HDPE PIPING SYSTEM

Be With You

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POLYGON

ABOUT AKAN

Akan Enterprise Group(Shanghai)Co.,Lted.
founded in 2000,providing a global environmental system for consumers and a network of solutions for government and builders.Akan have five production bases,and in 2005 wholly-owned acquisition of America POLYGON group.

Up to now,the group has three well-known brands,POLYGON for piping system,POLYGON HAVC/MACS system,Carewater for water treatment.The products cover all the municipal engineering pipe products,comfortalbe home system, plumbing and cold wind field.

Over the years,Akan Enterprise Group has continuously introduced advanced technical talents,developed advanced professional technology,establis CNAS national laboratory.In the field of water,air,temperature and humidity control,we provide consumers with more valuable products and technical services, and become a multinational enterprise group in the field of environmental control and distribution to realize the dreame of comfortalbe home for more users.

ABOUT POLYGON

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In 2005,Akan Enterprise Group acquired the American brand POLYGON.

After the whole of the technology research and developement,supplying chain and marketing of Akan Enterprise Group,Plygon Pipe has taken root in the international maket and achieved rapid growth.

Polygon Pipe has the world`s leading technology production equipment and complete product line.There are more than 5,000 types of products,covering home improvement projects and municipal engineering. The main systme products are:PPR water supply system,hot water circulation system,split water supply stystem, pipe shifting system,circuit piping system,municipal engineering water supply and drainage pipeline system.

In the future,Polygon Pipe will continue to practice the brand concept of “be with you”to create a healthy and comfortable home space for consumers.

POLYGON PIPE CNAS LABORATORY

R&D STRENGTH

The Polygon Pipe R&D Center has dozens of advanced testing equipments at home and abroad, and more than 20 professional R&D personnel with master's and bachelor's degrees. It is a leading R&D center for the domestic pipe industry. From raw materials to products, various project test items can be completed in the laboratory.

Now we are the national CNAS laboratory ,the certification we offered is recognized by China.








POLYGON

HDPE PIPELINE

PERFORMANCE ADVANTAGES

Good Hygienic Performance

POLYGON PE water supply pipeline only contains C and H elements, without any harmful components, the inner and outer surfaces are smooth,no scaling, no bacteria breeding, safety and health.

Good Flexibility

POLYGON PE water supply pipeline has good toughness, excellent impact resistance.It can resist uneven foundation settlement
It can be rolled in a coil, and the laying distance is long at a time, which reduces the construction cost.

Reliable Connection

PE has excellent weldability. The use of hot-melt or electric fusion connection makes the pipe and fittings become an integrated permanent connection, which greatly improves the reliability and safety of the system.

Long Service Life

POLYGON PE water supply pipeline is designed in strict accordance with relevant international standards, The service life is 50 years under the specified service conditions.

RANGE OF APPLICATION

Urban water pipe network system

Sewer system for sewage discharge (trenchless)

Industrial raw material transportation pipeline system

Ore and mud conveying system

Landscaping pipe network system

Agricultural irrigation pipeline system

It can be used in old network reconstruction engineering system.

PRODUCT SPECIFICATION

Nominal O.D. dn,mm	The average of permitted warp	Wall Thickness(e,mm)				
		Standard Size Ratio				
		SDR26	SDR21	SDR17	SDR13.6	SDR11
		Nominal Pressure(MPa)				
		0.6	0.8	1.0	1.25	1.6
20	+0.3	--	--	--	--	2.3
25	+0.3	--	--	--	--	2.3
32	+0.3	--	--	--	--	3.0
40	+0.4	--	--	--	--	3.7
50	+0.5	--	--	--	3.7	4.6
63	+0.6	--	--	--	4.7	5.8
75	+0.8	--	--	4.5	5.6	6.8
90	+1.0	--	4.3	5.4	6.7	8.2
110	+1.1	4.2	5.3	6.6	8.1	10.0
125	+1.3	4.8	6.0	7.4	9.2	11.4
140	+1.4	5.4	6.7	8.3	10.3	12.7
160	+1.5	6.2	7.7	9.5	11.8	14.6
180	+1.7	6.9	8.6	10.7	13.3	16.4
200	+1.8	7.7	9.6	11.9	14.7	18.2

Nominal O.D. dn,mm	The average of permitted warp	Wall Thickness(e,mm)				
		Standard Size Ratio				
		SDR26	SDR21	SDR17	SDR13.6	SDR11
		Nominal Pressure(MPa)				
		0.6	0.8	1.0	1.25	1.6
225	+2.1	8.6	10.8	13.4	16.6	20.5
250	+2.3	9.6	11.9	14.8	18.4	22.7
280	+2.6	10.7	13.4	16.6	20.6	25.4-
315	+2.9	12.1	15.0	18.7	23.2	28.6
355	+3.2	13.6	16.9	21.1	26.1	32.2
400	+3.6	15.3	19.1	23.7	29.4	36.3
450	+4.1	17.2	21.5	26.7	33.1	40.9
500	+4.5	19.1	23.9	29.7	36.8	45.4
560	+5.0	21.4	26.7	33.2	41.2	50.8
630	+5.7	24.1	30.0	37.4	46.3	57.2
710	+6.4	27.2	33.9-	42.1	52.2	--
800	+7.2	30.6	38.1	47.4	58.8	--
900	+8.1	34.4	42.9	53.3	--	--
1000	+9.2	47.7	59.3	--	--	--

PRODUCT PERFORMANCE

Project	Condition(PE100)	Requirement
Oxidation induction time	200°C	⩾20
MFR	195°C，5kg	Before and after processing:MRF<20%
20 °C Hydrostatic strength(100h)	12.4Mpa hoop stress	No rupture, no leakage
80 °C Hydrostatic strength(165h)	5.4Mpa hoop stress	No rupture, no leakage
80 °C Hydrostatic strength(1000h)	5.0Mpa hoop stress	No rupture, no leakage
Impact strength	0°C，2m，2.5kg	No rupture, no leakage

CLASSIFICATION OF HDPE FITTING

According to the connection mode

Welding connection fittings
Mechanical connection fittings
Flange connection fittings

According to the processing method

Injection molding pipe fittings
Welded pipe fittings

Welding connection fittings

Hot melt socket type
Butt fusion type
Electrofusion pipe fittings

Injection molding hot melt socket pipe fittings

OD⩽110mm（small-bore)

Injection type hot melt butt joint pipe fittings

63mm⩽OD⩽630mm

Injection type electrofusion pipe fittings

It is used for the system with high requirements, such as gas pipeline, which cannot be fused。

Welded pipe fittings

Large diameter or unconventional pipe joint that cannot be produced by injection molding (special angle)

Butt welding fitting series

Reducing tee

Dimension	D	d	L	C1	C2	H
T63-50	63	50	210	65	55	95
T75-50	75	50	250	73	55	107
T75-63	75	63	250	73	65	117
T90-50	90	50	280	80	55	110
T90-63	90	63	280	80	65	120
T90-75	90	75	280	80	73	129
T110-50	110	50	310	82	60	135
T110-63	110	63	310	82	65	140
T110-75	110	75	310	82	70	145
T110-90	125	90	310	82	80	155
T125-50	125	50	320	87	55	128
T125-63	125	63	320	87	63	136
T125-75	125	75	320	87	70	143
T125-90	125	90	320	87	80	152
T125-110	140	110	320	87	82	155
T140-63	140	63	354	92	65	150
T140-75	140	75	354	92	70	155
T140-90	140	90	354	92	79	164
T140-110	140	110	354	92	82	167
T140-125	160	125	354	92	87	152
T160-63	160	63	372	98	65	160
T160-75	160	75	372	98	70	165
T160-90	160	90	372	98	80	175
T160-110	200	110	372	98	90	185
T200-90	200	90	420	108	95	200
T200-110	200	110	420	108	95	200
T200-160	225	160	420	108	95	200
T225-110	225	110	470	110	95	222
T225-160	225	160	470	110	95	222
T225-200	250	200	470	110	110	235
T250-110	250	110	554	130	95	242
T250-160	250	160	554	130	95	242
T250-200	315	200	554	130	120	265
T315-110	315	110	635	150	90	260
T315-160	315	160	635	150	95	265
T315-200	315	200	635	150	110	280
T315-250	400	250	635	150	130	300
T400-110	400	110	640	110	110	329
T400-160	400	160	640	110	110	329
T400-200	400	200	640	110	110	329
T400-250	400	250	640	110	110	329
T400-315	400	315	640	110	110	329

Specifications

Butt welding fitting series

90°elbow

Dimension	D	C	L
L63-63	63	65	108
L75-75	75	73	125
L90-90	90	78	140
L110-100	110	82	155
L125-125	125	87	160
L140-140	140	92	177
L160-160	160	96	182
L200-200	200	95	210
L225-255	225	110	235
L250-250	250	130	277
L315-315	315	150	316
L400-400	400	110	330

Flange

Dimension	D	d	L	C
F50	88	50	88	75
F63	102	63	100	85
F75	120	75	110	94
F90	138	90	120	102
F110	150	110	120	102
F125	158	125	130	110
F140	188	140	130	108
F160	205	160	120	98
F180	212	180	140	115
F200	268	200	150	122
F225	268	225	150	120
F250	315	250	145	115
F280	320	280	175	140
F315	370	315	180	142
F355	430	355	170	130
F400	480	400	200	158
F450	525	450	180	135
F500	580	500	220	170
F630	685	630	230	180

135°elbow

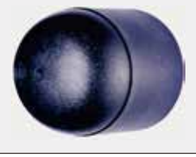
Dimension	D	C	L
L75-135°	75	73	85
L90-135°	90	78	90
L110-135°	110	80	95
L160-135°	160	95	115
L200-135°	200	110	130
L250-135°	250	112	125
L315-135°	315	112	125

Butt welding fitting series

Tee

Dimension	D	L	C	H
T63-63	63	210	65	105
T75-75	75	250	73	125
T90-90	90	280	80	140
T110-110	110	310	82	155
T125-125	125	320	87	160
T140-140	140	354	92	177
T160-160	160	372	98	186
T200-200	200	420	108	210
T225-225	225	470	110	235
T250-250	250	554	130	277
T315-315	315	635	150	317
T400-400	400	640	110	320

Cap



Dimension	D	L	Dimension	D	L
D75	75	90	D315	315	155
D90	90	95	D400	400	165
D110	110	95	D450	450	157
D160	160	120	D500	500	170
D200	200	140	D630	630	190
D250	250	125			

Reducing union

Dimension	D	d	L_1	L_2	L
S75-63	75	63	144	73	65
S90-63	90	63	157	78	65
S90-75	90	75	159	78	73
S110-63	110	63	169	80	65
S110-75	110	75	171	80	73
S110-90	110	90	168	80	78
S160-63	160	63	221	83	90
S160-75	160	75	221	89	90
S160-90	160	90	221	96	90
S160-110	160	110	221	106	90
S200-90	200	90	260	90	115
S200-110	200	110	260	100	115
S200-160	200	160	260	125	115
S250-160	250	160	280	95	140
S250-200	250	200	275	115	135
S315-200	315	200	267	100	110
S315-250	315	250	263	100	130
S400-315	400	315	312.50	130	140
S500-400	500	400	310	130	130
S630-500	630	500	335	140	130

Electrofusion fitting series

Reducing tee

Dimension	ΦD	L	C1	ΦD1	C2	H	Φd
DN32-25-32	45	120	43	25	45	36	4.8
DN40-32-40	52	130	45	32	50	41	4.8
DN50-32-50	65	150	50	32	55	48	4.8
DN50-40-50	65	150	50	40	55	48	4.8
DN63-32-63	80	176	57	32	65	58	4.8
DN63-40-63	80	176	57	40	65	58	4.8
DN63-50-63	80	176	57	50	65	58	4.8
DN75-32-63	95	205	65	32	70	64	4.8
DN75-40-75	95	205	65	40	70	64	4.8
DN75-50-75	95	205	65	50	70	64	4.8
DN75-63-75	95	205	65	63	70	64	4.8
DN90-50-90	112	225	70	50	79	71	4.8
DN90-63-90	112	225	70	63	79	71	4.8
DN90-75-90	112	225	70	75	79	71	4.8
DN110-50-110	139	255	77	50	82	87	4.8
DN110-63-110	139	255	77	63	82	87	4.8
DN110-75-110	139	255	77	75	82	87	4.8
DN110-90-110	139	255	77	90	82	87	4.8
DN125-63-125	156	285	83	63	87	95	4.8
DN125-75-125	156	285	83	75	87	95	4.8
DN125-90-125	156	285	83	90	87	95	4.8
DN125-110-125	156	285	83	110	87	95	4.8
DN160-63-160	198	320	90	63	98	114	4.8
DN160-75-160	198	320	90	75	98	114	4.8
DN160-90-160	198	320	90	90	98	114	4.8
DN160-110-160	198	320	90	110	98	114	4.8
DN160-125-160	198	320	90	125	98	114	4.8

Electrofusin fitting series

Tee

Dimension	ΦD	L	C1	ΦD1	C2	H	Φd
DN32-32-32	45	120	43	32	45	36	4.8
DN40-40-40	52	130	45	40	50	41	4.8
DN50-50-50	65	150	50	50	55	48	4.8
DN63-63-63	80	176	57	63	65	58	4.8
DN75-75-75	95	205	65	75	70	64	4.8
DN90-90-90	112	225	70	90	79	71	4.8
DN110-110-110	139	255	77	110	82	87	4.8
DN125-125-125	156	285	83	125	87	95	4.8
DN160-160-160	198	320	90	160	98	114	4.8

90°elbow

Dimension	ΦD	L	C	H	Φd
DN32-90°	45	63	43	36	4.8
DN40-90°	52	68	45	41	4.8
DN50-90°	65	80	50	48	4.8
DN63-90°	80	93	57	58	4.8
DN75-90°	95	108	65	64	4.8
DN90-90°	112	118	70	71	4.8
DN110-90°	139	140	77	87	4.8
DN125-90°	156	152	83	95	4.8
DN160-90°	198	178	90	114	4.8

Specifications

Electrofusin fitting series

Coupling

Dimension	ΦD	L	C	H	Φd
Dn32	45	90	43	36	4.8
Dn40	52	95	45	41	4.8
Dn50	65	105	50	48	4.8
Dn63	80	115	57	58	4.8
Dn75	95	135	65	64	4.8
Dn90	112	145	70	71	4.8
Dn110	139	160	77	87	4.8
Dn125	156	170	83	95	4.8
Dn160	198	186	90	114	4.8
Dn200	246	208	102	137	4.8
Dn250	306	220	107	169	4.8

Reducer union

Dimension	ΦD	C1	ΦD	C2	L	H1	H2	Φd
DN40-32	52	45	45	43	96	41	36	4.8
DN50-32	65	50	45	43	102	48	36	4.8
DN50-40	65	50	52	45	100	48	41	4.8
DN63-32	79	55	45	43	114	58	36	4.8
DN63-40	79	55	52	45	112	58	41	4.8
DN63-50	79	55	65	50	112	58	48	4.8
DN75-50	95	65	65	50	128	64	48	4.8
Dn75-63	95	65	79	55	126	64	58	4.8
DN90-63	112	70	79	55	139	71	58	4.8
DN90-75	112	70	95	65	143	71	64	4.8
DN110-63	139	77	79	55	156	87	58	4.8
DN110-75	139	77	95	65	160	87	64	4.8
DN110-90	139	77	112	70	157	87	71	4.8
DN125-110	156	83	139	77	168	95	87	4.8
DN160-110	198	90	139	77	192	114	87	4.8

Socket fitting series

Reducer union

Dimension	D	d	L1	L2	L
S25-20	32	26	18	16	35
S32-20	40	26	20	16	39
S32-25	40	32	20	18	41
S40-20	51	26	22	16	52
S40-25	51	32	22	18	52
S40-32	51	40	22	20	49
S50-40	61. 50	50	25	22	56
S50-32	61. 50	40	25	20	58
S50-25	61. 50	32	25	18	61
S50-20	61. 50	26	25	16	62
S63-25	77. 50	32	29	18	74
S63-32	77. 50	40	29	20	71
S63-40	77. 50	50	29	22	68
S63-50	77. 50	61. 50	29	25	65
S75-32	92	40	30	19	69
S75-40	92	50	30	21	68
S75-50	92	62	30	24	67
S75-63	92	78	30	28	67
S90-40	110	50	33	21	78
S90-50	110	62	33	24	77
S90-63	110	78	33	28	76
S90-75	110	92	33	30	74
S110-40	135	50	37	21	90
S110-50	135	62	37	24	90
S110-63	135	78	40	28	102
S110-75	135	92	37	30	86
S110-90	135	110	37	33	83

Cap

Dimension	D	L1	L
D20	26	16	21
D25	32	18	24
D32	40	20	28
D40	50	21	30
D50	62	24	37
D63	78	29	45
D75	92	31	50
D90	110	34	56
D110	135	38	65

Socket fitting series

Reducing tee

Dimension	D	d	L1	L2	L	H
S25-20-25	32	26	18	16	58	29
S32-20-32	40	26	20	16	66	37
S32-25-32	40	32	20	18	72	38
S40-20-40	51	26	22	16	69	41
S40-25-40	51	32	22	18	75	43
S40-32-40	51	40	22	20	84	45
S50-20-50	61. 50	26	25	16	76	48
S50-25-50	61. 50	32	25	18	82	49. 50
S50-32-50	61. 50	40	25	20	90	51. 50
S50-40-50	61. 50	50	25	22	100	53
S63-25-63	77. 50	32	29	18	90	58
S63-32-63	77. 50	40	29	20	98	60
S63-40-63	77. 50	50	29	22	108	62
S63-50-63	77. 50	61. 50	29	25	121	65
S75-32-75	92	40	30	19	99	58
S75-40-75	92	50	30	21	107	60
S75-50-75	92	62	30	24	117	64
S75-63-75	92	78	30	28	129	68
S90-40-90	110	50	33	21	115	68
S90-50-90	110	62	33	24	125	72
S90-63-90	110	78	33	28	137	76
S90-75-90	110	92	33	30	149	78
S110-40-110	135	50	37	21	123	77
S110-50-110	135	62	37	24	133	80
S110-63-110	135	72	40	29	158	97
S110-75-110	135	92	37	30	157	87
S110-90-110	135	110	37	33	172	90

135°elbow

Dimension	D	L1	L2
L20-135°	27	16	18
L25-135°	32	18	21. 5
L32-135°	41	20	22
L40-135°	51	21	24
L50-135°	63	24	26
L63-135°	79	29	26
L75-135°	92	31	27
L90-135°	110	34	30
L110-135°	133	38	38

Socket fitting series

90°union

Dimension	D	L	H
L20-20	26	16	26
L25-25	32	18	31
L32-32	40	20	40
L40-40	50	22	46
L50-50	62	25	56
L63-63	77. 50	29	66
L75-75	92	30	70
L90-90	110	33	82
L110-110	135	40	104

Coupling

Dimension	D	L	H
L20-20	26	34	16
L25-25	32	38	18
L32-32	40	42	20
L40-40	50	48	22
L50-50	62	53	25
L63-63	77. 50	61	28
L75-75	92	67	31
L90-90	110	75	35
L110-110	135	85	40

Tee

Dimension	D	L1	L	H
L20-20-20	26	16	54	27
L25-25-25	32	18	63	32
L32-32-32	40	20	81	41
L40-40-40	50	22	94	47
L50-50-50	62	25	114	57
L63-63-63	77. 50	29	137	68. 50
L75-75-75	92	30	140	70
L90-90-90	110	33	165	82
L110-110-110	135	37	190	95

Female tee

Dimension	D	d	L1	L	H	ZG
T20-1/2″ F-20	27	37	16	66	35	1/2″
T25-1/2″ F-25	33	37	18	70	38	1/2″
T25-3/4″ F-25	33	42	18	70	40	3/4″
Y32-3/4″ F-25	42	42	20	74	45	3/4″
T32- 1″ F-32	42	53	20	92	64	1″

Specifications

Socket fitting series

Female elbow

Dimension	D	d	L1	L	H	ZG
T20-1/2″ F	27	37	16	27	38	1/2″
T25-1/2″ F	33	37	18	29	40	1/2″
T25-3/4″ F	33	42	18	32	42	3/4″
Y32-3/4″ F	42	44	20	42	32	3/4″
T32- 1″ F	42	54	20	41	36	1″

Male elbow

Dimension	D	d	L1	L	H	ZG
T20-1/2″ M	27	37	16	27	38	1/2″
T25-1/2″ M	33	37	18	29	40	1/2″
T25-3/4″ M	33	42	18	32	42	3/4″
Y32- 1″ M	42	44	20	42	32	3/4″

Female union

Dimension	D	d	L1	L	ZG
S20-1/2″ F	27	38	16	40	1/2″
S20-3/4″ F	27	43	16	44	3/4″
S25-1/2″ F	33	38	18	41	1/2″
S25-3/4″ F	33	43	18	44	3/4″
S32-3/4″ F	42	47	20	46	3/4″
S32- 1″ F	42	52	20	59	1″
S40- $1\frac{1}{4}$″ F	52	65	22	70	$1\frac{1}{4}$″
S50- $1\frac{1}{2}$″ F	64	77	25	73	$1\frac{1}{2}$″
S63- 2″ F	81	92	29	77	2″

Male union

Dimension	D	d	L1	L	ZG
S20-1/2″ M	40	27	16	38	1/2″
S20-3/4″ M	43	27	16	39	3/4″
S25-1/2″ M	40	33	18	41	1/2″
S25-3/4″ M	43	33	18	41	3/4″
S32-3/4″ M	47	41	20	46	3/4″
S32- 1″ M	52	41	20	45	1″
S40- $1\frac{1}{4}$″ M	66	52	22	54	$1\frac{1}{4}$″
S50- $1\frac{1}{2}$″ M	76	64	25	58	$1\frac{1}{2}$″
S63- 2″ M	92	81	29	65	2″

Flange

Dimension	D	d	L1	L2	L
F40	65	51	22	15	28
F50	75	62	25	18	29
F63	94	78	29	21	32
F75	113	92	33	25	37
F90	126	110	35	25	39
F110	153	135	40	30	44

Steel-plastic fitting series

Flange core

Dimension	D	K	B	n	d
63	160	125	68	4	18
75	185	145	80	4	18
90	200	160	95	8	18
110	220	180	115	8	18
125	250	210	130	8	18
160	285	240	165	8	22
200	340	295	205	8	22
250	395	350	260	12	22
315	445	400	325	12	22
350	505	460	358	16	22
400	565	515	410	16	22
450	615	565	460	20	25
500	670	620	510	20	25
630	780	725	640	20	30

Union

Dimension
D20
D25
D32
D40
D50
D63

Stop valve

Dimension
Φ20
Φ25
Φ32
Φ40
Φ50
Φ63

Manifold

Straight CP transform union

Dimension
Φ20
Φ25
Φ32
Φ40
Φ50
Φ63
Φ110

Specifications

The Cutter for Branch Saddle

Pipe Scraper

Rotating Cutter

Pipe Cutter

Electrofusion Machine

Butt Fusicn Machine

Socket Welder

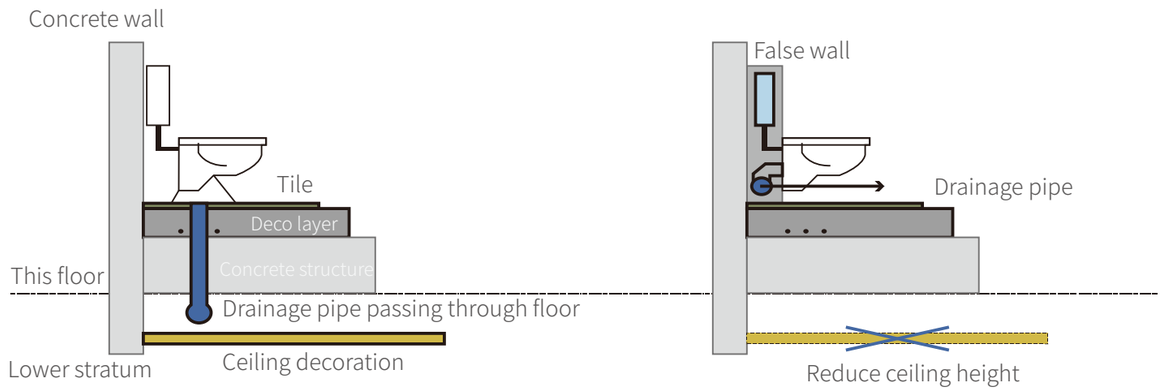
SAME LAYER DRAINAGE

FLEXIBLE LAYOUT

Free movement, flexible layout, sanitary ware is no longer limited by the pit distance, so that the layout appears arbitrary and active, the toilet looks bigger. Cover up those useless and indecent, create more use space.

SAME FLOOR DRAINAGE

PK PARTITION DRAINAGE



COMPARISION

Partition drainage system	Same floor drainage system
》 Encroach on the space of the partition	》 Free design of personality pattern
》 noise interference	》 Reasonable use of space to show infinite splendor
》 It's inconvenient to clear up	》 Easy realization of toilet sanitation
》 Leakage problem	》 Reliable system guarantee
》 Unclear property rights	》 Zero leakage of pipeline
》 Inconvenient maintenance	》 Convenient maintenance

Original Same Layer Drainage

Standpipe material is PVC or cast iron

Hang lavatory

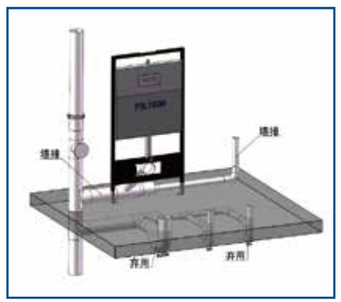
- ☐ Scheme A (when the riser is PVC): abolish the original pit position, reconstruct the vertical pipe, and then a dopt the wallrow drainage on the same floor + false wall to cover the horizontal pipe and water tank
- ☐ Scheme B (riser unlimited): keep the original pit position, use toilet shifter to shift forced drainage and false wall to cover the water tank.

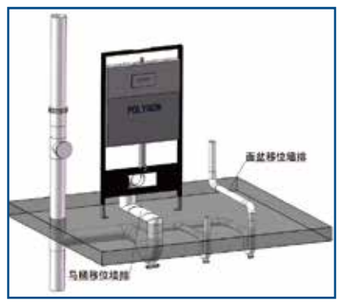
Washbasin

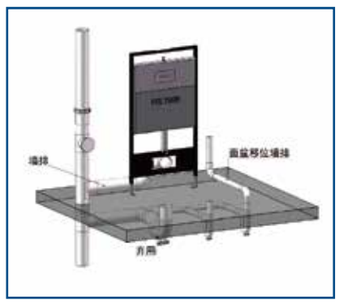
- ☐ Scheme A (under the premise of toilet hanging scheme a): the original water outlet can be abolished, and the horizontal sewage pipe directlyextends out of the branch pipe wall row + false wall to cover the branch pipe.
- ☐ Scheme B (when the riser is PVC pipe): the original water outlet can be abolished, and the horizontal pipe can be covered by the wall row and false wall separately from the riser.
- ☐ Scheme C(unrestricted riser) : The original lower nozzle is retained and the wall row is realized by pipeline displacement.

Floor drain

- ☐ The floor drain position can be kept unchanged, or it can be added or moved to any position by pipeline shift.







Original Cross-layer Drainage

Standpipe material is PVC or PE,none standpipe also applicable

Hang lavatory

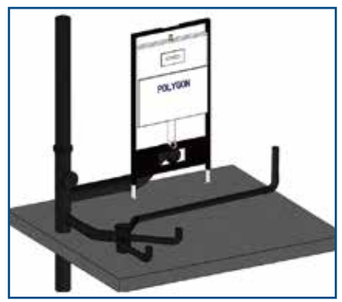
- ☐ Adopt wall row + false wall cover

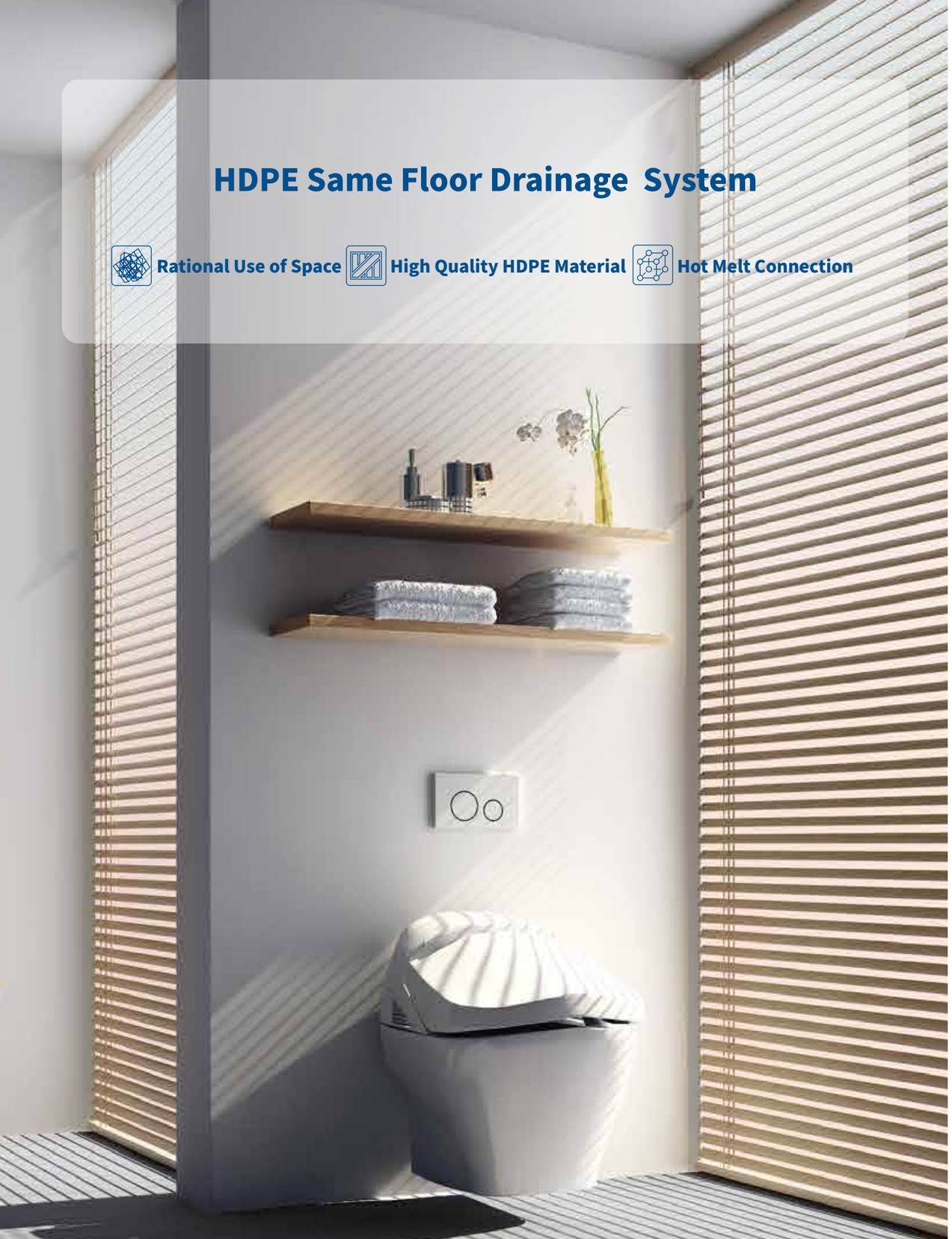
Washbasin

- ☐ Scheme A It adopts the same layer pipe arrangement form of sewage and waste confluent flow, and the basin drain pipe branches from the sewage pipe, and then adopts the wall row.
- ☐ Scheme B Sewage and waste can also be used in the form of separation, basin drainpipe alone from the vertical pipe extension, and then the wall row.

Floor drain

- ☐ Scheme A The floor drain pipe can branch from the sewage pipe.
- ☐ Scheme B It can also be branched from basin drainpipe
- ☐ Scheme C Waste can also be used in the form of separation, the floor drain pipe from the vertical pipe alone extension

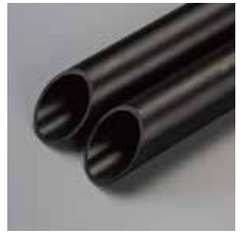




HDPE Same Floor Drainage System

Rational Use of Space | High Quality HDPE Material | Hot Melt Connection

PIPES&FITTINGS



PE Drainage Pipe

U9 Code	Name	Size	En(mm)	Length (M / piece)
12.32.101.805030	HEPE PIPE	Φ50	3.0	6
12.32.101.807530	HEPE PIPE	Φ75	3.0	6
12.32.101.8011042	HEPE PIPE	Φ110	4.2	6

Usage

- It is suitable for all indoor sewage and roof siphon drainage pipes.

Performance

- UV resistance;
- The drainage noise is low;
- The pipe has strong impact resistance and will not decompose or burst at low temperature (40 ° below zero);
- The pipe has heat resistance, wear resistance, acid and alkali corrosion resistance, good corrosion resistance for dishwasher and washing machine;
- The inner surface of PE pipe is smooth, which can avoid deposition and scaling;
- Polyethylene high quality performance assurance system has long service life;
- PE pipe connection is reliable, and the system is safe and reliable without leakage;
- Polyethylene (HDPE) pipes have a wide range of pipe diameter specifications and various key models. It is suitable for various facilities to meet the needs of the project.

PE / PVC Adapter

U9 Code	Name	Size
12.32.352.00110-01	PE / PVC adapter (suit)	Φ110

Usage

- It is used for conversion and connection between PVC and PE drainage pipes. It is commonly used for transition of PVC riser to PE horizontal branch pipe, so as to realize PE same layer drainage when riser is PVC pipe.

Product details

- The groove structure of the joint is fixed with the fastening screw with rubber seal, which is safe and not easy to leak drainage when riser is PVC pipe.

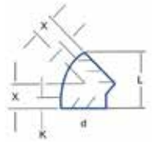
usage method

- PVC end and PVC pipe socket adhesive connection, PE endΦ110 * 66mm and PE drainage pipe butt welding or electric fusion connection.

Drainage 45 ° elbow

U9 Code	Name	Size	Number (PCS / box)
12.32.206.8050	45° Elbow	Φ50	30
12.32.206.8075	45° Elbow	Φ75	14
12.32.206.80110	45° Elbow	Φ110	19

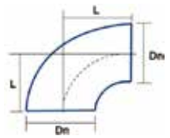
d(mm)	X(mm)	K (mm)	L (mm)
50	45	20	100
75	45	20	116
110	60	25	145



Drainage 90 ° elbow

U9 Code	Name	Size	Number (PCS / box)
12.32.219.80150	90° Elbow	Φ50	30
12.32.219.80175	90° Elbow	Φ75	14
12.32.219.801110	90° Elbow	Φ110	19

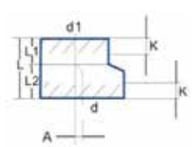
DN(mm)	L (mm)
50	45
75	70
110	95



Reducing union

U9 Code	Name	Size	Number (PCS / box)
12.32.351.807550	Reducing union	Φ75×50	24
12.32.351.8011050	Reducing union	Φ110×50	15
12.32.351.8011075	Reducing union	Φ110×75	10

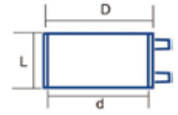
A(mm)	K (mm)	L (mm)	L1 (mm)	L2 (mm)
12	20	82	37	45
29	20	80	35	45
16	20	81	33	48



Drainage electrofusion couping

U9 Code	Name	Size	Number (PCS / box)
12.32.233.8050	Coupling	50	45
12.32.233.8075	Coupling	75	18
12.32.233.80110	Coupling	110	11

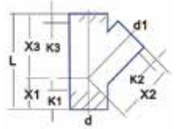
d(mm)	D(mm)	L (mm)
50	65	52
75	90	52
110	125	60



Y Shape tee

U9 Code	Name	Size	Number (PCS / box)
12.32.324.805050	Y shape	50×50	16
12.32.324.807550	Y shape	75×50	22
12.32.324.8011050	Y shape	110×50	10
12.32.324.8011075	Y shape	110×75	10

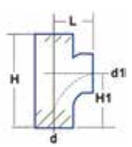
d(mm)	d1 (mm)	L (mm)	X1 (mm)	X2/3 (mm)
50	50	170	55	110
75	50	210	70	140
110	50	270	90	180
110	75	270	90	180



Downstream cock / Reducing downstream cock

U9 Code	Name	Size	Number (PCS / box)
12.32.255.80110	Downstream cock	110	10
12.32.255.8011050	Downstream cock	110×50	/
12.32.255.8011075	Downstream cock	110×70	/

d(mm)	d1 (mm)	H (mm)	H1 (mm)	L (mm)
110	110	226	135	120
110	50	221	135	94
110	75	226	135	120



P-trap

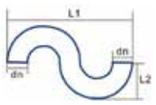
U9 Code	Name	Size	Number (PCS / box)
12.32.207.80150	P-trap	50	25
12.32.207.80175	P-trap	75	/

L1(mm)	L(mm)	L2 (mm)	R (mm)
70	180	170	75
108	180	253	110

S-trap

U9 Code	Name	Size	Number (PCS / box)
12.32.209.80150	S-trap	50	36
12.32.209.80175	S-trap	75	/

L1(mm)	L2(mm)
250	150
373	224



Water collector

U9 Code	Name	Size	Number (PCS / box)
12.32.244.8050	Water collector	50	40

Downward drain

U9 Code	Name	Size	Number (PCS / box)
12.32.264.8050	Downward drain	50	/
12.32.264.8075	Downward drain	75	/
12.32.264.80110	Downward drain	110	/

Downward drain for washing machine

U9 Code	Name	Size	Number (PCS / box)
12.32.258.8052	Downward drain	50	/

Single channel floor drain

U9 Code	Name	Size	Number (PCS / box)
12.32.232.8050	Single channel floor drain	50	/

Usage

- Floating ball odor proof structure, single channel
- The embedded height is adjustable

Double channel floor drain

U9 Code	Name	Size	Number (PCS / box)
12.32.232.8051	Double channel floor drain	50	/

Usage

- Floating ball odor proof structure, single channel
- The embedded height is adjustable

Single channel floor drain for washing machine

U9 Code	Name	Size	Number (PCS / box)
12.32.258.8050	Single channel floor drain		50

Usage

- Floating ball odor proof structure, single channel
- The embedded height is adjustable

Double channel floor drain for washing machine

U9 Code	Name	Size	Number (PCS / box)
12.32.258.8051	Double channel floor drain		50

Usage

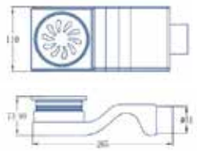
- Floating ball odor proof structure, single channel
- The embedded height is adjustable

Ultra-thin floor drain

U9 Code	Name	Size	Number (PCS / box)
21.25.208.0050	Ultra-thin floor drain	50	/

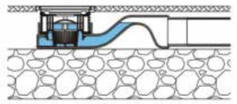
Usage

·It is suitable for non falling board or falling plate PE same floor drain.

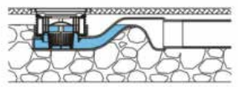


Performance

·The filter function prevents clogging;
·The height of the water seal is 3cm, which is odor proof and anti overflow;
·The drainage area is large and the water can be discharged quickly.



Installation mode 1



Installation mode 2

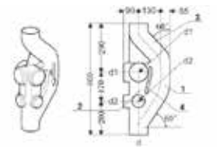
d(mm)	d1(mm)	d2 (mm)
110	110	75

Drainage sovent

U9 Code	Name	Size
12.32.256.80110	Drainage sovent	Φ110

Usage

Special pipe fittings for falling plate PE drainage single riser system on the same floor.



1. Riser flow chamber 2. Horizontal pipe flow chamber
3.Already word tube 4. Baffle

Product details

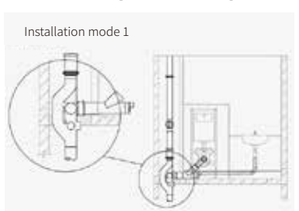
There are 110 upper and lower openings, 6 reserved openings for plugging, 3 110 openings and 3 50 openings on the side.

Performance

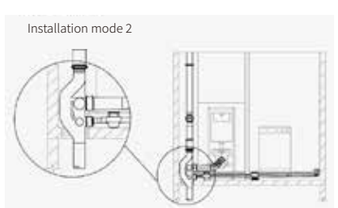
·It can link 6 branch pipes at the same time;
·It can be used for sewage and waste confluence or sewage and waste separation in the same layer drainage system
·In the case of not connecting the air pipe, 50 toilet seats can be connected at the same time
·There is a water flow blocking device inside, which can ensure that the water flow of each branch pipe can flow smoothly along a certain direction, at the same time, it can slow down the water flow speed, and ensure that the air pressure in the riser is always in a balanced state, thus eliminating the vent pipe.
·Suitable for buildings with more than eight floors, one for each floor

Suvito drainage

Traditional drainage



Installation mode 1

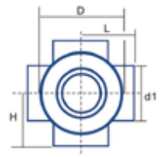


Installation mode 2

Spherical Cross

U9 Code	Name	Size
12.32.315.80110110	Drainage 90 ° spherical cross	Φ110×110

d1(mm)	D(mm)	H (mm)	L (mm)
110	160	35	52



Usage

·Drop plate PE special vertical pipe fittings for drainage on the same floor.

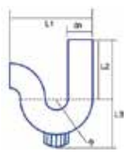
Performance

·Multi channel design
·According to the needs of different angles
·Better water conservancy conditions
·It can connect two horizontal branch pipes and risers at the same time
·It can be used to separate sewage and waste water
·Suitable for buildings below 8 floors, one for each floor.

P-bend （with inspection port)

U9 Code	Name	Size
12.32.207.80250	P-bend	50
12.32.207.80275	P-bend	75

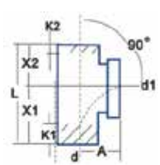
L1(mm)	L2(mm)	L3 (mm)	R (mm)
170	180	280.8	75
253	180	315.8	110



Drainage inspection port

U9 Code	Name	Size	Number (PCS / box)
12.32.245.8050	Drainage inspection port	50	/
12.32.245.8075	Drainage inspection port	75	/
12.32.245.80110	Drainage inspection port	110	6

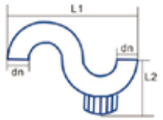
d1(mm)	X1(mm)	X2 (mm)	L (mm)	A (mm)
50	90	60	150	85
75	105	70	175	90
110	135	90	225	125



S-bend (with inspection port)

U9 Code	Name	Size	Number (PCS / box)
12.32.209.80250	S-bend	50	36
12.32.209.80275	S-bend	75	/

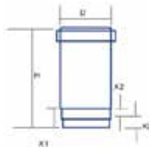
L1(mm)	L2(mm)
250	170
373	244



Drainage expansion joint

U9 Code	Name	Size	Number (PCS / box)
12.32.254.8050	Drainage expansion joint	50	/
12.32.254.8075	Drainage expansion joint	75	/
12.32.254.80110	Drainage expansion joint	110	10

d(mm)	H (mm)	D (mm)	X1 (mm)	X2 (mm)	K (mm)
50	/	/	/	/	/
75	232	83	75	34	41
110	246	118	76	34	39



Drain vent cap

U9 Code	Name	Size	d(mm)	Number (PCS / box)
12.32.257.8075	Drain vent cap	75	75	/
12.32.257.80110	Drain vent cap	110	110	20

Adjustable riser clamp

U9 Code	Name	Size	Number (PCS / box)
12.32.229.8050	Adjustable riser clamp	50	/
12.32.229.8075	Adjustable riser clamp	75	/
12.32.229.80110	Adjustable riser clamp	110	/
12.32.225.8018	Adjustable riser clamp	M18	/
12.32.269.8018	Adjustable riser clamp	M18	1米/根

Usage

• The above suspender, mounting piece and pipe clamp are used for fixing the drainage riser on the same floor and supporting and fixing the horizontal drainage pipe on the same floor.

Siphon Roof Drainage System

SIPHON DRAINAGE CONCEPT

The Siphon Roof Rainwater Drainage System utilizes siphon rainwater outlets that isolate air and precise hydraulic balance calculations of the pipes. It relies on the potential energy of the building to form full pipe flow through a sealed pipe system, creating a siphon effect that quickly discharges rainwater from the roof to the rainwater well.

The siphon roof rainwater drainage system is one of the most advanced roof rainwater drainage systems internationally, with nearly 40 years of history. It is widely used in large factories, exhibition halls, airports, stadiums, and high-rise building complexes with large spans and complex structures.

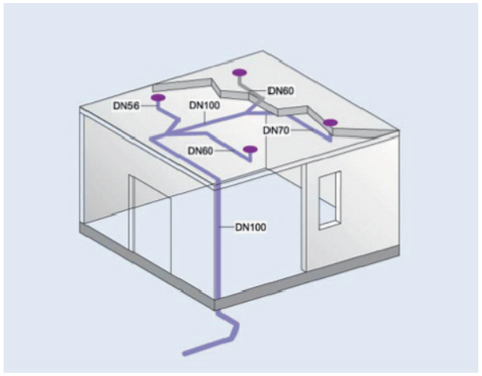
Due to modern design considerations that prioritize the aesthetics of buildings, ease of construction, increased usable area, and extended lifespan, traditional gravity-based rainwater systems are increasingly unable to meet the evolving design concepts. The siphon rainwater system, which addresses design challenges that traditional gravity systems cannot, also offers unparalleled advantages in material savings and reduced construction volume.

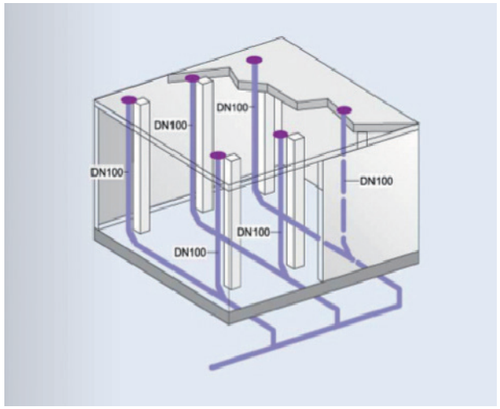
Siphon Rainwater Drainage System

At the beginning of a rainfall, the system uses gravity to drain the water, As the rainfall increases and the water level on the roof reaches a certain height, the rainwater outlet automatically cuts off the air, creating a siphon. The system then transforms into an efficient drainage system, suctioning and discharging the rainwater downward.

System Advantages

Efficient Drainage
Smaller Pipe Diameter: No need for slopes, aesthetically pleasing, and space-saving
Less Material: Reduced ground excavation work





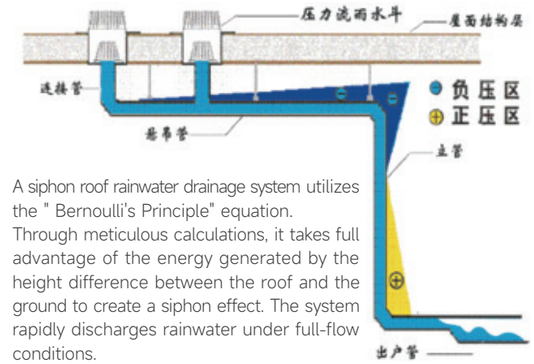
Traditional Gravity-Based Rainwater drainage system

Its principle relies on the slope of the roof structure, allowing water to naturally flow into the roof rainwater outlets. The water, in a mixed air-water state, then relies on gravity to flow down the vertical pipes.

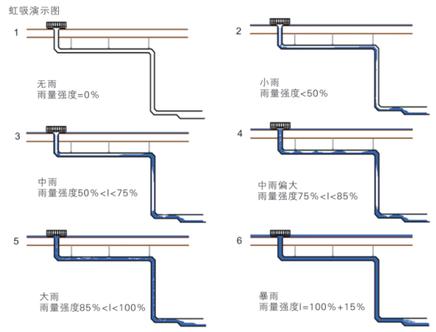
System Disadvantages

Inefficient Drainage
Large Pipe Diameter: Requires a 1%-3% slope
High Material Usage: Complex installation
Space Waste
Prone to Blockages
Extensive Ground Excavation

System Principle



A siphon roof rainwater drainage system utilizes the " Bernoulli's Principle" equation.
Through meticulous calculations, it takes full advantage of the energy generated by the height difference between the roof and the ground to create a siphon effect. The system rapidly discharges rainwater under full-flow conditions.

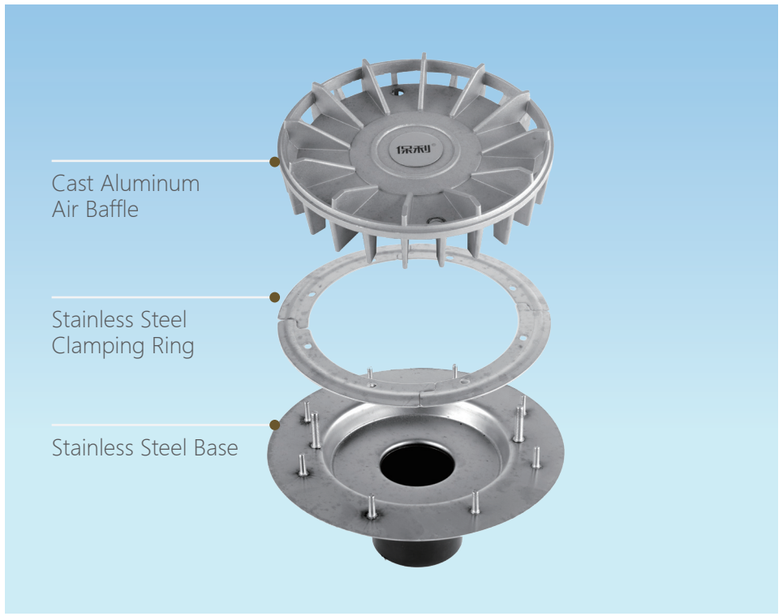


comprehensive system components

Rainwater Inlet

Polygon Rainwater Inlet requires the lowest water level in the industry to achieve a stable siphon state. The Polygon Rainwater Inlet is a controllable siphon rainwater inlet that prevents the drainage flow from increasing infinitely with the rainfall,which would otherwise cause excessive water flow velocity in the pipes, a sharp rise in negative pressure, and system failure.
The Polygon Rainwater Inlet strictly controls the drainage capacity within 1.15 times the design drainage capacity. The drainage capacity ranges from 1 L/s to 100 L/s, offering various types suitable for different roof types.

Rainwater Outlet Structure



Short Pipe Diameter (mm)	Water Depth Before inlet (mm)	Design Drainage Capacity (L/S)
56-63	35	12
75-90	55	25
110-125	85	80
125-160	110	100

Comprehensive system components:

Siphon Hope pipe system

Polygon's siphon HDPE (High-Density Polyethylene) pipes are exceptional, eco-friendly drainage materials. They have become the top choice for roof rainwater drainage and indoor wastewater systems in developed European countries and are also listed as one of the primary recommended materials in the "Technical Specification for Siphon Roof Rainwater Drainage Systems." Polygon's siphon HDPE pipes are made using imported raw materials and advanced equipment, offering excellent resistance to slow crack growth, rapid crack propagation, aging, and corrosion.

Compared to traditional materials, HDPE pipe systems have the following advantages:
1 Excellent Crack Resistance: Capable of withstanding slow crack growth and rapid crack propagation.
2 Durability: Resistant to aging and corrosion.
3 Environmental Friendliness: Eco-friendly material that supports sustainable building practices.
These benefits make HDPE pipes a superior choice for modern drainage systems.

HDPE pipe features

- Outstanding Corrosion Resistance
- Good Scratch Resistance
- Leak-Proof
- Strong Resistance to Rapid Crack Propagation
- High Toughness
- Long Lifespan
- Excellent Flexibility
- High Resistance to Positive and Negative Pressure

The Rainbow Attracts The Type Roofing
Rain Water Emission

Comprehensive System Components

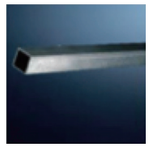
Fastening System

System Components

The fastening system of the Polygon Siphon Roof Rainwater Drainage System consists of square steel, C-shaped steel, connectors, guides, and anchoring pipe clamps. Unlike traditional pipe fixation systems, Polygon's fastening system can be pre-installed, ensuring safe and easy operation while significantly reducing installation time and labor costs.

Advantages of the Fastening system

By installing the fastening system, siphon pipes do not need to be directly connected to the roof, greatly redueing the number of contact points with the roof or floors. Polygon's fastening syslem is custem-designed for professional siphon drainage systems based on the folo'wing factors.



Square Steel and C-shaped Steel

Polygon's fastening system uses high-quality stee, with double-layer hot-dip galvanization inside and out, meeting the national level ten antimicrobial requirements (72-hour salt spray test).

Absorption of Pipe Vibrations

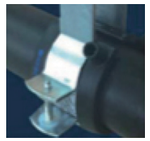
During the siphon drainage process, highspeed fluid flow can cause intense vibrations. The fastening system effectively absorbs and reduces these vibrations, thus protecting the building structure.

Guide Pipe Clamps

Exclusively designed by Polygon, these guide pipe clamps meet national level ten anti-corrosion requirements (72-hour salt spray test) and can fully support the weight of the pipes when they are filled with water.

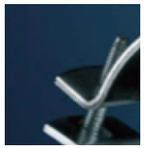
Absorption of Thermal Expansion and contraction Displacement

The fastening system effectively limits the thermal stress in drainage pipes caused by thermal expansion and contraction, ensuring the system operates more safely and stably.



Anchoring Pipe Clamps

Also exclusively designed by Polygon, these anchoring pipe clamps meet national level ten anti-corrosion requirements (72-hour salt spray test) They effectively counteract the internal stress in caused by temperature changes. When pipes combined with Polygon's proprietary welded rings or double flange connections, these clamps can effectively overcome the expansion and contraction of pipes due to environmental temperature changes, efficient ensuring more stable system and operation.



Preventing Pipe Deformation Due to Suspension Stress

In projects with very large spans, the fastening system can also prevent pipes from deforming due to prolonged bending, which occurs when horizontal suspended pipes are very long.

HDPE
Siphon Rainwater
Drainage System Fittings

45°Elbow
Spec.
dn50~dn315

90°Elbow
Spec.
dn50~dn315

Anchor Stub
Spec.
dn63~dn315

Eccentric Reduce
Spec.
dn56×50~dn315×250

45° Y Branch Tee
Spec.
dn50×50~dn315×315

Electrofusion Coupler
Spec.
dn50~dn315

Large Radius Reducing Elbow
Spec.
dn160×110

Mounting Plate
Spec.
M8、M10

Fully Threaded Galvanized
Hanger Rod
Spec.
M8、M10

Blind Plate Inspection Port
Spec.
dn50~315

Siphon Rainwater Outlet
Spec.
dn50~160

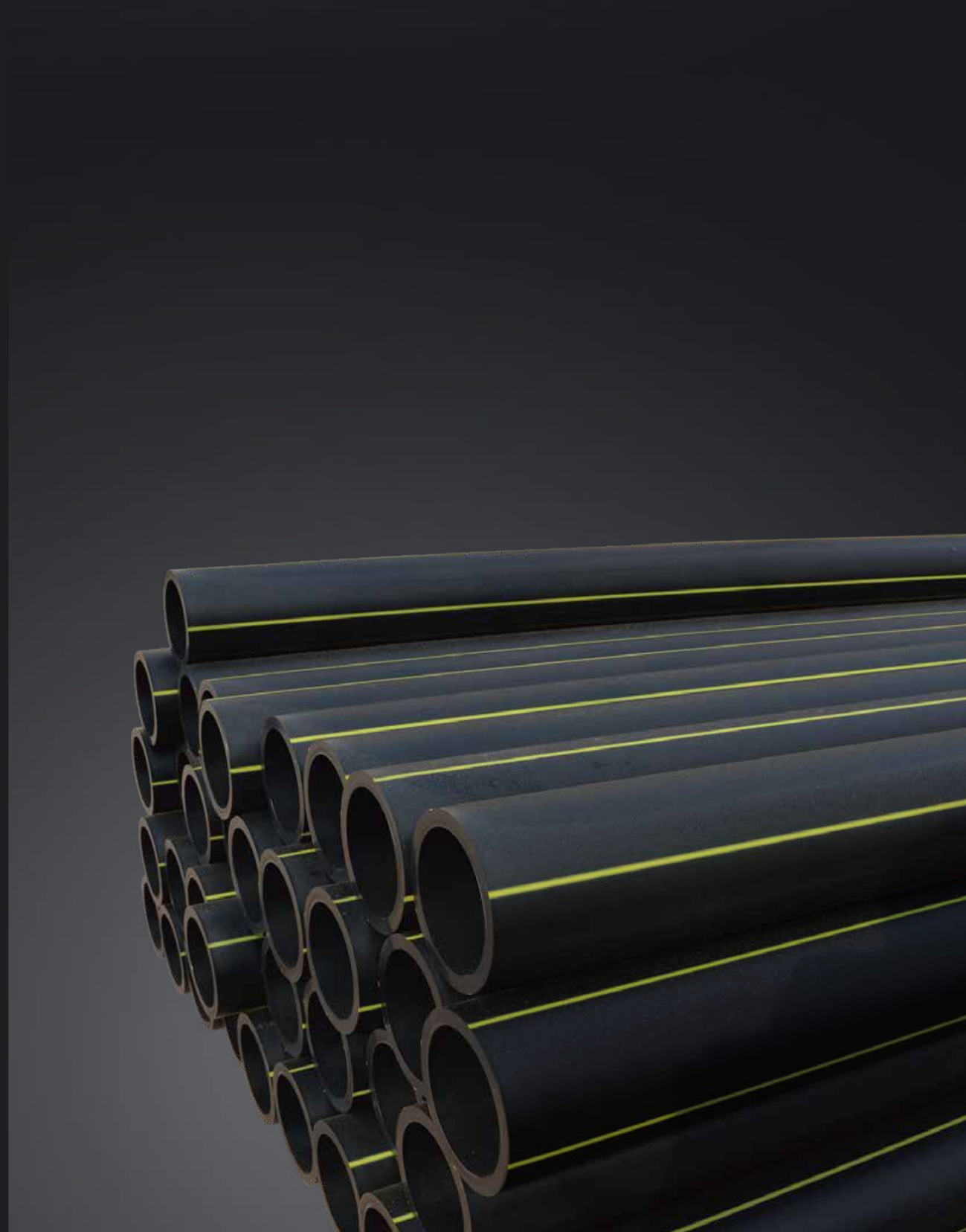
Adjustable Pipe Clamp
Spec.
dn50~315

Guided Pipe Clamp
Spec.
dn50~315

Polygon

POLYGON PE GAS PIPELINE

PE gas pipeline is made by using the mixture of Borealis Chemical Industry and the production line of Krauss Maffei ,a famous pipeline equipment manufacturer in the world. The product has excellent long-term pressure strength and cracking resistance, as well as excellent anti suspension function.PE gas pipe has higher transmission capacity, reliable connection, corrosion resistance, long service life and other characteristics, to ensure the safety of gas pipeline system.



PERFORMANCE & ADVANTAGES

Reliable connection

POLYGON PE gas pipeline adopts hot-melt welding or electric fusion connection, the joint performance is better than the POLYGON PE gas pipeline.

Good flexibility

The flexibility of the POLYGON PE gas pipe makes it easy to bend, which can be changed by changing the pipeline in engineering.Its flexibility can also resist ground subsidence, so it has excellent seismic performance.

Good chemical resistance

POLYGON PE gas pipeline can be resistant to corrosion in a variety of chemical media, and the chemical substances in the soil will not cause any degradation to the pipeline.

Good wear resistance and crack resistance

The wear resistance of POLYGON PE gas pipeline is 4 times of steel pipe, and it has good resistance to rapid crack propagation and slow crack growth to ensure the safety of pipeline system.

Aging resistance, long service life

2-2.5% carbon black with uniform distribution can support the pipeline to be stored outdoors or used for 50 years without being damaged by ultraviolet radiation.

RANGE OF APPLICATION

NATURAL GAS TRANSMISSION AND DISTRIBUTION
LPG TRANSPORTATION
ARTIFICIAL GAS DISTRIBUTION AND TRANSPORTATION




PRODUCT SPECIFICATION

External diameter (dn)	Minimum wall thickness (en)		External diameter (dn)	Minimum wall thickness (en)	
	SDR-17	SSR-11		SDR-17	SSR-11
16	——	3.0	180	10.7	16.4
20	——	3.0	200	11.9	18.2
25	——	3.0	225	13.4	20.5
32	3.0	3.0	250	14.8	22.7
40	3.0	3.7	280	16.6	25.4
50	3.0	4.6	315	18.7	38.6
63	3.8	5.8	355	21.1	32.2
75	4.5	6.8	400	23.7	36.4
90	5.4	8.2	450	26.7	40.9
110	6.6	10.0	500	29.7	45.5
125	7.4	11.4	560	33.2	50.9
140	8.3	12.7	630	37.4	57.3
160	9.5	14.6	——	——	——

PRODUCT PERFORMANCE

Item	requirement	Experimental parameters	Experimental basis
Hydrostatic strength	Destruction time≥100h	20°C, cycilc stress PE80:9.0MPa PE100:12.0MPa	GB/T 6111
	Destruction time≥165h	80°C, cycilc stress PE80:4.5MPa PE100:5.4MPa	
	Destruction time≥1000h	80°C, cycilc stress PE80:4.0MPa PE100:5.0MPa	
Elongation at break	≥350%		GB/T 8804.3
Longitudinal shrinkage	≤3%	110°C	GB/T 6671
Thermal stability	>20min	200°C	GB/T 17391
Melt flow rate	Change of MTF<20%	190°C5KG	GB/T 3682

PLOYGON DOUBLE-WALL CORRUGATED PIPE

APPLICATION

Underground drainage system
Irrigation and drainage
Seepage and drainage of railway Expressway
Waste water treatment and discharge system
Mine subway ventilation engineering
Chemical and pharmaceutical wastewater
Low voltage cable communication bushing

Rigid and flexible

Large conveying capacity

Good sealing

Light weight and high strength

POLYGON HDPE double-wall corrugated pipe is a new type of light pipe with high density polyethylene as the main raw material, adopting one-time full vacuum crawler feeding molding. Its unique pipe structure design makes this kind of pipe light in weight and high in ring stiffness. The sealing effect is better and the anti settlement ability is stronger. It is an ideal substitute for the traditional non pressure drainage and sewage pipes.

POLYGON HDPE double-wall corrugated pipe dn / ID 200 mm and above is of inner diameter series, dn / OD 160 mm outer diameter series.

Pipe Series	Outside diameter series Inner diameter series

Loop Stiffness	SN4 SN8

PRODUCT SPECIFICATION

Nominal diameter	Ring stiffness
DN/OD160	SN8
DN/ID200	SN4,SN8
DN/ID225	SN4,SN8
DN/ID300	SN4,SN8
DN/ID400	SN4,SN8
DN/ID500	SN4,SN8
DN/ID600	SN4,SN8
DN/ID800	SN4,SN8

PROPERTIES OF HDPE DOUBLE WALL

Item	Requirements	
Ring stiffness	SN4	⩾4kN/㎡
	SN8	⩾8kN/㎡
Ring flexibility	The sample is smooth No reverse bending No fracture and No separation of two walls	
Impact Properties	TIR⩽10%	
Oven test	No bubble, no delamination,no cracking	
Creep ratio	⩽4	

ENGINEERING CASE

Shanghai International World Financial Center

Snow Dragon South Board Research Ship

German Consulate in Shanghai

Nanjing Langsey international block

Yufeng Garden

Shangcheng County

New Oriental

Century Garde

Shenyang Industrial university

Rongqiao Real Estate in Xi'an

Xi'an Zhonghai Real Estate

Xi'an Merlin Pick Garden

Vanke Xi'an New Town

Xi'an Fuli City

Changqing Oilfield Lakeside Garden

Beijing Hongshan Community

Renovation of Caoshanling Old City

Dalian Wanda Pearl Square

Yadu Garden, Tianjin Tanggu Development Zone

Beijing Military District Tianjin Nursing Home

Baoding Huazhong Holiday Athens City

Baoding Jinpeng Swan Bay

Qinhuangdao Yanda Mangrove Bay

Qinhuangdao Beidaihe Guanhai Garden

Dongwangling New Village Reconstruction Project

Shijiazhuang Mocha Town

Sanmenxia Civil Service Community

Zhoukou Power Community

Shangqiu City Pipe Network

Zhongyuan Lida High Speed Rail Package

Dalian Wanda Mansion

Shenyang Olympic Sports Center

Fushun Big Ethylene Park

Anshan Fortune Center

Tianjin Tanggu Offshore Oil

Tianjin Tanggu Free Trade Zone Logistics Building

Tangshan Guangyuan Garden

Taicang Shanghai Holiday Garden

Changzhou Laijun Garden