



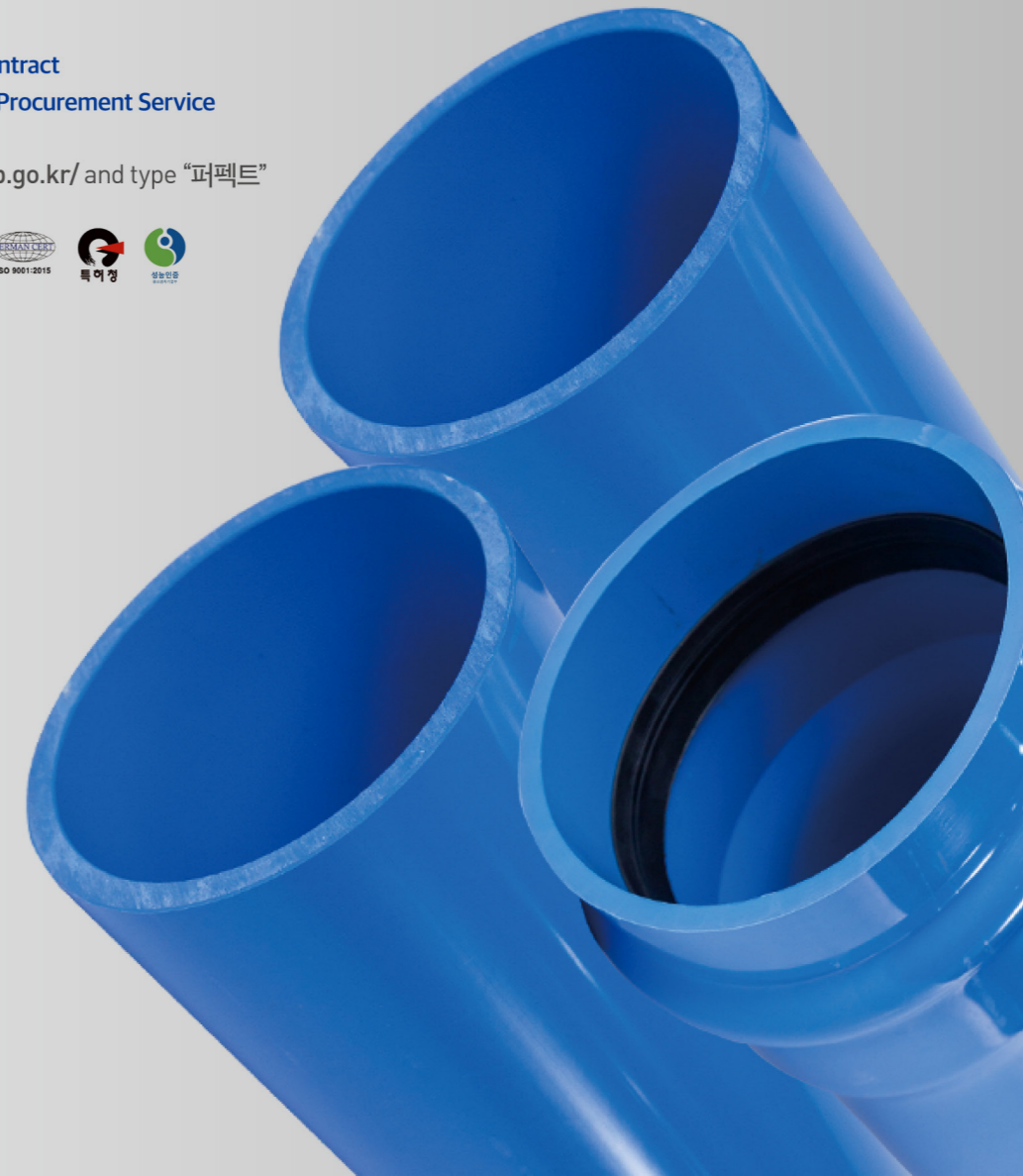
**PERFECT CO., LTD.**  
 makes your living environment perfect responsibly.

# WE ARE PERFECT.

Perfect has constantly made its way in one direction to grow to a global enterprise.



The item in a unit price contract for a third party of Public Procurement Service  
<http://www.pps.go.kr>  
 Go to <http://shopping.g2b.go.kr/> and type "퍼펙트"



T. 054. 634. 7790 T. 054. 631. 7790  
 F. 054. 632. 7790  
[www.perfectmh.co.kr](http://www.perfectmh.co.kr)  
 Seoul Office T. 02. 3431. 3434

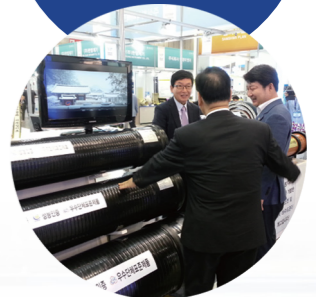
51, Jangsu-ro 220beon-gil, Jangsu-myeon,  
 Yeongju-si, Gyeongsangbuk-do, Republic of Korea

# Innovative Water Company taking on global challenges

Established in 1987, Perfect has always concentrated on one area. In the fast-changing 21st century, on the one hand, people have pursued a more well-off and convenient life. On the other hand, environmental issues have seriously been recognized at home and abroad. Unfortunately, storm & sewage drains (manholes), water & sewage pipes, and connectors have been considered less important and therefore have been less developed. As a result, soil pollution and sink holes lead to severe problems. PERFECT CO., LTD. has made its distinct R&D for nature and humans to live together.

PERFECT CO., LTD. more functionalized the differentiated performance of storm & sewage manholes and water & sewage pipes that have been expanded in fundamental social development projects and social overhead capital and successfully developed the products highly resistant for earth pressure, including one-touch water & sewage pipes with perfect water tightness and excellent durability, corrosion-resistant PE manholes, and a variety of fittings. These products have been recognized as eco-friendly products, thanks to their excellence and technology. Our company, PERFECT CO., LTD., always cherishes the environment to be handed over to our offspring. Since our distinct products, better than to the products developed by other companies, are selected by you, our company tries to spur the development of low carbon green products and follow-up management.

Heoh Won-gwon, CEO of PERFECT CO., LTD.,  
and all executives & employees



## 2004

- Jan 2004 Heoh Won-gwon, appointed as CEO of PERFECT CO., LTD.
- Dec 2004 Selected as New People of Knowledge by the Ministry of the Interior
- Jun 2005 Environmental Labeling Certification (No. 5443) - Storm & sewage drain and manhole (Korea Environmental Industry & Technology Institute)
- Jul 2007 Awarded 'Small & Medium Business' Prize by Yeongju-si
- Nov 2007 Acquired ISO 9001:2008
- Dec 2007 Acquired Confirmation of Excellent Invention Priority Purchase Recommendation by Korea Invention Promotion Association
- May 2008 Acquired MAIN-BIZ by Small and Medium Business Administration
- Jun 2008 Acquired INNO-BIZ by Small and Medium Business Administration
- Jun 2008 Acquired Certificate of R&D Department by Korea Industrial Technology Association
- Jun 2009 Received the Citation of Gyeongsangbuk-do Governor (on the day of the environment)
- Jul 2009 Specified as Quality Assurance Business by Korea Testing & Research Institute
- Sep 2009 Awarded 'the Grand Prize' of the Minister of Environment by the Ministry of Environment

## 2010

- Jul 2010 Acquired Korea Plastics Standard Labeling Certification by Korea Federation of Plastic Industry Cooperatives  
'Sewer and drainage polypropylene pipe with impervious wall in the profile: KPS M 2019'  
Acquired Korea Plastics Standard Labeling Certification by Korea Federation of Plastic Industry Cooperatives  
'Sewer and drainage polyethylene pipe with impervious wall in the profile: KPS M 2018'  
Acquired Korea Plastics Standard Labeling Certification by Korea Federation of Plastic Industry Cooperatives
- Nov 2010 'Structured Wall Polyethylene Sewer and Drainage Pipes: KPS M 2009'  
Acquired Certificate of Excellent Group Standard Product Confirmation by Korea Federation of Plastic Industry Cooperatives
- Jun 2011 'Connector for Polyethylene Sewer and Drainage Pipes: KPS M 2017'  
Acquired Korea PVC Pipe Cooperatives Standard Labeling Certification by Korean PVC Pipe Industry Cooperatives
- Sep 2011 'Unplasticized poly(vinyl chloride) (PVC-U) inspection chambers for sewerage: KPSS M 303'
- Nov 2012 Awarded a citation by Korea Federation of SMEs  
Acquired Environmental Labeling Certification (No. 10106) -PE Double Wall Pipe by Korea Environmental Industry & Technology Institute
- Feb 2013 Received the Citation of Gyeongsangbuk-do
- Aug 2014 Acquired Excellent Performance Certification (No. 13-247, No. 13-248)
- Nov 2014 Acquired a citation by the Minister of Trade, Industry and Energy
- May 2015 Specified as Excellent Procurement Joint Trademark Item
- Nov 2015 Registered as Wood Production & Manufacturing Business Specified as IP STAR Biz

## 2015

- May 2016 Acquired Group Standard Labeling Certification (Design Fence)
- Nov 2017 Acquired PVC Pipe Group Standard Certification; awarded the citation of PPS Administrator by Korean PVC Pipe Industry Cooperatives
- Dec 2017 Acquired the citation of Minister of Science and Technology
- Feb 2018 Acquired Water Pipe KS M 3401 and KC Sanitation & Safety Standard Certification
- Sep 2019 Specified as Leading Company in Water Industry (Gyeongsangbuk-do)
- Nov 2019 Awarded 'Citizen Grand Prize' by Yeongju-si

## 2020

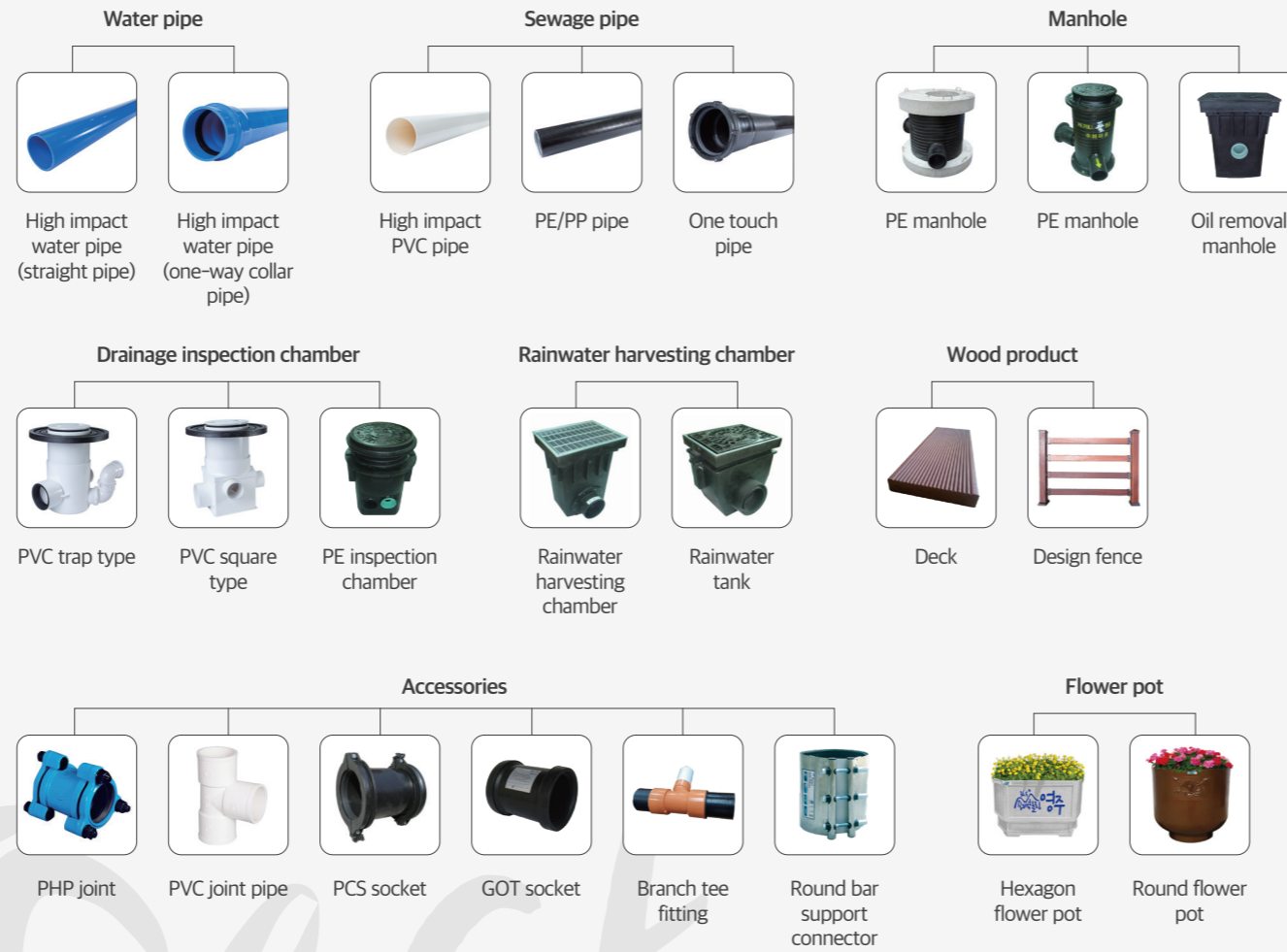
- Mar 2020 Specified as one of promising suppliers (G-pass companies) to enter the overseas procurement market (G-PASS Business)
- Jun 2020 Specified as the 1st period innovative water business by the Ministry of Environment ; acquired Excellent Performance Certification  
Specified as the 2020 fist quality assurance procurement item (high impact water & sewage pipes) by Public Procurement Service



Product Introduction



Product Classification



More perfect technology for nature and humans

Perfect shows the new standard of perfection by providing excellent performance and eco-friendly products.

- 02 CEO Message
- 03 History of PERFECT CO., LTD.
- 04 Product Introduction & Classification
- 05 Contents
- 08 High impact PVC-HIVP water pipe (water pipe integrated with protective socket)
- 12 High impact PVC water-pipe anti-separation clamp (NF clamp)
- 13 How to assemble High impact PVC water pipe
- 14 HI-VP High impact water pipe (one-way collar pipe)
- 15 HI-VP High impact water pipe (straight pipe)
- 16 Water pipe joint (small diameter/middle diameter/large diameter)
- 19 PHP anti-separation joint (large diameter 125~300A)
- 20 HI-VG2 High impact sewage pipe (straight pipe / SRA one-way collar pipe)
- 22 HI-VG2 High impact sewage pipe (SP-TYPE)
- 23 Sewer hard polyvinyl chloride (HPVC) joint
- 24 General HPVC (VG2)
- 25 PVC drainage inspection chamber D300
- 27 Branch tee fitting (LT)
- 28 OTS one-touch sewage pipe
- 29 Impervious wall/double wall sewage pipe
- 30 Good One Touch (GOT) socket
- 31 PCS flange (clamp) type socket
- 32 Round bar support connector
- 34 PFT PE manhole (small)
- 35 PFT composite manhole (small/no. 1/no. 2)
- 36 Flower pot
- 40 Patent & Certificate





# Perfect guarantees product quality

The products made by PERFECT Corporation are reliable.

### Features of PERFECT HI-VP High Impact Water Pipe

The product is very excellent at durability, physical strength, impact-resistance strength, and water pressure resistance, and excellent at weather-resistance and corrosion-resistance. Since it causes no electrical erosion, it is much applied to a variety of water supply construction. Therefore, it can be used safely as a water supply pipe with semi-permanent lifespan and non-toxicity. Thanks to the simple construction of the pipe and connector, it is very convenient and economical to make maintenance.



Durability



Impact resistance



Water pressure resistance



Corrosion resistance



**Details** | Differentiation from conventional product(application of one-way expansion tube thickness enhancement technology)

PERFECT developed the high impact water pipe integrated with anti-separation connector for seismic resistance.



# PERFECT High Impact Unplasticized PVC Pipes For Water Supply

| PERFECT High Impact PVC Water Pipe |

The clean and safe PERFECT PVC high impact water pipe improved long-term internal/external pressure strength, and is every excellent at impact strength. Since it has a differentiated watertight structure of connectors and the effect of separation prevention, it is excellent at seismic function and can be installed conveniently in a site. This pipe had two types of models : HI-VP High Impact Water Pipe (one-way collar pipe) and HI-VP High Impact Water Pipe (straight pipe).

PERFECT High Impact PVC-HIVP Water Pipe

PFT PR2PVC-HIVP One-way Collar Pipe (R type)



Standards Korean Industrial Standards (KS M 3401) KC Sanitation & Safety Standard Excellent Performance Certification of Ministry of SMEs and Startups Excellent Product of Public Procurement Service (unit : mm)

Standards	Nominal	D			t		One-way pipe			
		Standard	Allowable error of max & min outer diameter	Allowable error of average outer diameter	Standard	Allowable error of thickness	D1	ℓ1	ℓ2	ℓ3
PR2PVC-HIVP R50	50	60	±0.50	±0.20	4.5	±0.40	61.3	125	88	175
PR2PVC-HIVP R75	75	89	±0.50	±0.20	5.9	±0.40	90.3	145	110	211
PR2PVC-HIVP R100	100	114	±0.65	±0.20	7.1	±0.50	115.6	155	119	230
PR2PVC-HIVP R150	150	165	±1.00	±0.30	9.6	±0.60	167.3	200	155	270
PR2PVC-HIVP R200	200	216	±1.30	±0.70	11.1	±0.70	219.5	210	170	345

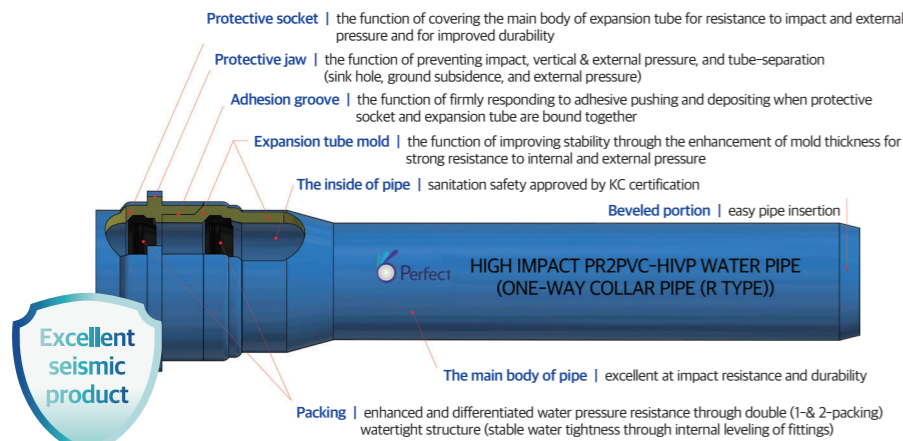
Remarks 01 Maximum and minimum outer diameters refer to the maximum and minimum values of the outer diameters measured in a random position  
02 The standard length of pipe is 4m or 6m, and the allowable error is +30/-10mm.



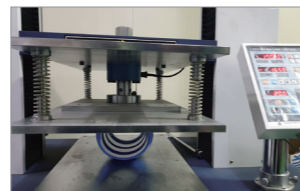
Features

- Dual watertight structure excellent at stable water tightness and response to soft ground subsidence and seismic separation
- Applied expansion tube thickness enhancement technology; effective at external impact resistance and pressure resistance strength; improved stability

Functions of differentiated components



Specified as Leading Company in Water Industry



One-way pipe load test  
※ About 100% higher than conventional product

High Impact PVC-HIVP Water Pipe

PFT PR2PVC-HIVP One-way Collar Pipe (CR Type)



Standards Korean Industrial Standards (KS M 3401) KC Sanitation & Safety Standard Excellent Performance Certification of Ministry of SMEs and Startups Excellent Product of Public Procurement Service (unit : mm)

Standards	Nominal	D			t		편수부			
		Standard	Allowable error of max & min outer diameter	Allowable error of average outer diameter	Standard	Allowable error of thickness	D1	ℓ1	ℓ2	ℓ3
PR2PVC-HIVP R50	50	60	±0.50	±0.20	4.5	±0.40	61.3	125	88	175
PR2PVC-HIVP R75	75	89	±0.50	±0.20	5.9	±0.40	90.3	145	110	211
PR2PVC-HIVP R100	100	114	±0.65	±0.20	7.1	±0.50	115.6	155	119	230
PR2PVC-HIVP R150	150	165	±1.00	±0.30	9.6	±0.60	167.3	200	155	270
PR2PVC-HIVP R200	200	216	±1.30	±0.70	11.1	±0.70	219.5	210	170	345

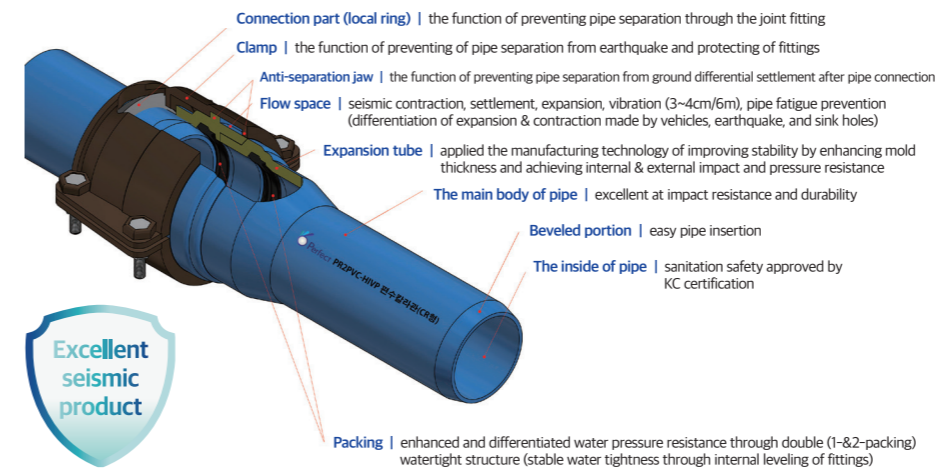
Remarks 01 Maximum and minimum outer diameters refer to the maximum and minimum values of the outer diameters measured in a random position  
02 The standard length of pipe is 4m or 6m, and the allowable error is +30/-10mm.



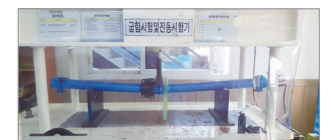
Features

- Excellent at expansion and contraction for earthquake and response to soft ground subsidence (excellent seismic performance)
- Excellent at water tightness, corrosion resistance, long-term durability and impact resistance

Functions of differentiated components



Vibration Test



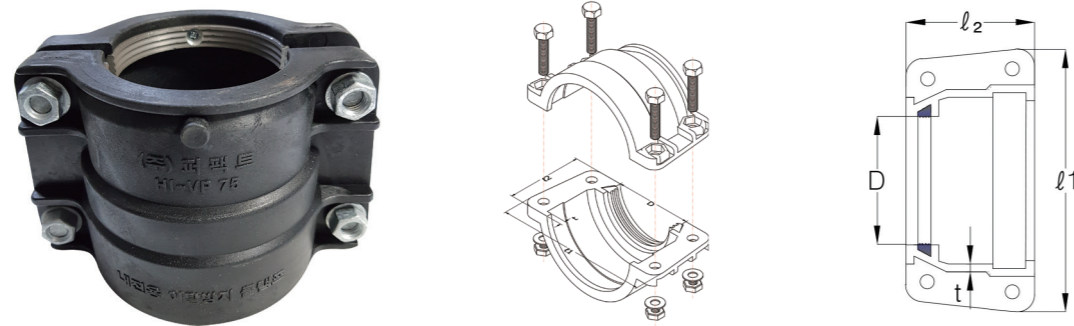
Bending Test



Pipe Separation Test

High Impact PVC Water Pipe Anti-separation Clamp (NF clamp)

PFT-NF Anti-separation Clamp



Standards

(unit : mm)

Model name	Item identification no.	Nominal	D		Standard (t)	Outside diameter (ø1)	Length (ø2)
			Standard	Allowable error of max & min outer diameter			
CR50	23975981	50	60	±1.50	5.0	167	104
CR75	23975982	75	89	±1.50	5.0	202	124
CR100	23975983	100	114	±1.50	7.0	240	125
CR150	23975984	150	165	±1.50	7.0	298	175
CR200	23975985	200	216	±1.50	8.0	368	190



Features

Highly excellent at the prevention of pipe separation that is caused by seismic-induced fitting expansion & contraction and soft ground subsidence

Functions of differentiated components

- Excellent at the protection of pipe fittings and the prevention of pipe separation caused by ground differential settlement and earthquake



Picture of exhibition



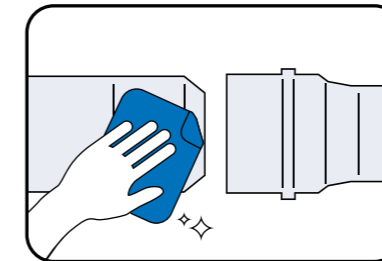
Shipping for export to Japan



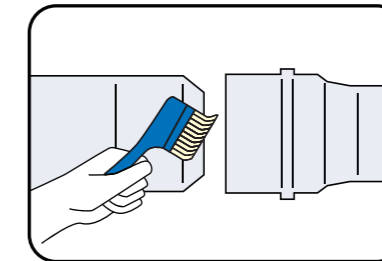
Product exporting to Japan

How to assemble PERFECT High Impact PVC-HVP Water Pipe

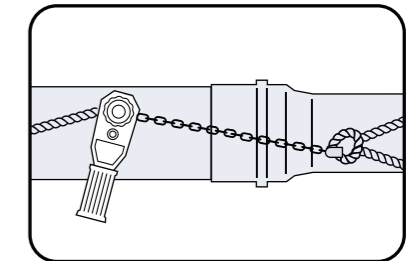
Rubber ring based assembly procedure (one-side collar pipe)



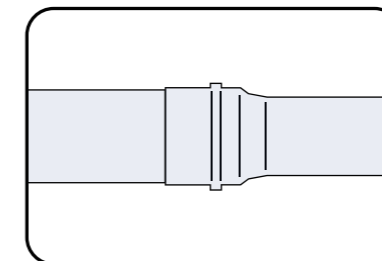
01 Check the position of the rubber ring and remove impurities from the insertion part clearly.



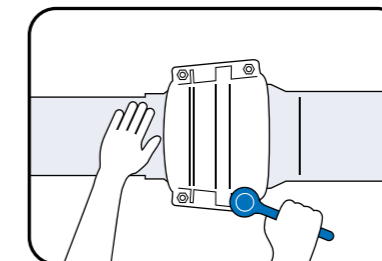
02 Evenly apply lubricant to the joint surface and beveled insertion surface of the 1st & 2nd rubber rings.



03 Align pipes in a straight line and make insertion up to the insertion line with the use of equipment.



04 Check that the insertion is made up to the joint completion status line.



05 Make connection well with the use of the fixture bolts of NF clamp left and right in turn.

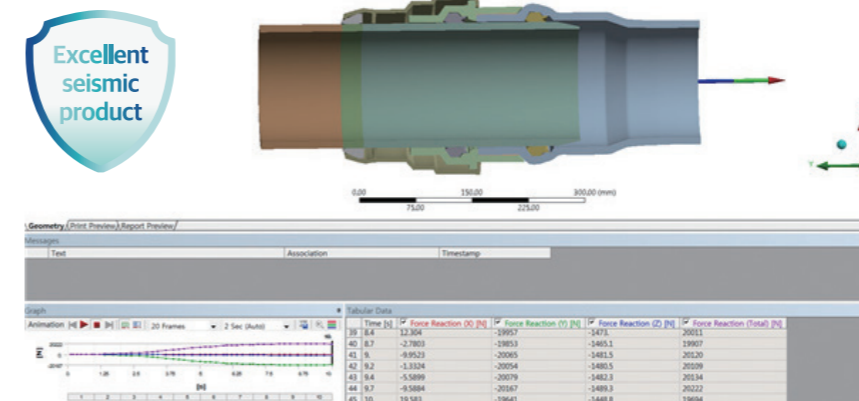


< Assembly completion >

Result from the structural analysis on pipe separation simulation of high impact PVC-HVP water pipe in case of earthquake (excellent seismic-resistance performance)

Reaction Force Calculation

- The reaction force of fitting was max. 20,222N.
- This model is Half Model, and its actual reaction force is twice higher than 20,222N. The maximum separation force needed for separation is estimated to be 40,444N (4,127kg).
- When separation was applied to this model by force, the pipe was not damaged by the wedge of metal ring and clamp separation occurred.



Conclusion

In case of 1.5m pipe burying, structural safety was reviewed. Seismic performance was analyzed at a magnitude 9.0 earthquake. As a result, the water & sewage pipe set of the applicant company was judged to be very excellent.

<Source: Performance Evaluation Report of PERFECT patented technology>

PERFECT High Impact HI-VP Water Pipe (One-way Collar Pipe)



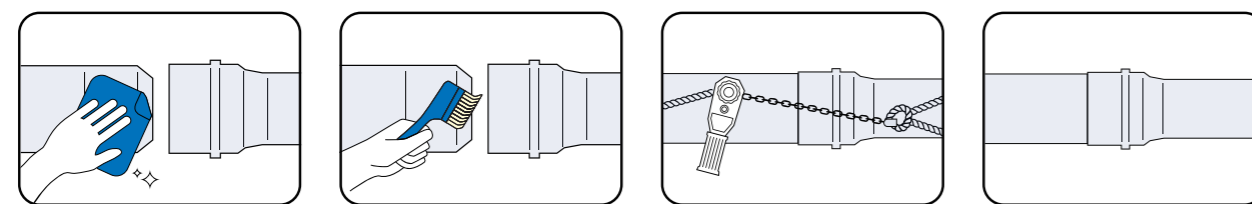
Standards Korean Industrial Standards (KS M 3401) KC Sanitation & Safety Standard Excellent Performance (unit : mm)

Model name	Identification no.	Nominal pipe size	D	D1	Allowable error of D1	l	t
PHIVP 50	23407950	50	60	61.3	±0.50	90	4.5
PHIVP 65	23407951	65	76	77.3	±0.50	95	5.2
PHIVP 75	23407952	75	89	90.3	±0.50	95	5.9
PHIVP 100	23407953	100	114	115.6	±0.50	115	7.1
PHIVP 125	23407954	125	140	142	±0.50	130	8.3
PHIVP 150	23407955	150	165	167.3	±1.0	135	9.6
PHIVP 200	23407956	200	216	219.5	±1.2	155	11.1
PHIVP 250	23407957	250	267	271.1	±1.4	180	13.4
PHIVP 300	23407958	300	318	322.7	±1.6	210	16.1

Remarks

- The length of pipe is 6m + a joint length. The standard length of pipe is 4m or 6m, and the allowable error is +30/-10mm.
- The outside diameter D and allowable error are different depending on the allowable error of D1.
- A watertight rubber ring is a standard product that follows KSM 6613.

Rubber ring based assembly procedure (one-side collar pipe)



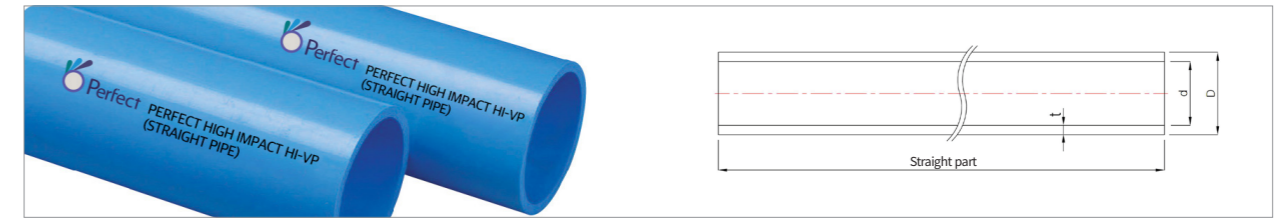
- 01 Check the position of the rubber ring and remove impurities from the insertion part clearly.
- 02 Evenly apply lubricant to the joint surface and beveled insertion surface of the rubber ring.
- 03 Align pipes in a straight line and make insertion up to the insertion line with the use of equipment.
- 04 Check that the joint is complete and that the insert goes into the mark line.



Attention in handling

- When the pipe is put outdoor, it should be kept away from direct sunlight, and should be covered with fabric in order to be protected against impurities and heat.
- Do not screw the pipe directly.
- Do not spray or put any types of organic chemicals or substances that negatively influence the pipe material, such as acetone, thinner, creosote, and insecticide.
- Even if the above substances do not touch the pipe directly (e.g., if any of the above substances spills on the ground or soaks into the ground), the pipe that is buried thinly can be damaged.

PERFECT High Impact HI-VP(straight pipe)



Standards Korean Industrial Standards (KS M 3401) KC Sanitation & Safety Standard Excellent Performance (unit : mm)

Model name	Diameter nominal	Outside diameter (D)			Thickness (t)		Reference weight (kg/m)	Certification
		Standard	Allowable error of max & min outer diameter	Allowable error of average outer diameter	Standard	Allowable error of thickness		
P-HIVP 16A	16	22	±0.20	±0.20	3.0	±0.30	0.251	KS, KC
P-HIVP 20A	20	26	±0.25	±0.20	3.0	±0.30	0.304	KS, KC
P-HIVP 25A	25	32	±0.30	±0.20	3.5	±0.30	0.439	KS, KC
P-HIVP 30A	30	38	±0.35	±0.20	3.5	±0.30	0.531	KS, KC
P-HIVP 35A	35	42	±0.35	±0.20	3.7	±0.30	0.623	KS, KC
P-HIVP 40A	40	48	±0.40	±0.20	4.0	±0.30	0.774	KS, KC
P-HIVP 50A	50	60	±0.50	±0.20	4.5	±0.40	1.099	KS, KC
P-HIVP 65A	65	76	±0.50	±0.20	5.2	±0.40	1.415	KS, KC
P-HIVP 75A	75	89	±0.50	±0.20	5.9	±0.40	2.191	KS, KC
P-HIVP 100A	100	114	±0.65	±0.20	7.1	±0.50	3.295	KS, KC
P-HIVP 125A	125	140	±0.80	±0.30	8.3	±0.60	4.371	KS, KC
P-HIVP 150A	150	165	±1.00	±0.30	9.6	±0.60	6.498	KS, KC
P-HIVP 200A	200	216	±1.30	±0.70	11.1	±0.80	9.919	KS, KC
P-HIVP 250A	250	267	±1.60	±0.90	13.4	±0.80	15.054	KS, KC
P-HIVP 300A	300	318	±1.90	±1.00	16.1	±1.10	21.255	KS, KC

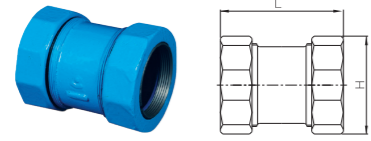
Remarks

- The standard length of pipe is 6m, and the allowable error is +30/-10mm.
- The diameter (D) and thickness are different depending on the size of (t).

Features

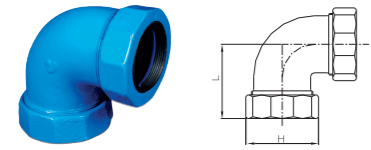
- A clean and safe water pipe
- Improved long-term internal & external pressure strength; very excellent impact-resistant strength
- Excellent seismic function through differentiated watertight structure and anti-separation effect of connectors
- Very convenient site construction
- ※ The color of pipe is white or blue.

Socket



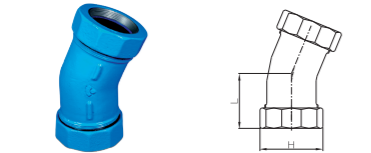
Standards	
16A	35A
20A	40A
25A	50A
30A	

90° Elbow



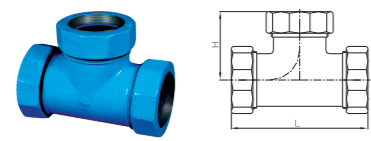
Standards	
16A	35A
20A	40A
25A	50A
30A	

22.5° Elbow



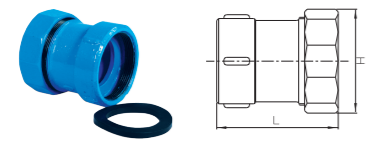
Standards	
25A	40A
30A	50A
35A	50A

Tee



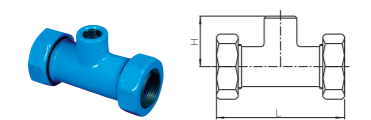
Standards	
16A	35A
20A	40A
25A	50A
30A	

Saddle Socket



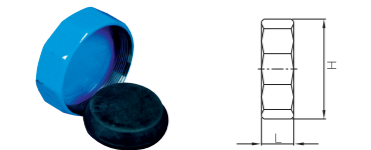
Standards	
16A	35A
20A	40A
25A	50A
30A	

Male Run Tee



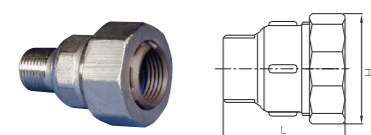
Standards	
16x16A	25x16A
20x16A	25x20A

Cap



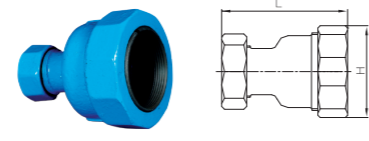
Standards	
16A	35A
20A	40A
25A	50A
30A	

STS Male Thread Nipple



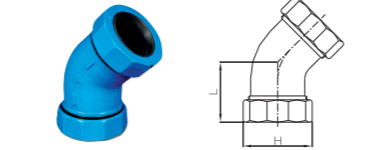
Standards	
16A	25A
25A	

Reducer Socket



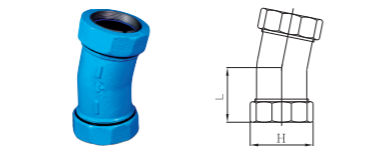
Standards	
20x16A	35x16-25A
25x16-20A	40x16-35A
25x16-25A	50x16-40A
30x16-25A	

45° Elbow



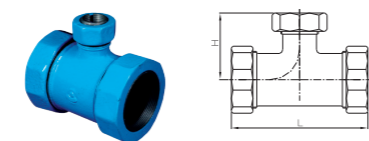
Standards	
16A	35A
20A	40A
25A	50A
30A	

11.25° Elbow



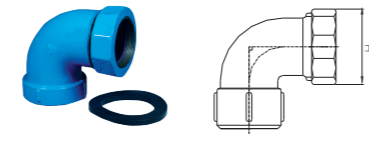
Standards	
50A	

Reducer Tee



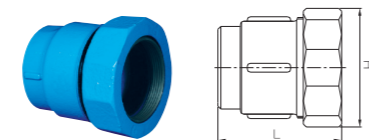
Standards	
20x16A	35x16-25A
25x16-20A	40x16-35A
30x16-25A	50x16-40A

Saddle Elbow



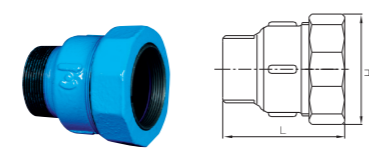
Standards	
16A	35A
20A	40A
25A	50A
30A	

Female Thread Nipple



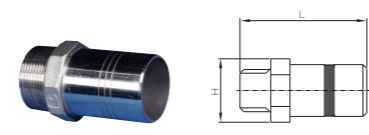
Standards	
16A	35A
20A	40A
25A	50A
30A	

Male Thread Nipple



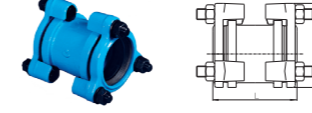
Standards	
16A	35A
20A	40A
25A	50A
30A	

STS Nipple



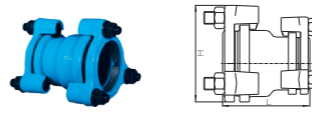
Standards	
16A	35A
20A	40A
25A	50A
30A	

Socket



Standards	
50A	75A
65A	100A

Reducer Socket



Standards	
75x50A	100x75A
75x65A	65x16-50a
100x50A	75x16-50A
100x65A	100x16-50A

90° Elbow



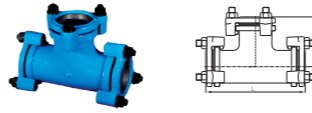
Standards	
50A	65A
75A	100A

22.5° Elbow



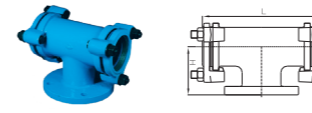
Standards	
50A	65A
75A	100A

Tee



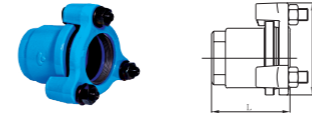
Standards	
50A	65A
75A	100A

Flange Tee



Standards	
75A	100A
100x75A	75x50A
75x100A	100x50A

Female Thread Nipple



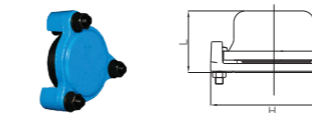
Standards	
50A	

Saddle Elbow



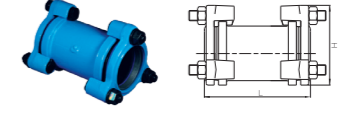
Standards	
50A	

Cap



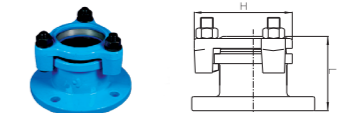
Standards	
50A	65A
75A	100A

Long Socket



Standards	
75A	100A

Flange Socket



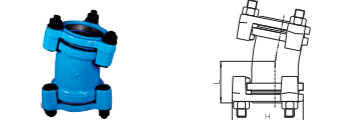
Standards	
50A	65A
75A	100A

45° Elbow



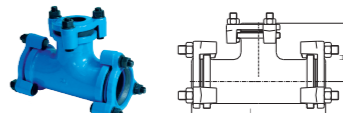
Standards	
50A	65A
75A	100A

11.25° Elbow



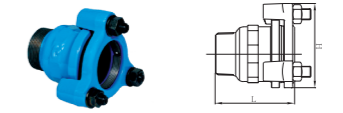
Standards	
50A	65A
75A	100A

Reducer Tee



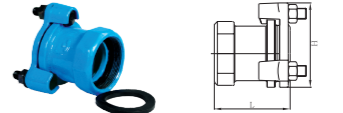
Standards	
75x50A	100x75A
75x65A	65x16-50a
100x50A	75x16-50A
100x65A	100x16-50A

Male Thread Nipple



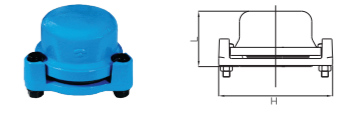
Standards	
50A	

Saddle Socket



Standards	
50A	

Integrated End Cap



Standards	
50A	75A
100A	

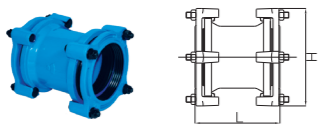
Reducer Flange



Standards	
65x16-50A	

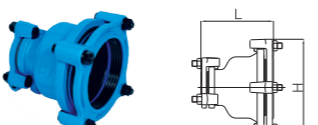


**Socket**




Standards	
125A	250A
150A	300A
200A	

**Reducer Socket**



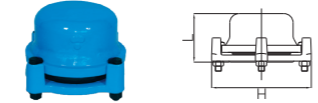
Standards	
125x75A	200x150A
125x100A	250x100A
150x75A	250x150A
150x100A	250x200A
150x125A	300x150A
200x100A	300x200A
200x125A	300x250A

**Flange Socket**



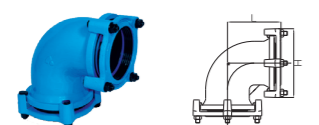
Standards	
125A	250A
150A	300A
200A	

**Cap**



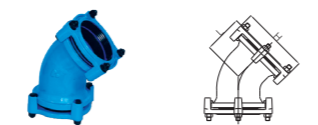
Standards	
125A	250A
150A	300A
200A	

**90° Elbow**



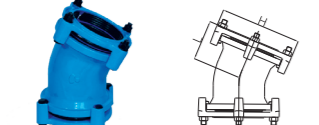
Standards	
125A	250A
150A	300A
200A	

**45° Elbow**



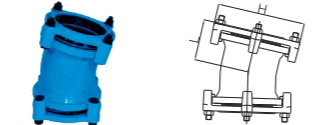
Standards	
125A	250A
150A	300A
200A	

**22.5° Elbow**



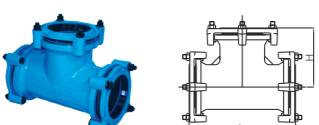
Standards	
125A	250A
150A	300A
200A	

**11.25° Elbow**



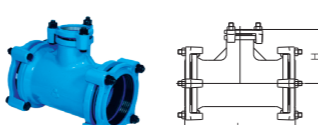
Standards	
125A	250A
150A	300A
200A	

**Tee**



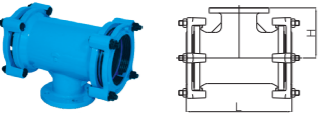
Standards	
125A	250A
150A	300A
200A	

**Reducer Tee**



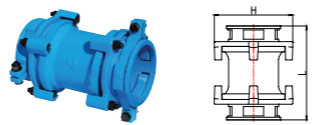
Standards	
125x75A	250x100A
125x100A	250x150A
150x75A	250x200A
150x100A	300x75A
200x75A	300x100A
200x100A	300x150A
200x150A	300x200A
250x75A	300x250A

**Flange Tee**



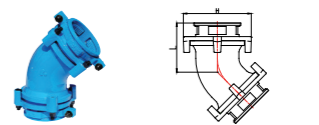
Standards	
125x75A	250x75A
125x100A	250x100A
150A	250x150A
150x75A	250x200A
150x100A	300x75A
200A	300x100A
200x75A	300x150A
200x100A	300x200A
200x150A	

**Socket**




Standards	
150A	250A
200A	300A

**45° Elbow**



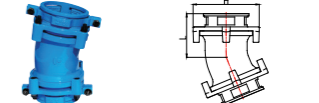
Standards	
150A	250A
200A	300A

**Reducer Socket**



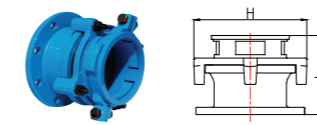
Standards	
150x80A	250x150A
150x100A	250x200A
200x100A	300x150A
200x150A	300x200A
250x100A	300x250A

**11.25° Elbow**



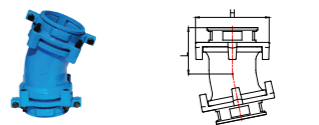
Standards	
150A	250A
200A	300A

**Flange Socket**



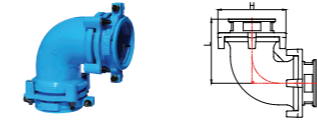
Standards	
150A	250A
200A	300A

**22.5° Elbow**



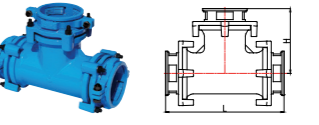
Standards	
150A	250A
200A	300A

**90° Elbow**



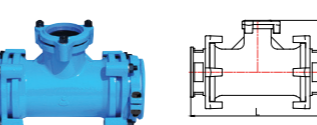
Standards	
150A	250A
200A	300A

**Tee**



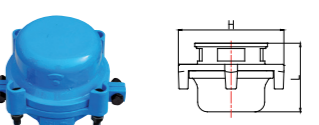
Standards	
150A	250A
200A	300A

**Reducer Tee**



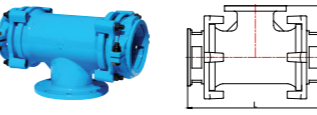
Standards	
120x80A	250x200A
150x100A	300x80A
200x80A	300x100A
200x100A	300x150A
200x150A	300x200A
250x100A	300x250A
250x150A	

**Integrated End Cap**




Standards	
150A	250A
200A	300A

**Flange Tee**



Standards	
150A	200x100A
150x50A	200x50A
150x100A	250x100A
200A	300x50A
200x50A	300x100A

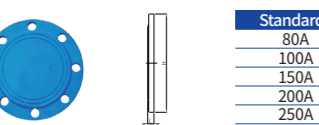
**Anti-separation Clamp**



Standards	
50A	200A
65A	250A
75A	300A
100A	350A
125A	400A
150A	

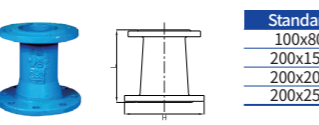
Other products

**Cap Flange**



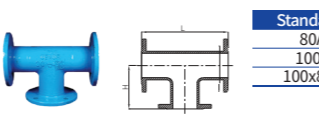
Standards	
80A	
100A	
150A	
200A	
250A	
300A	

**Flanged Concentric Taper**



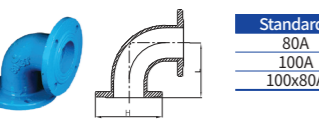
Standards	
100x80A	
200x150A	
200x200A	
200x250A	

**3-Hole Flange Tee**



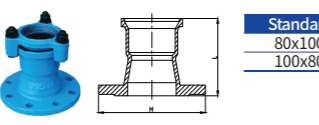
Standards	
80A	
100A	
100x80A	

**90° Flanged Bend**



Standards	
80A	
100A	
100x80A	

**3-Hole Flange Tee**



Standards	
80x100A	
100x80A	

**Reducer Flange for Fire Hydrant**



Standards	
80x100A	
100x80A	

Bending & Vibration Tests



Test item	Test method	Test result
Vibration test (joint)	2.0MPa water pressure is imposed. In that state, vibration with 6mm amplitude is applied 10,000 times.	No separation and leakage
Bendingtest	2.5MPa water pressure is imposed. In that state, the both sides are bent at 5°.	No separation and leakage

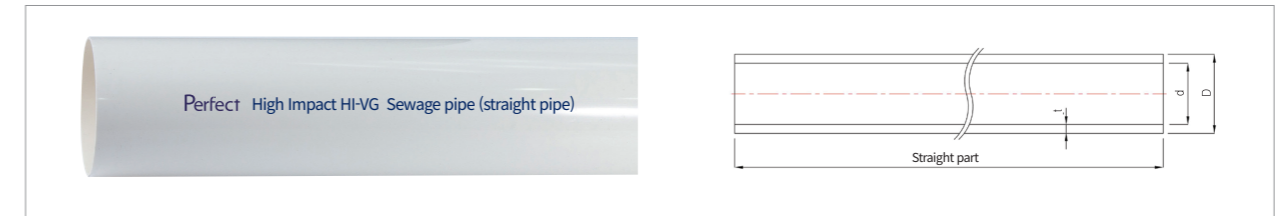
# PERFECT High Impact Unplasticized PVC Pipes For Water Supply

| PERFECT High Impact PVC Water Pipe |



This pipe product is very good for sewage pipe improvements. The PERFECT high impact sewer has excellent durability and is semi-permanent. Since it has a socket & one-touch type, it features simple construction and eco-friendliness. Thanks to the expansion and contraction of the pipe product, it can respond to temperature influence. The PVC material filled with impact-resistant stiffener is strongly resistant to impact and earth pressure.

## PERFECT High Impact HI-VG<sub>2</sub> Sewage pipe (straight pipe)

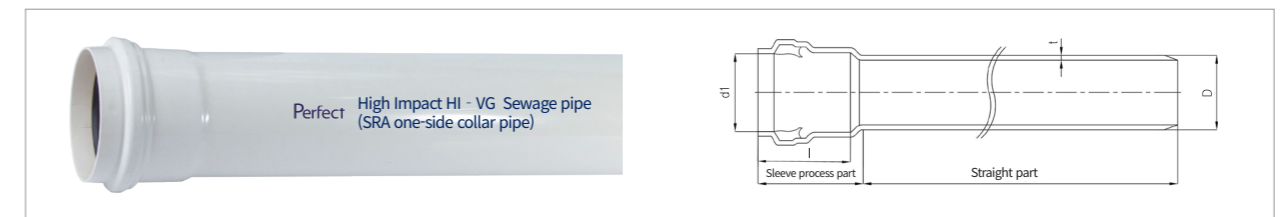


Standards Group Standard Certification (SPS-KPPS M306)

(Unit : mm)

Model name	Procurement item identification no.	Diameter nominal	Outside diameter (D)			Thickness (t)		Reference to near inside diameter (d)	Reference weight (kg/m)
			Standard	Average allowable error	Max & min allowable error	Min size	Allowable error		
P-HI 75	-	75	89	±0.3	±0.5	2.7	±0.6	83	1.135
P-HI 100	23357830	100	114	±0.4	±0.6	3.1	±0.8	107	1.701
P-HI 125	23357831	125	140	±0.5	±0.8	4.1	±0.8	131	2.682
P-HI 150	23357832	150	165	±0.5	±1.0	5.1	±0.8	154	3.859
P-HI 200	23357833	200	216	±0.7	±1.3	6.5	±1.0	202	6.435
P-HI 250	23357834	250	267	±0.9	±1.6	7.8	±1.2	250	9.555
P-HI 300	23357835	300	318	±1.0	±1.9	9.2	±1.4	298	13.417

## PERFECT High Impact HI-VG<sub>2</sub> Sewage pipe (SRA one-side collar pipe)



Standards Group Standard Certification (SPS-KPPS M306)

(Unit : mm)

Model name	Procurement item identification no.	Diameter nominal	Outside diameter (D)			HIVG2-SRA					
			Standard	Average allowable error	Max & min allowable error	Thickness (t)		Reference to near inside diameter (d)	Thickness (t)		
						Min size	Allowable error		Inside diameter of contact part d (min)	Joint length e (min)	Length of contact part t (min)
P-SRA 75	-	75	89	±0.3	±0.5	2.7	±0.6	±0.6	89.5	40	125
P-SRA 100	23361213	100	114	±0.4	±0.6	3.1	±0.8	±0.8	114.5	42	145
P-SRA 125	23361214	125	140	±0.5	±0.8	4.1	±0.8	±0.8	140.6	44	155
P-SRA 150	23361215	150	165	±0.5	±1.0	5.1	±0.8	±0.8	165.7	47	165
P-SRA 200	23361216	200	216	±0.7	±1.3	6.5	±1.0	±1.0	216.9	52	185
P-SRA 250	23361217	250	267	±0.9	±1.6	7.8	±1.2	±1.2	268.1	57	205
P-SRA 300	23361218	300	318	±1.0	±1.9	9.2	±1.4	±1.4	319.5	62	225

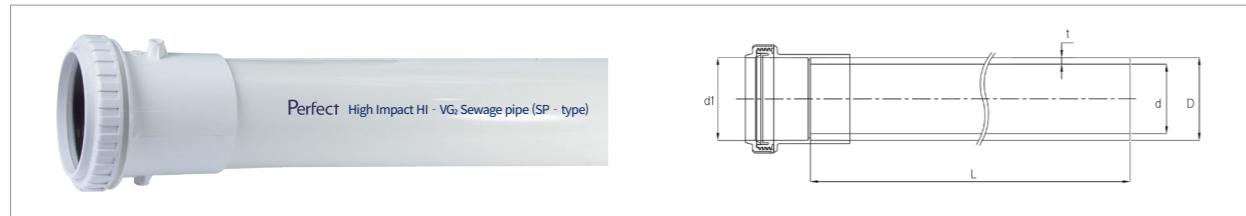
### Features

- Responsible to temperature influence through pipe expansion and contraction
- Strong resistant to impact and earth pressure through the PVC material filled with impact-resistant stiffener
- Perfect water tightness and durability through the watertight ring of EPDM

### Use

- Sewage pipe improvements, sewage and rain water pipes, APT sites, etc.
- Make-to-order for mosquito (larva) inflow reduction pipes

PERFECT High Impact HI-VG<sub>2</sub> Sewage pipe (SP-type) Integrated with Connector



Standards Group Standard Certification (SPS-KPPS M306)

(unit : mm)

Model name	Procurement item identification no.	Diameter nominal	Outside diameter (D)			Thickness (t)		Reference to near inside diameter (d)	Contact part	
			Standard	Average allowable error	Max & min allowable error	Min size	allowable error		Inside diameter	
									d1	allowable error
P-SP 100	23357828	100	114	±0.4	±0.6	3.1	±0.8	107	115.85 ±1.0	
P-SP 150	23357829	150	165	±0.5	±1.0	5.1	±0.8	154	167.15 ±1.15	
P-SP 200	-	200	216	±0.7	±1.3	6.5	±1.0	202	219.10 ±1.50	

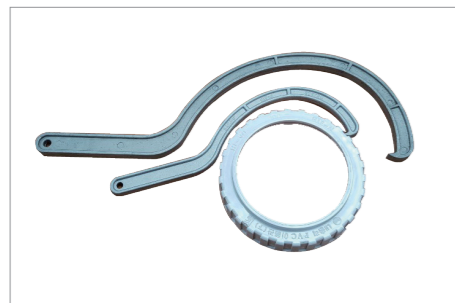
Features

- Socket & one-touch type; easy construction
- Semi-permanent and eco-friendly
- Prevention of sewage and rain water leakage; strong watertightness
- Strong resistant to differential settlement and external impact through the addition of impact-resistant stiffener
- Strong impact strength and no fragility
- Excellent durability through the rubber ring of EPDM

Use

- Sewage pipe improvements, sewage and rain water pipes, APT sites, etc.

High Impact Sewage pipe (SP-TYPE)

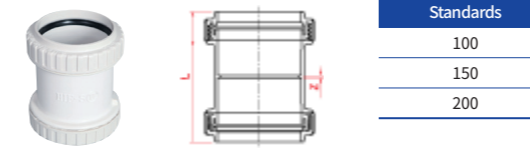


How to connect

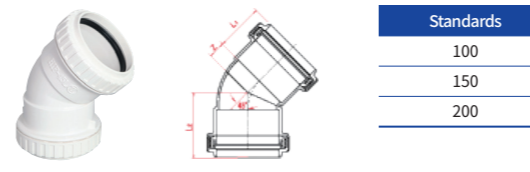
- 1 Cut the pipe at the right angle from the pipe axis and do beveling work at an acute angle.
- 2 Remove soil, sand, and dust from the insertion part of the pipe and the inside of joint.
- 3 Mark a line of joint insertion depth (stopper) on the pipe.
- 4 Turn HIF-N (one-touch screw-type joint) CAP 3~4 times and loosen it.  
*\*In this process, the CAP should not be separated completely from the main body.*
- 5 Push the pipe to install to the end (for more quick construction, it is possible to apply liquid detergent or soap water depending on a pipe or a joint insertion part) and tighten the loosened CAP fully
- 6 After the whole or part period of construction, firmly tighten HIF-N (one-touch screw-type joint) CAP with the use of tightening tools (jigs).
- 7 Apply liquid detergent or soap water on the rubber ring. (In this case, a lubricant should not be used.)

Sewer Hard Polyvinyl Chloride (HPVC) Joints

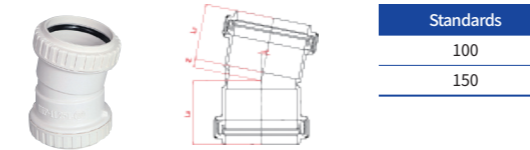
HIF-N Two-way Socket



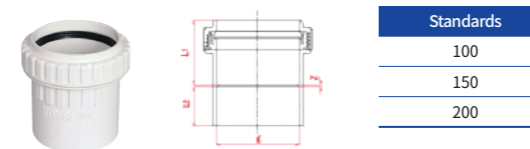
HIF-N45° Curved Pipe



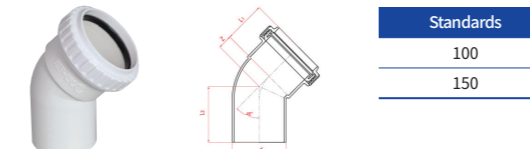
HIF-N11.5° Curved Pipe



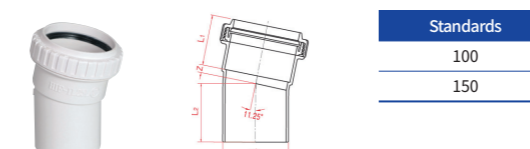
HIF-N One-way Socket



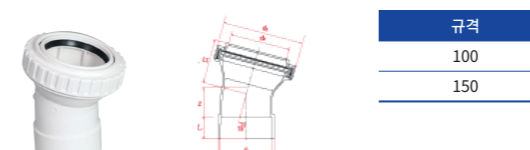
HIF-N45° urved Pipe (One-way)



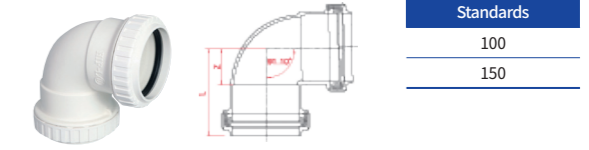
F-N11.5° urved Pipe (One-way)



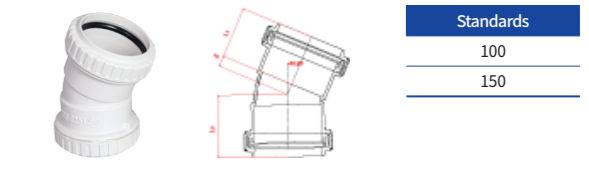
IF-N Variable Curved Pipe (socket type)



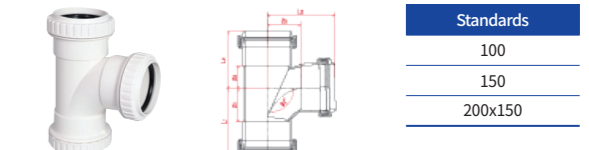
HIF-N90° Curved Pipe



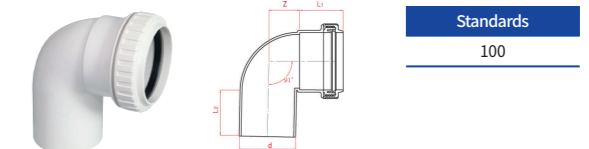
HIF-N22.5° Curved Pipe



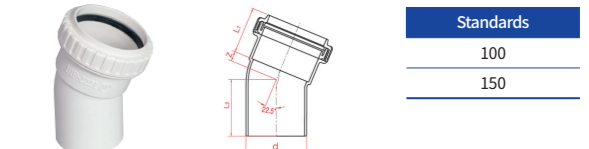
HIF-N LT Pipe



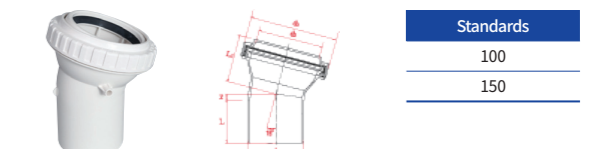
HIF-N90° Curved Pipe (One-way)



HIF-N22.5° urved Pipe (One-way)



HIF-N Variable Curved Pipe (inside insertion)



General HPVC (VG<sub>2</sub>) KS M 3404



Thin Pipe (Sanitary Pipe, VG<sub>2</sub>)

Nominal		Average outside diameter		Thickness		Near inside diameter	Reference weight (gr/m)
Nominal	Display (abbreviation)	Standard	Allowable error	Min size	Allowable size		
50	50	60	±0.2	1.8	±0.4	56	521
65	65	76	±0.3	2.2	±0.6	71	825
75	75	89	±0.3	2.7	±0.6	83	1,159
100	100	114	±0.4	3.1	±0.8	107	1,737
125	125	140	±0.5	4.1	±0.8	131	2,739
150	150	165	±0.5	5.1	±0.8	154	3,941
200	200	216	±0.7	6.5	±1.0	202	6,572
250	250	267	±0.9	7.8	±1.2	250	9,758
300	300	318	±0.10	9.2	±1.4	298	13,701

Features

- A standard length is 4,000mm, and the allowable error is ±10mm.
- Other specifications than the above spec. can be provided at a customer's request.
- ※ Make-to-order for mosquito (larva) inflow reduction pipes

Remarks

- APT sewage & rain water pipes, ventilation pipes, a variety of drainage equipment
- ※ Length: made to a customer's order

PFT-PVC Drainage Inspection Chamber D300(freeze protection)



Features

- Easy construction at any angle through the 90° variable curved pipe
- Odor backflow prevention through the U-trap in and out of the chamber
- Freeze-prevention effect through the thermo inner cover in the chamber
- Excellent constructability, chemical-resistance, corrosion-resistance, and durability
- Solution to the complaint of home odor backflow

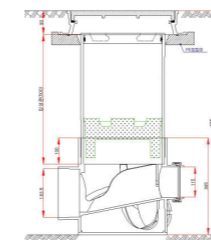


**Perfect** | PERFECT Co., Ltd. takes on challenges and makes its most effort to develop differentiated new products with the best quality on the basis of field know-how and technologies and to provide the clean environment for descendants

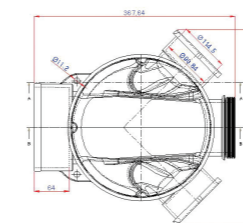
Diameter Nominal & Size of PFT-PVC Drainage Inspection Chamber

Model name	Item identification no.	Product name	Size	Cap & Support Frame	Name of certification
PFT-P124	22818763	PFT-PVC drainage inspection chamber	D300-100 x 150	Excluded	Group Standard Certification
PFT-300A	23699904	PFT-PVC drainage inspection chamber	D300-100 x 150	Excluded	Environmental Labeling Certification

Cross Section of PFT-PVC Drainage Inspection Chamber



Plane Figure of PFT-PVC Drainage Inspection Chamber



 PVC Inner Cover	 Thermo Inner Cover (excluded)	 Cast Iron Cover (excluded)
 PVC Vertical pipe	 Curved Trap Pipe	 Variable Curved Pipe
 Lower Body of Drainage Inspection Chamber	 Outflow Watertight Rubber Ring	 PE Support

PERFECT PVC Drainage Inspection Chamber D300

Model name : PFT-P124

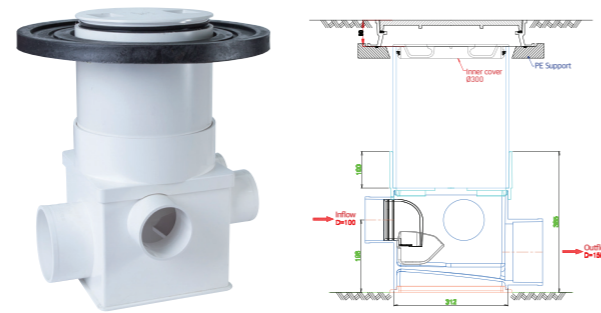


Size(Standards) | D300-100x150

Features

- Easy construction at any angle through the 90° variable curved pipe
- Odor backflow prevention through the U-trap in and out of the chamber
- Excellent constructability, chemical-resistance, corrosion-resistance, and durability
- Solution to the complaint of home odor backflow

Model name : PFT-P134

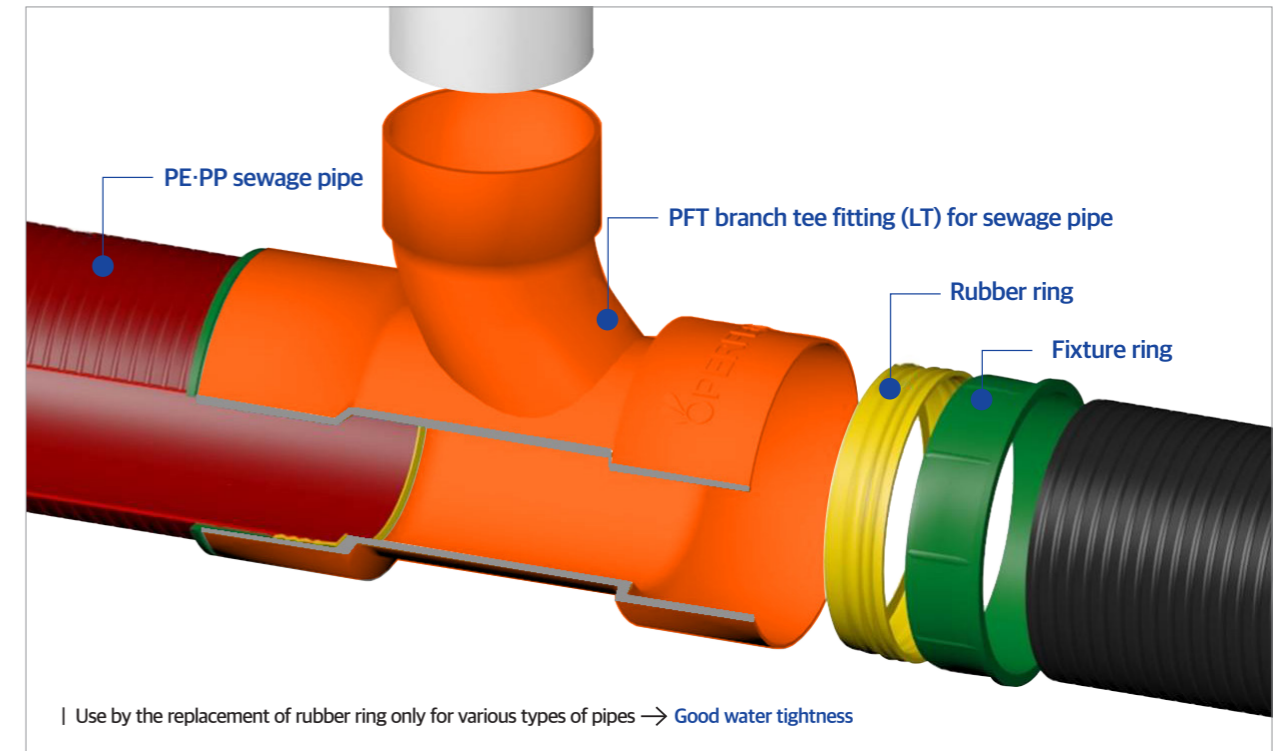


Size(Standards) | D300-100x150

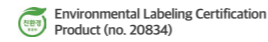
Features

- Easy construction in line with pipe angles and site conditions
- Connection in line with inlet

PERFECT Branch Tee Fitting (LT)



Diameter Nominal & Size of PERFECT PVC Drainage Inspection Chamber



Model name	Item identification no.	Diameter of water chamber	Height of main body	Vertical pipe	Inlet	Outlet	PVC inner cover	PE support	End cap	Certification
PFT-P124	22818763	Ø300	H365	Ø300	Ø100	Ø150	Ø280	Ø570	Ø100	
PFT-P134	22957140	Ø300	H385	Ø300	Ø100	Ø150	Ø280	Ø570	Ø100	
PFT-300A	23699904	Ø300	H365	Ø300	Ø100	Ø150	Ø280	Ø570	Ø100	
PFT-300A-1	23930547	Ø300	H385	Ø300	Ø100	Ø150	Ø280	Ø570	Ø100	

| Picture of exhibition



| Production



| Picture of field construction



| Product shipping



Size(Standards)

150x150, 200x150, 200x200, 250x150, 250x200

Features

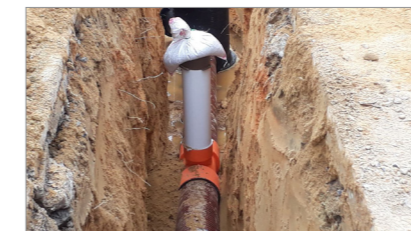
- The best branch tee fitting for PE, PP, and PVC sewage pipes in water pipe improvement construction
- More economic composite joint fitting than conventional weld-type PE fitting
- PFT branch tee fitting that overcomes the drilling-induced damage problem
- Seismic-resistant structure
- Differentiated rubber ring compatible with any type of pipes
- Differentiated watertight ring, rubber ring, and support ring that overcome the watertight weakness caused by fatigue load

Use

- Branch fitting for sewage pipe



| Picture of construction ※ Patent no. 10-1396790 (Be careful of pseudo products)

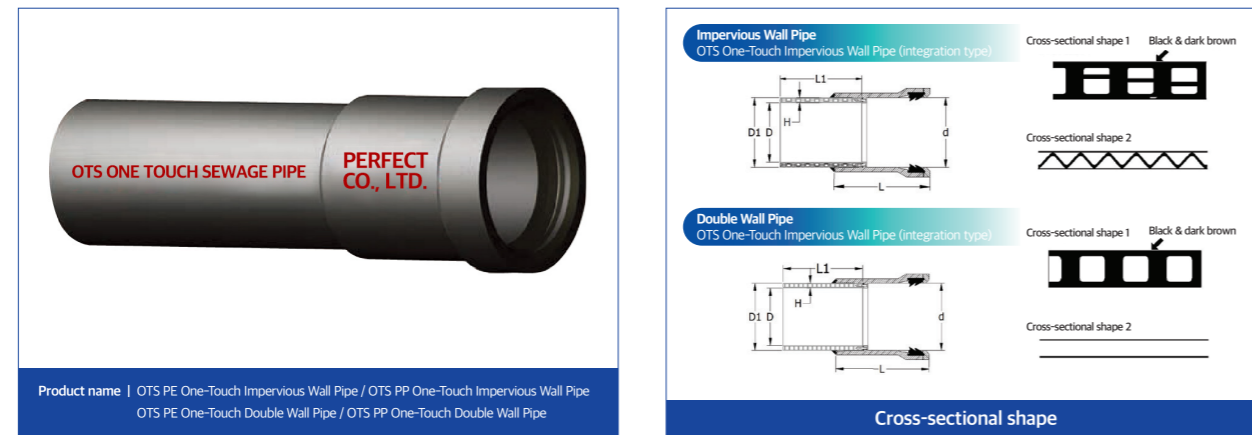


## One Touch Socket (OTS) Sewage Pipe

### Features

- One-Touch connector-integrated structure with remarkably excellent watertightness and constructability
- Simple and fast construction with one-touch integrated socket (OTS) for sewage pipe; perfect watertightness and solution to pipe expansion and contraction through the support ring based packing ring damage prevention
- Convenient field management and construction with no need of separate accessories

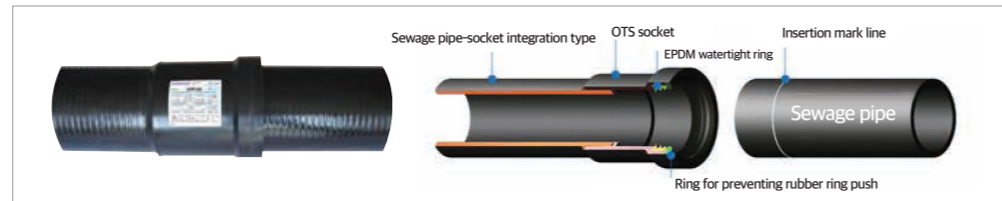
**Structure** | perfect watertightness and simple construction through the differentiated fitting and hollow structure (simple construction and perfect watertightness with no need of separate accessories)



Product name | OTS PE One-Touch Impervious Wall Pipe / OTS PP One-Touch Impervious Wall Pipe  
OTS PE One-Touch Double Wall Pipe / OTS PP One-Touch Double Wall Pipe

### Use

- Sewage pipe & rain water pipe
- Sewage pipe improvements
- Housing land development and complex development
- APT sites



### Standards

Diameter nominal	Item identification no. (PE impervious wall pipe)	Inside diameter (D)	Outside diameter (D1)	Nominal ring stiffness (SN, kN/m)				Pipe length (L1)
				One-Touch impervious wall pipe		One-Touch double wall pipe		
				PE	PP	PE	PP	
150	23738568	150±4.5	174	SN12.5 and more	SN18 and more	SN12.5 and more	SN12.5 and more	6m
200	23738569	200±5.1	228	SN12.5 and more	SN18 and more	SN12.5 and more	SN12.5 and more	6m
250	23738570	250±5.1	280	SN12.5 and more	SN18 and more	SN8 and more	SN12.5 and more	6m
300	23738571	300±5.1	338	SN12.5 and more	SN18 and more	SN8 and more	SN12.5 and more	6m
400	23738572	400±5.1	450	SN12.5 and more	SN18 and more	SN8 and more	SN12.5 and more	6m
500	-	500±5.1	562	SN12.5 and more	SN18 and more	SN8 and more	SN12.5 and more	6m
600	-	600±5.1	678	SN12.5 and more	SN18 and more	SN8 and more	SN12.5 and more	6m

### Remarks

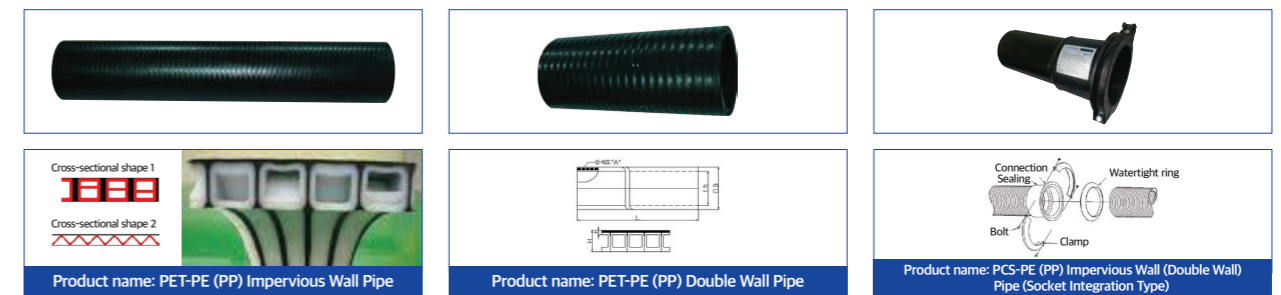
- 01 The standard length of pipe is 4m or 6m, and is changeable with the consent of the parties concerned.
- 02 The allowable error of average inside diameter is ±2%.
- 03 The allowable error of length is (0~2)%.
- 04 The allowable thickness of pipe wall thickness is ±8%. (That of double wall pipe with 300mm or more is ±5%)

## Sewage Pipe with Impervious Wall/Double Wall (Wave) in the Profile

### Features

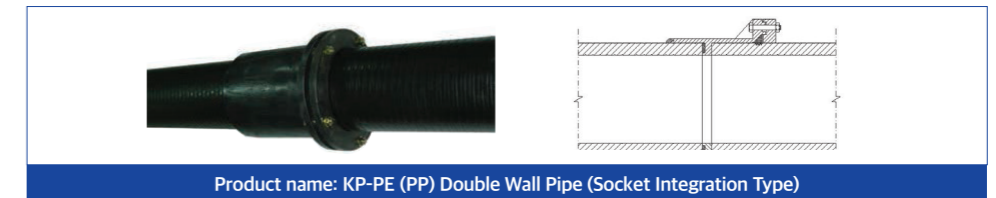
- W-shape wave structure in the profile, excellent at the block of water inflow from the outside; excellent at the remarkable prevention of soil and underground water pollution induced by sewage leakage, even if the outer wall of pipe is damaged
- Far better external pressure strength than conventional pipe products
- Double wall structure of the pipe cross-section, highly resistant to external pressure load; high section modulus of pipe wall
- Lower price and lighter weight than other types of pipes; helpful to shorten a construction period; excellently cost-effective

**Structure** | perfect water tightness and easy construction through differentiated connector structure



### Use

- Sewage pipe & rain water pipe
- Sewage pipe improvements
- Housing land development and complex development
- APT sites



### Standards

Environmental Labeling Certification "Resource Cycle Improvement" Excellent Group Standard Product

Diameter nominal (average inside diameter)	Procurement identification no.				Allowable error of average inside diameter	Average outside diameter (reference value)	Pipe wall thickness (t)	Min inner wall thickness (ti, min)	
	PE impervious wall pipe (straight pipe)	Double wall pipe (straight pipe) Environmental labeling (PE)	Double wall pipe (PCS) Socket integration type	Double wall pipe (KP) Socket integration type				Impervious wall pie	Double wall pipe
150	-	-	22678544	21936226	±4.5	174	12	2.0	2.0
200	21928732	22764918	22678545	21936227	±5.1	228	14	2.0	2.0
250	21928733	22764919	21927663	23168255	±5.1	280	15	2.0	2.0
300	21928734	22764920	21927664	23168256	±5.1	338	19	2.2	2.2
400	21928736	22764921	21927665	23168257	±5.1	450	25	2.8	2.8
450	21928737	-	-	23168258	±5.1	508	29	3.0	3.0
500	21928738	22764923	-	-	±5.1	562	31	3.5	3.5
600	21928739	22764924	-	-	±5.1	678	39	4.0	4.0
700	21928740	-	-	-	±6.4	788	44	4.5	4.5
800	21928741	22764925	-	-	±6.4	900	50	4.5	4.5
900	21928742	22764926	-	-	±6.4	1,012	56	4.8	4.8
1000	22486644	-	-	-	±6.4	1,124	62	5.0	5.0
1200	22486645	-	-	-	±6.4	1,350	75	5.0	5.0

### Remarks

- 01 The standard length of pipe is 4m or 6m, and is changeable with the consent of the parties concerned.
- 02 The allowable error of average inside diameter is ±2%.
- 03 The allowable error of length is (0~2)%.
- 04 The allowable thickness of pipe wall thickness is ±8%. (That of double wall pipe with 300mm or more is ±5%)

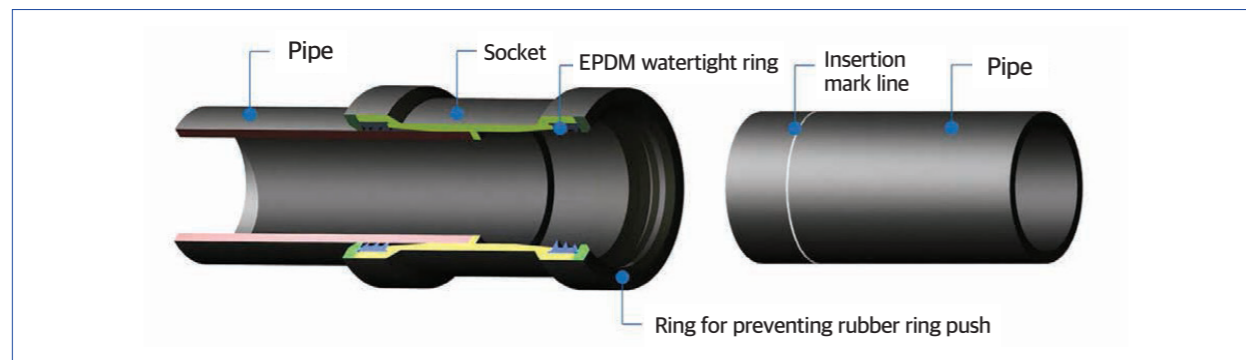
Good One Touch (GOT) Socket

Features

- One-touch socket type effective at simple construction and construction period shortening
- PE-PP synthetic resin with highly excellent durability and corrosion-resistance
- Very stronger external pressure strength than conventional fitting sockets
- Perfect water tightness through the ring for preventing one-touch rubber ring push
- Convenient construction under any bad conditions
- Very easy site management and construction with no need of separate accessories

Structure | Perfect water tightness through differentiated watertight ring structure

Excellent Group Standard Product



Use

- Socket for sewage pipe or rain water pipe connection (sewage pipe improvements, housing land development, APT site)

Size (Standards)

- D150, D200, D250, D300, D400, D500, D600



GOT One-Touch Socket Joints

Procurement identification no.	Type Diameter (mm)	Assembly & installation		Procurement identification no.	Type Diameter (mm)	Assembly & installation		
		Plumber	Worker			Plumber	Worker	Crane (hr)
22819321	D150	0.10	0.10	22819325	D400	0.15	0.15	-
22819322	D200	0.11	0.11	22819326	D500	0.18	0.10	0.27
22819323	D250	0.12	0.12	22819327	D600	0.21	0.12	0.31
22819324	D300	0.13	0.13	-	-	-	-	-

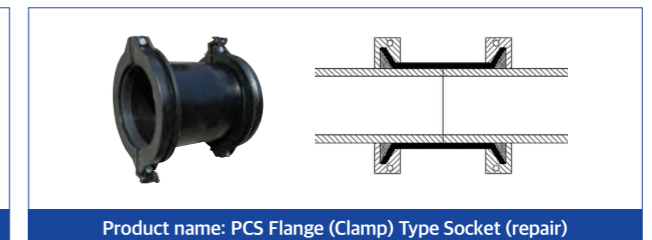
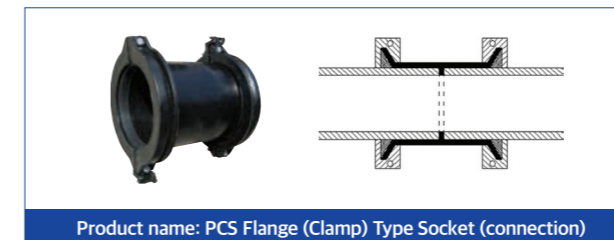
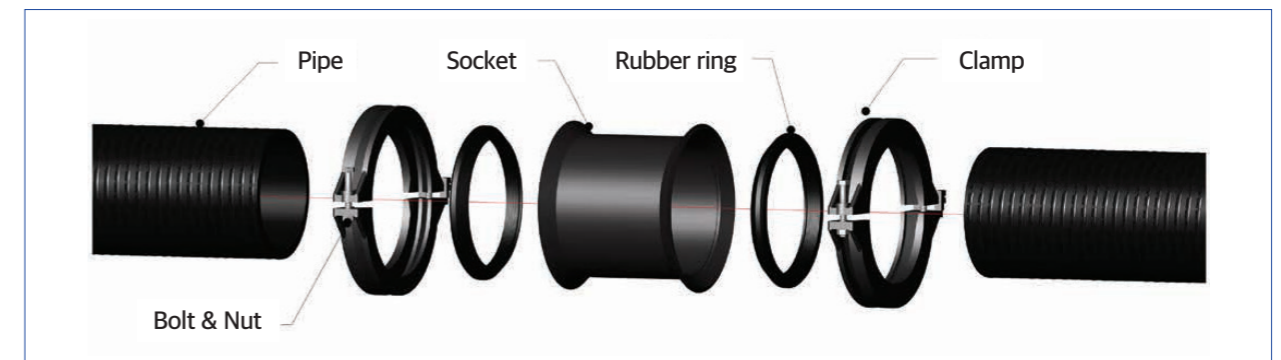
PCS Flange (Clamp) Type Socket

Features

- Easy construction through the flange (clamp) type socket for connection and repair
- Very stronger external pressure strength than conventional fitting sockets
- Better pressure-resistance and constructability than conventional connection sockets
- Excellent water tightness through the complete flange (clamp) type fixture of pipe and socket
- Easy repair work (fully movement of both pipes to the inside and then return to their original positions)

Structure | The best type for pipe connection and repair

Excellent Group Standard Product

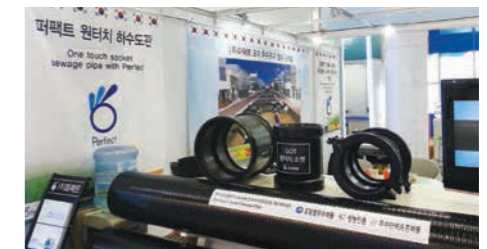


Use

- Socket for sewage pipe or rain water pipe connection (sewage pipe improvements, housing land development, APT site)

Size (Standards)

- D150, D200, D250, D300, D400





PCS Flange (Clamp) Type Socket Joints

Procurement identification no.	Type Diameter (mm)	Assembly & installation		Procurement identification no.	Type Diameter (mm)	Assembly & installation	
		Plumber	Worker			Plumber	Worker
22819316	D150	0.10	0.10	22819319	D300	0.13	0.13
22819317	D250	0.11	0.11	22819320	D400	0.15	0.15
22819318	D300	0.12	0.12	-	-	-	-

PERFECT Round Bar Support Connector

Water tightness and stability improvements by the development of differentiated round bar connector

<p>Round Bar Separation Type Connector</p>	<p>Round Bar Integration Type Connector</p>	<p>Round Bar Support Link Type Connector</p>
		
<p>&lt;Enlarged image&gt;</p>	<p>&lt;Enlarged image&gt;</p>	<p>&lt;Enlarged image&gt;</p>
		

Features of the developed products

Use : connectors for rain water pipes, sewage pipes, and other types of pipes



- Stability**

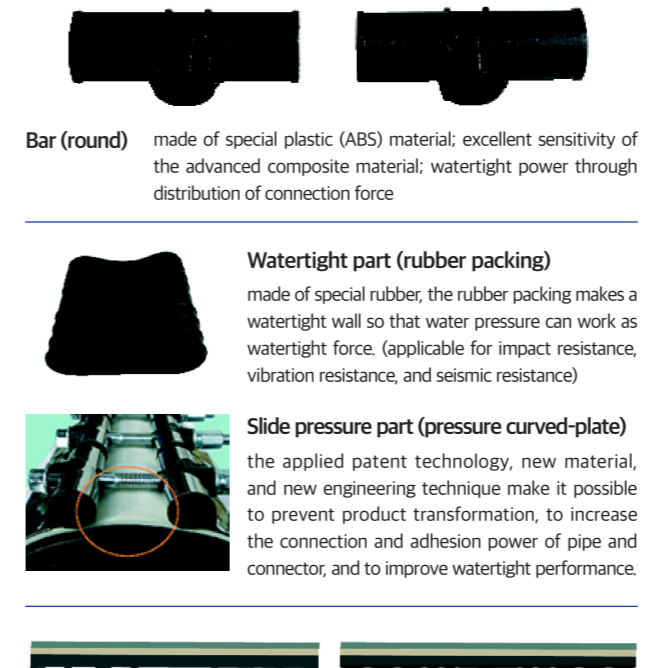
The thicker and longer slide than before helps to increase water tightness power of round bars, and the round shape without sharpness helps workers secure their safety.
- Improvement in fragile unit**

The engineering design of slide makes it possible to improve the fragile unit related to water tightness and to stick to a sewage pipe closely. A connector can be installed easily without any interference of bolts.
- Improvement in water tightness**

The adhesion force of a connector and a sewage pipe is improved. The evenly distributed connection power of the connector makes it possible to prevent the connector's transformation and to secure perfect water tightness in pipe expansion and contraction.
- Improvement in product performance /differentiation**

The thicker and longer slide than before helps to increase water tightness power of round bars, and the round shape without sharpness helps workers secure their safety.

Main parts



**Bar (round)** made of special plastic (ABS) material; excellent sensitivity of the advanced composite material; watertight power through distribution of connection force

**Watertight part (rubber packing)** made of special rubber, the rubber packing makes a watertight wall so that water pressure can work as watertight force. (applicable for impact resistance, vibration resistance, and seismic resistance)

**Slide pressure part (pressure curved-plate)** the applied patent technology, new material, and new engineering technique make it possible to prevent product transformation, to increase the connection and adhesion power of pipe and connector, and to improve watertight performance.

**Rubber pimples (under development)** The pimples in the watertight part (rubber packing) give pressure effectively and guarantee water tightness and easy work.

Dimensions of Round Bar Support Connector (KPS M 2020)

Type	Connection Part (STS)		Watertight Part (Rubber)	
	Thickness	Width	Thickness	Width
Ø150	0.6±0.07	250 and more	2.0 and more	245 ~250
Ø200	0.6±0.07	250 and more	2.0 and more	245 ~250
Ø250	0.6±0.07	250 and more	2.0 and more	245 ~250
Ø300	0.6±0.07	250 and more	2.0 and more	245 ~250
Ø350	0.6±0.07	350 and more	2.0 and more	345 ~350
Ø400	0.6±0.07	350 and more	2.0 and more	345 ~350
Ø450	0.6±0.07	350 and more	2.0 and more	345 ~350
Ø500	0.8±0.09	450 and more	2.0 and more	445 ~450
Ø600	0.8±0.09	450 and more	2.0 and more	445 ~450
Ø700	0.8±0.09	450 and more	2.0 and more	445 ~450
Ø800	0.8±0.09	600 and more	2.0 and more	590 ~600
Ø900	0.8±0.09	600 and more	2.0 and more	590 ~600
Ø1000	0.8±0.09	600 and more	2.0 and more	590 ~600
Ø1200	0.8±0.09	600 and more	2.0 and more	590 ~600
Ø1500	0.8±0.09	600 and more	2.0 and more	590 ~600

※ The product specification is adjustable under mutual discussion. (unit : mm)

How to install the connector



- Remove impurities of the product and insert the watertight rubber band into the half of the pipe.
- Set the watertight rubber band to the center (mark line) and fold it in half.
- Level the both ends of the pipe, put the watertight rubber band and apply a lubricant (e.g., detergent water, WD) on the rubber band.
- Install the connection part (STS) in line with the watertight rubber band
- Tighten the bolt with the use of tools (e.g., spanner, wrench).
- Check the connection and complete the installation.



PFT PE Manhole (Small Type)

Easy site construction and perfect water tightness through differentiated product

Excellent Group Standard Product

**PE manhole**



**Size (Standards)**  
 Ø300xH1000~H2000  
 Ø400xH1000~H2000  
 Ø500xH1000~H2000  
 Ø600xH1000~H2000



The inside of manhole



The body of manhole



Internal invert

Model name	Item identification no.	Product name	Size	
PFT310-B	22213714	PFT PE manhole (small)	Ø300xH1000	Not included(Ø400)
PFT410-B	21983328	PFT PE manhole (small)	Ø400xH1000	Not included(Ø400)
PFT412-B	21983329	PFT PE manhole (small)	Ø400xH1200	Not included(Ø400)
PFT415-B	21983330	PFT PE manhole (small)	Ø400xH1500	Not included(Ø400)
PFT417-B	21983331	PFT PE manhole (small)	Ø400xH1700	Not included(Ø400)
PFT420-B	21983332	PFT PE manhole (small)	Ø400xH2000	Not included(Ø400)
PFT510-B	21983335	PFT PE manhole (small)	Ø500xH1000	Not included(Ø548)
PFT515-B	21983337	PFT PE manhole (small)	Ø500xH1500	Not included(Ø548)
PFT610-A	21479083	PFT PE manhole (small)	Ø600xH1000	Not included(Ø548)
PFT612-A	21479084	PFT PE manhole (small)	Ø600xH1200	Not included(Ø548)
PFT615-A	21479085	PFT PE manhole (small)	Ø600xH1500	Not included(Ø548)
PFT618-A	21479086	PFT PE manhole (small)	Ø600xH1800	Not included(Ø548)
PFT620-A	21479087	PFT PE manhole (small)	Ø600xH2000	Not included(Ø548)
PFT301-M	22280798	PFT PE manhole riser	Ø300xH100	-
PFT401	21313649	PFT PE manhole riser	Ø400xH100	-
PFT501	21714455	PFT PE manhole riser	Ø500xH100	-
PFT601	21160229	PFT PE manhole riser	Ø600xH100	-

**Remarks** | Make-to-order is applicable to the height of manhole and inlet & outlet branch unit at a customer's request.

**Structure**



A cover is not included.

**Features**

\*Inlet & outlet branch unit is included.

- Highly excellent resistance to earth pressure and external pressure
- Very easy constructability through the adjustable height of manhole
- Easy construction in narrow paths or complicated roads; good water tightness
- A replaceable manhole cover for sewage and rain water
- Good separation prevention with the anti-separation cover frame

**Use** | sewer pipe improvements, small manhole (inspection unit), housing land development, APT sites

**Inlet** | Ø150, 200      **Outlet** | Ø150, 200 (Ø600 manhole supporting up to 250 of branch unit)



PS Branch Socket (not included)



PE Branch Unit (not included)

PFT Composite Manhole (Small · No. 1 · No. 2)


PFT composite manhole highly excellent at constructability, water tightness and corrosion resistance

Excellent Group Standard Product


**Composite Manhole**




**Size (Standards)**  
 Ø600xH1000~H6000  
 Ø900xH1300~H6000  
 Ø1200xH2000~H6000



The inside of manhole



Field Watertight Test



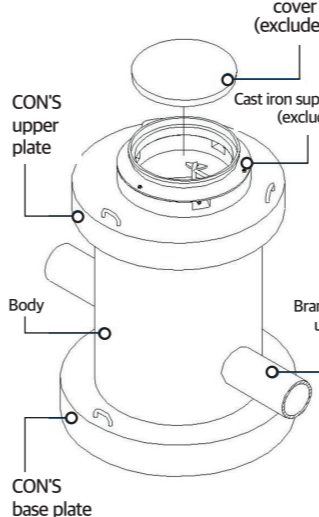
Internal invert

Model name	Item identification no.	Product name	Size	Upper plate & Base plate	Size of branch unit
PFT610-C	21717904	PFT composite manhole (Small)	Ø600xH1000	PE, CON'C	150~250
PFT615-C	21717906	PFT composite manhole (Small)	Ø600xH1500	PE, CON'C	
PFT618-C	21717907	PFT composite manhole (Small)	Ø600xH1800	PE, CON'C	
PFT620-C	21717908	PFT composite manhole (Small)	Ø600xH2000	PE, CON'C	
PFT601	21160229	PFT manhole riser	Ø600xH100	-	150~400
PFT912-C	21717920	PFT composite manhole (No. 1)	Ø900xH1300	CON'C	
PFT915-C	21717912	PFT composite manhole (No. 1)	Ø900xH1500	CON'C	
PFT918-C	21717913	PFT composite manhole (No. 1)	Ø900xH1800	CON'C	
PFT920-C	21717914	PFT composite manhole (No. 1)	Ø900xH2000	CON'C	
PFT901	21160230	PFT manhole riser	Ø900xH100	-	400
PFT1220-B	21958030	PFT composite manhole (No. 2)	Ø1200xH2000	CON'C	
PFT1220-C	21958031	PFT composite manhole (No. 2)	Ø1200xH2000	CON'C	
PFT1220-D	21958032	PFT composite manhole (No. 2)	Ø1200xH2000	CON'C	
PFT1201	21958033	PFT manhole riser	Ø1200xH100	-	-

**Note**

- 01 The manhole cover Ø648 is not included.
- 02 The height of manhole and inlet & outlet branch unit can be made in line with field conditions.
- 03 For non-standard products, see Height Collar Procurement & Information and Price

**Structure**



Labels: Cast iron cover (excluded), Cast iron support (excluded), CON'S upper plate, Body, CON'S base plate, Branch unit.

**Features**

- Remarkable improved strength; strong resistance to pressure load and external impact
- No corrosion of manhole; permanent resistance to acids, alkalis, waste water, and salt
- Good construction and water tightness in all seasons; semi-permanent product
- Invert installed to prevent impurities from being piled up on the bottom of manhole
- If drop manhole is installed, it is good to maintain the manhole due to the cleaning tool inside.
- Adjustable inlet and height in line with field conditions; very convenient construction

**Use** | Sewer pipe improvements (sewage & rainwater separation), Housing land development, APT sites, Golf course sites

**Inlet & outlet** | Make-to-order, Base & upper plates CON'C and Thiomer included (manhole cover Ø648 not included)



PS Branch Socket (not included)



PE Branch Unit (not included)

Flower Pot Images	Model name	Size (mm)	Supply price	Use
	PET-HFP-06 Square Flower Pot	740 x 250 x 230	40,000	Sidewalk block, Plant growth, etc
	PET-RFP-06 Low Bowl Round Flower Pot (Small)	Ø620 x 290	49,000	Public places, Landscape decoration, Flower growth
	PET-HFP-05 Boat-shaped Flower Pot	860 x 330 x 320	65,000	Sidewalk block, Public places, Landscape decoration, Flower growth, etc.
	PET-HFP-05 Boat-shaped Flower Pot	860 x 250 x 320	65,000	Sidewalk block, Public places, Landscape decoration, Flower growth, etc.
	PET-RFP-04 Low Bowl Round Flower Pot (Small)	Ø655 x 430	109,000	Public facilities, Decorative plants on road, Flower & tree growth (water tank plate included)

※ VAT excluded

Flower Pot Images	Model name	Size (mm)	Supply price	Use
	PET-RFP-07 Cauldron A-type Flower Pot	Ø860 x 300	131,000	Public facilities, Public places, Flower & tree growth
	PET-RFP-09 Teacup Type Flower Pot	Ø780 x 470	120,000	Urban landscape, Public facilities, Interior design, Flower & plant growth
	PET-HFP-01 Hexagon Flower Pot	645 x 555 x 565	141,000	Public places, Landscape decoration, Safety zone, Flower & plant growth (water tank plate included)
	PET-HFP-01 Hexagon Flower Pot	645 x 555 x 565	141,000	Public places, Landscape decoration, Safety zone, Flower & plant growth (water tank plate included)
	PET-RFP-05 Cauldron B-type Flower Pot	Ø860 x 560	180,000	Urban landscape, Public facilities, Interior design, Flower & plant growth

※ VAT excluded

Flower Pot Images	Model name	Size (mm)	Supply price	Use
	PET-HFP-03 Hexagon Flower Pot	960 x 570 x 500	181,000	Public places, Landscape decoration, Safety zones, Exhibitions & roadside Decorative plant Flower & tree growth (water tank plate included)
	PET-HFP-03 New Hexagon Flower Pot	960 x 570 x 500	181,000	Public places, Landscape decoration, Safety zones, Exhibitions & roadside Decorative plant Flower & tree growth (water tank plate included)
	PET-HFP-03 New Hexagon Flower Pot	960 x 570 x 500	181,000	Public places, Landscape decoration, Safety zones, Exhibitions & roadside Decorative plant Flower & tree growth (water tank plate included)
	PET-HFP-03 New Hexagon Flower Pot	960 x 570 x 500	181,000	Public places, Landscape decoration, Safety zones, Exhibitions & roadside Decorative plant Flower & tree growth (water tank plate included)
	PET-HFP-03 New Hexagon Flower Pot	960 x 570 x 500	181,000	Public places, Landscape decoration, Safety zones, Exhibitions & roadside Decorative plant Flower & tree growth (water tank plate included)

※ VAT excluded

Flower Pot Images	Model name	Size (mm)	Supply price	Use
	PET-RFP-11 Goblet A-type Flower Pot	Ø780 x 710	169,000	Urban landscape, Public facilities, Interior design, Flower & tree growth
	PET-RFP-02 High Bowl Round Flower Pot	Ø670 x 670	174,000	Public places, Landscape decoration, Safety zones, Flower & tree growth (water tank plate included)
	PET-RFP-02 High Bowl Round Flower Pot	Ø670 x 670	174,000	Public places, Landscape decoration, Safety zones, Flower & tree growth (water tank plate included)
	PET-RFP-12 Goblet B-type Flower Pot	Ø655 x 690	158,000	Public places, Landscape decoration, Safety zones, Exhibitions & roadside Decorative plant Flower & tree growth (water tank plate included)
	PET-RFP-12 Goblet B-type Flower Pot	Ø655 x 690	158,000	Public places, Landscape decoration, Safety zones, Exhibitions & roadside Decorative plant Flower & tree growth (water tank plate included)

※ VAT excluded

# Reliable certificates & patents

Our technologies are approved through a variety of patents and certification.  
 With the business philosophy of Quality First, Perfect. Co., Ltd. will implement the best quality for customer satisfaction.

## Certificates



## Patents



# With creative technology and innovation, the company grows in the global market.

Good products of good company, PERFECT CO., LTD.  
 PERFECT CO., LTD. will make your living environment perfect responsibly.

