloride	×	×	Cane sugar liquors	⊙	⊙
Aniline dyes	×	×	Carbon bisulfide	×	×
Anthraquinone	⊙	⊙	Carbon dioxide	⊙	⊙
Anthraquinone sulfonic acid	⊙	⊙	Carbon dioxide, aq	⊙	⊙
Antimony trichloride	⊙	⊙	Carbon monoxide	⊙	⊙
Aqua regia	◯	×	Carbon terachloride	⊙	×
Arsenic acid, 80%	⊙	⊙	Casein	⊙	⊙
Aryl-sulfonic acid	⊙	⊙	Castor oil	⊙	⊙

2 Chemical and Physical Properties of HI high impact PVC-U Pipe and Fitting

CHEMICAL	23℃	60℃	CHEMICAL	23℃	60℃
Caustic potash	⊙	⊙	Dibutyl phthalate	×	×
(potassium hydroxide)			Dibutyl sebacate	○	×
Caustic Soda	⊙	⊙	Dichlorobenzene	×	×
(sodium hydroxide)			Dichloroethylene	×	×
Cellosolve	⊙	○	Ethers	×	×
Cellosolve acetate	⊙	–	Ethyl esters	×	×
Chloral hydrate	⊙	⊙	Ethyl esters	×	×
Chloramine	⊙	–	Ethylene halides	×	×
Chloric acid, 20%	⊙	⊙	Ethylene glycol	⊙	⊙
Chlorine, gas ,dry	○	×	Ethylene oxide	×	×
Chlorine, gas ,wet	×	×	Fatty acids	⊙	⊙
Chlorine, liquid	×	×	Ferric salts	⊙	⊙
Chlorine water	⊙	⊙	Fluorine, dry gas	○	×
Chloracetic acid	⊙	⊙	Fluorine, wet gas	○	×
Chlorobenzene	×	×	Fluoboric acid, 25%	⊙	⊙
Chlorbenzyl chloride	×	×	Fluosilicic acid	⊙	⊙
Chloroform	×	×	Formaldehyde	⊙	⊙
Chlorosulfonic acid	⊙	×	Formic acid	⊙	×
Chromic acid, 10%	⊙	⊙	F11, F12, F113, F114 Freon-F11, F12, F113, F114	⊙	⊙
Chromic acid, 30%	⊙	○	F21, F22 Freon-F21, F22	×	×
Chromic acid, 40%	⊙	○	Fruit juices and pulps	⊙	⊙
Chromic acid, 50%	×	×	Fuil oil	○	×
Citric acid, 20%	⊙	⊙	Furfural	×	×
Coconut oil	⊙	⊙	Gas, coal, manufactured	×	×
Coke oven gas	⊙	⊙	Gas, natural, methane	⊙	⊙
Copper salts,aq	⊙	⊙	Gasolines	○	○
Corn oil	⊙	⊙	Gelatin	⊙	⊙
Corn syrup	⊙	⊙	Glycerine (Glycerol)	⊙	⊙
Cottonseed oil	⊙	⊙	Gglycols	⊙	⊙
Cresol	×	×	Glue, animal	⊙	⊙
Cresylic acid, 50%	⊙	⊙	HOCH2COOH Glycolic acid	⊙	⊙
Croton aldehyde	×	×	Green liquor, paper	⊙	⊙
Crude oil	⊙	⊙	Gallic acid	⊙	⊙
Cyclohexane	×	×	Heptane	⊙	⊙
Cyclohexanol	×	×	Hexane	⊙	○
Cycohexanone	×	×	Hydrobromic acid, 20%	⊙	⊙
Diazo salts	⊙	⊙	Hydrochloric acid	⊙	⊙
Diesel fuels	⊙	⊙	Hydrobromic acid, 10%	⊙	○
Diethyl amine	×	×	Hydrobromic acid, 60%	⊙	○
Dioctyl phthalate	×	×	Hydrobromic acid, 100%	⊙	○
Disodium phosphate	⊙	⊙	Hydrocyanic acid	⊙	⊙
Diglycolic acid	⊙	⊙	Hydrogen	⊙	⊙
Dioxane-1.4	×	×	Hydrogen peroxide, 50%	⊙	⊙
Dimethylamine	⊙	⊙	Hydrogen peroxide, 90%	⊙	⊙
Dimethyl formamide	×	×	Hydrogen sulfide, aq	⊙	⊙
Detergents, aq	⊙	⊙			

2 Chemical and Physical Properties of HI high impact PVC-U Pipe and Fitting

CHEMICAL	23℃	60℃	CHEMICAL	23℃	60℃
Hydrogen sulfide, dry	⊙	⊙	Methyl sulfonic acid	⊙	⊙
Hydroquinone	⊙	⊙	Methylene bromide	×	×
Hydroxylamine sulfate	⊙	⊙	Methylene chloride	×	×
Hydrazine	×	×	Methylene iodine	×	×
Hypochlorous acid	⊙	⊙	Milk	⊙	⊙
Iodine, in KI, 3%,aq	○	×	Mineral oil	⊙	⊙
Iodine, alc	×	×	Mixed acids (sulfuric & nitric)	○	×
Iodine, aq, 10%	×	×	Mixed acids (sulfuric & phosphoric)	⊙	⊙
Jet fuels, JP-4 and JP-5	⊙	⊙	Malasses	×	×
Kerosene	⊙	⊙	Monochlorobenzene	×	×
Ketones	×	×	Monoethanolamine	×	×
Kraft paper liquor	⊙	⊙	Motor oil	⊙	⊙
Lacquer thinners	○	×	Nophtha	⊙	⊙
Lactic acid, 25%	⊙	⊙	Naphthalene	×	×
Lard oil	⊙	⊙	Nickel salts	⊙	⊙
Lauric acid	⊙	⊙	Nicotine	⊙	⊙
Lauryl chloride	⊙	⊙	Nicotinic acid	⊙	⊙
Lauryl sulfate	⊙	⊙	Nitric acid, 0 tp 50%	⊙	○
Lead salts	⊙	⊙	Nitric acid,60%	⊙	○
Lime sulfur	⊙	⊙	Nitric acid,70%	⊙	○
Linoleic acid	⊙	⊙	Nitric acid,80%	○	○
Linseed oil	⊙	⊙	Nitric acid,90%	○	×
Liqueurs	⊙	⊙	Nitric acid,100%	×	×
Liqueurs	⊙	⊙	Nitric acid , fuming	×	×
Llthium salts	⊙	⊙	Nitrobenzene	×	×
Lubricating oils	⊙	⊙	Nitroglycerine	×	×
Machine Oil	⊙	⊙	Nitrous acid	⊙	○
Magnesium salts	⊙	⊙	Nitrous oxide, gas	⊙	○
Maleic acid	⊙	⊙	Nitroglycol	×	×
Malic acid	⊙	⊙	Nitropropane	○	○
Manganese sulfate	⊙	⊙	Oils, vegetable	⊙	⊙
Mercuric salts	⊙	⊙	Oils abd fats	⊙	⊙
Mercury	⊙	⊙	Oleic acid	⊙	⊙
Mesityl oxide	×	×	Oleum	×	×
Metallic soaps, aq	⊙	⊙	Olive oil	○	–
Methane	⊙	⊙	Oxalic acid	⊙	⊙
Methyl acetate	×	×	Oxygen, gas	⊙	⊙
Methyl bromide	×	×	Ozone, gas	⊙	○
Methyl cellosolve	×	×	Palmitic acid, 10%	⊙	⊙
Methyl chloride	×	×	Palmitic acid, 70%	⊙	×
Methyl chloroform	×	×	Paraffin	⊙	⊙
Methyl cyclohexanone	×	×	Pentane	○	○
Methyl methacrylate	⊙	–	Peracetic acid, 40%	⊙	×
Methyl salicylate	⊙	⊙	Peracetic acid, 10%	⊙	○
Methyl sulfate	⊙	○	Peracetic acid, 70%	⊙	×

2 Chemical and Physical Properties of HI high impact PVC-U Pipe and Fitting

CHEMICAL	23℃	60℃	CHEMICAL	23℃	60℃
Perchloroethlene	○	○	Sulfite liquor	⊙	⊙
Petroleum, sour	⊙	⊙	Sulfur	⊙	⊙
Phenol	○	×	Sugars, aq	⊙	⊙
Phenylcarbinol	×	×	Sulfur dioxide, aq	⊙	⊙
Phenylhydrazine	×	×	Sulfur dioxide, wet	⊙	○
HCI Phenylhydrazine HCI	○	×	Sulfur dioxide, aq	⊙	⊙
Phosgene, liquid, gas	⊙	○	Sulfur dioxide, wet	⊙	○
Phosgene, liquid	×	×	Sulfuric acid, up to 70%	⊙	⊙
Phosphorus,acid	⊙	⊙	Sulfuric acid, 70 to 90%	⊙	○
Phohosphorus, yellow	⊙	○	Sulfuric acid, 90 to 100%	○	×
Phosphorus, red	⊙	⊙	Sulfurous acid	○	×
Phosphorus pentoxide	⊙	○	Tall oil	⊙	⊙
Phosphorus trichloride	×	×	Tannic acid	⊙	⊙
Photographic chemicals ,aq	⊙	⊙	Tanning liquors	⊙	⊙
Phthalic acid	○	○	Tartaric acid	⊙	⊙
Picric acid	×	×	Tetrachloroethane	○	○
Plating solutions, metal	⊙	○	Tetraethyl lead	⊙	○
Potassium salts, aq	⊙	⊙	Tetrahydrofuran	×	×
Potassium permanganate, 25%	○	○	($SOCl_2$) Thionyl chloride	×	×
Potassium alkyl xanthates	⊙	×	Thread cutting oils	⊙	–
Propane	⊙	⊙	Terpineol	○	○
Propylene dichloride	×	×	Titanium tetrachioride	○	×
Propylene glycol	⊙	⊙	Toluene	×	×
Propylene oxide	×	×	Tributyl phosphate	×	×
Pyridine	×	×	Tributyl citrate	⊙	–
Pyrogallic acid	○	○	Tricresyl phosphate	×	×
Rayon coagulation bath	⊙	⊙	Trichloroacetic acid	⊙	⊙
Sea water	⊙	⊙	Trichloroethylene	×	×
Salicylic acid	⊙	⊙	Triethanolamine	⊙	○
Salicylaldehyde	○	○	Triethylamine	⊙	⊙
Selenic acid	⊙	⊙	Turpentine	⊙	⊙
Sewage, residential	⊙	⊙	Urea	⊙	⊙
Silicic acid	⊙	⊙	Urine	⊙	⊙
Silicone oil	⊙	×	Vaseline	×	×
Silver salts	⊙	⊙	Vegetable oils	⊙	⊙
Soaps	⊙	⊙	Vinegar	⊙	⊙
Sodium salts, aq, except	⊙	⊙	Vinyl acetate	×	×
Sodium chlorite	⊙	⊙	Water, distilled	⊙	⊙
Sodium chlorate	⊙	○	Water, fresh	⊙	⊙
Sodium dichromate, acid	⊙	⊙	Water, mine	⊙	⊙
Sodium perborate	⊙	⊙	Water, salt	⊙	⊙
Stannic chloride	⊙	⊙	Water, tap	⊙	⊙
Stannous chloride	⊙	⊙	Whiskey	⊙	⊙
Starch	⊙	⊙	Wines	⊙	⊙
Stearic acid	⊙	⊙	Xylene	×	×
Stoddard solvent	×	×	Zinc salts	⊙	⊙

Information about chemical resistance is for reference only

3 Specification of HI high impact PVC-U Pipe

(一) PVC-U Pipe for High-Impact Use (CNS 14345)

單位 Unit : mm

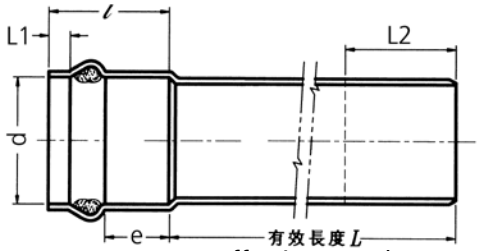
Nominal Pipe Size		Outside Diameter			Wall Thickness		Approx. Inside Diameter	Approx. Weight (kg/m)
		Reference Diameter	Tolerance of max. and min outside diameter[a]	Tolerance of mean outside diameter[b]	Minimum	Tolerance		
16	½"	22	± 0.2	± 0.2	2.7	+ 0.6	16	0.251
20	¾"	26					20	0.304
25	1"W	32			3.2		25	0.439
30	1¼"W	38	± 0.3				31	0.531
40	1½"	48			3.7		40	0.774
50	2"	60	± 0.4		4.1	+ 0.8	51	1.099
65	2½"	76	± 0.5				67	1.415
80	3"	89			5.5		77	2.156
100	4"	114	± 0.6		6.6	+ 1.0	100	3.338
125	5"	140	± 0.8	± 0.3	7.5	+ 1.2	124	4.699
150	6"	165	± 1.0		9.0		146	6.562
200	8"	216	± 1.3	± 0.7	10.5	+ 1.4	194	10.089
250	10"	267	± 1.6	± 0.9	13.0	+ 1.8	239	15.473
300	12"	318	± 1.9	± 1.0	15.5	+ 2.2	285	22.005
350	14"	370	± 2.2	± 1.2	18.0	+ 2.6	332	29.770
400	16"	420	± 2.6	± 1.3	20.5	+ 3.0	376	38.511

NOTE：

1. [a]The tolerance of maximum and minimum diameter means the difference between the measured maximum and minimum values of outside diameter in a randomly picked cross-section (maximum and minimum diameter) and the reference dimension.
2. The pipe sizes and specification of ring-seal type for High-Impact are same with the ring-seal type for Drinking water's.
3. PVC-U pipe for High-Impact is dark black-blue color.
4. The other colors could be produced by deal with customers.
5. Pipe length can be determined by the buyer and seller agreement.

3 Specification of HI high impact PVC-U Pipe

(二) RIng-Seal Type for Water Supply



Effective Length L

單位 Unit : mm

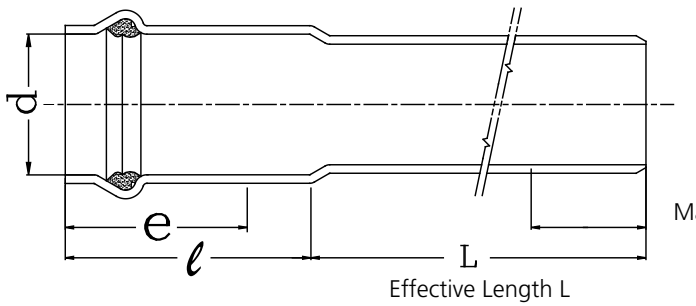
Nominal Pipe Size		(d) (min) Mean Inside Diameter	(e) (min) Insert Effective Length	(ℓ) (min) Sooket Length	L 2 Insert Length of Male Adapter	L Effective Length
40	1½"	48.3	57	110	50～55	4m
50	2"	60.3	58	115	60～65	4m～7m
65	2½"	76.4	60	125	70～75	4m～7m
80	3"	89.5	61	130	80～85	4m～7m
100	4"	114.5	64	145	90～100	5m～7m
125	5"	140.6	67	150	105～115	5m～7m
150	6"	165.7	70	165	120～130	6m～7m
200	8"	216.9	76	190	170～180	6m～7m
250	10"	268.1	82	210	200～210	6m～7m
300	12"	319.3	88	235	245～260	6m～7m
350	14"	371.5	89	245	285～300	6m～7m
400	16"	421.7	91	265	315～330	6m～7m
450	18"	471.9	94	290	345～360	6m～7m
500	20"	522.1	96	305	385～400	6m～7m
600	24"	633.8	102	355	460～475	6m～7m

NOTE：

1. Above 200mm(8") is the ring-seal type for drinking water, and its thickness of socket must be thicker than thickness of PVC-U pipe.
2. Pipe length can be determined by the buyer and seller agreement.

3 Specification of HI high impact PVC-U Pipe

(三) Ring-Seal Type A for Drinking Water Supply



d：Inside Diameter
e：Insert Length
ℓ ：Socket Length

Male Side Insert Length

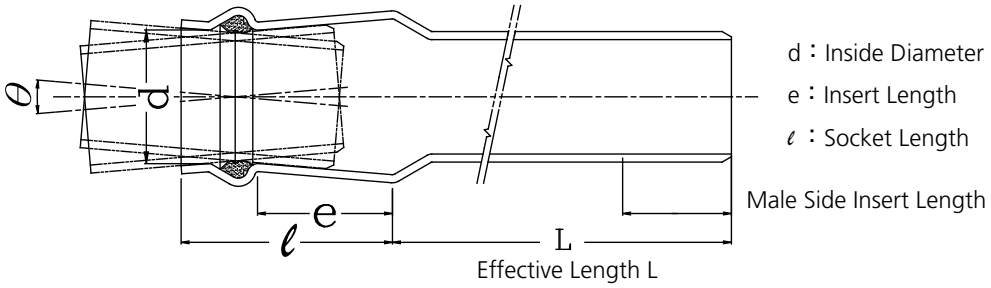
Unit : mm

Nominal Pipe Size		(d) (min) Mean Inside Diameter	(e) (min) Insert Effective Length	(ℓ) (min) Sooket Length	Wall Thickness of Socket		L Effective Length
					Minimum	Tolerance	
40	1½"	48.2	151	215	3.6	+0.8	4m
50	2"	60.3	156	220	4.1		4m~7m
65	2½"	76.5	156	220			4m~7m
80	3"	89.5	166	220	5.5		4m~7m
100	4"	114.6	179	235	6.6	+1.0	5m~7m
125	5"	140.6	191	245	7.5	+1.2	5m~7m
150	6"	165.8	201	250	9.0		6m,7m
200	8"	217.0	222	270	10.5	+1.4	6m,7m
250	10"	268.1	248	290	13.0	+1.8	6m,7m
300	12"	319.4	272	310	15.5	+2.2	6m,7m
350	14"	371.5	89	245	18.0	+2.6	6m~7m
400	16"	421.7	91	265	20.5	+3.0	6m~7m
450	18"	471.9	94	290	22.9	+3.4	6m~7m
500	20"	522.1	96	305	25.3	+3.8	6m~7m
600	24"	633.8	102	355	30.7	+4.0	6m~7m

NOTE：
Pipe length can be determined by the buyer and seller agreement.

3 Specification of HI high impact PVC-U Pipe

(四) Ring-Seal Type B for Water Supply



單位 Unit : mm

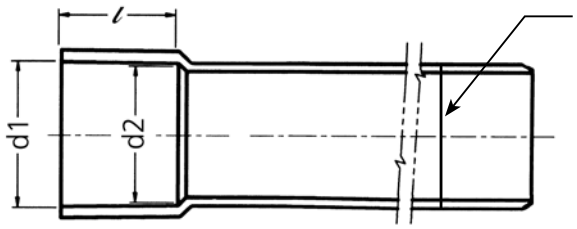
Nominal Pipe Size		(d) (min) Mean Inside Diameter	(e) (min) Insert Effective Length	(ℓ) (min) Sooket Length	Wall Thickness of Socket		L Effective Length
					Minimum	Tolerance	
40	1½"	48.3	44	105	3.6	+0.8	4m
50	2"	60.3	50	125	4.1		4m~7m
65	2½"	76.4	55	135			4m~7m
80	3"	89.5	60	145	5.5		4m~7m
100	4"	114.5	80	160	6.6	+1.0	5m~7m
125	5"	140.6	90	175	7.5	+1.2	5m~7m
150	6"	165.7	100	200	9.0		6m,7m
200	8"	216.9	115	235	10.5	+1.4	6m,7m
250	10"	268.1	145	280	13.0	+1.8	6m,7m
300	12"	319.3	170	320	15.5	+2.2	6m,7m
350	14"	371.5	200	355	18	+2.6	6m,7m
400	16"	421.7	230	380	20.5	+3.0	6m,7m

NOTE：

1. Ring-Seal Type B joint together, the deflection θ : Between ± 5°
2. Pipe length can be determined by the buyer and seller agreement.

3 Specification of HI high impact PVC-U Pipe

(五) Pipe With Solvent Cement Socket (Single Socket)



單位 Unit : mm

Nominal Pipe Size		Average inner diameter		(ℓ) (min)
		d1	d2	
16	½"	22.40±0.20	21.52±0.20	30
20	¾"	26.45±0.20	25.42±0.20	35
25	1"W	32.55±0.25	31.37±0.25	40
30	1¼"W	38.60±0.25	37.31±0.25	44
40	1½"	48.70±0.30	47.21±0.30	55
50	2"	60.80±0.30	59.10±0.30	63
65	2½"	76.80±0.30	75.12±0.30	64
80	3"	89.60±0.30	88.30±0.30	64
100	4"	114.70±0.30	113.20±0.30	84
125	5"	140.90±0.40	139.10±0.40	104
150	6"	166.00±0.50	163.90±0.50	132
200	8"	217.90±0.80	213.90±0.80	200
250	10"	269.30±0.90	264.30±0.90	250
300	12"	320.70±1.00	314.70±1.00	300
350	14"	373.10±1.00	366.10±1.00	350
400	16"	423.60±1.20	415.60±1.20	400
450	18"	474.00±1.20	465.00±1.20	450
500	20"	524.50±1.30	514.50±1.30	500
600	24"	635.30±2.10	623.30±2.10	600
*700	*28"	738.10±2.40	724.10±2.40	700

NOTE：

1. Pipe length can be determined by the buyer and seller agreement.
2. At the time of delivery, the male pipe end of each T.S. single-socket pipe has a drawing length reference line, which is mainly used for reference when the pipe and the pipe are joined. If the T.S. single-socket pipe is used for jointing with the fitting, the reference line will exceeding the length of the fitting's socket.
3. *：Molds are under development.

4 Installation of HI high impact PVC-U Pipe

(—) Installation of PVC-U Pipe

(1) One-time Inserting Method :

This method is suited for connecting medium Diameter pipes. The installation process is as follows :

1. Whittle two edges of adapter with file or knife at 30 angle(whitting in-side angle of fema a adapter and outside angle of male adapter) untill edge thickness comes to about 1mm(or 1/3 thicknes if pipe thickness scover 3mm). Referring to illustration 1.
2. Heat one edge of female adapter at 120-130℃ to make it soft (heat-ing with blow torch or burning charcoal direct or with out oil or hot sand indirect).
3. Smear outside edge of male acapter with adhesive averagelty andthen insert the edge into female adapter. the inserting depth is 1.2-1.5 times of pipe diameter for small diameter pipes.
4. After two adapters are connected and adjusted to alignment, coll them with cloth or cold water and wipe off the permeated adhsive.

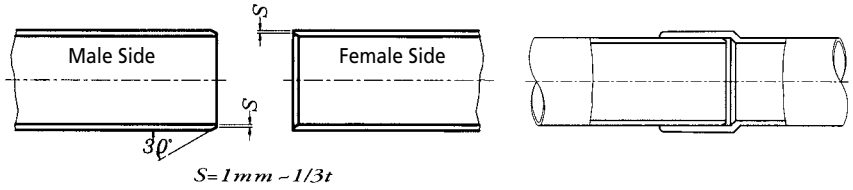


Fig 1

(2) Two-time tight inserting method :

This method is suited for connecting large diameter pipes. The installation process is as follows :

1. Whittle edges of two adapters at 30 angle. outside angle of male adapter and inside angle of female adapter. same method as item 1 to whittle angle of large clameter pipes. first heat edges with blow torch to make it soft then whittle with knife and trim with file this can step up installation.
2. Heat female adapter edget at 120-130℃ to make it soft.
3. Primor to smearing male adapter edge with adhesive. spread the edge with lubricant such as butter. and insert the lubricated edge into softened male adapter. then adjust. them to alignment. and finally coll them with wet cloth or cold water for formation.
4. Draw a line on connected edges paaraiell to pipe length direction and write figures on two edges to avoid confusion while connecting referring to illustration 2.
5. Pull out the male adapter and wipe off the lubricant semeared on two connected edges. Before connecting smear edges of both male and female adapters with adhesive. then insert and locate the adapters along the crawn line.

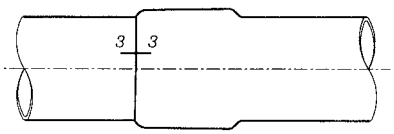


Fig 2

4 Installation of HI high impact PVC-U Pipe

(3) TS unheating connection method :

This method is applied to the connection of pre-processed TS or injection fittings it features its quick and easy installation and especially suitability in places where fire and smoking is strickly prohibitted. It allows water to flow within a short time after installation. The installation process is as follows.

1. The male side of PVC pipe, cutting 30° to 45° angle by the wide file or cutting wheel, and the thickness of pipe end face is about 1/3t.
2. The depth of insertion of the TS singled hole or fitting hole should be measured and marked in the male side of PVC-U pipe before construction.
3. Each PVC pipe with taper socket, the male side are painted a black line, the length of socket for reference.
4. IF PVC pipe have cut off, please painted a reference line of the length of socket.
5. To avoid leakage, it is suggested that large size of PVC-U pipe be glued with high viscosity of PVC adhesive.
6. First, please clean the inside of the fitting, socket, and the male side of PVC-U pipe with alcohol or dry cloth; then, please smear PVC adhesive on them; last, please insert the male side of PVC-U pipe into the fitting or socket tightly. If temperature is too high or PVC adhesive dries too fast, it is suggested that PVC adhesive be supplied quickly. Then, please insert PVC-U pipes tightly until PVC adhesive is volatile and its adhesion is reinforced. In addition, small size of PVC-U pipe can be rotated (90°) so that PVC adhesive can be distributed more uniformly. As for medium or large size of PVC-U pipe, both sides of PVC-U pipes can be padded with thick wooden plate or beam when being inserted, and please use wooden hammer or iron bar to make joints of PVC-U pipes tight and stable.
7. After completed the TS unheating connection, please don't move the piping line during the curing time, until the rigid PVC adhesive is completely dry. Then allow water to flow.

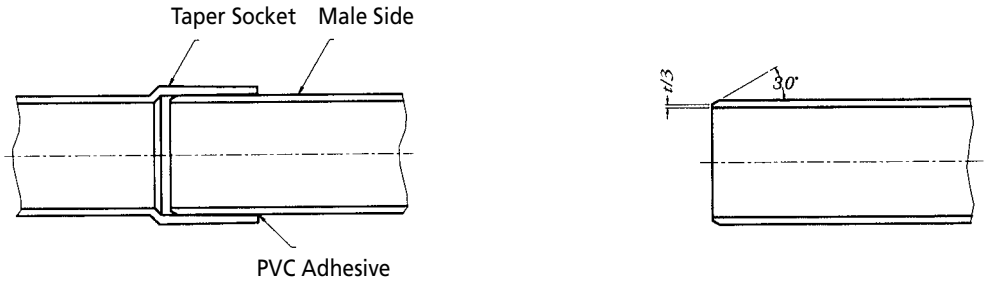


Fig 3

4 Installation of HI high impact PVC-U Pipe

(4) Taper ring connection method :

If PVC-U pipe requires to use solvent. belling refer to illustration 4 to take metal taper flange and toper nng to make and belling solvent then connect them with packing and screw. The installation process is as follows.

1. Wipe clear inside of pipe edge and tilt side of taper ring with alcohol.
2. Heat pipe edge to make it soft. At the sametime. smear adhesive on tilt side of taper ring.
3. Put titling taper flange first and then titling ring into softered pipe edge. At this moment. have to make sure taper ring sticks out of pipe edge and surface of taper ring stays vertical to pipe axis. Then, cool them with cold water for formation.
4. Connect PVC solvent belling together or PVC solvent belling and valve together. The latter connection method require to cushion a packing and screw.

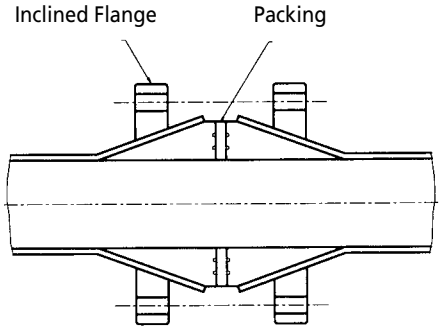


Fig 4

(5) Installation of Flange :

1. The outside rim of PVC pipe should be whittled with a knife at a 30 angle. For pipes under 100mm (4") trim with a file: above 125mm (5") heat first with a blow torch. whittle and then finalize by trimming with a file.
2. Sweep and clean the inside wall of the flange socket and the outside rim of the PVC pipe to be inserted in. then smear rigid adhiesive and insert toiciby. For specification above 125mm (5") a thick board or wodden angle material may be placed under.
3. Wipe the overflown adhesive with a piece of cloth.
4. After flange and PVC pipe are connected. airm the flange bolt holes of valve at the flange part with packing cushioned in between. and then bolt the holts to couple them. While operating. diagonally screwing is preferred so that even and close effect may be achieved.

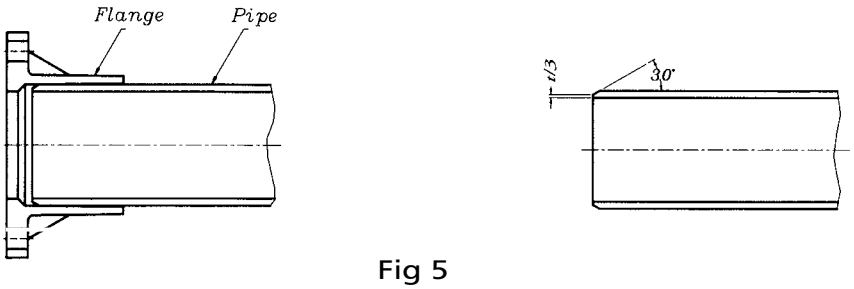


Fig 5

4 Installation of HI high impact PVC-U Pipe

(6) Installation of ring-seal type pipe :

1. Cut the exterior angle of a male pipe by 20 degree and leave 1/4t~1/3t thickness at its tip. (Each pipe has the angle of chamfer before it goes to the market. If cutting is still needed, one has to pare the pipe by 20 degree at the construction site.)
2. Take out the ring (rubber ring) from the pipe and clean it. Clean the inside of the pipe and mount the ring back (Notice : Ring shall be installed correctly)
3. Mark the insertion length at the end of the male pipe (This step usually is done by manufacturer)
4. Lubricate the inner ring and the insertion section of the male pipe. Notice: No lubricant on the ring trough; otherwise it may cause loss of friction of the ring trough when the trough gets lubricated. Also, when male and female pipes combine, the rubber ring may be displaced and causes leaking. See Figure 6.
5. Combination of male and female pipes (In inserting the two, hands are for small sizes, a wooden mallet for middle sizes after the pipes are on a plank or a wooden block, and a puller for large sizes.) The gap after the insertion : about 10mm for smaller than 50; 15mm for 65~100; 20mm for 125~150; 25mm for larger than 200.

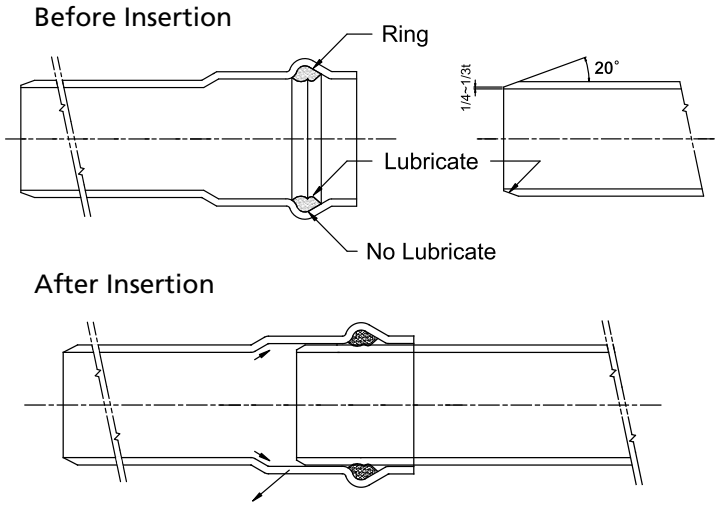


Fig 6

4 Installation of HI high impact PVC-U Pipe

(二) Notice Items of PVC-U Piping Instructions

1. Before concreting the floor. run water presure test on the tape water pipe line according to Article 28. Chapter II. "Construcation Techincal Rules" with testing water pressure retained for one (1) hour at not lower than 10kg/cm^2, nor higher than 1.5 times of the working pressure. Start concreting only when no leakage is abserved. Usually, this test is separtely run by floor.
2. Earth coverage over the pipe line is required on testing the water pressure of spigot pipe. which however may be left bare only the connectingparts if working environment permits. The purpose of earth coverage before the test is mainly to prevent the spigot from escaping during the test to be run in where heavy traffic flow occura. such as in the downtown area.
3. Run the water pressure test by section for approaximater every 500~1000m on pipe line completed. at the testing hydrostatic pressure retained for one (1) hour at not lower than 10kg/cm^2, nor higher than 15 times of the working pressure. Observe for any leakage.
4. Provide vent valve to the pipe line at the pipe end or at where with higher elevation.
5. Send filling with layer thickness not less than 10cm is required before the embedment of pipe line. Do not cause the pipe to contact directly with anystone.
6. Linear allocation governs the pipe for electric conduit on the building floor. If bending is required. the bend angle shall no be larger than 90° and not larger than 270° in total in one area (i.e. between two wiring cases). The wiring length shall not be larger than 30m.
7. Prevent the assembled pipe for electric conduit use and wiring cases from being destructed or damaged by concreting. Repair any damage immediately to avoid affecting the subsequent wire pulling by clog of concrete.
8. Number of pipe at interesction embedded in the floor shall not be larger than two as illustrated below. Three or more pipes at the same intersection is not allowed.
9. Civil utilities technician shall be always avaible on site during the operation of concreting in case of any incident to the piping work.
10. Don't apply the vinyl adhesive too much between PVC-U pipe and fitting, thus avoid the soften, expansion, cracked occurred by PVC-U pipe and fitting.
11. Put the required amount of cement hardener into the concrete, to avoid the curing heat softening, transforming the PVC-U pipe during concreting the floor, wall, column.
12. When PVC-U pipe is embedded in the floor slabs, columns and beams of a building, follow the proper concrete construction standards by following the requirements in The Practice of Construction Outline, Public Engineering Committee of Executive Yuan and Chapter 03310–Concrete for Structures in The Practice of Construction, Water Resources Department, Ministry of Economy. In construction with structural concrete, note the following items during the construction to avoid the deformation, sinking and other anomalies caused by overheating of PVC-U pipe:

(1) During hot weather, the following operations should be implemented in order to prevent sinking of PVC-U pipe due to softening when the temperature of concrete is too high in the few days after pouring:

A. When the ambient temperature exceeds 32℃, implement proper cooling for the mold plate and rebar, etc. by water or other appropriate methods several days before pouring the concrete.

B. To prevent the concrete pouring temperature exceeding 32℃, the following measures should be taken to protect the poured concrete.

a. Properly cover the concrete to prevent direct sun exposure.

b. Spray cold water or cover with moist burlap sacks or thick pads to keep the mold plate moist.

(2)The quality of ready-mixed concrete should be in compliance with the requirements of CNS 3090 "Pre-blended Concrete". For example,

A.The process of adding water to the ready-mixed concrete and pellets and transporting to the construction site must be completed within 1.5 hours. In hot weather or in case of early setting of the concrete, the buyer can specify that the delivery time should be less than 1.5 hours.

B.While using the pre-heated pellets, hot water, or both at the same time for the fabrication of concrete, the maximum temperature for fabrication or transportation should not exceed 32℃.

(3)The pipe hole shall be temporarily filled with easily removable material to prevent the infiltration of concrete mortar.

(4)While pouring the concrete, it is necessary to pay attention to the PVC-U pipe in case of displacement or deformation. If this happens, the pouring should be suspended to correct the situation before continuing to pour.

(5)It is necessary to prevent excessive tamping caused by displacement, sinking and deformation of the PVC-U pipe.

(6)Within 15 minutes of pouring concrete, ensure not to touch the mold plate and rebar while the vibrator is in operation to prevent shifting of the PVC-U pipe.

13.Flexible PVC fitting is applicable to high-pressure pipeline (small or medium size) with following characteristics:

(1)Compression fitting, which is easy for construction and loading without weather impact, features superb compression and water pressure resistance.

(2)Compression fitting, not only used for underground pipeline but also suitable for above-ground pipeline, needs to be fixed tightly to avoid sliding.

(3)It is suggested that lid and body of compression fitting be locked properly.

(4)Compression fitting is not only able to absorb piping's expansion resulted from thermal expansion and contraction but able to be used for fixing cracked pipeline.

Followings are methods of construction for flexible PVC fitting used for fixing cracked pipeline:

A. Please shut off upstream valves to cut off water and dig damaged parts of pipeline. (Please use one compression fitting to fix slightly damaged parts of pipeline; moreover, please dig damaged parts of pipeline deeply and widely so that PVC-U pipes are feasible to be elevated and fitted into compression fittings).

B. Please cut damaged PVC-U pipes.

C. Followings are steps of construction for fixing damaged PVC-U pipes:

14.When pipes are stored outside, please avoid direct sunlight and cover them with canvas without gathering heat.

15.Don't install threads in pipes.

16.Don't spray, coat or contact pipes with harmful substances, such as acetone, thinner, cresol, insecticide, termite repellent, etc. Furthermore, even if above substances do not directly contact pipes, please note that when the pipe is shallowly buried, if above substances are spilled on the ground, they will penetrate the ground and erode pipes.

17.In order to reduce the expansion and contraction caused by pipeline subsidence or temperature changes, take appropriate mea sures as needed, for example: install flexible pipes in appropriate places.

18.Vinyl adhesive should be applied evenly and uniformly on the adhesive surfaces of cleaned pipes and their accessories; then, please adhere quickly and maintain the insertion force until the specified time; next, please wipe off vinyl adhesive out of pipes after bonding them. Last, please take measures such as ventilation to expel the vinyl adhesive vapor in pipes during the construction. Therefore, it is necessary to choose suitable pipes to match relative accessories.

4 Installation of HI high impact PVC-U Pipe

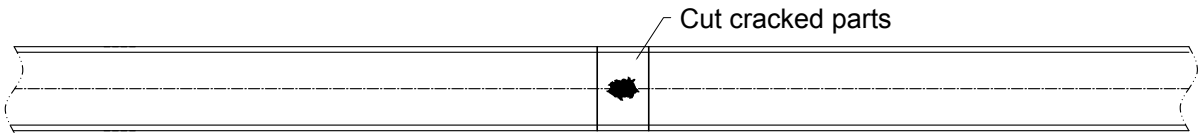
19.PVC伸縮接頭作為搶修接頭的施工方法如下：

(1)關閉上游的制水閥，加以斷水，並挖掘破損之範圍，挖掘之範圍要長些，以利管材抬高並套入伸縮接頭之零件。

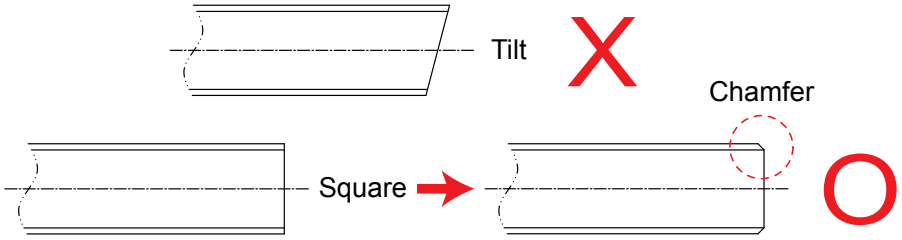
(2)將破損之PVC-U管切除。

(3)實際PVC-U管材破損之搶修施工步驟如下圖示：

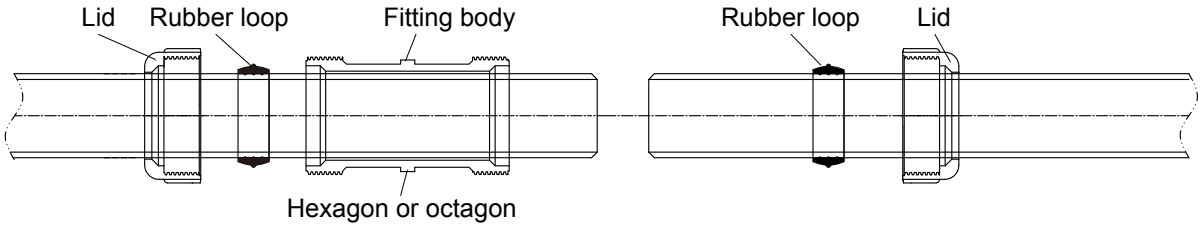
(A) Excision of damaged PVC pipe：



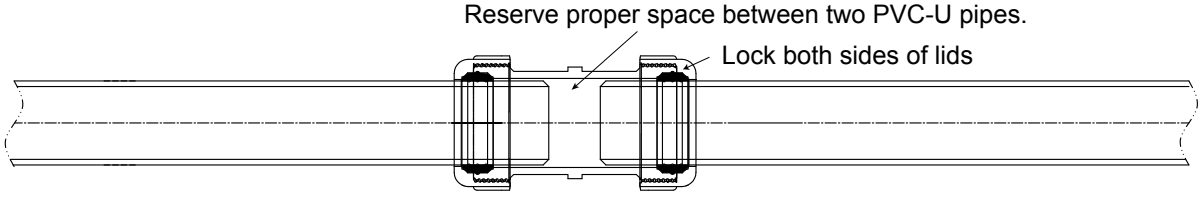
(B) Cut pipe square. Deburr and bevel：



(C) Accessories for pipe lifting and fitting into the PVC compression coupling：



(D) After the repair is completed：

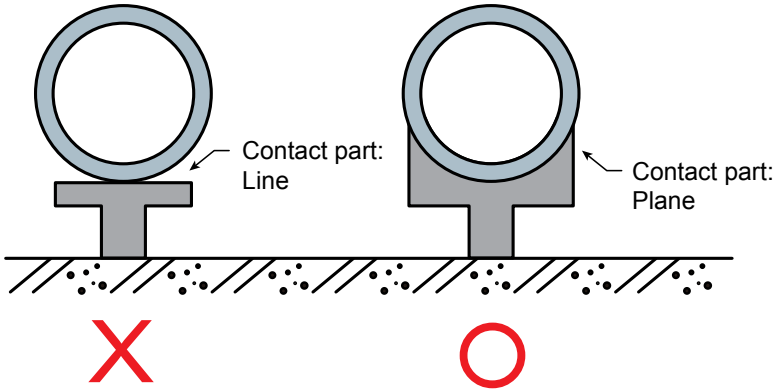


Lock the lid and body of the fitting tightly until there is no gap.

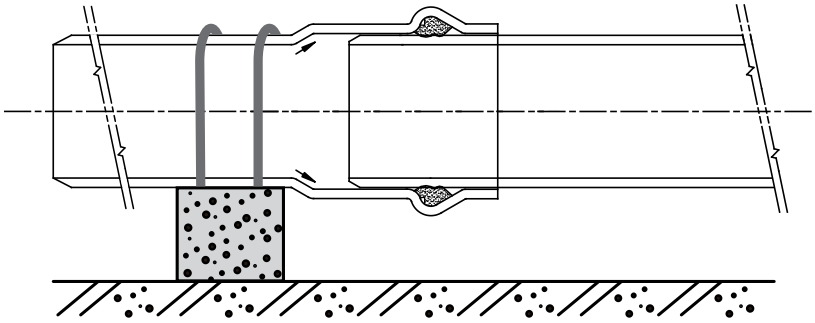
4 Notice Items of HI high impact PVC-U Pipe

20. Cautions of PVC-U piping (large size)

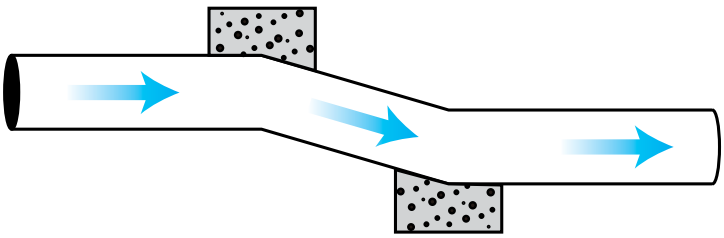
(1) To avoid concentrative strength and assure long-term life of the pipeline, the contact surface of the support base of PVC-U pipe should be changed from "line" into "plane"



(2) The head loop should be fixed tightly when the pipe loop is out of the pipeline.



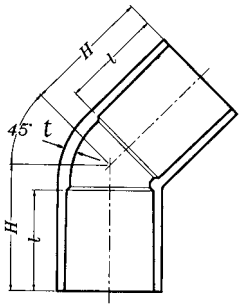
(3) To prevent the pipeline from shifting when lots of water are transferred, it is suggested that fixation of cement be added in the turning point or the end of the pipeline.



(4) The exhaust valve should be installed in the pipeline to prevent the inside of the pipeline from water hammer.

5 Specification for HI high impact PVC-U fittings drainage

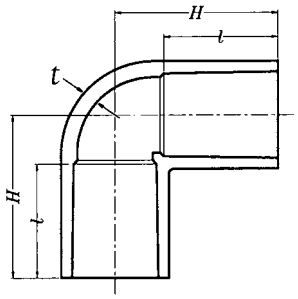
45° Elbow



Unit : mm

Size		t	l	H
16	½"	3.5	30	38
20	¾"	3.5	35	44
25	1"W	4.0	40	51
30	1¼"W	4.0	44	56
40	1½"	4.5	55	69
50	2"	5.0	63	80
65	2½"	5.0	69	90
80	3"	6.0	72	95
100	4"	7.5	92	121
125	5"	8.0	112	150
150	6"	9.0	140	186
200	8"	10.5	172	224
250	10"	13.0	185	248

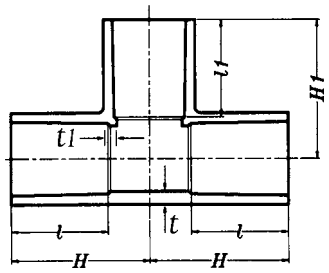
90° Elbow



Unit : mm

Size		t	l	H
16	½"	3.5	30	43
20	¾"	3.5	35	50
25	1"W	4.0	40	58
30	1¼"W	4.0	44	65
40	1½"	4.5	55	82
50	2"	5.0	63	96
65	2½"	5.0	69	110
80	3"	6.0	72	120
100	4"	7.5	92	152
125	5"	8.0	112	188
150	6"	9.0	140	228
200	8"	10.5	172	288
250	10"	13.0	185	326

5 Specification for HI high impact PVC-U fittings drainage



Tee

Unit : mm

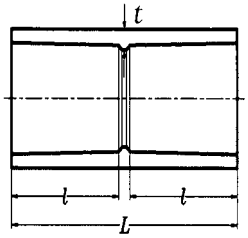
Size		t	l	l1	H	H1
16	½"	3.5	30	30	43	43
20	¾"	3.5	35	35	50	50
25	1"W	4.0	40	40	58	58
30	1¼"W	4.0	44	44	65	65
40	1½"	4.5	55	55	82	82
50	2"	5.0	63	63	96	96
65	2½"	6.6	61	61	110	110
80	3"	8.0	64	64	120	120
100	4"	10.0	84	84	152	152
125	5"	8.0	112	112	188	188
150	6"	9.0	140	140	228	228
200	8"	10.5	172	172	287.5	287.5
250	10"	13.0	185	185	325	325

Reducer Tee

Unit : mm

Size		t	t1	l	l1	H	H1
20x16	¾"x½"	3.5	3.5	35	30	48	45
25x16	1"Wx½"	4.0	3.5	40	30	53	48
25x20	1"Wx¾"	4.0	3.5	40	35	55	53
30x16	1¼"Wx½"	4.0	3.5	44	30	57	51
30x20	1¼"Wx¾"	4.0	3.5	44	35	59	56
30x25	1¼"Wx1"W	4.0	4.0	44	40	62	61
40x16	1½"x½"	4.5	3.5	55	30	68	57
40x20	1½"x¾"	4.5	3.5	55	35	70	62
40x25	1½"x1"W	4.5	4.0	55	40	73	67
40x30	1½"x1¼"W	4.5	4.0	55	44	76	71
50x16	2"x½"	5.0	3.5	63	30	76	63
50x20	2"x¾"	5.0	3.5	63	35	78	68
50x25	2"x1"W	5.0	4.0	63	40	81	73
50x30	2"x1¼"W	5.0	4.0	63	44	84	77
50x40	2"x1½"	5.0	4.5	63	55	90	88
65x40	2½"x1½"	6.6	4.5	61	55	100	96
65x50	2½"x2"	6.6	5.0	61	63	101	104
80x20	3"x¾"	6.0	3.5	72	35	90	82
80x25	3"x1"W	8.0	4.0	64	40	93	88
80x40	3"x1½"	8.0	4.5	64	55	100	102
80x50	3"x2"	6.0	5.0	72	63	105	115
80x65	3"x2½"	6.0	5.0	72	69	113	117
100x40	4"x1½"	7.5	4.5	92	55	120	115
100x50	4"x2"	7.5	5.0	92	63	125	122
100x80	4"x3"	7.5	6.0	92	72	140	132
125x80	5"x3"	8.0	6.0	112	72	160	148
125x100	5"x4"	8.0	7.5	112	92	174	168
150x80	6"x3"	9.0	6.0	140	72	190	155
150x100	6"x4"	9.0	7.5	140	92	202	182
150x125	6"x5"	9.0	8.0	140	112	214.5	200
200x100	8"x4"	10.5	7.5	172	92	236.5	204
200x150	8"x6"	10.5	9.0	172	140	264	252

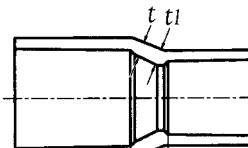
5 Specification for HI high impact PVC-U fittings drainage



Coupling

Unit : mm

Size		t	l	H
16	½"	3.5	30	67
20	¾"	3.5	35	77
25	1"W	4.0	40	87
30	1¼"W	4.0	44	95
40	1½"	4.5	55	117
50	2"	5.0	63	133
65	2½"	6.6	61	145
80	3"	6.0	72	152
100	4"	7.5	92	200
125	5"	8.0	112	235
150	6"	9.0	140	300
200	8"	10.5	172	360
250	10"	13.0	185	400



Reducer Coupling

Unit : mm

Size		t	t1	l	l1	L
20x16	¾"x½"	3.5	3.5	35	30	71
25x16	1"Wx½"	4.0	3.5	40	30	85
25x20	1"Wx¾"	4.0	3.5	40	35	84
28x25	1"x1"W	3.5	4.0	4.0	4.0	90
30x16	1¼"Wx½"	4.0	3.5	44	30	95
30x20	1¼"Wx¾"	4.0	3.5	44	35	93
30x25	1¼"Wx1"W	4.0	4.0	44	40	93
35x30	1¼"x1¼"W	4.0	4.0	44	44	100
40x16	1½"x½"	4.5	3.5	55	30	91
40x20	1½"x¾"	4.5	3.5	55	35	113
40x25	1½"x1"W	4.5	4.0	55	40	114
40x30	1½"x1¼"W	4.5	4.0	55	44	114
50x16	2"x½"	5.0	3.5	63	30	120
50x20	2"x¾"	5.0	3.5	63	35	116
50x25	2"x1"W	5.0	4.0	63	40	140
50x30	2"x1¼"W	5.0	4.0	63	44	136
50x40	2"x1½"	5.0	4.5	63	55	136
65x40	2½"x1½"	6.6	4.5	61	55	145
65x50	2½"x2"	6.6	5.0	61	63	149
80x40	3"x1½"	6.0	4.5	72	55	165
80x50	3"x2"	8.0	5.0	64	63	165
80x65	3"x2½"	6.0	6.0	72	69	165
100x40	4"x1½"	7.5	4.5	92	55	190
100x50	4"x2"	7.5	5.0	92	63	208
100x80	4"x3"	10.0	8.0	84	64	190
125x100	5"x4"	11.0	10.0	104	84	229
150x80	6"x3"	9.0	6.0	140	72	260
150x100	6"x4"	9.0	7.5	140	92	280
150x125	6"x5"	9.0	8.0	140	112	295
200x100	8"x4"	10.5	7.5	172	92	340
200x125	8"x5"	10.5	8.0	172	112	345
200x150	8"x6"	10.5	9.0	172	140	350
250x200	10"x8"	13.0	10.5	185	172	420
300x200	12"x8"	15.0	10.5	230	172	495

5 Specification for HI high impact PVC-U fittings drainage

FIG.1

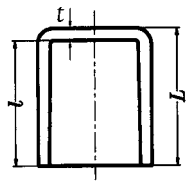
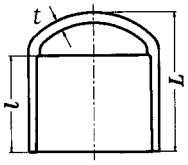


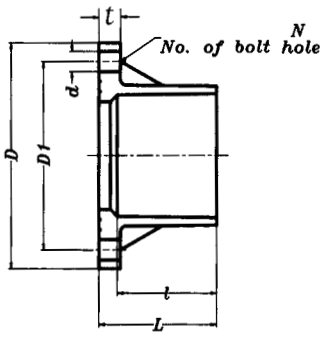
FIG.2



Cap

Unit : mm

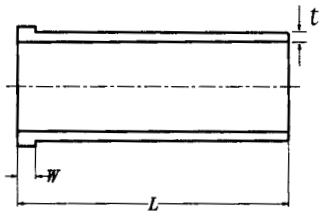
Size			t	l	L
FIG.1	16	½"	3.5	30	33.5
	20	¾"	3.5	35	38.5
	25	1"W	4.0	40	44
	30	1¼"W	4.0	44	48
	40	1½"	4.5	55	59.5
	50	2"	5.0	63	68
FIG.2	65	2½"	6.6	61	96
	80	3"	8.0	64	105
	100	4"	10.0	84	138
	125	5"	11.0	104	160
	150	6"	13.0	132	205
	200	8"	15.0	164	257



Flange

Unit : mm

Size		t	D	D1	l	Hole		L
						d	N	
40	1½"	17	140	105	55	19	4	68
50	2"	17	155	120	63	19	4	76
65	2½"	18	175	140	69	19	4	83
80	3"	20	185	150	72	19	8	86
100	4"	20	210	175	92	19	8	107
125	5"	20	250	210	112	23	8	130
150	6"	22	280	240	140	23	8	165
200	8"	22	330	290	172	23	12	195
250	10"	24	400	355	185	25	12	235
300	12"	30	445	400	230	25	16	295

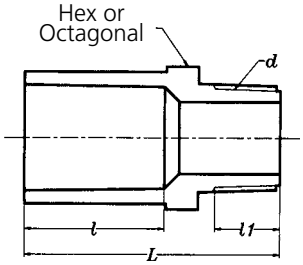


Union

Unit : mm

Size		t	W	L
16	½"	3.0	5	85
20	¾"	3.0	6	90
25	1"W	3.5	7	100
30	1¼"W	3.5	8	110
40	1½"	4.0	8	120
50	2"	4.5	9	130

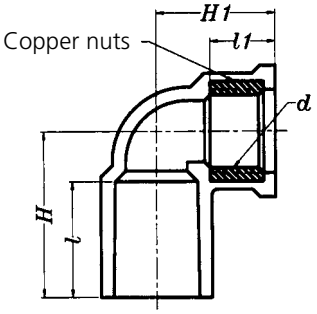
5 Specification for HI high impact PVC-U fittings drainage



Male Adapter (Plastic Thread)

Unit : mm

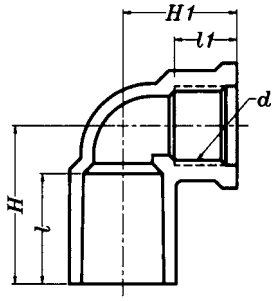
Size		l	THREAD		L
			d	l1	
16	½"	30	PT½"	15	54
20	¾"	35	PT¾"	17	64
25	1"W	40	PT1"	19	71
30	1¼"W	44	PT1¼"	22	80
40	1½"	55	PT1½"	22	92
50	2"	63	PT2"	26	106
65	2½"	69	PT2½"	30	120
80	3"	72	PT3"	33	126
100	4"	92	PT4"	40	146
125	5"	112	PT5"	44	177
150	6"	140	PT6"	44	213



Faucet Fitting (Insert Bronze Nut)—90° Elbow

Unit : mm

Size		l	H	THREAD		H1
				d	l1	
16	½"	30	43	PF½"	17	32
20	¾"	35	51	PF¾"	19	36



Faucet Fitting (Plastic Thread) —90° Elbow

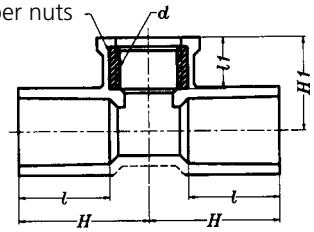
Unit : mm

Size		l	H	THREAD		H1
				d	l1	
16	½"	30	43	PT½"	17	32
20	¾"	35	51	PT¾"	19	36

5 Specification for HI high impact PVC-U fittings drainage

Faucet Fitting (Insert Bronze Nut) —Fixture Tee

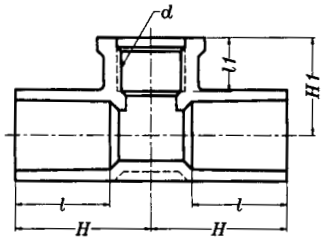
Copper nuts



Unit : mm

Size		l	H	THREAD		H1
				d	l1	
16	½"	30	43	PF½"	17	32
20x16	¾"x½"	30	47	PF½"	17	34
20	¾"	35	51	PF¾"	19	36

Faucet Fitting (Plastic Thread) —Fixture Tee

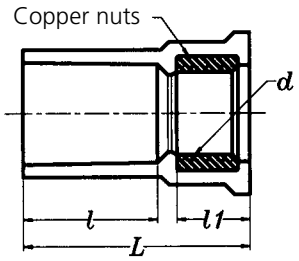


Unit : mm

Size		l	H	THREAD		H1
				d	l1	
16	½"	30	43	PT ½"	17	32
20x16	¾"x½"	35	47	PT ½"	17	34
20	¾"	35	51	PT ¾"	19	36

5 Specification for HI high impact PVC-U fittings drainage

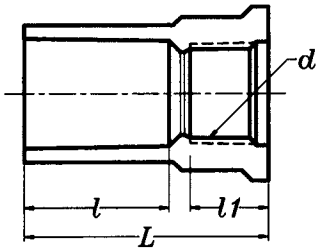
Faucet Fitting (Insert Bronze Nut) —Female Adapter



Unit : mm

Size		l	THREAD		L
			d	l1	
16	½"	30	PF½"	17	52
20	¾"	35	PF¾"	19	59
25	1"W	40	PF1"	21	68

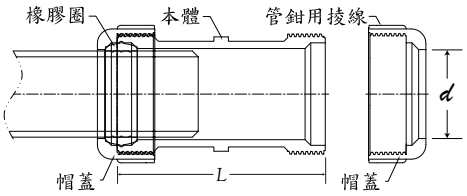
Faucet Fitting (Plastic Thread) —Female Adapter



Unit : mm

Size		l	THREAD		L
			d	l1	
16	½"	30	PT½"	19	57
20	¾"	35	PT¾"	19	59

5 Specification for HI high impact PVC-U fittings drainage



Compression Fitting

Characteristics:

1. Compression fitting, which is easy for construction and loading without weather impact, features superb compression and water pressure resistance.
2. Compression fitting, not only used for underground pipeline but also suitable for above-ground pipeline, needs to be fixed tightly to avoid sliding.

Applications:

1. Applicable to high pressure pipeline (for small and medium size of compression fittings use).
2. Able to absorb piping's expansion resulted from thermal expansion and contraction.
3. Suitable for fixing damaged compression fittings of cracked pipeline.

Unit : mm

Size		Inside Diameter and Tolerance	*L*
16	½"	22.8 ± 0.3	90
20	¾"	26.8 ± 0.3	90
* 25	1"W	33.0 ± 0.4	-
* 30	1¼"W	39.0 ± 0.4	-
* 40	1½"	49.2 ± 0.4	-
50	2"	61.5 ± 0.5	144
65	2½"	77.5 ± 0.5	183
80	3"	90.8 ± 0.5	223
100	4"	116.0 ± 0.6	251

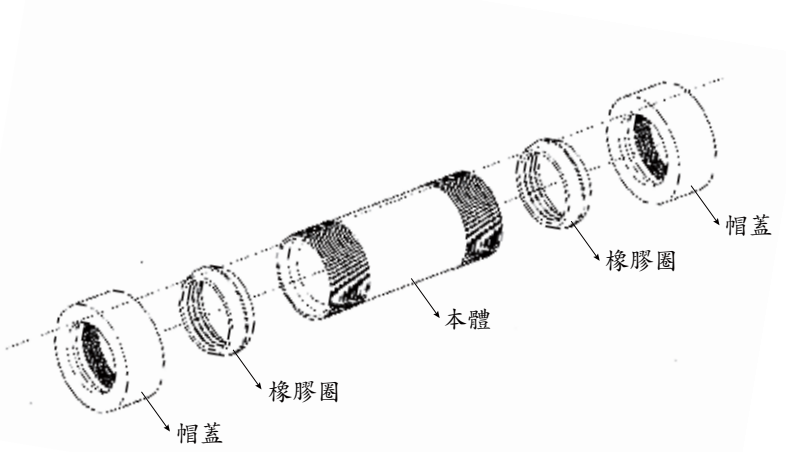

中華民國專利證書

新型第 M583510 號

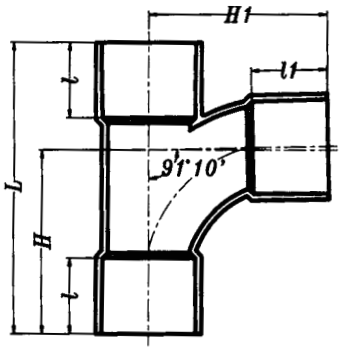
洪淑敏

Remark :

1. The rubber ring material is in accordance with the A5 of Class I in CNS 10774.
2. * Means the mold is developing.
3. Compression coupling construction method, please read the notice items for PVC-U piping instructions, item 13 (Page 31).



5 Specification for HI high impact PVC-U fittings drainage



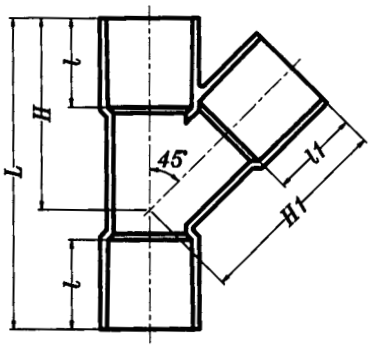
Sanitary Tee

Unit : mm

Size		l	l1	H	H1	L
80X50	3"X2"	72	63	140	145	235
100X50	4"X2"	92	63	154	152	270

Note:

Sanitary T fitting is used for non-pressuer drainage.



Wye

Unit : mm

Size		l	l1	H	H1	L
50	2"	63	141	142	220	200
80	3"	72	180	188	280	235
100	4"	92	92	230	240	355
125	5"	112	112	282	292	434
150	6"	140	140	344	352	530

Reducer Wye

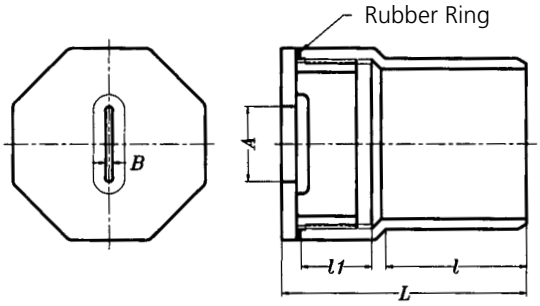
Unit : mm

Size		l	l1	H	H1	L
80X50	3"X2"	72	63	164	164	239
100X50	4"X2"	92	63	195	185	285
100X80	4"X3"	92	72	213	202	319
125X50	5"X2"	112	63	233	192	337
125X80	5"X3"	112	72	252	216	372
125X100	5"X4"	112	92	272	252	415
150X50	6"X2"	140	63	270	228	385
150X80	6"X3"	130	72	282	240	412
150X100	6"X4"	130	92	294	274	435
150X125	6"X5"	140	112	322	310	500

Note:

Wye type fitting is used for non-pressuer drainage.

5 Specification for HI high impact PVC-U fittings drainage



Cleanout Bushing

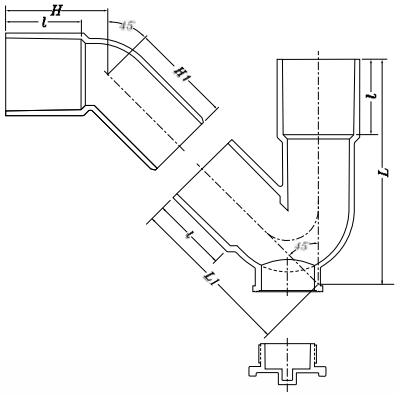
Unit : mm

Size		A	B	l	l1	L
50	2"	30	4.5	59	25	98
125	5"	80	10	120	50	194

Note:

1.In order to against the leakage of rubber ring between cleanout bushing body and cap, please screw the cleanout cap on the cleanout bushing body tightly.

2.cleanout bushing is used for non-pressuer drainage.



"P" Trap with Solvent Weldjoint and Cleanout Plug

Unit : mm

Size	l	H	l1	H1	L
2"X4mm	63	85	138	85	195

Note:

It is used for non-pressuer drainage.

6 Nan Ya High Impact Vinyl Adhesive

I. Applications :

1. Gluing high impact PVC-U pipes
2. Gluing high impact PVC-U pipe and PVC-U fitting.

II. Characteristics :

1. Superb adhesion with high impact PVC-U materials in compliance with CNS 1345 Standards— water- resistant joints.
2. Easy for construction; quick-drying after installation.

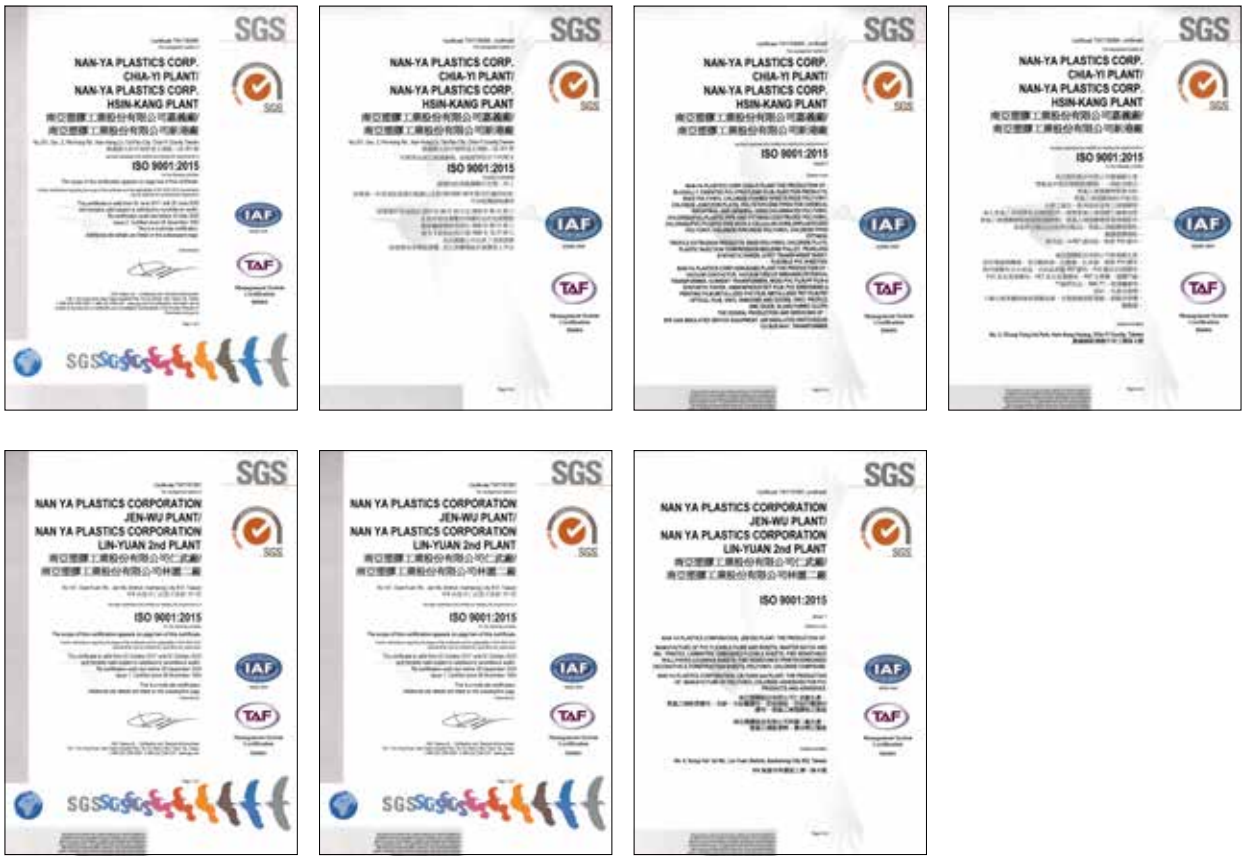
III. Remarks :

1. Applicable to glue high impact PVC-U pipe (Size: below 6 inches) with high impact vinyl adhesive (Viscosity: 200～1000CPS).
2. To ensure that nothing happened during PVC-U piping projects (Pipe size: above 6 inches), please glue PVC-U pipes over and over again with high impact vinyl adhesive until there is not any gap in pipes. Therefore, it is suggested that the pipe size of high impact PVC-U pipe be less than 16 inches.
3. Do not move the pipeline during the construction. Besides, according to CNS standards, it is suggested that water be transferred after 24 hours at normal temperature or after 48 hours at 5℃.

** To meet the requirement of pressure resistance, water supply pipe should pass the hydrostatic test before cement covering.

7 Certification

ISO 9001 Quality Certification



ISO 14001 品質認證合格證書
ISO 14001 quality certification

7 Certification

CNS Marks of All Products

經濟部標準檢驗局正字標記證書

廠商名稱 南亞塑膠工業股份有限公司

廠商地址 高雄市仁武區水管路101號

代表人姓名 吳嘉昭

生產製造工廠名稱 南亞塑膠工業股份有限公司嘉義廠

生產製造工廠地址 嘉義縣太保市北港路2段201號

品管評鑑制度 CNS 12681/ISO 9001:2008

產品名稱 耐衝擊硬質聚氯乙烯塑膠管接頭

適用國家標準 總號 15010 類號 K3126

證書號碼 台正字第 7367 號

上記產品依標準法第11條第1項規定審查合格，
核准使用正字標記。

局長 劉明忠

中華民國 96 年 3 月

廠商地址變更104年1月23日

經濟部標準檢驗局正字標記證書

廠商名稱 南亞塑膠工業股份有限公司

廠商地址 高雄市仁武區竹後里水管路101號

代表人姓名 吳嘉昭

生產製造工廠名稱 南亞塑膠工業股份有限公司嘉義廠

生產製造工廠地址 嘉義縣太保市南新里北港路2段201號

品管評鑑制度 CNS 12681/ISO 9001:2015

產品名稱 耐衝擊硬質聚氯乙烯塑膠管

適用國家標準 總號 14345 類號 K3114

證書號碼 台正字第 6949 號

上記產品依標準法第11條第1項規定審查合格，
核准使用正字標記。

局長 劉明忠

中華民國 90 年 8 月 16 日

品管評鑑制度變更106年7月31日 換發此證

南亞塑膠工業股份有限公司
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NAN YA Plastics Corp.

NAN YA Plastics Pipe

Test data, sizes, and pictures in the catalog are for reference only,
and actual product information is based on the formal reports.

(2021.08.16)