Urban Construction Industry Standard of the People's Republic of China

CJ / T 123 – 2004

Replacing CJ / T123 – 2000

Steel reinforced polyethylene plastic pipes for water supply

Approved on December 2, 2004 **Implemented** on June 1, 2004

Approved by Ministry of Construction of the People's Republic of China

CJ/T 123 - 2004

Foreword

This standard is the revised edition of the **CJ / T**123 – 2000, and the main references are some international standard and national standard such as ISO 4427《 Polyethylene(PE) pipes for water supply-Specifications 》 and GB/T13663《Polyethylene pipes for water supply》etc.

This standard replaces **CJ / T**123 – 2000《Steel reinforced polyethylene plastic pipes for water supply》from the implemented day, the main content have been changed are as follows:

—— in the "Scope" part, make the "the composite pipes used for transport the materials under 70℃" be replaced by "the composite pipes used for transport the materials under 70℃ for long term using , and under 80℃ for short term using";

——in the "Material" part, add some regulations such as " stripe, dispersing of the carbon black and the dispersing of the pigment" and cancel some regulations such as "volatile content, anti-gas component" etc. in the old standard;

——in "5.1.1", add the 1.6Mpa series for the Dn350~Dn500 and add 4.0Mpa series for the Dn50~Dn80";

——in "5.1.2",make the "correction coefficient is 0.76 when 60＜t≤70℃" replaced by "correction coefficient is 0.70 when 60＜t≤70℃",and add "correction coefficient is 0.60 when 70＜t≤80℃";

——in "5.2", add "double faucets fittings connection and butt-fusion connection"

—— in "5.3", add" the composite pipes end's structure of double faucets fittings connection type" and "the composite pipes end's structure of butt-fusion connection type";

—— add "6.3.4" "the composite pipes end's specification and dimension of two faucets fittings connection type";

——delete the "6.5""camber" in the old standard;

—— in "5.3",make"temperature:20℃ ,time:1h;pressure:nominal pressure × 2 "in "Short term hydrostatic strength test" be replaced by"temperature:20℃ ,time:100h;pressure:nominal pressure × 1.5" and make "temperature:80℃ ,time:165h;pressure:nominal pressure × 2 × 0.71 " be replaced by "temperature:80℃ ,time:165h;pressure:nominal pressure × 1.5 × 0.6 " (see 6.5);

—— in "8.3.2",make "Each group should not exceed 100t."be replaced by "Each group should not exceed 200t.",make "If the outcome of 15 days is less than 100t, it is set as one group." be replaced by "If the outcome of 20 days is less than 200t, it is set as one group.";

——delete " The storage period is no more than two years." in "9.4";

——add appendix C.

The appendix A appendix B and appendix C are the normative appendixes.

This standard is issued by the Research institute of Standards & Norms of the Ministry of Construction;

This standard is put under centralized management of the Technology Standardization Council of Water Supply and Drainage Product, Ministry of Construction.

This standard is drafted by Xinghe Industrial Co., Ltd. of Harbin Institute of Technology and Huachuang Tianyuan Industrial Developing Co., Ltd and Daqing Oil-field Changyuan Pipe Indurstry Co.,Ltd and Shenzhen Pipelines Science& Technology Co., Ltd and Xi'an Changqing pipelines Co., Ltd.

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CJ / T123 - 2004

Steel framed polyethylene plastic pipes for water supply

1. **Scope.**

This standard defines the requirements of the raw materials, the classification of the products, the requirements, the methods of the tests, the rules for inspection, signs, packaging, transportation and storage of the steel framed polyethylene plastic pipes (composite pipes or SRPE for short), which is compounded by pressing the framed steel network continuously interconnected when welding, and the polyethylene (of mid density or high density) thermo-plastic resin.

This standard is suitable for the composite pipes indoors or outdoors, built on stilts or underground, used for water supply under pressure and drinking water supply, the composite pipes used for transport the materials under 70℃ for long term using, and under 80℃ for short term using.

2. **Normative references**

The terms cited in the following standards are naturally terms of this standard since they are quoted. All the standards cited below are effective when this standard is issued. Any standard may be revised in the future, so it is necessary to check the possible latest versions when using the relative standards.

GB / T 343 low-carbon steel for general use

GB / T 2828 counting sampling inspection by batches procedures and sampling tables (suitable for continuous batches)

GB / T2918 regulation of the conditions of plastic samples and the standard environment for experiment

GB / T 3681 the method of test for plastics exposed in the natural environment

GB / T 3682 the method of test for the flowing speed of the thermo plasticity melting plastics

GB / T 6111 the method of examination for the time of thermo plasticity plastic pipes endure under certain inner pressure before spoiled

GB / T 6671 the method of test for the vertical shrinkage of the polyethylene (PE) tubular product

GB / T 8806 the method of measure for the size of the plastic tubular product

GB / T13021 the measure of the carbon black in polyethylene tubular product and tubing the method of thermo zero gravity

GB / T17219 the evaluation standard of the safety of the facilities and protective materials used for drinking water supply

GB / T 17391 the test method of Thermo-stability for Polyethylene pipes and fittings.

GB/T 18251 measure method for distribution of pigment and carbon black in Polyoefin pipes and fittings.

GB/T 18252 plastic pipeline system measurement of the long-term hydrostatic Strength for thermoplastics pipes by extrapolation.

GB/T 18475 classification and naming of the material for thermoplastics pipes and

fittings general usage(design) coefficient.
GB/T 18476 polyolefin pipes for the transport of fluids measurement of the resistance crack propagation test measure of the RCP of the pipes with notch (notch test)

3. **Technical term**

Nominal pressure
The greatest possible pressure against composite pipes used for water supply at 20℃ (the expected service life is 50 years)

4. **Raw materials**

4.1 The mixed polyethylene
4.1.1General rules
4.1.1.1The mixed polyethylene used to produce the composite pipes should be black or blue. Only the indispensable additives, such as antioxidant, ultraviolet stabilizer and pigment should be added into the mixed polyethylene material to make the composite pipe accord with this standard and its' final usage.
4.1.1.2 For the black pipe, the content of the carbon black in the mixed material should be 2.25%±0.25%(quality percentage).
4.1.1.3 For the blue pipe, the mixed material should ensure that the anti weathering properties of the pipe manufactured using the material meet the requirement in Table 6.
4.1.1.4 When use the co-extrusion to make the stripe, the material should be as the same as the pipes'.
4.1.1.5We suggest to use the PE63 or advanced mixed material which accords with the GB/T18252 and GB/T18475.
4.1.2 disperse of the pigment in the mixed material
4.1.2.1disperse of the carbon black
according with the prescription in GB/T18251, the dispersion of the carbon black should ≤classification 3.
4.1.2.2disperse of the pigment
According with the prescription in GB/T18251, the dispersion of the pigment should ≤classification 3.
4.1.3 thermo-stability
Under the test temperature 200℃, the O.I.T time of the material advanced PE63 should be 20min at least.
4.1.4Resistance Crack Propagation
According with the prescription in GB/T18476, the pipe shouldn't be destroyed in 165h, and the material manufacturer should provide the test data.
4.1.5 Recycle material
The unpolluted materials produce in the process of the plastic production according to this standard, and the leftover bits and pieces produced in the process of adjustment, craft, and cutting, which can be used to produce standard composite fittings, could be recycled after refined not more than 5% with the new materials.
4.1.6 the affection on the water quality of the mixed material will be used to produce drinking water.

The content of the substance, chemical matter or biologic matter which could be separated out when the mixed polyethylene material contact with drinking water should accord with the prescription in GB/T 17219 or relevant sanitation specification.

4.1.7Melting Flow Rate and Density

The composite pipe manufacturer should provide the data about density and MFR of the mixed material. The MFR should accord with the following requirements:

a) the deviation between the actual value and the prescriptive value of the manufacturer shouldn't exceed ±25%
b) The MFR value's change brought during the processing, that is the test value deviation between the mixed material and the sample form the composite pipe, shouldn't exceed 20%.

4.2 Steel wires

4.2.1 Mechanical performance

The steel wires used to produce steel frames should be low-carbon steel wire for general use. At the moment of transaction, the steel wires should be anneal state, and the tensile strength of the steel wires should ≥400 MPa , and other performance should meet the requirements set in GB/T 343.

4.2.2 Surface plating layer

The low-carbon steel wires should be plated with metal that is rust-resistant and able to be welded. The plating should be even and stable, without unplated area. The plated metal should not give out hazardous gas while welding. The plating surface should be pure and smooth, with no oil or dust.

4.2.3 Diameter and Bending

The diameter of the steel wire sees table1. The steel wires should be straight. The steel wires, which have a diameter not bigger than 0.3, must not have a bend of radius that is less than 30 mm. The steel wires, which have a diameter bigger than 0.3, must not have a bend of radius that is less than 60 mm.

table1 diameter of the steel wire unit: mm

Nominal Inner Diameter		50	65	80	100	125	150	200	250	300	350	400	450	500	600
diameter d≥	longitude	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	3.0	3.0	3.5	3.5	3.5
	woof	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	3.0	3.5	3.5	3.5	3.5	3.5

4.2.4 Steel wires network

The network structure is listed in table 2.The net distance between the woof steel wire which loop twist shouldn't less than 3mm. The manufacturers may make adjustment to the network, but the blow up strength of the composite pipes after adjustment should meet the requirements list in table 6.

5 **The classification of the products**

5.1 The nominal diameter, thickness, limit deviations and nominal pressure of the composite pipes.

5.1.1 The nominal diameter, thickness, limit deviations and nominal pressure of the composite pipe should meet the requirements listed in table 2.

Table 2 the nominal diameter, nominal pressure, thickness, limit deviations and

Nominal diameter Dn mm	Nominal pressure，MPa			
	1.0	1.6	2.5	4.0
	Nominal thickness e_N and limit deviation ,mm			
50	—	—	$9^{+1.4}_{0}$	$10.6^{+1.6}_{0}$
65	—	—	$9^{+1.4}_{0}$	$10.6^{+1.6}_{0}$
80	—	—	$9^{+1.4}_{0}$	$11.7^{+1.8}_{0}$
100	—	$9^{+1.4}_{0}$	$11.7^{+1.8}_{0}$	—
125	—	$10^{+1.5}_{0}$	$11.8^{+1.8}_{0}$	—
150	$12^{+1.8}_{0}$	$12^{+1.8}_{0}$	—	—
200	$12.5^{+1.9}_{0}$	$12.5^{+1.9}_{0}$	—	—
250	$12.5^{+1.9}_{0}$	$12.5^{+2.4}_{0}$	—	—
300	$12.5^{+1.9}_{0}$	$12.5^{+2.4}_{0}$	—	—
350	$15^{+2.3}_{0}$	$15^{+2.9}_{0}$	—	—
400	$15^{+2.3}_{0}$	$15^{+2.9}_{0}$	—	—
450	$16^{+2.4}_{0}$	$16^{+3.1}_{0}$	—	—
500	$16^{+2.4}_{0}$	$16^{+3.1}_{0}$	—	—
600	20^{+3}_{0}	—	—	—

note:

1、 The thickness in the table is the original size after the pipes being produced, the style and dimension of the pipe end should meet the requirements in Appendix A, Appendix B or Appendix C.

2、 The material, diameter, distance between the network of the same specification but different pressure classification pipe may be different.

5.1.2 The correction coefficient of nominal pressure

When the composite pipes are used to transport water above 20℃, the nominal pressure should be revised. The method is to multiply the nominal pressure listed in table 3 or table 4 with the revision coefficient listed in table 5.

Table 5 the correction coefficient of nominal pressure

Temperature t,℃	0＜t≤20	20＜t≤30	30＜t≤40	40＜t≤50	50＜t≤60	60＜t≤70	70＜t≤80
the correction coefficient of nominal pressure	1	0.95	0.90	0.86	0.81	0.70	0.60

5.1.3 The even limit deviation of the nominal diameter.

The even limit deviation of the nominal diameter should meet the requirements in table4.

unit: mm

Nominal diameter Dn	50	65	80	100	125	150	200	250	300	350	400	450	500	600

Even limit deviation	±0.4	±0.4	±0.6	±0.6	±0.6	±0.8	±1.0	±1.2	±1.2	±1.6	±1.6	±1.8	±2.0	±2.0

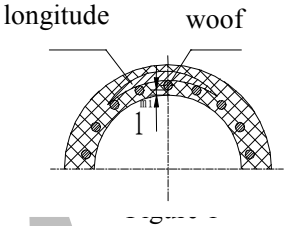
5.1.4 the eccentric of the steel framework

The net distance between any longitude steel wire of the framework and the inner surface of the composite pipe should meet the requirements in figure1.

For the pipes that Dn≤125mm, l_{min}≥1.8mm;

For the pipes that 150mm≤Dn≤300mm, l_{min}≥2.5mm

For the pipes that 350mm≤Dn≤600mm, l_{min}≥3.0mm



5.2 The connection mode of the composite pipes

According to the different conditions, we can choose different connection modes such as flange connection or electro-fusion connection or double faucets or butt-fusion connection.

5.3 The structure of the composite pipes' ending.

When the composite pipes adopt different connection mode, the structure of the ending of the pipe may be different.

5.3.1 Composite pipes of flange connection

The connection mode, specification and size of the composite pipes of flange connection can be seen in Appendix A (the standard appendix). The pipes are sealed by O rings. When necessary, other sealing modes can also be adopted. The loop sealing slot should be replaced by waterline at the flange end of the pipe. Other type of sealing may be adopted.

5.3.1.1 When composite pipes between Dn50~Dn300 are transporting medium whose temperature is higher than 45 or its working pressure is higher than the values in Table 5, intensifying hoops should put on the flange connection.

5.3.1.2 To the pipes whose inner diameter is more than Dn350, put on intensifying hoops to the flange connections when the temperature is higher than 45.

Table 5 the pressure of common flange connections with intensifying hoops put on.

Specification	Dn50	Dn65	Dn80	Dn100	Dn125	Dn150	Dn200	Dn250	Dn300
Working pressure MPa	1.8	≥1.6	≥1.3	≥1.3	≥1.2	≥1.1	≥0.8	≥0.8	≥0.7

5.3.2 Composite pipes of electro-fusion connection

There are the two types of composite pipes ending of electro-fusion connections, flat ending and cone-shaped ending, and their specifications and sizes are seen in Appendix B.

5.3.3 Composite pipes of double faucets.

The ending of the composite pipes for the double faucets is the flat structure, and the specifications and sizes are seen in Appendix C.

5.3.4 Composite pipes of butt fusion connection.

The structure of the pipes' ending for butt fusion connection is the same as the flange

connection, the surface of the flange ending has not the loop sealing slot, the intensifying hoops should not used when adopt the butt fusion connection.

5. 4 The length of composite pipes

The standard lengths of composite pipes are 6m, 8m, 10m and 12m with a warp of ± 20mm. (see figure 2) When special length is required, it can be also decided through bilateral consultation. The deviation allowed of the length is ±0.2%.

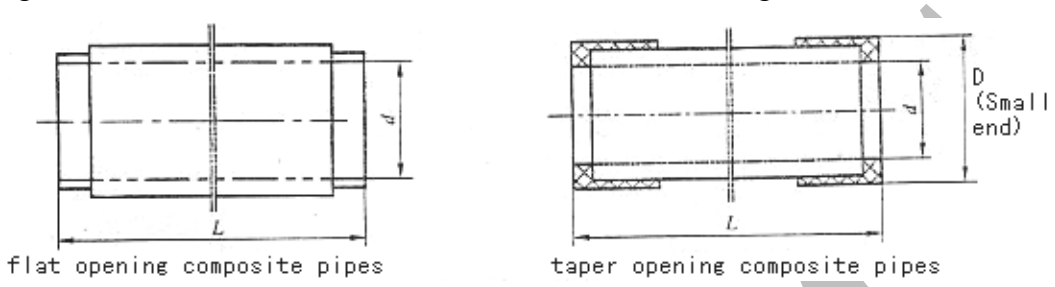


Figure 2 the length of composite pipes

6 **Requirements**

6.1 Color

The color of composite pipes must be black or blue. And the color of the pipes exposed to sunshine, like above-ground pipes, must be black.

6.2 Appearance

6.2.1 The inner surfaces of composite pipes must be clean and smooth, have no obvious nicks or color-dividing line and no steel wire should be exposed. The out surface of composite pipes is allowed to appear in a state of screw-thread-looking natural shrink, and a little bulge caused by natural shrink is also allowed. No faults like obvious scoring, air bubble, impurity and uneven color are allowed.

6.2.2 The surfaces of second-time injection mould parts of the flange connections and of the flat openings and taper openings of electro-fusion composite pipes must be flat, smooth, do not have faults like drop pit, scoring, burr, meet the composite pipes well and allow certain shrink of the pure plastic part at the forward end of taper opening.

6.3 Specification, size and size warp

6.3.1 The specification, size, size warp and nominal pressure of composite pipes should meet the prescription in Table 3 and Table 4.

6.3.2 The specification, size and size warp of flange connection composite pipes are seen in Appendix A (standard appendix).

6.3.3 The specification, size and size warp of the flat openings and taper openings of electro-fusion composite pipes are to be seen in Appendix A (standard appendix).

6.4 Out of roundness

The out of roundness of composite pipes is not to be over 5%.

6.5 The performance requirement of composite pipes.

The performance requirement of composite pipes must be in accordance with the prescription in Table 9.

Table 9 the performance requirement of composite pipes

No.	Item	Performance requirement	Test means

1	Stability under pressure		No cracking	See 7.10.1
2	Contractility rate of portrait size (110℃ 1h) %		≤0.4	See 7.10.2
3	O.I.T(200℃)/min		≥20	See 7.9
4	Short term hydrostatic strength test	Temp: 20, Time: 100h, Pressure: nominal pressure×1.5	No cracking and leakage	See 7.10.3
		Temp: 80 Time: 165h Nominal pressure × 1.5 ×0.6	No cracking and leakage	
5	Explosion intention test		Explosion pressure ≥ nominal pressure×3	See 7.10.3
6	Weathering resistance test(accumulated reception≥3.5 kMJ/m2)		Still meet the performance requirement of Item 3 and 4 in this Table	See 7.10.4
1) Weathering resistance test only apply to the non-black pipes.				

6.6 Sanitation performance

The sanitation performance of drinking water used composite pipes must meet the prescription of GB/T 17219 or relevant sanitation specification.

7 **Test means**

7.1 The standard environment of the adjustment and test of sample's state

The standard environment of the adjustment and test of sample's state should meet the prescription in GB/T 2918. Temperature is 23℃ ± 2℃. The adjustment time should be no less than 24h.

7.2 Appearance test

Eye check and observe the inner surface under backlighting.

7.3 The measurement of geometrical size

7.3.1 The length of composite pipes: use measure implements whose precision is no less than 1mm.

7.3.2 The inner core and outer diameter: use measure implements prescribed in GB/T 8806

7.3.3 Thickness: use measure implements prescribed in GB/T 8806

7.3.4 Other sizes: use measure implements whose precision is no less than 0.02mm.

7.4 Measure the out of roundness

Proceed according to GB/T8806.

7.5 Melt flow rate measurement

Proceed according to GB/T 3682.

7.6 The content of black carbon measurement

Proceed according to GB/T 13021

7.7 The dispersion degree of black carbon measurement.

Proceed according to GB/T 18251

7.8 The dispersion degree of pigment measurement.

Proceed according to GB/T 18251

7.9 Thermal stability test

Proceed according to GB/T17391

7.10 The performance check of composite pipes

7.10.1 The test of shelling stability under pressure: take composite pipes of the length between 100mm ± 10mm as samples. Put them between the clamp plates of a hydraulic press and press down slowly for 10s~15s after which the pipe diameter is pressed to 50%.

7.10.2 The test of size shrink in portrait direction

Proceed according to GB/T 6671.2

7.10.3 Short-term hydrostatic strength test and Explosion intention test

Proceed according to GB/T 6111. The time, temperature and pressure of test should meet the prescription in Table 9. See test instruments in Figure 2.

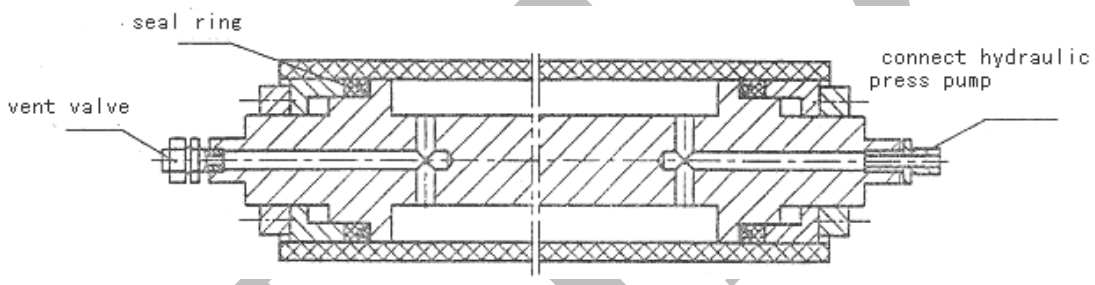


Figure 3

7.10.4 Weathering resistance test

Proceed according to GB/T 3681.

7.11 Sanitation performance test

Proceed according to GB/T 17219.

8 Test rules

8.1 Only after being checked out and being given certificate of approval can the composite pipes leave factory.

8.2 Test types

Routine test and model test are the two types.

8.3 Check before leave factory.

8.3.1 The test items of composite pipe routine test are the test of size shrink in portrait direction and short term hydrostatic strength test in 6.1, 6.2, 6.3, 6.4and 6.6.

8.3.2 Group sampling and judgment

Set the composite pipes manufactured with the same material, ingredient and techniques as one group. Each group should not exceed 100t. If the outcome of 15 days is less than 100t, it is set as one group. Proceed according to GB/T 2828. Adopt the normal test sampling formula. Set IL=I as the normal test level and AQL=6.5 as the satisfactory quality level. See sampling formula in Table 10.

Table 7

Group range	Sample size n	Satisfaction value Ac	Dissatisfaction value Re
≤150	8	1	2
151~280	13	2	3
281~500	20	3	4
501~1200	32	5	6
1201~3200	50	7	8
3201~10000	80	10	11

8.3.3 Randomly take out enough samples from a group of products that passed counting sampling test and carry out the test of size shrink in portrait direction and the short term hydrostatic strength test in 6.6. When they are not eligible, take out the 2nd set and carry out the tests. If they are not eligible again, then this group of products is judged to be not eligible.

8.4 Model test

8.4.1 The items of model test is the items required by this standard.

8.4.2 Implement the model test under any of the following situations.

a) when there is a big change in material and techniques which may influence the performance of products;

b) Conduct no less than once under normal production.

c) at the time of restoring production after stopping production for more than 6 months;

d) when great differences exist between the routine test results and the last time model test results;

e) when a model test is required by national quality supervision department.

8.4.3 Sampling and judgment

Judge 6.2, 6.3, 6.4 in accordance with Table 10. When only one item in 6.6 falls short of the standard, randomly take out twice the amount of samples again and test. If still some item fails to reach the standard, then this group of products can be judged not eligible.

9 Sign, packing, transportation and store

9.1 Sign

There should be the following signs when the composite pipes leave factory:

a) the variety and trademark of raw material
b) nominal inner core and length
c) nominal pressure
d) connection means (F refers to flange connection and D refers to electro-fusion connection)
e) manufacturer or trade mark
f) this standard number
g) date of production or batch number

9.2 Packing

Take protective measures to prevent the flange connections, flat openings and

taper openings from damage during handling and transportation. The packing should be attached with quality certification, batch number, quantity, etc provided by quality inspection department.

9.3 Transportation

During transportation and handling, prevent the pipes from fierce collision, scoring and throwing.

9.4 Store

Composite pipes should be stored at places away from heat source and the temperature should not exceed 40℃. Keep the pipes from isolation in the open air. The store ground should be clean and flat. Being stored outside, the pipes should be covered. The height of storage should not exceed 1.5m.

The storage period is no more than two years.

Appendix A
(Standard appendix)

A1 The specification and sizes of flange connection (type I, see figure A.1and table A.1)

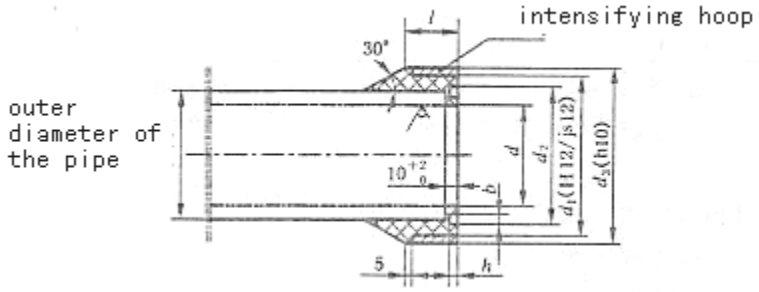


Figure A1 flange connection

A1 The specification and sizes of flange connection mm

Nominal inner core *Dn*	*d*	*d1*	*d2*	*d3*	*l*	*h*	*b*
50	50	91	79.6	97	35	4.15±0.1	7.1±0.15
65	65	107	90.6	113	35	4.15±0.1	7.1±0.15
80	80	122	105.6	128	35	4.15±0.1	7.1±0.15
100	100	146	125.6	152	35	4.15±0.1	7.1±0.15
125	125	173	150.6	179	35	4.15±0.1	7.1±0.15
150	150	199	175.6	205	35	4.15±0.1	7.1±0.15
200	200	250	228.6	256	35	4.15±0.1	7.1±0.15
250	250	305	282.6	311	41	4.15±0.1	7.1±0.15
300	300	355	329.0	361	41	4.15±0.1	9.45±0.20
500	500	562	544.0	570	50	4.15±0.1	9.45±0.20

A.2 The specification and sizes of flange connection (type II, see figure A.2and table A.2)

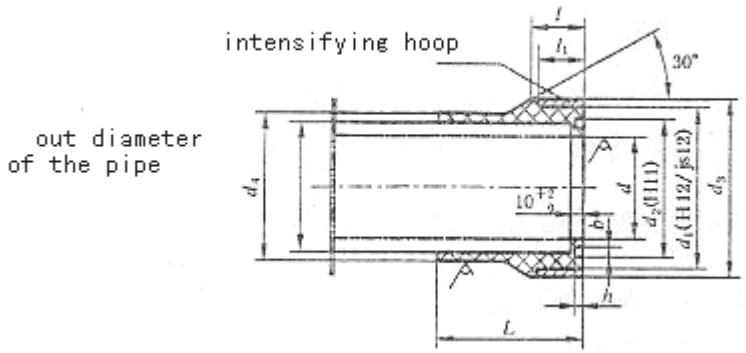


Figure A2 flange connection

Table A2 the specification and size of flange connection mm

Nominal inner core, Dn	*d*	*d1*	*d2*	*d3*	*d4*	*L*	*l*	*l1*	*h*	*b*
50	50	91	79.6	97	75	80	35	30	4.15±0.1	7.1±0.15
65	65	107	90.6	113	90	80	35	30	4.15±0.1	7.1±0.15
80	80	122	105.6	128	105	80	35	30	4.15±0.1	7.1±0.15
100	100	146	125.6	152	126	85	35	30	4.15±0.1	7.1±0.15
125	125	173	150.6	179	153	90	35	30	4.15±0.1	7.1±0.15
150	150	202	175.6	208	182	90	35	30	4.15±0.1	7.1±0.15
200	200	256	232.0	262	233	100	41	36	5.45±0.1	9.45±0.20
250	250	307	279.0	313	184	110	41	36	5.45±0.1	9.45±0.20
300	300	357	329.0	363	334	120	45	40	5.45±0.1	9.45±0.20
350	350	414	389.0	422	390	125	50	45	5.45±0.1	9.45±0.20
400	400	464	439.0	472	440	130	55	50	5.45±0.1	9.45±0.20
450	450	520	489.0	528	493	135	60	55	5.45±0.1	9.45±0.20
500	500	572	544.0	580	543	140	65	60	5.45±0.1	9.45±0.20
600[1)]	500			730	670	160	80			

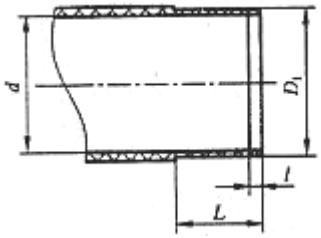
1) the molding mode of the composite pipes of DN600 is not the same as other size pipes, the size is different, the angle of the cone-shape is 45°, the distance between the longitude and the end of the pipes is 20 mm.

Appendix B

((Standard appendix)

The end of the electro-fusion connection pipes

B.1 The specification and size of the electro-fusion connection (type I, see figure B.1 and tableB.1)



B.1 the outlay of the flat opening at the end of the pipe

Table B.1 the specification and size of the electro-fusion connection mm

Nominal inner core, Dn	The outer diameter of electro-fusion area	The length of electro-fusion area	The thickness of flat opening
50	71.0±0.2	75±5	6~10
65	86.0±0.2	75±5	
80	103.0±0.25	85±5	
100	123.0±0.25	90±5	
125	148.3±0.3	100±5	
150	173.1±0.3	110±5	
200	224.4±0.4	115±5	
250	273.8±0.4	130±5	
300	324.0±0.5	150±5	

B.2 The specification and size of the electro-fusion connection (type II, see figure B.2 and tableB.2)

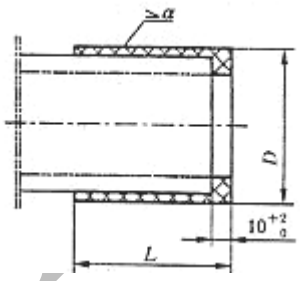


Figure B.2 the layout of taper opening at the end of the pipe

Table B.2 the specification and size of electro-fusion connection mm

Nominal inner core, Dn	Taper opening (small end) outer diameter D and warp extreme	The length of taper opening L	a
50	$75_{-1.3}^{-0.3}$	100	30’
65	$89_{-1.3}^{-0.3}$	100	30’
80	$104_{-1.3}^{-0.3}$	100	30’
100	$125_{-1.3}^{-0.3}$	100	30’
125	$152_{-1.3}^{-0.3}$	100	30’
150	182±0.5	110	30’
200	234±0.5	120	30’
250	284±0.5	130	30’
300	334±0.5	150	30’

350	390±0.5	160	1
400	440±0.5	170	1
450	492±0.5	180	1
500	542±0.5	190	1

Appendix C

((Standard appendix)

The end of the double faucets connection pipes

C.1 The specification and size of the double faucets connection(see Figure C.1 and Table C.1)

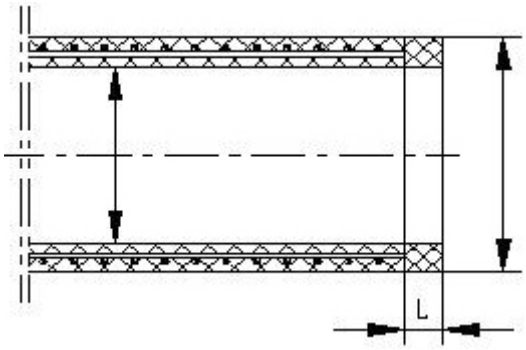


Figure C.1 the layout of double faucets connection at the end of the pipe

TableC.1 The specification and size of the double faucets connection

unit：mm

Nominal inner diameter (Dn)	50	65	80	100	125	150	200	250	300	350	400	450	500	600
Thickness of the flat end (L)	6～10													10～15

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