Heating and cooling pipelines

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TANGSHAN XINGBANG PIPELINE ENGINEERING EQUIPMENT CO.,LTD.

Contents

Rigid polyurethane spray polyethylene winding prefabricated directly buried insulating pipes

Product introduction (including application scope)

The PU insulation pipe consists of working steel pipe, PU thermal insulation layer and extruded PE external protection layer. The thickness of the thermal insulation layer and the external protection layer can be adjusted as needed within a certain range. The product can be produced quantificationally according to thermal insulation layer thickness for centralized heating and cooling medium parameters and actual heat loss to meet the need of different projects.

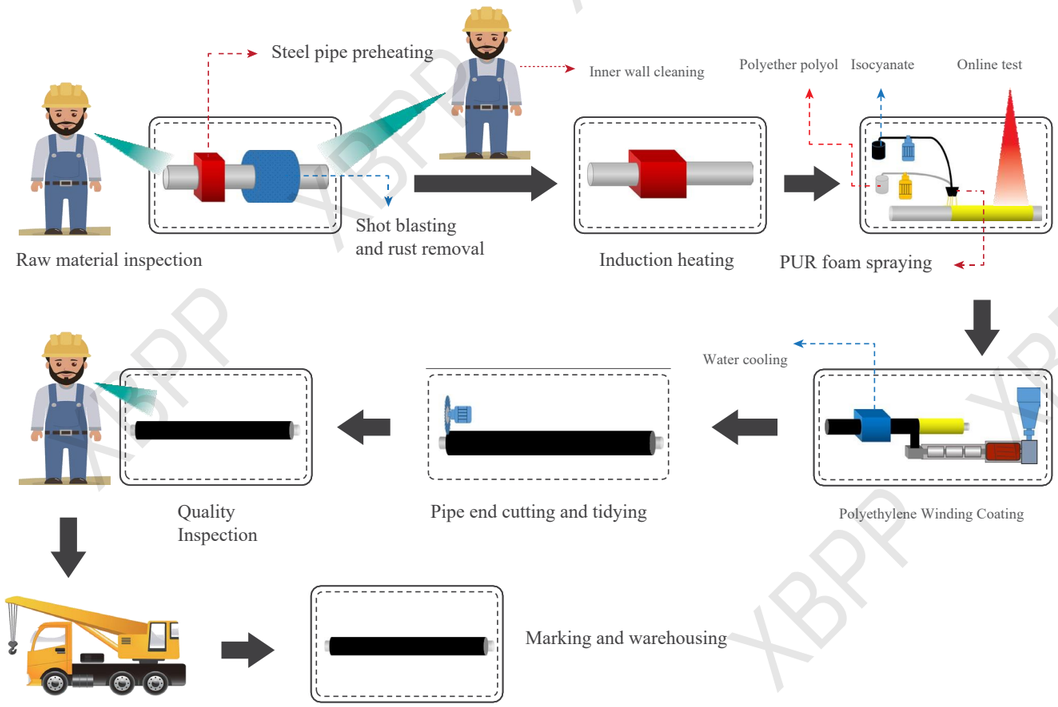
Application scope

This product is applicable to thermal insulation projects whose conveying medium temperature (long-term operating temperature) is no greater than 120℃ and sudden peak is no greater than 140℃.

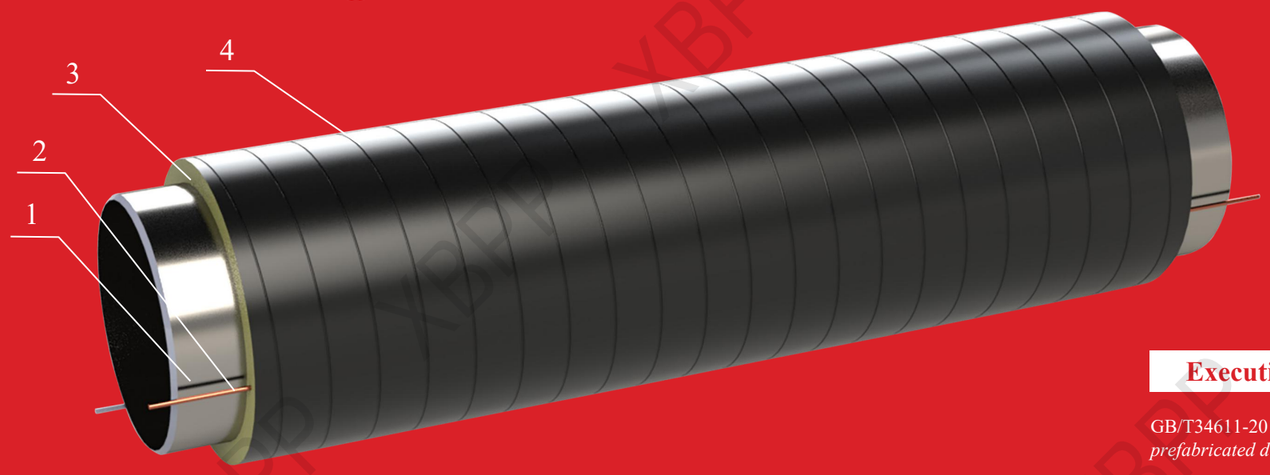
Laying method

It is mainly used for directly burying pipelines and laying pipelines in trenches.

Process flow chart



Product structure diagram



1. Working Steel Pipe
2. Signal Line (Optional)
3. Thermal Insulation Layer
4. PE External Protection Layer

Executive standard

GB/T34611-2017 *Rigid polyurethane spray polyethylene winding prefabricated directly buried insulating pipes*

Production scope and capacity

Specification & model table

Diameter of working steel pipe (DN)	Thickness of thermal insulation layer	Outer diameter of external protection layer (Dc)	Minimum wall thickness of external protection layer (emin)
300	30—50	393-433	4.0
350	30—50	445-485	4.0
400	30—60	494-554	4.0
450	30—60	547-607	4.5
500	30—60	598-658	4.5
600	30—60	700-760	5.0
700	30—60	790-850	5.0
800	30—60	891-951	5.5
900	30—60	992-1052	6.0
1000	30—60	1093-1153	6.5
1100	30—60	1194-1254	7.0
1200	40—100	1316-1436	8.0
1400	50—120	1538-1678	9.0
1600	60—150	1760--1944	11.0

"One-step" PUR insulation pipes

Product introduction (including application scope)

One-step forming process is different from pipe-in-pipe forming process. The insulation pipe consists of working steel pipe, (PBE anti-corrosion layer), PUR thermal insulation layer and extruded PE external protection layer.

Application scope

This product is applicable to anti-corrosion and insulation pipe projects whose conveying medium temperature is no greater than 120℃.

Laying method

It is mainly used for directly burying pipelines and laying pipelines in trenches.

Product structure diagram

GB/T50538-2020 *Technical standard for anti-corrosion and insulation coatings of buried steel pipeline*
GB/T29047-2021 *Prefabricated directly buried insulating pipes and fittings with polyurethane foamed-plastics and high density polyethylene casing pipes*

1 Working Steel Pipe 2 Signal Line (Optional) 3 Thermal Insulation Layer 4 PE External Protection Layer

Production scope and capacity

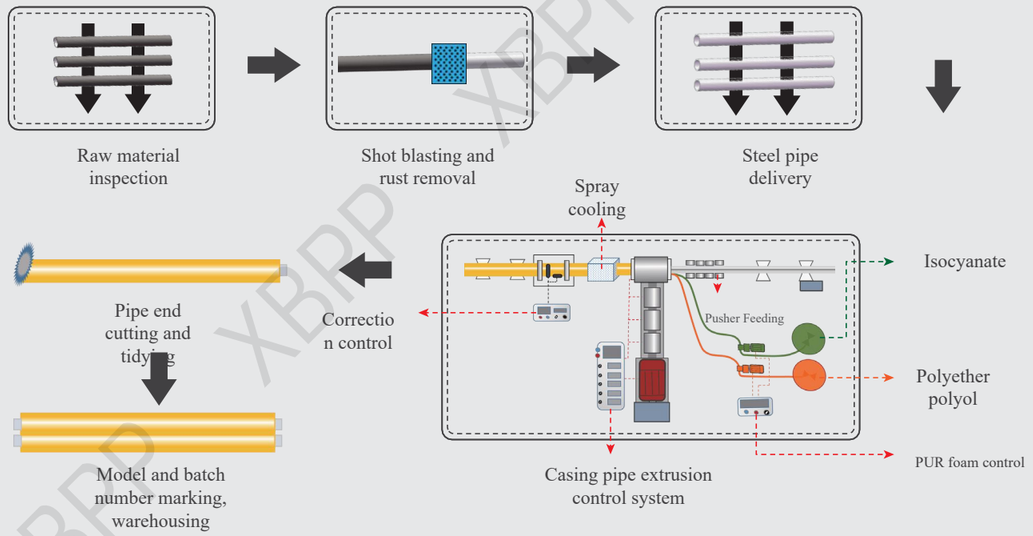
DN_25
DN400mm

Production scope

1200km/year

Production capacity

Process flow chart



Specification & model table

Forming process	Steel pipe diameter	Axial eccentricity	Minimum thickness of protection layer
One step method	φ48～φ114	±3	≥1.4
	Φ159～φ377	±5	≥1. 6
	〉φ377		≥1.8

High-intensity PE casing pipe Rigid polyurethane foamed-plastics directly buried casing pipes

Product introduction (including application scope)

This product is applicable to pipe network systems whose conveying medium temperature is no greater than 120℃, sudden peak is no greater than 130℃ and working pressure is no greater than 2.5Mpa. The PUR insulation pipe can work continuously for at least 30 years at a temperature of 120℃. This product can be widely used in anti-corrosion and insulation pipe projects in the heating, cooling and crude oil transportation fields.

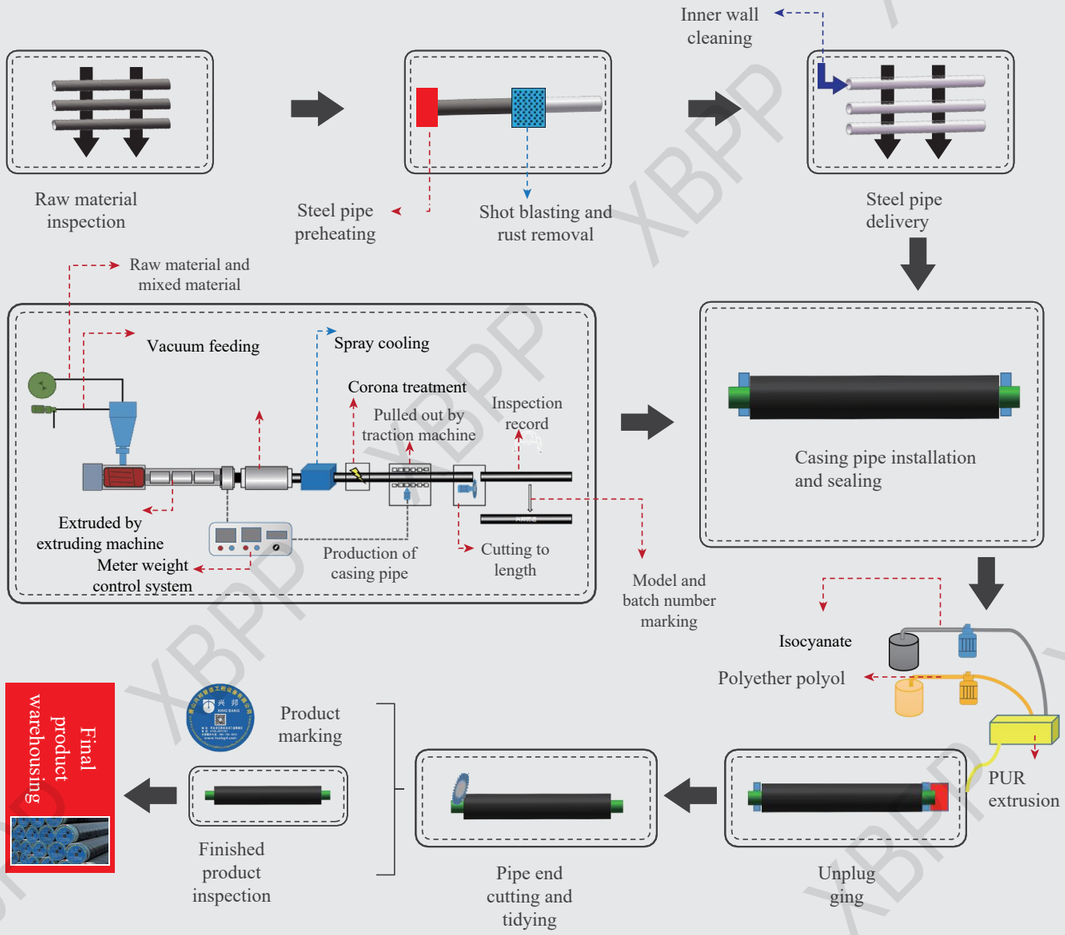
Product structure diagram

Executive standard

GB/T29047-2021 *Prefabricated directly buried insulating pipes and fittings with polyurethane foamed-plastics and high density polyethylene casing pipes*

1 Working Steel Pipe　2 Signal Line (Optional)　3 Thermal Insulation Layer　4 PE External Protection Layer

Process flow chart



Production scope and capacity

DN_20
DN1600mm

Production scope

2000km/year

Production capacity

Specification & model table

Outer diameter of steel pipe (φ, mm)	Wall thickness of steel pipe (mm)	Outer diameter of casing pipe (φ, mm)	Minimum wall thickness of casing pipe (mm)	Thickness of thermal insulation layer (mm)
32	3.0	90	3.0	26
45	3.5	110	3.0	29.5
57	3.5	120	3.0	28.5
76	4.0	140	3.0	29
89	4.0	150	3.0	27.5
108	4.5	180	3.0	33
133	4.5	225	3.5	42.5
159	5.0	250	3.6	41.9
219	6.0	315	4.1	43.9
273	6.0	365	4.8	41.2
325	7.0	420	5.2	42.3
377	7.0	500	5.6	55.9
426	8.0	560	6.0	61
478	8.0	600	6.3	54.7
529	8.0	655	6.6	56.4
630	9.0	760	7.6	57.4
720	9.0	850	8.3	56.7
820	10.0	960	9.1	60.9
920	10.0	1055	9.8	57.7
1020	10.0	1155	10.6	56.9
1220	12.0	1370	12.5	62.5
1220	14.0	1420	13.4	86.6
1420	16.0	1580	15.0	65
1420	18.0	1680	16.0	114
1620	18.0	1840	20.0	90
1620	20.0	1890	20.0	115

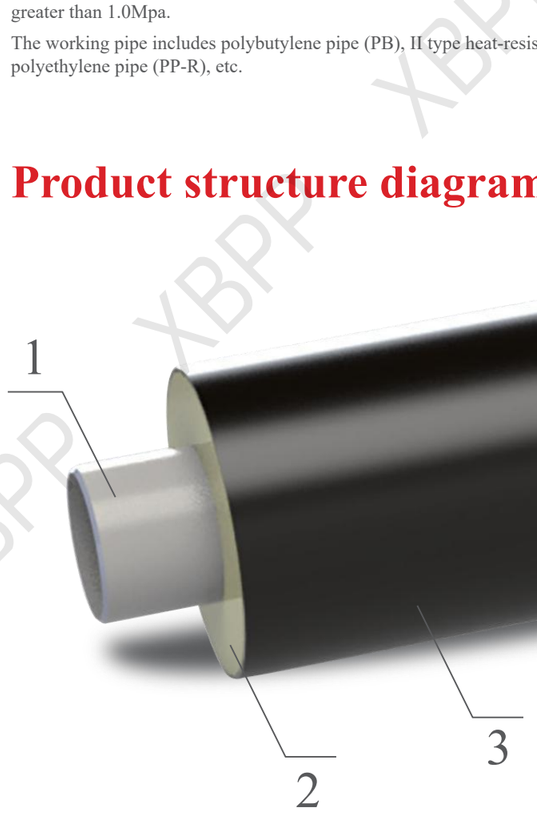
Prefabricated insulation composite plastic pipes with PE casing pipes

Product introduction (including application scope)

Prefabricated insulating composite plastic pipe with PE casing pipe is applicable to cooling and heating pipe network systems whose conveying medium temperature (long-term operating temperature) is no greater than 85°C and working pressure is no greater than 1.0Mpa.

The working pipe includes polybutylene pipe (PB), II type heat-resistant polyethylene pipe (PE-RT II) and III type polyethylene pipe (PP-R), etc.

Product structure diagram



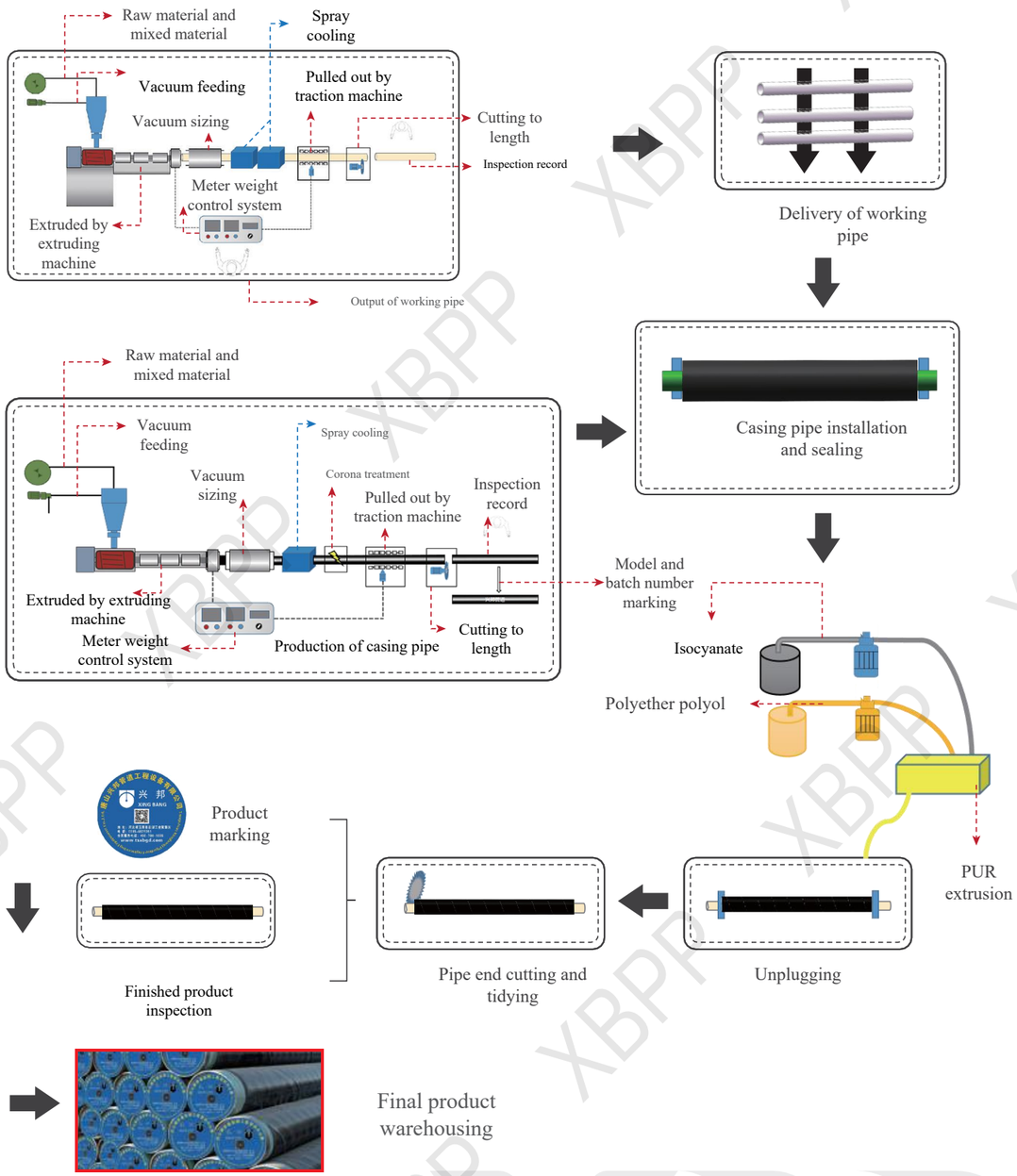
Executive standard

GB/T40402-2021 *Prefabricated insulation composite plastic pipes with PE casing pipes*

CJT480-2015 *Prefabricated directly buried composite insulating pipes with polyurethane (PUR) formed-plastics and high intensity polyethylene (PE) casting pipes*

1 Plastic Working Pipe 2 Thermal Insulation Layer 3 PE External Protection Layer

Process flow chart



Production scope and capacity

DN_40
DN400mm

Production scope

500km/year

Production capacity

Specification & model table

Outer diameter of working pipe (φ, mm)	Outer diameter of casing pipe (φ, mm)	Wall thickness of casing pipe (mm)	Thickness of thermal insulation layer (mm)
40	110	3.0	32
50	120	3.0	32
63	130	3.0	30.5
75	140	3.0	29.5
90	160	3.0	32
110	180	3.0	32
125	200	3.2	34.3
140	225	3.4	39.1
160	250	3.6	41.1
200	315	4.1	53.4
225	345	4.5	55.5
250	365	4.8	52.7
280	400	4.8	55.2
315	450	5.2	62.3
355	500	5.6	66.9
400	550	6.0	69
450	600	6.3	68.7
500	655	6.6	70.9

Prefabricated insulation pipes for overhead and utility tunnels

Product introduction (including application scope)

This product is applicable to anti-corrosion and insulation pipe projects in the heating, cooling and crude oil transportation fields for overhead, trench and utility tunnels whose conveying medium temperature is less than or equal to 150℃ and nominal pressure is less than or equal to 2.5Mpa;

When the long-term operating temperature of conveying medium is greater than 120℃, the composite insulation structure should be adopted.

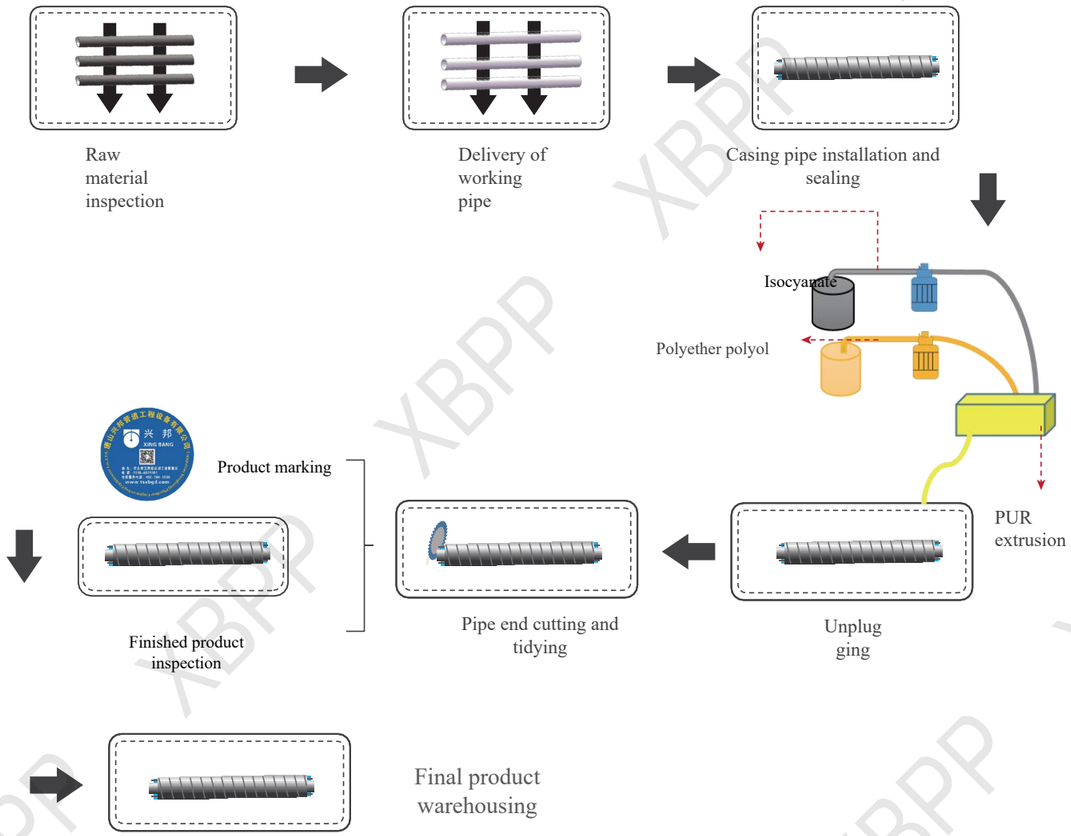
Product structure diagram

Executive standard

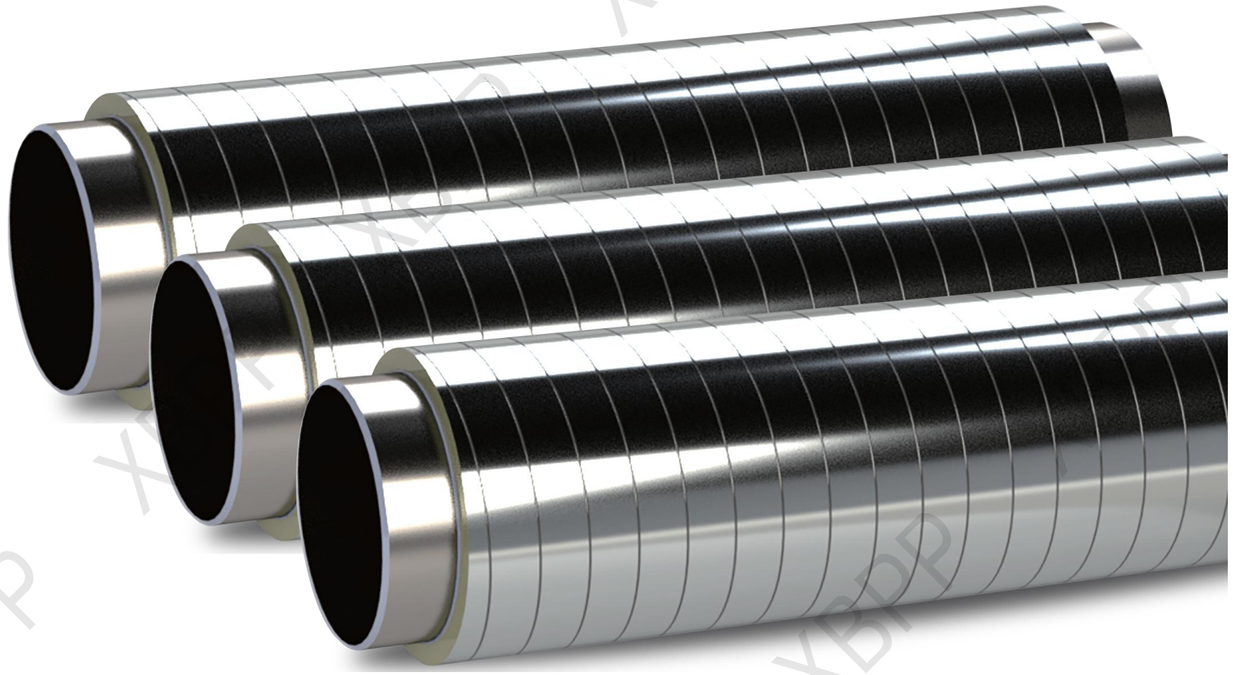
T/CDHA1-2019 *Prefabricated insulation hot water pipes and fittings for overhead and utility tunnel*

1 Working Steel Pipe
2 High-temperature Composite Layer
3 Thermal Insulation Layer
4 Steel External Protection Layer

Process flow chart



Production scope and capacity



Specification & model table

Outer diameter of casing pipe	Minimum nominal wall thickness	
	Color plate, galvanized steel, aluminum sheet	Stainless steel sheet
90～250	0.5	0.4
251～500	0.6	0.5
501～800	0.8	0.6
801～1400	1	0.8
1401～2000	1.2	1

Glass fiber-reinforced plastics external protective layer PUR foamed-plastics directly buried insulation pipes

Product introduction (including application scope)

This product is applicable to pipe network systems whose conveying medium temperature is no greater than 120°C, sudden peak is no greater than 140°C and working pressure is no greater than 2.5Mpa.

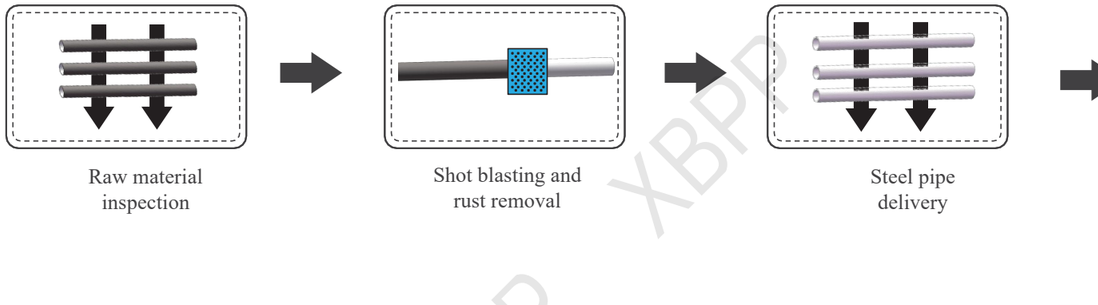
Executive standard

GB/T 38097-2019 *Urban heating-Prefabricated directly buried insulating pipes and fittings with polyurethane (PUR) foamed-plastics and glass fiber reinforced plastics protect layers*

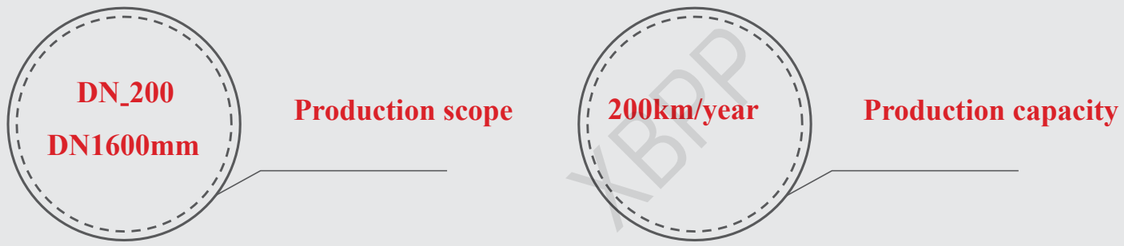
Product structure diagram

1 Working Steel Pipe
2 Signal Line (Optional)
3 Thermal Insulation Layer
4 Fiberglass External Protection Layer

Process flow chart



Production scope and capacity



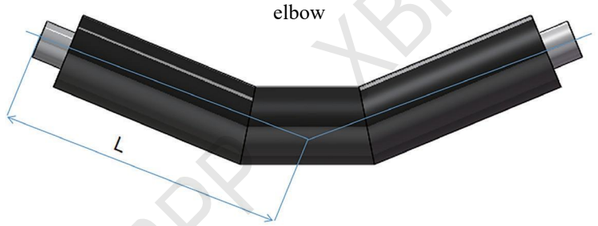
Specification & model table

Outer diameter of external protection layer (mm)	Minimum wall thickness (mm)
≤117	2.5
140—194	3.0
225—400	3.5
420—550	4.0
600—750	4.5
850—960	5.0
1055—1200	7.0
1300—1400	9.0
≥1500	10.0

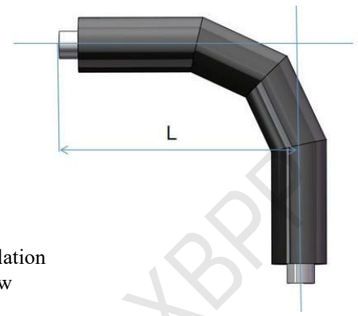
Overall dimension of insulation pipe

Insulation reducer

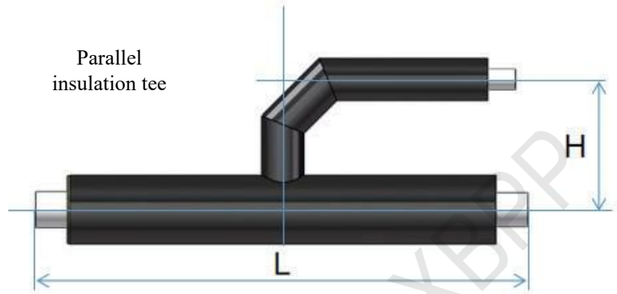
45° insulation elbow



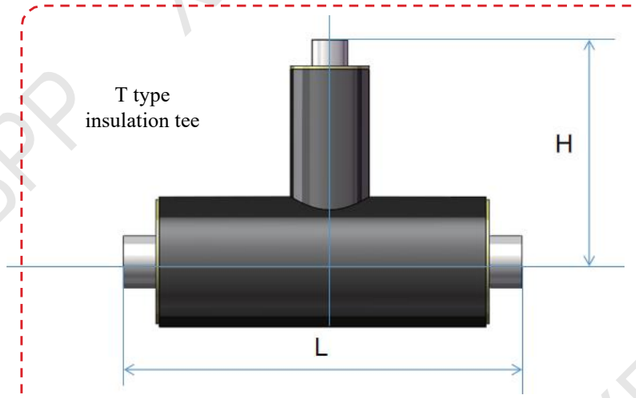
90° insulation elbow



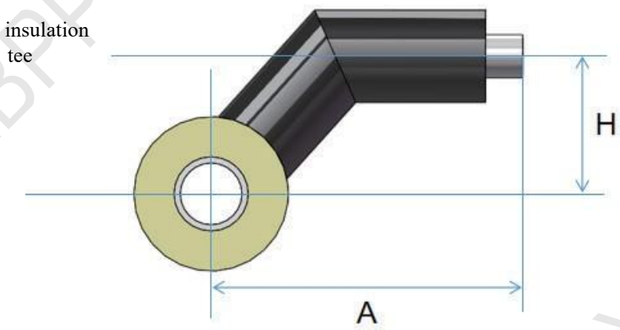
Parallel insulation tee

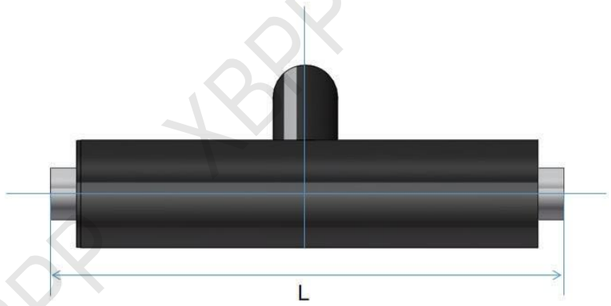


T type insulation tee



Cross insulation tee





Note

A — The distance from the main pipe center to the brand pipe end; **L** — Length of main pipe; **H** — The height from the main pipe center to the brand pipe center.

45° insulation elbow specification table

DN	Center distance L (mm)				
	1.5D	2.5D	3D	4D	5D
DN 20	420	430	430	440	450
DN 25	420	430	440	450	460
DN 32	420	440	440	460	470
DN 40	430	440	450	470	480
DN 50	440	460	470	490	510
DN 65	450	470	490	510	540
DN 80	450	490	500	540	570
DN 100	470	510	530	570	610
DN 125	480	530	560	610	660
DN 150	500	560	590	650	720
DN 200	530	610	650	740	820
DN 250	560	660	720	820	920
DN 300	590	720	780	900	1030
DN 350	620	770	840	980	1130
DN 400	650	820	900	1070	1230
DN 450	680	870	960	1150	1340
DN 500	720	920	1030	1230	1440
DN 600	880	1130	1250	1500	1750
DN 700	940	1230	1370	1660	1950
DN 800	1000	1330	1500	1830	2160
DN 900	1160	1540	1720	2100	2470
DN 1000	1330	1740	1950	2360	2780
DN 1200	1550	2050	2300	2790	3290
DN 1400	1670	2250	2540	3120	3700
DN 1600	1790	2460	2790	3450	4530

90° insulation elbow specification table

DN	Center distance L (mm)				
	1.5D	2.5D	3D	4D	5D
DN 20	430	450	460	480	500
DN 25	440	470	480	500	525
DN 32	450	480	500	530	560
DN 40	460	500	520	560	590
DN 50	480	530	550	600	650
DN 65	500	570	600	660	725
DN 80	520	600	640	720	800
DN 100	550	650	700	800	900
DN 125	590	720	780	900	1025
DN 150	630	780	850	1000	1150
DN 200	700	900	1000	1200	1400
DN 250	780	1030	1150	1400	1650
DN 300	850	1150	1300	1600	1900
DN 350	930	1280	1450	1800	2150
DN 400	1000	1400	1600	2000	2400
DN 450	1080	1530	1750	2200	2650
DN 500	1150	1650	1900	2400	2900
DN 600	1400	2000	2300	2900	3500
DN 700	1550	2250	2600	3300	4000
DN 800	1700	2500	2900	3700	4500
DN 900	1950	2850	3300	4200	5100
DN 1000	2200	3200	3700	4700	5700
DN 1200	2600	3800	4400	5600	6800
DN 1400	2900	4300	5000	6400	7800
DN 1600	3200	4800	5600	7200	9800

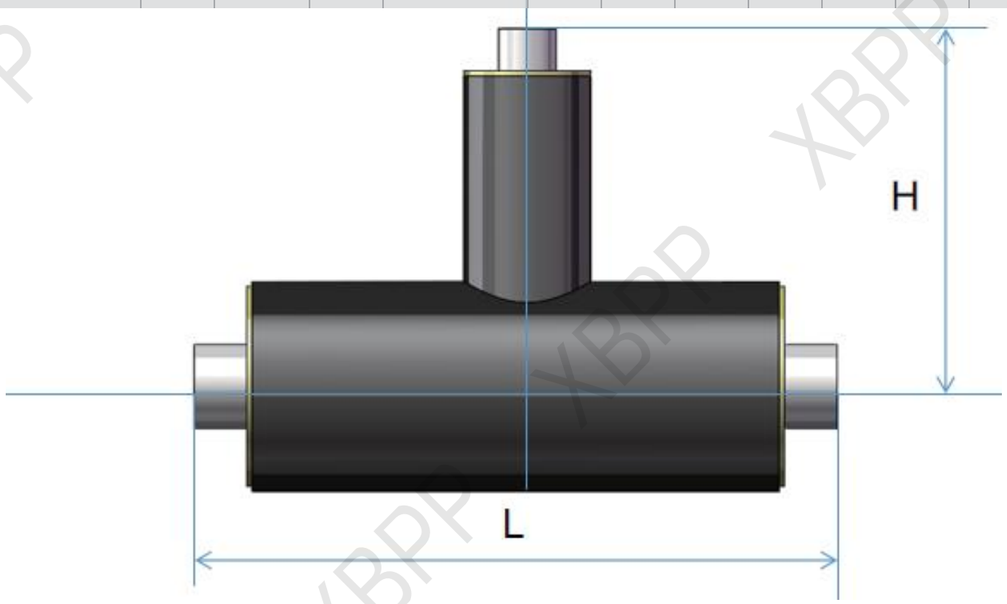
T type insulation tee specification table

Main pipe and branch pipe	DN20		DN25		DN32		DN40		DN50		DN65	
	L	H	L	H	L	H	L	H	L	H	L	H
DN20	405	405										
DN25	405	405	810	405								
DN32	415	415	810	415	830	415						
DN40	415	415	810	415	830	415	830	415				
DN50	423	423	810	423	830	423	830	423	845	423		
DN65	430	430	810	430	830	430	830	430	845	430	860	430
DN80	440	440	810	440	830	440	830	440	845	440	860	440
DN100	460	460	810	460	830	460	830	460	845	460	860	460
DN125	473	473	810	473	830	473	830	473	845	473	860	473
DN150	485	485	810	485	830	485	830	485	845	485	860	485
DN200	518	518	810	518	830	518	830	518	845	518	860	518
DN250	560	560	810	560	830	560	830	560	845	560	860	560
DN300	585	585	810	585	830	585	830	585	845	585	860	585
DN350	610	610	810	610	830	610	830	610	845	610	860	610
DN400	640	640	810	640	830	640	830	640	845	640	860	640
DN450	660	660	810	660	830	660	830	660	845	660	860	660
DN500	688	688	810	688	830	688	830	688	845	688	860	688
DN600	740	740	810	740	830	740	830	740	845	740	860	740
DN700	785	785	810	785	830	785	830	785	845	785	860	785
DN800	840	840	850	840	830	840	830	840	845	840	860	840
DN900	888	888	950	888	950	888	950	888	950	888	950	888
DN1000	938	938	1050	938	1050	938	1050	938	1050	938	1050	938
DN1200	1045	1045	1250	1045	1250	1045	1250	1045	1250	1045	1250	1045
DN1400	1161	1161	1450	1161	1450	1161	1450	1161	1450	1161	1450	1161
DN1600	1290	1290	1650	1290	1650	1290	1650	1290	1650	1290	1650	1290

DN80		DN100		DN125		DN150		DN200		DN250	
L	H	L	H	L	H	L	H	L	H	L	H
1000	440										
1000	460	1050	460								
1000	473	1050	473	1100	473						
1000	485	1050	485	1100	485	1100	485				
1000	518	1050	518	1100	518	1100	518	1150	518		
1000	560	1050	560	1100	560	1100	560	1150	560	1250	560
1000	585	1050	585	1100	585	1100	585	1150	585	1250	585
1000	610	1050	610	1100	610	1100	610	1150	610	1250	610
1000	640	1050	640	1100	640	1100	640	1150	640	1250	640
1050	660	1075	660	1100	660	1120	660	1200	660	1250	660
1050	688	1075	688	1100	688	1120	688	1200	688	1310	688
1050	740	1075	740	1100	740	1120	740	1200	740	1310	740
1050	785	1075	785	1100	785	1120	785	1200	785	1310	785
1050	840	1075	840	1100	840	1120	840	1200	840	1310	840
1050	888	1075	888	1100	888	1120	888	1200	888	1310	888
1050	938	1075	938	1100	938	1120	938	1200	938	1310	938
1250	1045	1250	1045	1250	1045	1250	1045	1250	1045	1310	1045
1450	1161	1450	1161	1450	1161	1450	1161	1450	1161	1450	1161
1650	1290	1650	1290	1650	1290	1650	1290	1650	1290	1650	1290

T type insulation tee specification table (continued 1)

Main pipe and branch pipe	DN300		DN350		DN400		DN450		DN500		DN600	
	L	H	L	H	L	H	L	H	L	H	L	H
DN300	1300	585										
DN350	1300	610	1350	610								
DN400	1300	640	1350	640	1400	640						
DN450	1300	660	1350	660	1400	660	1450	660				
DN500	1400	688	1450	688	1500	688	1550	688	1600	688		
DN600	1410	740	1520	740	1615	740	1720	740	1800	740	1900	740
DN700	1410	785	1520	785	1615	785	1720	785	1820	785	2020	785
DN800	1410	840	1520	840	1615	840	1720	840	1820	840	2020	840
DN900	1410	888	1520	888	1615	888	1720	888	1820	888	2020	888
DN1000	1410	938	1520	938	1615	938	1720	938	1820	938	2020	938
DN1200	1410	1045	1520	1045	1615	1045	1720	1045	1820	1045	2020	1045
DN1400	1450	1161	1520	1161	1615	1161	1720	1161	1820	1161	2020	1161
DN1600	1650	1290	1650	1290	1650	1290	1750	1290	1820	1290	2020	1290



DN700		DN800		DN900		DN1000		DN1200		DN1400	
L	H	L	H	L	H	L	H	L	H	L	H
2200	785										
2200	840	2400	840								
2200	888	2400	888	2600	888						
2200	938	2400	938	2600	938	2800	938				
2200	1045	2400	1045	2600	1045	2800	1045	3200	1045		
2200	1161	2400	1161	2600	1161	2800	1161	3200	1161	3600	1161
2200	1290	2400	1290	2600	1290	2800	1290	3200	1290	3600	1290

T type insulation tee specification table (continued 2)

Main pipe and branch pipe	1620/1860	
	L	H
1620/1860	4000	1290

Cross insulation tee specification table

Main pipe and branch pipe	DN20			DN25			DN32			DN40		
	A	H	L	A	H	L	A	H	L	A	H	L
DN20	536	150	810									
DN25	546	160	810	546	160	810						
DN32	546	160	810	556	170	810	560	170	830			
DN40	556	170	810	556	170	810	560	170	830	564	180	830
DN50	561	175	810	565	179	810	568	178	830	572	188	830
DN65	566	180	810	571	185	810	575	185	830	579	195	830
DN80	566	180	810	582	196	810	585	195	830	589	205	830
DN100	576	190	810	601	215	810	605	215	830	609	225	830
DN125	586	200	810	614	228	810	618	228	830	622	238	830
DN150	606	220	810	626	240	810	630	240	830	634	250	830
DN200	626	240	810	660	274	810	664	274	830	667	283	830
DN250	666	280	810	701	315	810	705	315	830	709	325	830
DN300	706	320	810	726	340	810	730	340	830	734	350	830
DN350	736	350	810	751	365	810	755	365	830	759	375	830
DN400			810			810			830			830
DN450			810			810			830			830
DN500			810			810			830			830
DN600			810			810			830			830
DN700			810			810			830			830
DN800			850			850			830			830
DN900			950			950			950			950
DN1000			1050			1050			1050			1050
DN1200			1250			1250			1250			1250
DN1400			1450			1450			1450			1450
DN1600			1650			1650			1650			1650

DN50			DN65			DN80			DN100		
A	H	L	A	H	L	A	H	L	A	H	L
586	195	845									
594	203	845	599	210	860						
604	213	845	609	220	860	627	230	1000			
624	233	845	629	240	860	649	252	1000	673	270	1050
636	245	845	642	253	860	658	261	1000	686	283	1050
649	258	845	654	265	860	670	273	1000	698	295	1050
681	290	845	687	298	860	705	308	1000	731	328	1050
724	333	845	729	340	860	746	349	1000	773	370	1050
749	358	845	754	365	860	772	375	1000	798	395	1050
774	383	845	779	390	860	798	401	1000	823	420	1050
804	413	845	809	420	860	827	430	1000	853	450	1050
824	433	845	829	440	860	847	450	1050	873	470	1075
839	448	845	844	455	860	862	465	1050	888	485	1075
904	513	845	909	520	860	927	530	1050	953	550	1075
949	558	845	954	565	860	972	575	1050	998	595	1075
1004	613	845	1009	620	860	1027	630	1050	1053	650	1075
1051	660	950	1057	668	950	1075	678	1050	1092	689	1075
1101	710	1050	1107	718	1050	1125	728	1050	1151	748	1075
1201	810	1250	1207	818	1250	1225	828	1250	1251	848	1250
1325	934	1450	1330	941	1450	1348	951	1450	1374	971	1450
1455	1064	1650	1460	1071	1650	1478	1081	1650	1504	1101	1650

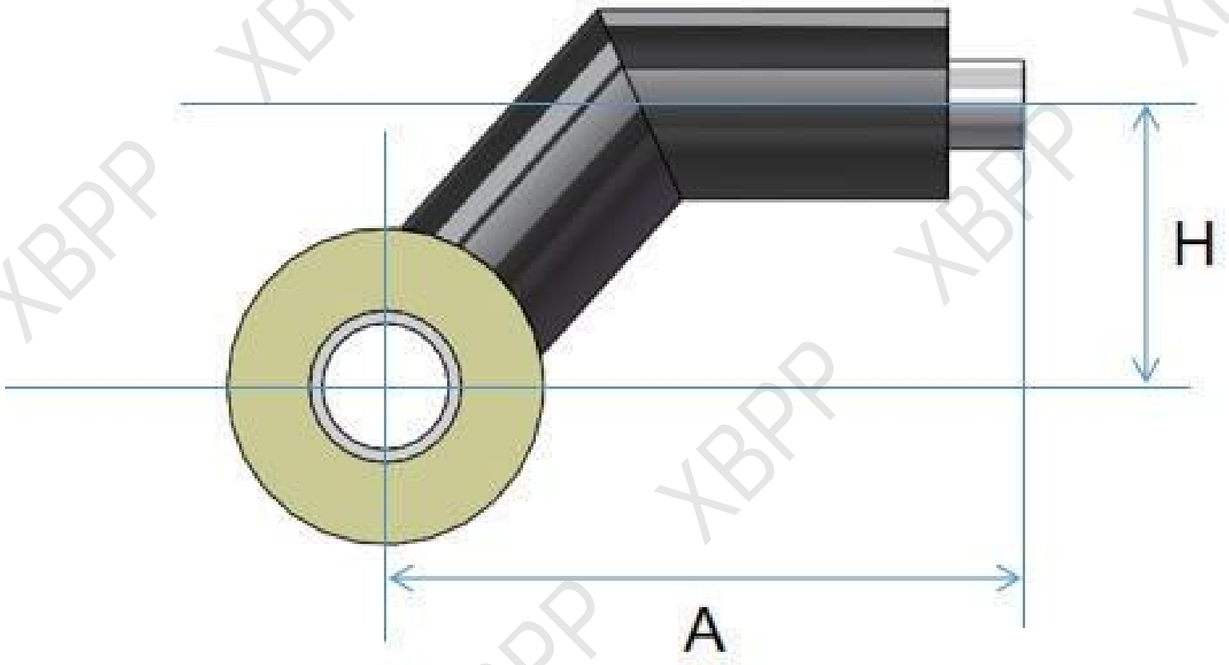
Cross insulation tee specification table (continued 1)

Main pipe and branch pipe	DN125			DN150			DN200			DN250		
	A	H	L	A	H	L	A	H	L	A	H	L
DN125	704	295	1100									
DN150	717	308	1100	735	320	1100						
DN200	749	340	1100	768	353	1100	811	385	1150			
DN250	792	383	1100	810	395	1100	854	428	1150	628	470	1250
DN300	817	408	1100	835	420	1100	879	453	1150	943	495	1250
DN350	842	433	1100	860	445	1100	904	478	1150	968	520	1250
DN400	872	463	1100	890	475	1100	934	508	1150	998	550	1250
DN450	892	483	1100	910	495	1120	954	528	1200	1018	570	1250
DN500	907	498	1100	925	510	1120	969	543	1200	1033	585	1310
DN600	972	563	1100	990	575	1120	1034	608	1200	1098	650	1310
DN700	1017	608	1100	1035	620	1120	1079	653	1200	1143	695	1310
DN800	1072	663	1100	1090	675	1120	1134	708	1200	1198	750	1310
DN900	1119	710	1100	1138	723	1120	1181	755	1200	1246	798	1310
DN1000	1169	760	1100	1188	773	1120	1231	805	1200	1296	848	1310
DN1200	1269	860	1250	1288	873	1250	1331	905	1250	1396	948	1310
DN1400	1393	984	1450	1411	996	1450	1455	1029	1450	1519	1071	1450
DN1600	1523	1114	1650	1541	1126	1650	1585	1159	1650	1649	1201	1650

DN300			DN350			DN400			DN450		
A	H	L	A	H	L	A	H	L	A	H	L
1009	520	1300									
1034	545	1300	1081	570	1350						
1064	575	1300	1111	600	1350	1183	630	1400			
1084	595	1300	1131	620	1350	1203	650	1400	1254	670	1450
1099	610	1400	1146	635	1450	1218	665	1500	1269	685	1550
1164	675	1410	1211	700	1520	1283	730	1615	1334	750	1720
1209	720	1410	1256	745	1520	1328	775	1615	1379	795	1720
1264	775	1410	1311	800	1520	1383	830	1615	1434	850	1720
1312	823	1410	1359	848	1520	1431	878	1615	1482	898	1720
1362	873	1410	1409	898	1520	1481	928	1615	1533	949	1720
1462	973	1410	1509	998	1520	1581	1028	1615	1632	1048	1720
1585	1096	1450	1632	1121	1520	1704	1151	1615	1755	1171	1720
1715	1226	1650	1762	1251	1650	1834	1281	1650	1885	1301	1720

Cross insulation tee specification table (continued 2)

Main pipe and branch pipe	DN500			DN600			DN700			DN800		
	A	H	L	A	H	L	A	H	L	A	H	L
DN500	1366	700	1600									
DN600	1431	765	1800	1609	830	1900						
DN700	1476	810	1820	1654	875	2020	1812	920	2200			
DN800	1531	865	1820	1709	930	2020	1867	975	2200	1985	1030	2400
DN900	1579	913	1820	1757	978	2020	1915	1023	2200	2033	1078	2400
DN1000	1629	963	1820	1807	1028	2020	1965	1073	2200	2083	1128	2400
DN1200	1729	1063	1820	1904	1125	2020	2065	1173	2200	2183	1228	2400
DN1400	1865	1199	1820	2030	1251	2020	2188	1296	2200	2306	1351	2400
DN1600	1995	1329	1820	2160	1381	2020	2318	1426	2200	2436	1481	2400



DN900			DN1000			DN1200			DN1400		
A	H	L	A	H	L	A	H	L	A	H	L
2193	1125	2600									
2243	1175	2600	2356	1225	2800						
2343	1275	2600	2456	1325	2800	2633	1375	3200			
2467	1399	2600	2580	1449	2800	2814	1556	3200	3092	1672	3600
2597	1529	2600	2710	1579	2800	2944	1686	3200	3222	1802	3600

Cross insulation tee specification table (continued 3)

Main pipe and branch pipe	1620/1860		
	A	H	L
1620/1860	3449	1905	4000

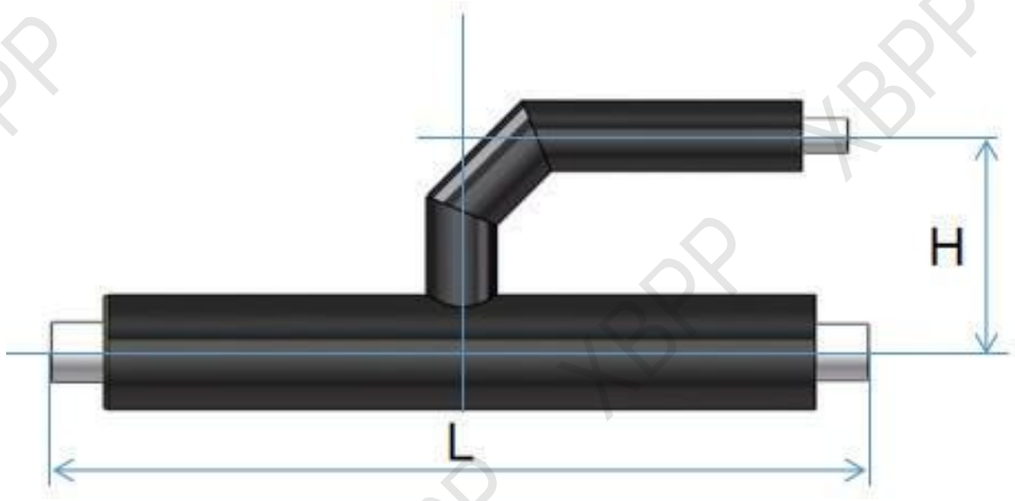
Parallel insulation tee specification table

Main pipe and branch pipe	DN20		DN25		DN32		DN40		DN50		DN65	
	L	H	L	H	L	H	L	H	L	H	L	H
DN20	810	247										
DN25	810	256	810	256								
DN32	810	266	810	266	830	276						
DN40	810	275	810	275	830	285	830	294				
DN50	810	262	810	269	830	285	830	297	860	285		
DN65	810	275	810	269	830	292	830	304	860	293	890	300
DN80	810	290	810	290	830	300	830	312	860	303	890	310
DN100	810	314	810	314	830	324	830	333	860	323	890	330
DN125	810	333	810	333	830	343	830	352	860	335	890	343
DN150	810	351	810	351	830	361	830	370	860	348	890	355
DN200	810	385	810	385	830	395	830	404	860	380	890	388
DN250	810	433	810	433	830	443	830	452	860	423	890	430
DN300	810	463	810	463	830	473	830	482	860	448	890	455
DN350	810	485	810	485	830	495	830	504	860	473	890	480
DN400	810	516	810	516	830	526	830	535	860	503	890	510
DN450	810	544	810	544	830	554	830	563	860	523	890	530
DN500	810	560	810	560	830	570	830	579	860	538	890	545
DN600	810	634	810	634	830	644	830	653	860	603	890	610
DN700	810	698	810	698	830	708	830	717	860	648	890	655
DN800	850	763	850	763	850	773	850	782	860	703	890	710
DN900	950	811	950	811	950	821	950	830	950	750	950	758
DN1000	1050	874	1050	874	1050	884	1050	893	1050	800	1050	808
DN1200	1250	989	1250	989	1250	999	1250	1008	1250	900	1250	908
DN1400	1450	1090	1450	1090	1450	1190	1450	1199	1450	1024	1450	1031
DN1600	1650	1219	1650	1219	1650	1319	1650	1328	1650	1153	1650	1160

DN80		DN100		DN125		DN150		DN200		DN250	
L	H	L	H	L	H	L	H	L	H	L	H
1050	320										
1050	340	1075	360								
1050	353	1075	370	1100	385						
1050	365	1075	385	1100	398	1120	410				
1050	398	1075	418	1100	430	1120	443	1210	475		
1050	440	1075	460	1100	473	1120	485	1210	518	1330	620
1050	465	1075	485	1100	498	1120	510	1210	543	1330	645
1050	490	1075	510	1100	523	1120	535	1210	568	1330	670
1050	520	1075	540	1100	553	1120	565	1210	598	1330	700
1050	540	1075	560	1100	573	1120	585	1210	618	1330	720
1050	555	1075	575	1100	588	1120	600	1210	633	1330	735
1050	620	1075	640	1100	653	1120	665	1210	698	1330	800
1050	665	1075	685	1100	698	1120	710	1210	743	1330	845
1050	720	1075	741	1100	753	1120	765	1210	798	1330	900
1050	768	1075	788	1100	788	1120	800	1210	813	1330	948
1050	818	1075	838	1100	850	1120	863	1210	895	1330	998
1250	918	1250	938	1250	950	1250	963	1250	995	1330	1098
1450	1041	1450	1061	1450	1074	1450	1086	1450	1119	1450	1221
1650	1170	1650	1190	1650	1203	1650	1215	1650	1248	1650	1350

Parallel insulation tee specification table (continued 1)

Main pipe and branch pipe	DN300		DN350		DN400		DN450		DN500		DN600	
	L	H	L	H	L	H	L	H	L	H	L	H
DN300	1510	705										
DN350	1510	730	1640	820								
DN400	1510	760	1640	850	1820	985						
DN450	1510	780	1640	870	1820	1005	2080	1040				
DN500	1510	795	1640	885	1820	1020	2080	1055	2230	1090		
DN600	1510	860	1640	950	1820	1085	2080	1120	2230	1155	2630	1365
DN700	1510	905	1640	995	1820	1130	2080	1165	2230	1200	2630	1410
DN800	1510	960	1640	1050	1820	1185	2080	1220	2230	1255	2630	1465
DN900	1510	1008	1640	1098	1820	1233	2080	1268	2230	1303	2630	1513
DN1000	1510	1058	1640	1148	1820	1283	2080	1318	2230	1353	2630	1563
DN1200	1510	1158	1640	1248	1820	1383	2080	1418	2230	1453	2630	1663
DN1400	1510	1281	1640	1371	1820	1506	2080	1541	2230	1576	2630	1786
DN1600	1650	1410	1650	1500	1820	1635	2080	1670	2230	1705	2630	1915



DN700		DN800		DN900		DN1000		DN1200		DN1400	
L	H	L	H	L	H	L	H	L	H	L	H
3040	1610										
3040	1665	3340	1810								
3040	1713	3340	1858	3750	2010						
3040	1763	3340	1908	3750	2060	4050	2210				
3040	1863	3340	2008	3750	2160	4050	2310	4660	2360		
3040	1986	3340	2131	3750	2284	4050	2434	4660	2711	5370	3011
3040	2115	3340	2260	3750	2413	4050	2563	4660	2840	5370	3140

Parallel insulation tee specification table (continued 2)

Main pipe and branch pipe	1620/1860	
	L	H
1620/1860	6000	3429

Parallel insulation tee specification table

Specification (mm)	L(mm)	Specification (mm)	L(mm)
DN25>DN20	860	DN32>DN20	860
DN32>DN25	860	DN45>DN25	870
DN40>DN32	880	DN50>DN32	880
DN50>DN40	880	DN65>DN40	890
DN65>DN50	890	DN80>DN50	890
DN80>DN65	890	DN100>DN65	910
DN100>DN80	910	DN125>DN80	930
DN125>DN100	930	DN150>DN100	940
DN150>DN125	940	DN200>DN125	960
DN200>DN150	960	DN250>DN150	980
DN250>DN200	980	DN300>DN200	1010
DN300>DN250	1010	DN350>DN250	1130
DN350>DN300	1130	DN400>DN300	1160
DN400>DN350	1160	DN450>DN350	1190
DN450>DN400	1190	DN500>DN400	1310
DN500>DN450	1310	DN600>DN450	1610
DN600>DN500	1610	DN700>DN500	1610
DN700>DN600	1610	DN800>DN600	1610
DN800>DN700	1610	DN900>DN700	1810
DN900>DN800	1810	DN1000>DN800	2010
DN1000>DN900	2010	DN1200>DN1000	2210
		DN1400>DN1200	2210
		DN1600>DN1400	3400

Thermal Insulation of On-site Interface (PE External Protection Layer)

Pipeline interfaces whose diameter is less than or equal to DN200

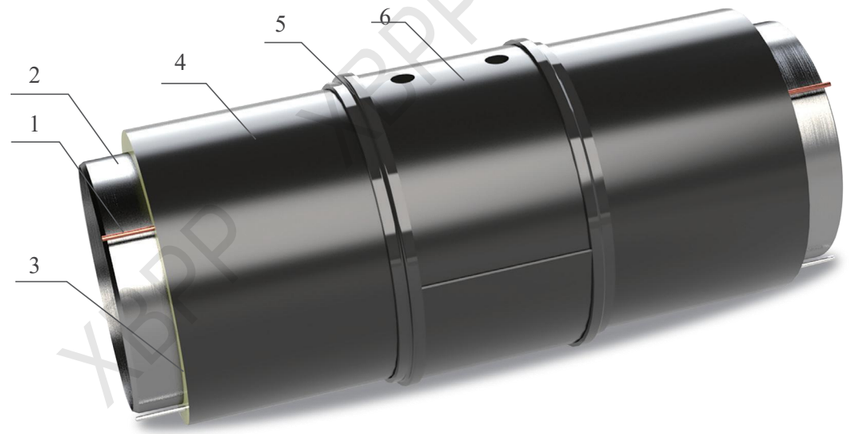
1.1 Before installation, confirm that the weld of working steel pipe has passed the inspection. After passing the pressure test, ensure there is no water on the interface.

1.2 Installation materials and tools of interface: PE interface pipe, heat shrinkable belt, flame gun, polyether polyol composite material (white material), isocyanate (black material) packaging bag, tightener, plastic welder, plastic electrode, electric hand drill, special bit, foam plug, wallpaper cutter, hot melting tools for sealing, etc.

1.3 Preparation: Check the tools and materials prepared, clean the interface surface and remove dirt. Then, select insulated packaging bag according to interface size, including suitable PE interface pipe, whose longitudinal overlapping length is 50mm and transverse overlapping length is 100mm.

1.4 Prefabricated insulation pipe with alarm line: Before repairing the opening, connect the alarm line and test its ON/OFF condition and resistance value. After passing the test, repair the opening.

1.5 When PE interface pipe is adopted, move it to the interface, connect both ends evenly and seal them using heat shrinkable belt. The width of the heat shrinkable belt should be 60-80mm and its length should be the circumferential length of PE pipe plus 100-200mm. Heat the ends of the heat shrinkable belt using flame gun and circumferentially bind them to the circumferential seam of the PE interface pipe. Evenly heat the heat shrinkable belt for shrinkage in order that the circumferential seam of the PE interface pipe is tightly wrapped with the heat shrinkable belt. Continue heating the heat shrinkable belt to melt glue on the internal surface and securely bind the heat shrinkable belt to the PE interface pipe of the casing pipe.



1 Signal Line (Optional)
2 Working Pipe
3 Thermal Insulation Layer
4 PE External Protection Layer
5 Heat Shrinkable Belt
6 PE Interface Pipe

1.6 When PE plate and strip interface pipe is adopted, wrap the interface with PE plate, be sure to connect both ends evenly, tighten PE plate using tightener, of which the edge is 20mm away from the interface pipe edge, weld the transverse seam material using welding gun and electrode, and remove the tightner. Both ends are sealed with heat shrinkable belt. The heat shrinkable belt is installed using the same method as that in 1.5, but the opening position of the heat shrinkable belt and PE plate should be circularly staggered along the pipeline for 180°.

1.7 Drill two 032mm feed holes using electric hand drill: 1 feed hole and 1 vent hole, right above the pipeline, and connect the inner edge to the casing pipe.

1.8 Evenly mix white and black materials corresponding to interface model using packaging bag for 5-15s, pour them into the foam mouth, and seal it when foam flows out of the foam mouth after completion of foaming reaction.

1.9 Clean feed holes and vent holes and weld them through hot melting to ensure air tightness.

1 Signal Line (Optional)
2 Working Pipe
3 Thermal Insulation Layer
4 PE External Protection Layer
5 Heat Shrinkable Belt
6 Hot Melt Plug
7 PE Board/Interface Pipe

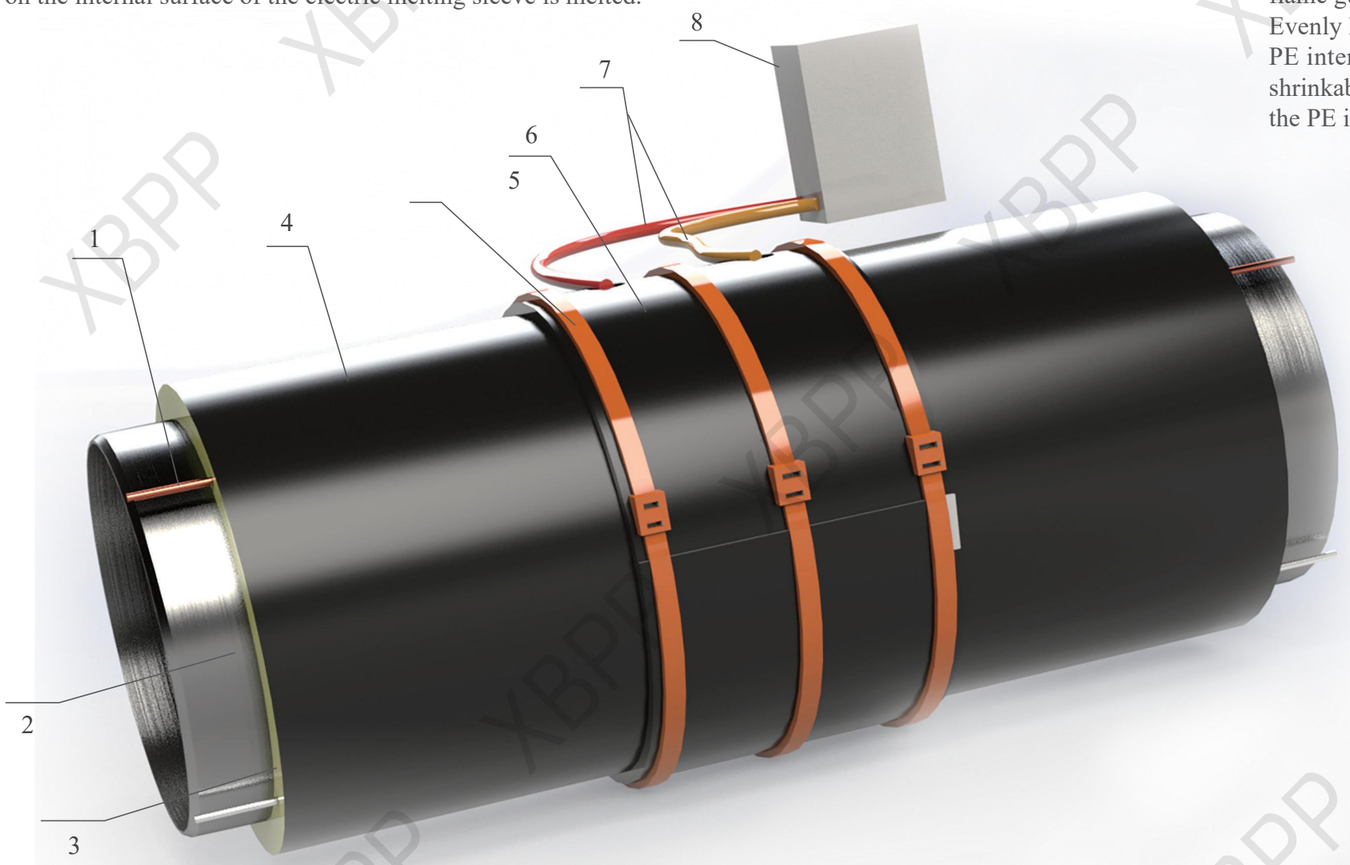
Pipeline interfaces whose diameter is greater than DN200

2.1 Installation materials and tools of interface: Electric generator, air compressor, electric fuse machine, high pressure foaming machine, hot melting tools for sealing, tightener, electric drill, special bit, electric melting sleeve, insulation material, etc.

2.2 Clean the interface surface, remove dirt, wrap the interface with electric melting sleeve and connect both ends evenly.

2.3 Clamp the electric melting sleeve using tightener, of which the edge is 20mm away from the edge of the electric melting sleeve, tighten the middle of the melting sleeve using tightener, and place a batten of equal length to the melting sleeve 10mm away from the transverse seam edge to keep in close contact with the longitudinal weld for hot melting.

2.4 Connect the power, the voltage regulator and the electric melting sleeve and turn on the switch of the voltage regulator: Adjust the voltage regulator to the required voltage, current and heating time, and constantly heat to the set time until PE on the internal surface of the electric melting sleeve is melted.



2.5 Turn off the voltage regulator, remove the connecting line and remove the tightener after the hot melting sleeve cools down.

2.6 Air tightness test of interface: After the interface cools down to below 40℃, pressurize using compressed air or other gases at a pressure of 0.02Mpa, hold for 2min, apply soapy water onto the sealing position, and there should be no bubbles.

2.7 Quantificationally fill insulation materials using high pressure foaming machine, and the foam density should be no less than the pipe density.

2.8 Clean feed holes and vent holes and weld them through hot melting to ensure air tightness.

2.9 The width of the heat shrinkable belt should be 60-80mm and its length should be the circumferential length of PE pipe plus 100-200mm. Heat ends of the heat shrinkable belt using flame gun and circumferentially bind them to the circumferential seam of the PE interface pipe. Evenly heat the heat shrinkable belt for shrinkage in order that the circumferential seam of the PE interface pipe is tightly wrapped with the heat shrinkable belt. Continue heating the heat shrinkable belt to melt glue on the internal surface and securely bind the heat shrinkable belt to the PE interface pipe of the casing pipe.

1 Signal Line (Optional)
3 Thermal Insulation Layer
2 Working Pipe
4 PE External Protection Layer
5 Tightener
7 Connecting Line
6 Electric Melting Sleeve
8 Electric Fuse Machine

Operating parameters of electric fuse machine

Specification of casing pipe (DN)		225	250	315	365	430	500	530	600	655	760	860	960	1050	1156	1380	1556
Welding current	380v	8A	10	10	11	12	13	14	15	16	17	18	19	19	20	20	22
	220v	10A	11	12	12	13	14	15	16	17	18	19	20	20	22	22	24
Welding time	0°C	680s	600s										620s				
	1-4°C	650s	550s										580s				
	5-9°C	630s	510s										550s				
	10-14°C	610s	480s										520s				
	15-19°C	590s	450s										480s				
	20-24°C	570s	420s										450s				
	25-29°C	550s	350s										420s				
	30-34°C	530s	320s										380s				
	>35°C	510s	300s										320s				
Cooling time	<14°C	30min	45min														
	<15°C	45min	60min														