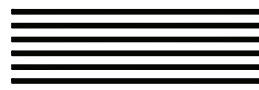




RASHMI



GROUP

A House of Infrastructure Solutions

**PIPE FITTINGS AND
ACCESSORIES**



Rashmi Group, one of the fastest-growing Business Conglomerates in India, is a pioneer in manufacturing integrated Iron & Steel Products, Cement, Power, Ferro Alloys, Bio Fuels, Networking Solutions, and Dredging services.

Mr. Sajjan Kumar Patwari

Group Chairman



Rashmi Group stands as a prominent Business Conglomerate in India, recognized for its expansive operations. Pioneering the integration of Iron & Steel Products, Cement, Power, and Ferro Alloys, the group is under the astute guidance of **Mr. Sajjan Kumar Patwari** along with his three sons - **Mr. Sunil Kumar Patwari**, **Mr. Sanjib Kumar Patwari**, and **Mr. Sanjay Kumar Patwari**.

Strategically headquartered in Kolkata, the group maintains its operational footprint through strategically positioned manufacturing facilities in Kharagpur and Jhargram. The product portfolio boasts a diverse array, encompassing DI Pipes and Fittings, TMT Bars, Pig Iron, Wire Rods, MS Billets, Sponge Iron, Sinter, Ferro Alloys, Pellets, Cement, Nitrile Gloves, Seamless Pipes & Tubes, Digital Networking Devices, and Dredging solutions.

Rashmi Group has been awarded “**Ultra Mega Project**” status by the West Bengal government and is among the first few to receive environmental and pollution clearance in the state. The group’s turnover has reached around **USD 3.50 Billion** and it has built a Net worth of USD 1.00 Billion. Rashmi has USD 875 Million invested in the manufacturing facilities and the group is the only **debt free** steel conglomerate in Eastern India.

RASHMI METALIKS LIMITED

An innovative spirit and the desire to establish excellence at every stage of production have been the driving forces behind the Rashmi Metaliks' remarkable growth story.



Rashmi Metaliks Limited is a name synonymous with reliability & quality in India's iron & steel manufacturing industry. It is one of the flagship companies of Rashmi Group, incorporated in the year 2004 in West Bengal. We have a State-Of-The-Art Integrated Steel manufacturing facility comprised of Pellet, Sinter, Pig iron, Sponge Iron, Ductile Iron Pipe and Fittings, Billet, TMT & Wire Rod.

Rashmi Metaliks is one of the leading manufacturers of DI Pipes & Fittings in India. We have a substantial number of jointing options with various internal and external coating types when it comes to fittings. Since its inception, Rashmi Metaliks has been expanding at an unbeatable CAGR of 62%. We have upgraded our production to **7,70,000** Metric Tonnes of DI Pipes & **26,000** Metric Tonnes of DI Fittings annually.

Today, Rashmi Metaliks stands as the largest manufacturer of DI Pipes & Fittings in India and holds the second position in the globe.

We employ advanced casting techniques to meet international standards, ensuring high-quality pipes and fittings for potable water, raw water, and wastewater transportation. Our products adhere to various international and European standards. Precision manufacturing ensures proper fitment, with options for diverse coatings and linings. We offer high-quality **DI Pipes (DN 80 to DN 1200)** and **Fittings (DN 80 to DN 1600)**, suitable for various applications. With a high safety factor and extensive availability, they provide optimal pipeline solutions for diverse needs.

DUCTILE IRON PIPE FITTINGS

Ductile Iron is the most preferred pipe material for water supply and pressure sewage applications. The DI Pipe manufacturing is the flagship block of Rashmi Metaliks and has been growing at a CAGR of 62% for the last 4 years.



The Ductile Iron Pipe Fittings are produced in compliance with all International Standards including ISO 2531, ISO 7186, BS EN 545 and BS EN 598. The company's impeccable track record of quality assurance has placed it in a commanding position in the market. The Pipe Fittings are produced in the range of DN 80 - DN 1600 with the capacity of 26,000 MTPA. Pipe Fittings are manufactured using the latest advanced technologies, Vacuum Lost Foam Process and High Pressure Moulding Process, to increase productivity. Ductile Iron is an alloy of Iron, Carbon, and Silicon, also known as Spheroidal Graphite Iron or Nodular Cast Iron.

The process of manufacturing Ductile Iron involves adding magnesium to low-sulphur molten iron. Due to the reaction with magnesium, the carbon (graphite) present in the iron forms multiple small nodules and the resultant product is known as Ductile Iron. Ductile Iron is preferred to Cast Iron because it retains the corrosion resistance of Cast Iron and has double the tensile strength of [Cast Iron - 180 MPa (min), Ductile Iron - 420 MPa (min)].





PRODUCT LIST OF PIPE FITTINGS

Rashmi Metaliks Limited is one of the premier manufacturers of Ductile Iron Fittings in India. The fittings are manufactured in Kharagpur (West Bengal) with the most modern casting techniques like Vacuum Lost Foam Process (VLFP) and High Pressure Moulding Process. The Plant is equipped with the latest machinery, sophisticated finishing facilities, and modern testing laboratories. Since Rashmi Metaliks manufactures both Pipes and Fittings, it is a one-stop shop for your pipeline requirement, offering excellent compatibility between Pipes and Fittings.

Quality as per International benchmarks.

Most advanced casting techniques result in good-quality casting.

High dimensional accuracy leads to proper fitment.

Varied options for coating and lining depending on external and internal conditions.

Proven pre-sales and after-sales support.

Coating:

Fittings and accessories are normally internally and externally coated. Normally Bituminous Paint is applied. However, the following coatings may also be done:

External Coating:

1. Zinc Coating
2. Bituminous Coating
3. Epoxy Liquid Coating
4. Fusion Bonded Epoxy Coating

Internal Lining:

The following linings may be applied internally depending on the usage:

1. Portland Cement Mortar
2. SRC
3. High Alumina Cement Mortar
4. Seal Coat
5. Fusion Bonded Epoxy Coating

Rashmi Metaliks produces fittings in the range of DN 80 mm DN 1600 mm in accordance with the following standards:

Product Range

- ISO 2531/EN 545 for Water
- ISO 7186/EN 598 for Sewerage
- IS 9523 for Water and Sewerage

Range of Fittings

- Push on Joint Socket Fittings
- Flanged Fittings
- Loose Flanged Fittings
- Mechanical Joint Fittings



Manufacturing Process

Vaccum Lost Foam process, used for manufacturing DI Fittings, is an advanced technique and it scores over other conventional processes. The other process is High Pressure Moulding process.

Advantage of Vaccum Lost Foam Technique

- There is no need for a core set, so no displacement will occur in uneven thickness.
- Much lower chances of having a pinhole, slag inclusion, or blow hole.
- Maintains high dimensional tolerance, which is extremely vital for proper fitment.
- The casting has excellent finish.
- Higher productivity because the casting process is much faster.

Vaccum Lost Foam Technique

First, a replica of the fittings is made with Styrofoam popularly known as Polystyrene.

This replica is moulded in a special machine as a pattern for the casting. The pattern is then kept in mechanized moulding boxes and then packed with sand.

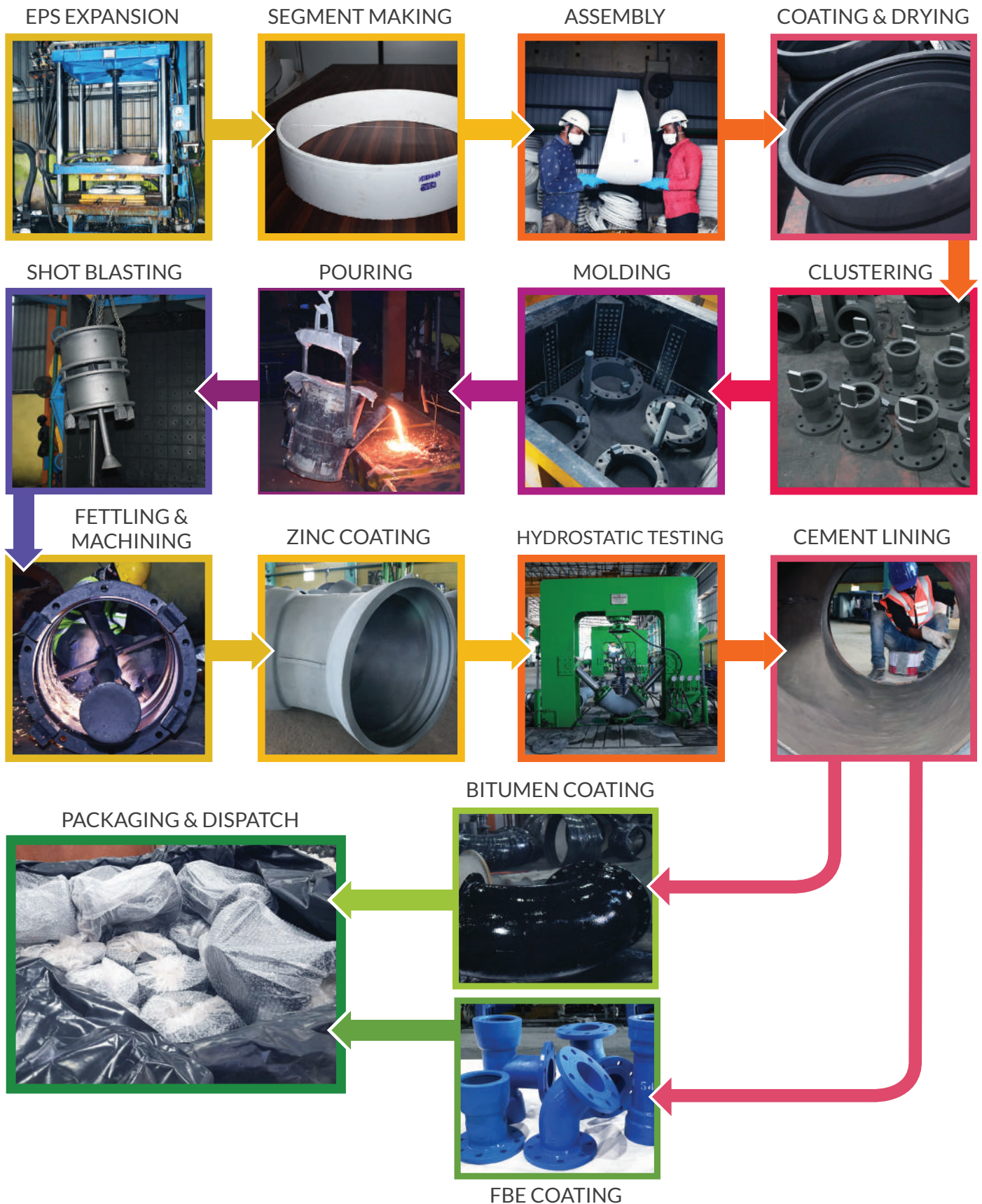
When hot metal is poured, the Styrofoam pattern vaporizes and the metal takes the shape of the fitting by filling up the cavity.

After cooling, casting is taken out, shot blasted, fettled and cleaned.

After thorough fettling and inspection, the casting is subjected to Zinc coating and then hydrostatic testing.

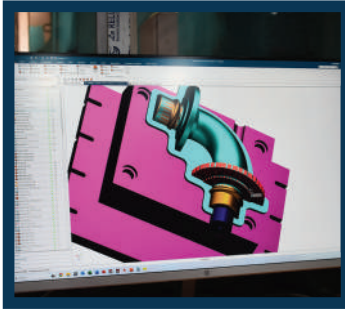
Cement lining and bituminous finishing coat is applied from the outside. Alternatively, Fittings are Fusion-Bonded Epoxy (FBE) coated and lined in our special FBE plant.

FLOW CHART OF VLFP PROCESS



FLOW CHART OF HIGH PRESSURE MOULDING PROCESS

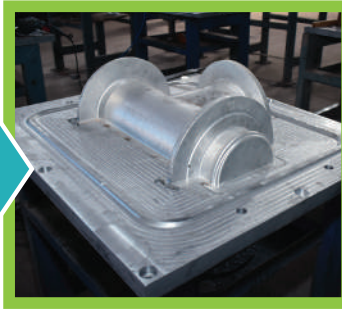
PATTERN
DEVELOPMENT



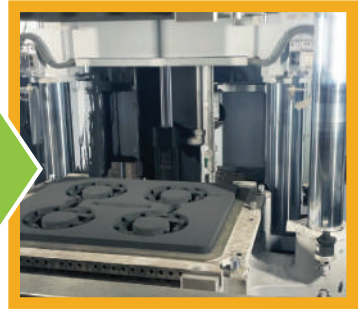
PATTERN
MACHINING



PATTERN MOUNTING
ON MATCH PLATE



MOLDING
& CORE FIXING



SHOT BLASTING



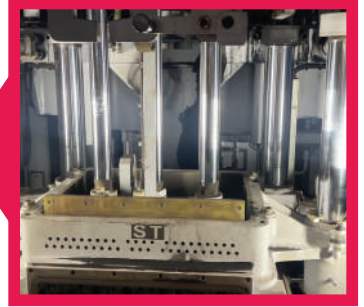
KNOCKOUT



POURING



MOLDING



FETTLING &
MACHINING



HYDROTESTING POST
ZINC COATING



CEMENT LINING



BITUMEN COATING



SHOT BLASTING

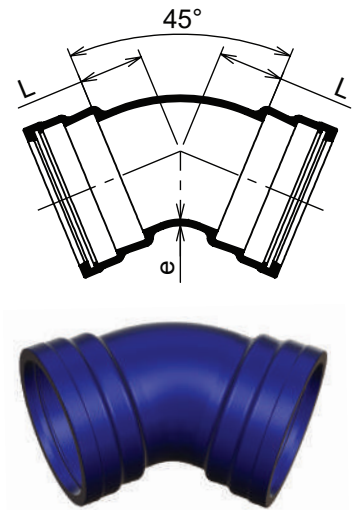
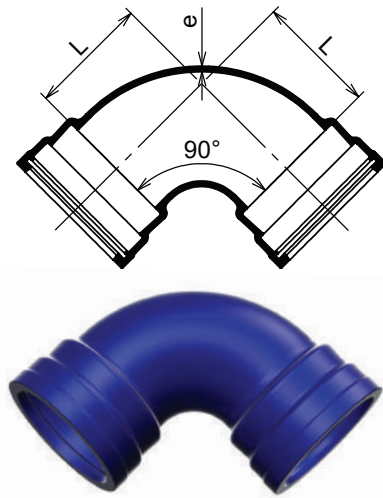


FUSION-BONDED
EPOXY COATING



PACKAGING & DISPATCH





Dimensions in millimeters

Double Socket Bend 90°

Size/DN	e	L
80	7.0	100
100	7.2	120
125	7.5	145
150	7.8	170
200	8.4	220
250	9.0	270
300	9.6	320
350	10.2	370
400	10.8	420
450	11.4	470
500	12.0	520
600	13.2	620
700	14.4	720
750	15.0	770
800	15.6	820
900	16.8	920
1000	18.0	1020
1100	19.2	1130
1200	20.4	1230
1400	22.8	1430
1500	24.0	1530
1600	25.2	1630

Double Socket Bend 45°

Size/DN	e	L
80	7.0	55
100	7.2	65
125	7.5	75
150	7.8	85
200	8.4	110
250	9.0	130
300	9.6	150
350	10.2	175
400	10.8	195
450	11.4	220
500	12.0	240
600	13.2	285
700	14.4	330
750	15.0	350
800	15.6	370
900	16.8	415
1000	18.0	460
1100	19.2	505
1200	20.4	550
1400	22.8	515
1500	24.0	540
1600	25.2	565

Note: The nominal size is designated DN.

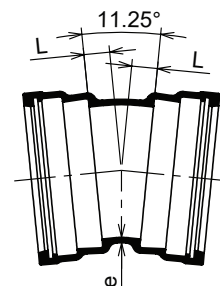
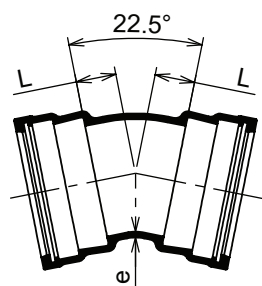
ISO 2531

ISO 7186

IS 9523

EN 598

EN 545



Dimensions in millimeters

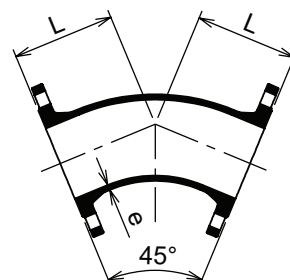
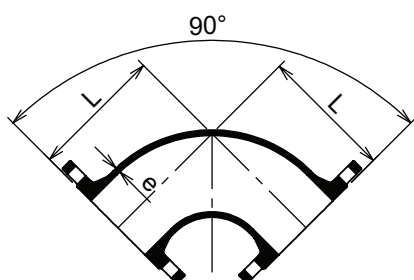
Double Socket Bend 22.5°

Size/DN	e	L
80	7.0	40
100	7.2	40
125	7.5	50
150	7.8	55
200	8.4	65
250	9.0	75
300	9.6	85
350	10.2	95
400	10.8	110
450	11.4	120
500	12.0	130
600	13.2	150
700	14.4	175
750	15.0	185
800	15.6	195
900	16.8	205
1000	18.0	210
1100	19.2	220
1200	20.4	240
1400	22.8	260
1500	24.0	270
1600	25.2	280

Double Socket Bend 11.25°

Size/DN	e	L
80	7.0	30
100	7.2	30
125	7.5	35
150	7.8	35
200	8.4	40
250	9.0	50
300	9.6	55
250	10.2	60
400	10.8	65
450	11.4	70
500	12.0	75
600	13.2	85
700	14.4	95
750	15.0	100
800	15.6	110
900	16.8	115
1000	18.0	120
1100	19.2	120
1200	20.4	130
1400	22.8	130
1500	24.0	135
1600	25.2	140

Note: The nominal size is designated DN.



Dimensions in millimeters

Double Flanged Bend 90°

Size/DN	e	L
80	7.0	165
100	7.2	180
125	7.5	200
150	7.8	220
200	8.4	260
250	9.0	350
300	9.6	400
350	10.2	450
400	10.8	500
450	11.4	550
500	12.0	600
600	13.2	700
700	14.4	800
750	15.0	850
800	15.6	900
900	16.8	1000
1000	18.0	1100
1100	19.2	1235
1200	20.4	1340
1400	22.8	1550
1500	24.0	1660
1600	25.2	1765

Double Flanged Bend 45°

Size/DN	e	L
80	7.0	130
100	7.2	140
125	7.5	150
150	7.8	160
200	8.4	180
250	9.0	350
300	9.6	400
350	10.2	300
400	10.8	325
450	11.4	350
500	12.0	375
600	13.2	425
700	14.4	480
750	15.0	504
800	15.6	530
900	16.8	580
1000	18.0	630
1100	19.2	695
1200	20.4	750
1400	22.8	775
1500	24.0	810
1600	25.2	845

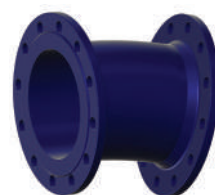
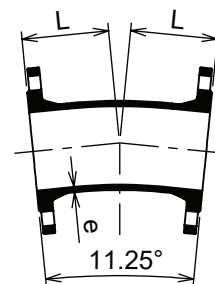
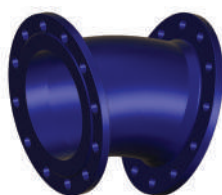
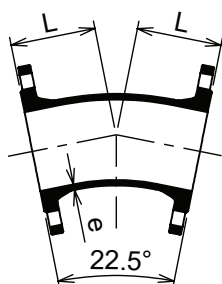
ISO 2531

ISO 7186

IS 9523

EN 598

EN 545



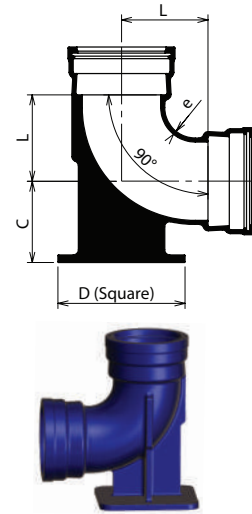
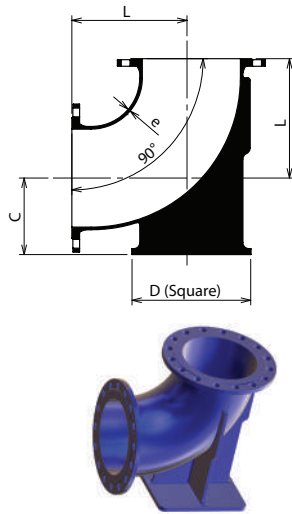
Dimensions in millimeters

Double Flanged Bend 22.5°

Size/DN	e	L
80	7.0	105
100	7.2	110
125	7.5	105
150	7.8	109
200	8.4	131
250	9.0	190
300	9.6	210
350	10.2	210
400	10.8	239
450	11.4	-
500	12.0	-
600	13.2	-
700	14.4	-
750	15.0	-
800	15.6	-
900	16.8	-
1000	18.0	-
1100	19.2	-
1200	20.4	-
1400	22.8	-
1500	24.0	-
1600	25.2	-

Double Flanged Bend 11.25°

Size/DN	e	L
80	7.0	113
100	7.2	115
125	7.5	111
150	7.8	113
200	8.4	132
250	9.0	165
300	9.6	175
350	10.2	191
400	10.8	205
450	11.4	-
500	12.0	-
600	13.2	-
700	14.4	-
750	15.0	-
800	15.6	-
900	16.8	-
1000	18.0	-
1100	19.2	-
1200	20.4	-
1400	22.8	-
1500	24.0	-
1600	25.2	-



Dimensions in millimeters

Duckfoot Double Flanged Bend 90°

Size/DN	e	L
80	7.0	165
100	7.2	180
125	7.5	200
150	7.8	220
200	8.4	260
250	9.0	350
300	9.6	400
350	10.2	450
400	10.8	500
450	11.4	550
500	12.0	600
600	13.2	700
700	14.4	800
750	15.0	850
800	15.6	900
900	16.8	1000
1000	18.0	1100
1100	19.2	1235
1200	20.4	1340
1400	22.8	1550
1500	24.0	1660
1600	25.2	1765

Duckfoot Double Socket Bend 90°

Size/DN	e	L
80	7.0	110
100	7.2	130
125	7.5	155
150	7.8	180
200	8.4	230
250	9.0	280
300	9.6	325
350	10.2	380
400	10.8	430
450	11.4	480
500	12.0	530
600	13.2	630
700	14.4	735
750	15.0	790
800	15.6	830
900	16.8	930
1000	18.0	1035
1100	19.2	1130
1200	20.4	1230
1400	22.8	1430
1500	24.0	1530
1600	25.2	1630

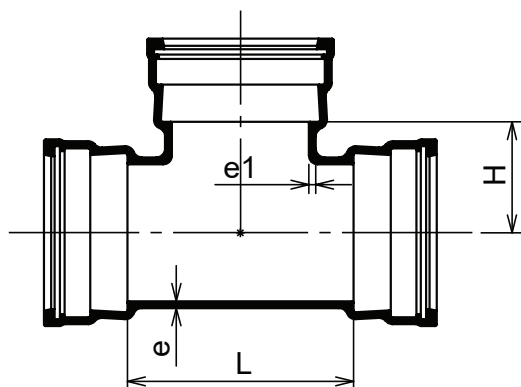
ISO 2531

ISO 7186

IS 9523

EN 598

EN 545



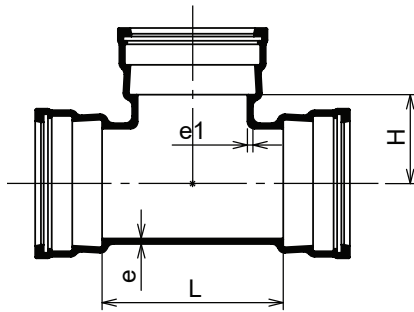
Dimensions in millimeters

All Socket Tee

Size/DN		e	e1	L	H
Body	Branch				
80	80	7.0	7.0	170	85
100	80	7.2	7.0	170	95
100	100	7.2	7.2	190	95
125	80	7.5	7.0	170	105
125	100	7.5	7.2	195	100
125	125	7.5	7.5	225	110
150	80	7.8	7.0	170	120
150	100	7.8	7.2	195	120
150	150	7.8	7.8	255	125
200	80	8.4	7.0	175	145
200	100	8.4	7.2	200	145
200	150	8.4	7.8	255	150
200	200	8.4	8.4	315	155
250	80	9.0	7.0	180	170
250	100	9.0	7.2	200	170
250	150	9.0	7.8	260	175
250	200	9.0	8.4	315	180
250	250	9.0	9.0	375	190
300	80	9.6	7.0	180	235
300	100	9.6	7.2	205	220
300	150	9.6	7.8	260	240
300	200	9.6	8.4	320	220
300	250	9.6	9.0	375	255
300	300	9.6	9.6	435	220
350	80	10.0	7.0	185	260
350	100	10.2	7.2	205	260
350	150	10.2	7.8	265	265
350	200	10.2	8.4	325	270
350	250	10.2	9.0	380	280
350	300	10.2	9.6	440	285
350	350	10.2	10.2	495	290

All Socket Tee

Size/DN		e	e1	L	H
Body	Branch				
400	80	10.8	7.0	185	285
400	100	10.8	7.2	210	285
400	150	10.8	7.8	270	290
400	200	10.8	8.4	325	295
400	250	10.8	9.0	385	305
400	300	10.8	9.6	440	310
400	400	10.8	10.8	560	320
450	80	11.4	7.0	190	310
450	100	11.4	7.2	215	310
450	150	11.4	7.8	270	315
450	200	11.4	8.4	330	320
450	250	11.4	9.0	390	330
450	300	11.4	9.6	445	335
450	400	11.4	10.8	560	345
450	450	11.4	11.4	620	350
500	80	12	7.0	195	335
500	100	12	7.2	215	335
500	150	12	7.8	275	340
500	200	12	8.4	330	345
500	250	12	9.0	390	355
500	300	12	9.6	450	360
500	350	12	10.2	505	365
500	400	12	10.8	565	370
500	500	12	10.12	680	380
600	80	13.2	7.0	200	385
600	100	13.2	7.2	220	385
600	150	13.2	7.8	280	390
600	200	13.2	8.4	340	395
600	300	13.2	9.6	455	410
600	400	13.2	10.8	570	420
600	500	13.2	12.0	685	430
600	600	13.2	13.2	800	440



Dimensions in millimeters

All Socket Tee

Size/DN		e	e1	L	H
Body	Branch				
700	100	14.4	7.2	230	435
700	150	14.4	7.8	285	440
700	200	14.4	8.4	345	445
700	300	14.4	9.6	460	460
700	400	14.4	10.8	575	470
700	500	14.4	12.0	690	480
700	600	14.4	13.2	810	490
700	700	14.4	14.4	925	500
750	100	15.0	7.2	230	460
750	150	15.0	7.8	290	465
750	200	15.0	8.4	345	470
750	300	15.0	9.6	465	485
750	400	15.0	10.8	580	495
750	500	15.0	12.0	695	505
750	600	15.0	13.2	810	515
750	700	15.0	14.4	925	525
750	750	15.0	15.0	985	535
800	100	15.6	7.2	235	485
800	150	15.6	7.8	290	490
800	200	15.6	8.4	350	495
800	300	15.6	9.6	465	510
800	400	15.6	10.8	580	520
800	500	15.6	12.0	700	530
800	600	15.6	13.2	815	540
800	700	15.6	14.4	930	550
800	800	15.6	15.6	1045	565
900	100	16.8	7.2	360	540
900	150	16.8	7.8	300	540
900	200	16.8	8.4	355	545
900	400	16.8	10.8	590	570
900	600	16.8	13.2	820	590
900	800	16.8	15.6	1050	615
900	900	16.8	16.8	1170	625
1000	100	18.0	7.2	370	580
1000	150	18.0	7.8	305	590

All Socket Tee

Size/DN		e	e1	L	H
Body	Branch				
1000	200	18.0	7.8	360	595
1000	400	18.0	8.4	595	620
1000	600	18.0	10.8	1290	640
1000	800	18.0	13.2	1290	665
1000	1000	18.0	15.6	1290	685
1100	200	19.2	7.8	370	645
1100	400	19.2	10.8	600	670
1100	600	19.2	13.2	830	690
1100	800	19.2	15.6	1065	715
1100	1000	19.2	18.0	1295	735
1100	1100	19.2	19.2	1410	745
1200	200	20.4	8.4	375	695
1200	400	20.4	10.8	605	720
1200	600	20.4	13.2	840	740
1200	800	20.4	15.6	1070	765
1200	1000	20.4	18.0	1300	785
1200	1200	20.4	20.4	1535	805
1400	400	22.8	10.8	800	950
1400	600	22.8	13.2	1030	980
1400	800	22.8	15.6	1260	1010
1400	1000	22.8	18.0	1495	1040
1400	1200	22.8	20.4	1725	1070
1400	1400	22.8	22.8	1960	1100
1500	400	24.0	10.8	805	1005
1500	600	24.0	13.2	1035	1035
1500	800	24.0	15.6	1270	1065
1500	1000	24.0	18.0	1500	1095
1500	1200	24.0	20.4	1730	1125
1500	1400	24.0	22.8	1965	1155
1500	1500	24.0	24.0	2080	1170
1600	400	25.2	10.8	810	1060
1600	600	25.2	13.2	1040	1090
1600	800	25.2	15.6	1275	1120
1600	1000	25.2	18.0	1505	1150
1600	1200	25.2	20.4	1740	1180
1600	1400	25.2	22.8	1970	1210
1600	1600	25.2	25.2	2200	1240

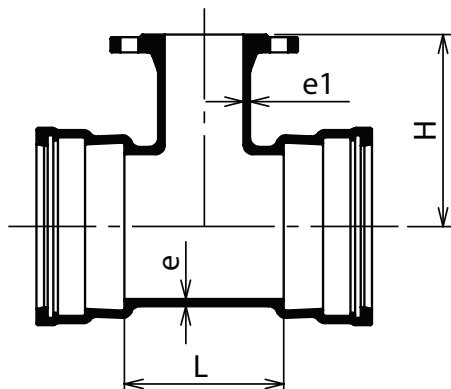
ISO 2531

ISO 7186

IS 9523

EN 598

EN 545



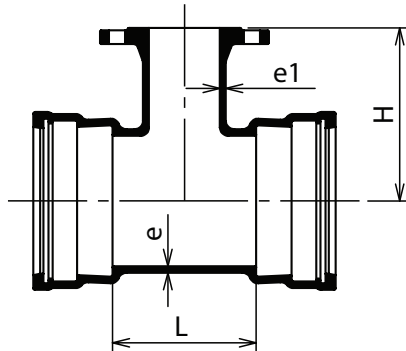
Dimensions in millimeters

Double Socket Flanged Branch Tee

Size/DN		e	e1	L	H
Body	Branch				
80	80	7.0	7.0	170	165
100	80	7.2	7.0	170	175
100	100	7.2	7.2	190	180
125	80	7.5	7.0	170	190
125	100	7.5	7.2	195	195
125	125	7.5	7.5	225	200
150	80	7.8	7.0	170	205
150	100	7.8	7.2	195	210
150	150	7.8	7.8	255	220
200	80	8.4	7.0	175	235
200	100	8.4	7.2	200	240
200	150	8.4	7.8	255	250
200	200	8.4	8.4	315	260
250	80	9.0	7.0	180	265
250	100	9.0	7.2	200	270
250	150	9.0	7.8	260	280
250	200	9.0	8.4	315	290
250	250	9.0	9.0	375	300
300	80	9.6	7.0	180	295
300	100	9.6	7.2	210	300
300	150	9.6	7.8	260	310
300	200	9.6	8.4	325	320
300	250	9.6	9.0	380	330
300	300	9.6	9.6	440	340
350	80	10.0	7.0	185	325
350	100	10.2	7.2	205	330
350	150	10.2	7.8	265	340
350	200	10.2	8.4	325	350
350	250	10.2	9.0	380	360
350	300	10.2	9.6	440	370
350	350	10.2	10.2	495	380

Double Socket Flanged Branch Tee

Size/DN		e	e1	L	H
Body	Branch				
400	80	10.8	7.0	185	355
400	100	10.8	7.2	210	360
400	150	10.8	7.8	270	370
400	200	10.8	8.4	325	380
400	250	10.8	9.0	385	390
400	300	10.8	9.6	440	400
400	400	10.8	10.8	560	420
450	80	11.4	7.0	190	385
450	100	11.4	7.2	215	390
450	150	11.4	7.8	270	400
450	200	11.4	8.4	330	410
450	250	11.4	9.0	390	420
450	300	11.4	9.6	445	430
450	400	11.4	10.8	560	450
450	450	11.4	11.4	620	460
500	80	12.0	7.0	195	415
500	100	12.0	7.2	215	420
500	150	12.0	7.8	275	430
500	200	12.0	8.4	330	440
500	250	12.0	9.0	390	450
500	300	12.0	9.6	450	460
500	350	12.0	10.2	505	470
500	400	12.0	10.8	565	480
500	500	12.0	12.0	680	500
600	80	13.2	7.0	200	475
600	100	13.2	7.2	220	480
600	150	13.2	7.8	280	490
600	200	13.2	8.4	340	500
600	300	13.2	9.6	455	520
600	400	13.2	10.8	570	540
600	500	13.2	12.0	685	560
600	600	13.2	13.2	800	580



Dimensions in millimeters

Double Socket Flanged Branch Tee

Size/DN		e	e1	L	H
Body	Branch				
700	100	14.4	7.2	230	510
700	150	14.4	7.8	285	520
700	200	14.4	8.4	345	525
700	300	14.4	9.6	460	540
700	400	14.4	10.8	575	555
700	500	14.4	12	690	570
700	600	14.4	13.2	810	585
700	700	14.4	14.4	925	600
750	100	15.0	7.2	230	540
750	150	15.0	7.8	290	550
750	200	15.0	8.4	345	555
750	300	15.0	9.6	465	570
750	400	15.0	10.8	580	585
750	500	15.0	12	695	600
750	600	15.0	13.2	810	615
750	700	15.0	14.4	925	630
750	750	15.0	15	985	640
800	100	15.6	7.2	235	570
800	150	15.6	7.8	290	580
800	200	15.6	8.4	350	585
800	300	15.6	9.6	465	600
800	400	15.6	12	580	615
800	500	15.6	14.4	700	630
800	600	15.6	15.6	815	645
800	700	15.6	7.8	930	660
800	800	15.6	10.8	1045	675
900	150	16.8	7.8	300	640
900	200	16.8	8.4	355	645
900	400	16.8	10.8	590	675
900	600	16.8	13.2	820	705
900	800	16.8	15.6	1050	735
900	900	16.8	16.8	1170	750
1000	150	18	7.8	305	700

Double Socket Flanged Branch Tee

Size/DN		e	e1	L	H
Body	Branch				
1000	200	18.0	8.4	360	705
1000	400	18.0	10.8	595	735
1000	600	18.0	13.2	1290	765
1000	800	18.0	15.6	1290	795
1000	1000	18.0	18.0	1290	825
1100	200	19.2	8.4	370	765
1100	400	19.2	10.8	600	795
1100	600	19.2	13.2	830	825
1100	800	19.2	15.6	1065	855
1100	1000	19.2	18.0	1295	885
1100	1100	19.2	19.2	1410	900
1200	200	20.4	8.4	375	825
1200	400	20.4	10.8	605	855
1200	600	20.4	13.2	840	885
1200	800	20.4	15.6	1070	915
1200	1000	20.4	18.0	1300	945
1200	1200	20.4	20.4	1535	975
1400	400	22.8	10.8	800	950
1400	600	22.8	13.2	1030	980
1400	800	22.8	15.6	1260	1010
1400	1000	22.8	18.0	1495	1040
1400	1200	22.8	20.4	1725	1070
1400	1400	22.8	22.8	1960	1100
1500	400	24.0	10.8	805	1005
1500	600	24.0	13.2	1035	1035
1500	800	24.0	15.6	1270	1065
1500	1000	24.0	18.0	1500	1095
1500	1200	24.0	20.4	1730	1125
1500	1400	24.0	22.8	1965	1155
1500	1500	24.0	24.0	2080	1170
1600	400	25.2	10.8	810	1060
1600	600	25.2	13.2	1040	1090
1600	800	25.2	15.6	1275	1120
1600	1000	25.2	18.0	1505	1150
1600	1200	25.2	20.4	1740	1180
1600	1400	25.2	22.8	1970	1210
1600	1600	25.2	25.2	2200	1240

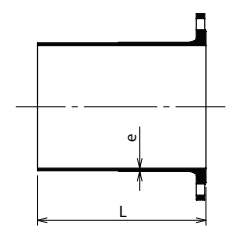
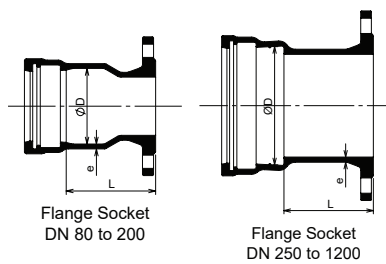
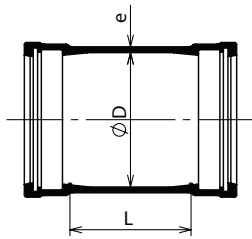
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Dimensions in millimeters

Double Socket Collar

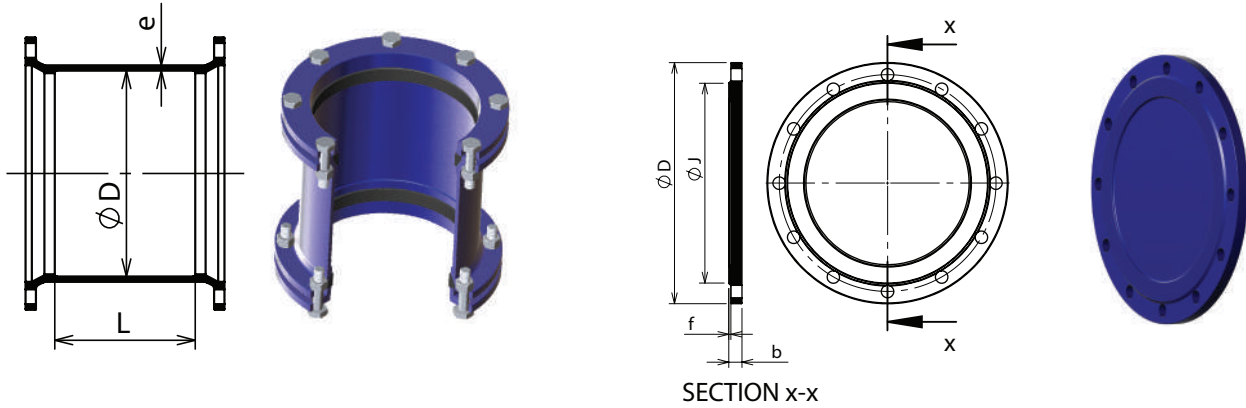
Size/DN	e	L	D
80	7.0	160	109
100	7.2	160	130
125	7.5	165	156
150	7.8	165	183
200	8.4	170	235
250	9.0	175	288
300	9.6	180	340
350	10.2	185	393
400	10.8	190	445
450	11.4	195	498
500	12.0	200	550
600	13.2	210	655
700	14.4	220	760
750	15.0	225	810
800	15.6	230	865
900	16.8	240	970
1000	18.0	250	1075
1100	19.2	260	1180
1200	20.4	270	1285
1400	22.8	340	1477
1500	24.0	350	1580
1600	25.2	360	1683

Flanged Socket

Size/DN	e	L
80	7.0	130
100	7.2	130
125	7.5	135
150	7.8	135
200	8.4	140
250	9.0	145
300	9.6	150
350	10.2	155
400	10.8	160
450	11.4	165
500	12.0	170
600	13.2	180
700	14.4	190
750	15.0	195
800	15.6	200
900	16.8	210
1000	18.0	220
1100	19.2	230
1200	20.4	240
1400	22.8	310
1500	24.0	330
1600	25.2	330

Flanged Spigot

Size/DN	e	L
80	7.0	350
100	7.2	360
125	7.5	370
150	7.8	380
200	8.4	400
250	9.0	420
300	9.6	440
350	10.2	460
400	10.8	480
450	11.4	500
500	12.0	520
600	13.2	560
700	14.4	600
750	15.0	600
800	15.6	600
900	16.8	600
1000	18.0	600
1100	19.2	600
1200	20.4	600
1400	22.8	710
1500	24.0	750
1600	25.2	780



SECTION x-x

Dimensions in millimeters

Mechanical Joint Collar

Size/DN	e	L	D
80	7.0	160	109
100	7.2	160	130
125	7.5	165	156
150	7.8	165	183
200	8.4	170	235
250	9.0	175	288
300	9.6	180	340
350	10.2	185	393
400	10.8	190	445
450	11.4	195	498
500	12.0	200	550
600	13.2	210	655
700	14.4	220	760
750	15.0	225	810
800	15.6	230	865
900	16.8	240	970
1000	18.0	250	1075
1100	19.2	260	1180
1200	20.4	270	1285
1400	22.8	340	1477
1500	24.0	350	1580
1600	25.2	360	1683

Blank Flange

Size/DN	a		b		D	
	PN 10	PN 16	PN 10	PN 16	PN 10	PN 16
80	19.0	19.0	16.0	16.0	200	200
100	19.0	19.0	16.0	16.0	220	220
125	19.0	19.0	16.0	16.0	250	250
150	19.0	19.0	16.0	16.0	285	285
200	20.0	20.0	17.0	17.0	340	340
250	22.0	22.0	19.0	19.0	400	400
300	24.5	24.5	20.5	20.5	455	455
350	24.5	26.5	20.5	22.5	505	520
400	24.5	28.0	20.5	24.0	565	580
450	25.5	30.0	21.5	26.0	615	640
500	26.5	31.5	22.5	27.5	670	715
600	30.0	36.0	25.0	31.0	780	840
700	32.5	39.5	27.5	34.5	895	910
750	33.0	41.0	28.0	36.0	960	970
800	35.0	43.0	30.0	38.0	1015	1025
900	37.5	46.5	32.5	41.5	1115	1125
1000	40.0	50.0	35.0	45.0	1230	1255
1100	42.5	53.5	37.5	48.5	1340	1355
1200	45.0	57.0	40.0	52.0	1455	1485
1400	46.0	60.0	41.0	55.0	1675	1685
1500	47.5	62.5	42.5	57.5	1785	1820
1600	49.0	65.0	44.0	60.0	1915	1930

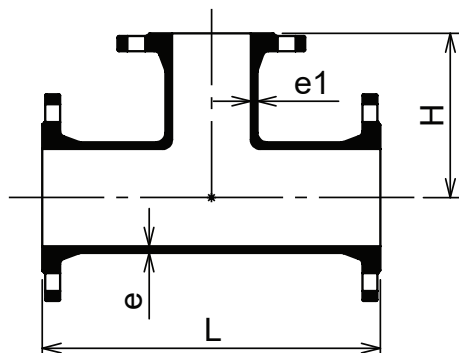
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EN 598

EN 545



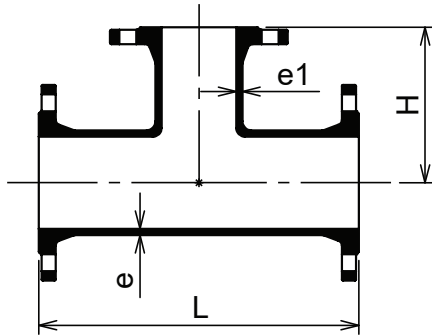
Dimensions in millimeters

All Flanged Tee

Size/DN		e	e1	L	H
Body	Branch				
80	80	7.0	7.0	330	165
100	80	7.2	7.0	360	175
100	100	7.2	7.2	360	180
125	80	7.5	7.0	400	190
125	100	7.5	7.2	400	195
125	125	7.5	7.5	400	200
150	80	7.8	7.0	440	205
150	100	7.8	7.2	440	210
150	150	7.8	7.8	440	220
200	80	8.4	7.0	520	235
200	100	8.4	7.2	520	240
200	150	8.4	7.8	520	250
200	200	8.4	8.4	520	260
250	80	9.0	7.0	700	235
250	100	9.0	7.2	700	275
250	150	9.0	7.8	700	325
250	200	9.0	8.4	700	325
250	250	9.0	9.0	700	350
300	80	9.6	7.0	800	265
300	100	9.6	7.2	800	300
300	150	9.6	7.8	800	350
300	200	9.6	8.4	800	350
300	250	9.6	9.0	800	350
300	300	9.6	9.6	800	400
350	80	10	7.0	850	295
350	100	10.2	7.2	850	325
350	150	10.2	7.8	850	325
350	200	10.2	8.4	850	325
350	250	10.2	9.0	850	325
350	300	10.2	9.6	850	425
350	350	10.2	10.2	850	425

All Flanged Tee

Size/DN		e	e1	L	H
Body	Branch				
400	80	10.8	7.0	900	325
400	100	10.8	7.2	900	350
400	150	10.8	7.8	900	350
400	200	10.8	8.4	900	350
400	250	10.8	9.0	900	350
400	300	10.8	9.6	900	450
400	400	10.8	10.8	900	450
450	80	11.4	7.0	950	355
450	100	11.4	7.2	950	375
450	150	11.4	7.8	950	375
450	200	11.4	8.4	950	375
450	250	11.4	9.0	950	375
450	300	11.4	9.6	950	375
450	400	11.4	10.8	950	475
450	450	11.4	11.4	950	475
500	80	12.0	7.0	1000	385
500	100	12.0	7.2	1000	400
500	150	12.0	7.8	1000	400
500	200	12.0	8.4	1000	400
500	250	12.0	9.0	1000	400
500	300	12.0	9.6	1000	500
500	350	12.0	10.2	1000	500
500	400	12.0	10.8	1000	500
500	500	12.0	12.0	1000	500
600	80	13.2	7.0	1100	445
600	100	13.2	7.2	1100	450
600	150	13.2	7.8	1100	450
600	200	13.2	8.4	1100	450
600	300	13.2	9.6	1100	550
600	400	13.2	10.8	1100	550
600	500	13.2	12.0	1100	550
600	600	13.2	13.2	1100	550



Dimensions in millimeters

All Flanged Tee

Size/DN		e	e1	L	H
Body	Branch				
700	100	14.4	7.2	540	510
700	150	14.4	7.8	600	520
700	200	14.4	8.4	650	525
700	250	14.4	9.0	700	530
700	300	14.4	9.6	760	540
700	350	14.4	10.2	750	550
700	400	14.4	10.8	870	555
700	500	14.4	12.0	1000	570
700	600	14.4	13.2	1200	585
700	700	14.4	14.4	1200	600
750	100	15.0	7.2	550	540
750	150	15.0	7.8	610	550
750	200	15.0	8.4	670	555
750	300	15.0	9.6	780	570
750	400	15.0	10.8	890	585
750	500	15.0	12.0	1020	600
750	600	15.0	13.2	1130	615
750	700	15.0	14.4	1250	630
750	750	15.0	15.0	1275	640
800	100	15.6	7.2	560	570
800	150	15.6	7.8	620	580
800	200	15.6	8.4	690	585
800	300	15.6	9.6	800	600
800	350	15.6	10.2	810	605
800	400	15.6	10.8	910	615
800	500	15.6	12.0	1030	630
800	600	15.6	13.2	1350	645
800	700	15.6	14.4	1350	660
800	800	15.6	15.6	1350	675
900	150	16.8	7.8	650	640
900	200	16.8	8.4	730	645
900	400	16.8	10.8	950	675
900	600	16.8	13.2	1500	705
900	800	16.8	15.6	1500	735
900	900	16.8	16.8	1500	750

All Flanged Tee

Size/DN		e	e1	L	H
Body	Branch				
1000	150	18.0	7.8	720	700
1000	200	18.0	8.4	770	705
1000	400	18.0	10.8	990	735
1000	600	18.0	13.2	1650	765
1000	800	18.0	15.6	1650	795
1000	1000	18.0	18.0	1650	825
1100	200	19.2	8.4	760	765
1100	400	19.2	10.8	980	795
1100	600	19.2	13.2	1210	825
1100	800	19.2	15.6	1470	855
1100	1000	19.2	18.0	1690	885
1100	1100	19.2	19.2	1800	900
1200	200	20.4	8.4	780	825
1200	400	20.4	10.8	1070	855
1200	600	20.4	13.2	1240	885
1200	800	20.4	15.6	1470	915
1200	1000	20.4	18.0	1700	945
1200	1200	20.4	20.4	1950	975
1400	400	22.8	10.8	1050	950
1400	600	22.8	13.2	1550	980
1400	800	22.8	15.6	1760	1010
1400	1000	22.8	18.0	2015	1040
1400	1200	22.8	20.4	2015	1070
1400	1400	22.8	22.8	2200	1100
1500	400	24.0	10.8	1070	1005
1500	600	24.0	13.2	1350	1035
1500	800	24.0	15.6	1570	1065
1500	1000	24.0	18.0	1790	1095
1500	1200	24.0	20.4	2010	1025
1500	1400	24.0	22.8	2230	1155
1500	1500	24.0	24.0	2340	1170
1600	400	25.2	10.8	1100	1060
1600	600	25.2	13.2	1600	1090
1600	800	25.2	15.6	1835	1120
1600	1000	25.2	18.0	2065	1150
1600	1200	25.2	20.4	2300	1180
1600	1400	25.2	22.8	2300	1210
1600	1600	25.2	25.2	2480	1240

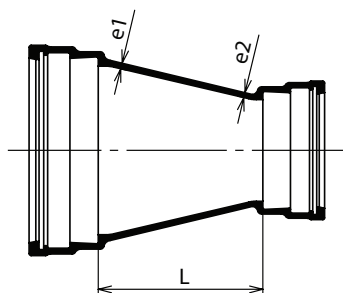
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EN 545



Dimensions in millimeters

Double Socket Reducer

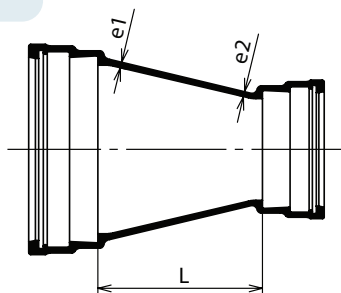
Size/DN		e1	e2	L
Larger	Smaller			
100	80	7.2	7.0	90
125	80	7.5	7.0	140
125	100	7.5	7.2	120
150	80	7.8	7.0	190
150	100	7.8	7.2	150
150	125	7.8	7.5	100
200	80	8.4	7.0	270
200	100	8.4	7.2	250
200	125	8.4	7.5	180
200	150	8.4	7.8	150
250	80	9.0	7.0	370
250	100	9.0	7.2	320
250	125	9.0	7.5	300
250	150	9.0	7.8	250
250	200	9.0	8.4	150
300	80	9.6	7.0	460
300	100	9.6	7.2	420
300	125	9.6	7.5	360
300	150	9.6	7.8	350
300	200	9.6	8.4	250
300	250	9.6	9.0	150
350	80	10.2	7.0	560
350	100	10.2	7.2	520
350	125	10.2	7.5	460
350	150	10.2	7.8	420
350	200	10.2	8.4	360
350	250	10.2	9.0	260
350	300	10.2	9.6	160
400	80	10.8	7.0	660
400	100	10.8	7.2	610
400	125	10.8	7.5	560
400	150	10.8	7.8	510
400	200	10.8	8.4	410
400	250	10.8	9.0	360
400	300	10.8	9.6	260
400	350	10.8	10.2	160
450	80	11.4	7.0	750
450	100	11.4	7.2	700
450	125	11.4	7.5	650
450	150	11.4	7.8	600
450	200	11.4	8.4	510
450	250	11.4	9.0	410
450	300	11.4	9.6	330
450	350	11.4	10.2	260

Double Socket Reducer

Size/DN		e1	e2	L
Larger	Smaller			
450	400	11.4	10.8	160
500	80	12.0	7.0	840
500	100	12.0	7.2	800
500	125	12.0	7.5	740
500	150	12.0	7.8	690
500	200	12.0	8.4	590
500	250	12.0	9.0	500
500	300	12.0	9.6	410
500	350	12.0	10.2	360
500	400	12.0	10.8	260
500	450	12.0	11.4	180
600	80	13.2	7.0	1020
600	100	13.2	7.2	980
600	125	13.2	7.5	930
600	150	13.2	7.8	880
600	200	13.2	8.4	780
600	250	13.2	9.0	680
600	300	13.2	9.6	590
600	350	13.2	10.2	490
600	400	13.2	10.8	460
600	450	13.2	11.4	330
600	500	13.2	12.0	260
700	80	14.4	7.0	1220
700	100	14.4	7.2	1180
700	125	14.4	7.5	1130
700	150	14.4	7.8	1080
700	200	14.4	8.4	980
700	250	14.4	9.0	880
700	300	14.4	9.6	800
700	350	14.4	10.2	690
700	400	14.4	10.8	600
700	450	14.4	11.4	520
700	500	14.4	12.0	480
700	600	14.4	13.2	280
750	80	15.0	7.0	1320
750	100	15.0	7.2	1270
750	125	15.0	7.5	1220
750	150	15.0	7.8	1170
750	200	15.0	8.4	1080
750	250	15.0	9.0	980
750	300	15.0	9.6	890
750	350	15.0	10.2	490
750	400	15.0	10.8	700
750	450	15.0	11.4	600

Double Socket Reducer

Size/DN		e1	e2	L
Larger	Smaller			
750	500	15.0	12.0	480
750	600	15.0	13.2	280
750	700	15.0	14.4	220
800	80	15.6	7.0	1420
800	100	15.6	7.2	1380
800	125	15.6	7.5	1310
800	150	15.6	7.8	1260
800	200	15.6	8.4	1170
800	250	15.6	9.0	1070
800	300	15.6	9.6	980
800	350	15.6	10.2	880
800	400	15.6	10.8	780
800	450	15.6	11.4	690
800	500	15.6	12.0	600
800	600	15.6	13.2	480
800	700	15.6	14.4	280
800	750	15.6	15.0	140
900	80	16.8	7.0	1600
900	100	16.8	7.2	1550
900	125	16.8	7.5	1500
900	150	16.8	7.8	1450
900	200	16.8	8.4	1350
900	250	16.8	9.0	1250
900	300	16.8	9.6	1160
900	350	16.8	10.2	1060
900	400	16.8	10.8	960
900	450	16.8	11.4	880
900	500	16.8	12.0	780
900	600	16.8	13.2	600
900	700	16.8	14.4	480
900	750	16.8	15.0	320
900	800	16.8	15.6	280



Dimensions in millimeters

Double Socket Reducer

Size/DN		e1	e2	L
Larger	Smaller			
1000	80	18.0	7.0	1770
1000	100	18.0	7.2	1720
1000	125	18.0	7.5	1670
1000	150	18.0	7.8	1620
1000	200	18.0	8.4	1530
1000	250	18.0	9.0	1430
1000	300	18.0	9.6	1340
1000	350	18.0	10.2	1240
1000	400	18.0	10.8	1150
1000	450	18.0	11.4	1050
1000	500	18.0	12.0	960
1000	600	18.0	13.2	770
1000	700	18.0	14.4	605
1000	750	18.0	15.0	490
1000	800	18.0	15.6	480
1000	900	18.0	16.8	280
1100	80	19.2	7.0	1870
1100	100	19.2	7.2	1820
1100	125	19.2	7.5	1770
1100	150	19.2	7.8	1720
1100	200	19.2	8.4	1630
1100	250	19.2	9.0	1530
1100	300	19.2	9.6	1440
1100	350	19.2	10.2	1340
1100	400	19.2	10.8	1240
1100	450	19.2	11.4	1150
1100	500	19.2	12.0	1050
1100	600	19.2	13.2	880
1100	700	19.2	14.4	690
1100	750	19.2	15.0	600
1100	800	19.2	15.6	520
1100	900	19.2	16.8	330
1100	1000	19.2	18.0	280

Double Socket Reducer

Size/DN		e1	e2	L
Larger	Smaller			
1200	80	20.4	7.0	1970
1200	100	20.4	7.2	1930
1200	125	20.4	7.5	1880
1200	150	20.4	7.8	1830
1200	200	20.4	8.4	1740
1200	250	20.4	9.0	1640
1200	300	20.4	9.6	1550
1200	350	20.4	10.2	1450
1200	400	20.4	10.8	1350
1200	450	20.4	11.4	1260
1200	500	20.4	12.0	1170
1200	600	20.4	13.2	1000
1200	700	20.4	14.4	800
1200	750	20.4	15.0	720
1200	800	20.4	15.6	630
1200	900	20.4	16.8	520
1200	1000	20.4	18.0	480
1200	1100	20.4	19.2	280
1600	1400	25.2	22.8	360

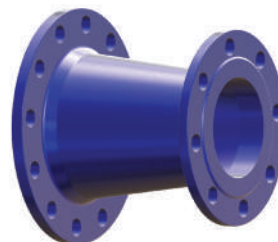
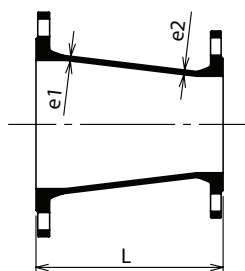
ISO 2531

ISO 7186

IS 9523

EN 598

EN 545

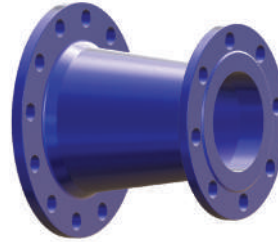
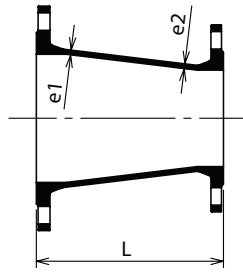


Dimensions in millimeters

Double Flange Reducer				
Size/DN		e1	e2	L
Larger	Smaller			
100	80	7.2	7.0	200
125	80	7.5	7.0	200
125	100	7.5	7.2	200
150	80	7.8	7.0	200
150	100	7.8	7.2	200
150	125	7.8	7.5	200
200	80	8.4	7.0	300
200	100	8.4	7.2	300
200	125	8.4	7.5	300
200	150	8.4	7.8	300
250	80	9.0	7.0	440
250	100	9.0	7.2	400
250	125	9.0	7.5	350
250	150	9.0	7.8	300
250	200	9.0	8.4	300
300	80	9.6	7.0	550
300	100	9.6	7.2	510
300	125	9.6	7.5	460
300	150	9.6	7.8	405
300	200	9.6	8.4	300
300	250	9.6	9.0	300
350	80	10.2	7.0	655
350	100	10.2	7.2	615
350	125	10.2	7.5	565
350	150	10.2	7.8	510
350	200	10.2	8.4	410
350	250	10.2	9.0	305
350	300	10.2	9.6	300
400	80	10.8	7.0	730
400	100	10.8	7.2	720
400	125	10.8	7.5	670
400	150	10.8	7.8	615
400	200	10.8	8.4	510
400	250	10.8	9.0	410
400	300	10.8	9.6	300
400	350	10.8	10.2	300
450	80	11.4	7.0	830
450	100	11.4	7.2	790
450	125	11.4	7.5	740
450	150	11.4	7.8	715
450	200	11.4	8.4	610
450	250	11.4	9.0	510
450	300	11.4	9.6	410
450	350	11.4	10.2	305

Double Flange Reducer				
Size/DN		e1	e2	L
Larger	Smaller			
450	400	11.4	10.8	300
500	80	12.0	7.0	920
500	100	12.0	7.2	880
500	125	12.0	7.5	830
500	150	12.0	7.8	780
500	200	12.0	8.4	725
500	250	12.0	9.0	625
500	300	12.0	9.6	520
500	350	12.0	10.2	420
500	400	12.0	10.8	600
500	450	12.0	11.4	600
600	80	13.2	7.0	1120
600	100	13.2	7.2	1080
600	125	13.2	7.5	1020
600	150	13.2	7.8	970
600	200	13.2	8.4	870
600	250	13.2	9.0	780
600	300	13.2	9.6	730
600	350	13.2	10.2	625
600	400	13.2	10.8	525
600	450	13.2	11.4	400
600	500	13.2	12.0	600
700	80	14.4	7.0	1320
700	100	14.4	7.2	1270
700	125	14.4	7.5	1220
700	150	14.4	7.8	1170
700	200	14.4	8.4	1080
700	250	14.4	9.0	960
700	300	14.4	9.6	880
700	350	14.4	10.2	790
700	400	14.4	10.8	680
700	450	14.4	11.4	610
700	500	14.4	12.0	600
700	600	14.4	13.2	600
750	80	15.0	7.0	1400
750	100	15.0	7.2	1350
750	125	15.0	7.5	1300
750	150	15.0	7.8	1260
750	200	15.0	8.4	1160
750	250	15.0	9.0	1060
750	300	15.0	9.6	970
750	350	15.0	10.2	870
750	400	15.0	10.8	770
750	450	15.0	11.4	700

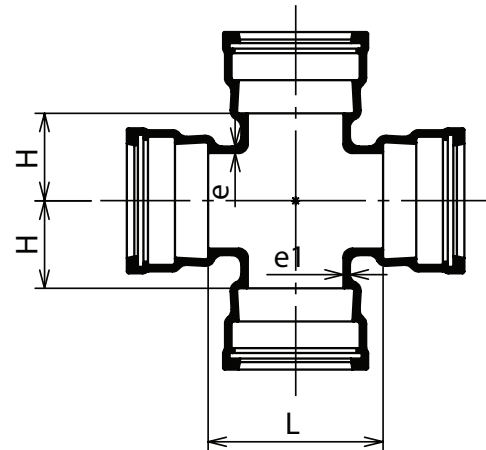
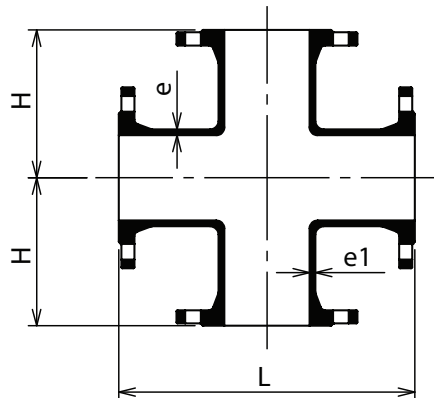
Double Flange Reducer				
Size/DN		e1	e2	L
Larger	Smaller			
750	500	15.0	12.0	600
750	600	15.0	13.2	600
750	700	15.0	14.4	600
800	80	15.6	7.0	1500
800	100	15.6	7.2	1450
800	125	15.6	7.5	1400
800	150	15.6	7.8	1350
800	200	15.6	8.4	1250
800	250	15.6	9.0	1150
800	300	15.6	9.6	1060
800	350	15.6	10.2	970
800	400	15.6	10.8	870
800	450	15.6	11.4	790
800	500	15.6	12.0	700
800	600	15.6	13.2	600
800	700	15.6	14.4	600
800	750	15.6	15.0	600
900	80	16.8	7.0	1690
900	100	16.8	7.2	1640
900	125	16.8	7.5	1590
900	150	16.8	7.8	1540
900	200	16.8	8.4	1440
900	250	16.8	9.0	1340
900	300	16.8	9.6	1250
900	350	16.8	10.2	1150
900	400	16.8	10.8	1060
900	450	16.8	11.4	980
900	500	16.8	12.0	880
900	600	16.8	13.2	700
900	700	16.8	14.4	600
900	750	16.8	15.0	600
900	800	16.8	15.6	600



Dimensions in millimeters

Double Flange Reducer				
Size/DN		e1	e2	L
Larger	Smaller			
1000	80	18.0	7.0	1760
1000	100	18.0	7.2	1720
1000	125	18.0	7.5	1660
1000	150	18.0	7.8	1610
1000	200	18.0	8.4	1510
1000	250	18.0	9.0	1410
1000	300	18.0	9.6	1320
1000	350	18.0	10.2	1340
1000	400	18.0	10.8	1250
1000	450	18.0	11.4	1160
1000	500	18.0	12.0	1070
1000	600	18.0	13.2	890
1000	700	18.0	14.4	700
1000	750	18.0	15.0	600
1000	800	18.0	15.6	600
1000	900	18.0	16.8	600
1100	80	19.2	7.0	2040
1100	100	19.2	7.2	2000
1100	125	19.2	7.5	2940
1100	150	19.2	7.8	1900
1100	200	19.2	8.4	1800
1100	250	19.2	9.0	1700
1100	300	19.2	9.6	1610
1100	350	19.2	10.2	1520
1100	400	19.2	10.8	1420
1100	450	19.2	11.4	1330
1100	500	19.2	12.0	1240
1100	600	19.2	13.2	1060
1100	700	19.2	14.4	870
1100	750	19.2	15.0	780
1100	800	19.2	15.6	600
1100	900	19.2	16.8	600
1100	1000	19.2	18.0	600

Double Flange Reducer				
Size/DN		e1	e2	L
Larger	Smaller			
1200	80	20.4	7.0	2150
1200	100	20.4	7.2	2100
1200	125	20.4	7.5	2050
1200	150	20.4	7.8	2000
1200	200	20.4	8.4	1900
1200	250	20.4	9.0	1800
1200	300	20.4	9.6	1710
1200	350	20.4	10.2	1620
1200	400	20.4	10.8	1520
1200	450	20.4	11.4	1440
1200	500	20.4	12.0	1350
1200	600	20.4	13.2	1160
1200	700	20.4	14.4	980
1200	750	20.4	15.0	890
1200	800	20.4	15.6	790
1200	900	20.4	16.8	790
1200	1000	20.4	18.0	790
1200	1100	20.4	19.2	790
1400	800	22.8	15.6	850
1400	900	22.8	16.8	850
1400	1000	22.8	18	850
1400	1100	22.8	19.2	850
1400	1200	22.8	20.4	850
1500	900	24.0	22.8	695
1500	1000	24.0	18.0	910
1500	1100	24.0	19.2	910
1500	1200	24.0	20.4	910
1500	1400	24.0	22.8	695
1600	1000	25.2	18.0	910
1600	1100	25.2	19.2	910
1600	1200	25.2	20.4	910
1600	1400	25.2	22.8	910
1600	1500	25.2	24.0	910

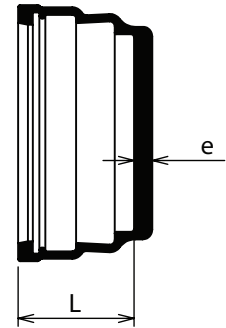
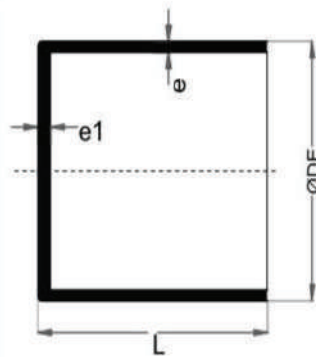
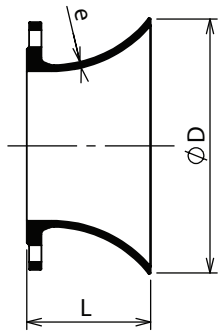


Dimensions in millimeters

All Flanged Cross				
Size/DN		e	L	H
DN	dn			
80	80	7.0	330	165
100	100	7.2	360	180
150	150	7.8	440	220
200	200	8.4	520	260
250	250	9.0	700	350
300	300	9.6	800	400
350	350	10.2	850	425
400	400	10.8	900	450
450	450	11.4	950	475
500	500	12.0	1000	500
600	600	13.2	1100	550
700	700	14.4	1200	600
750	750	15.0	1275	640
800	800	15.6	1350	675
900	900	16.8	1500	750
1000	1000	18.0	1650	825

All Socket Cross				
Size/DN		e	L	H
DN	dn			
80	80	7.0	170	85
100	100	7.2	190	95
150	150	7.8	255	125
200	200	8.4	315	155
250	250	9.0	375	190
300	300	9.6	440	220
350	350	10.2	500	250
400	400	10.8	560	280
450	450	11.4	620	310
500	500	12.0	680	340
600	600	13.2	800	400
700	700	14.4	925	460
750	750	15.0	985	490
800	800	15.6	1045	520
900	900	16.8	1170	585
1000	1000	18.0	1290	645

Note: Special Fittings are available as per customer requirements.



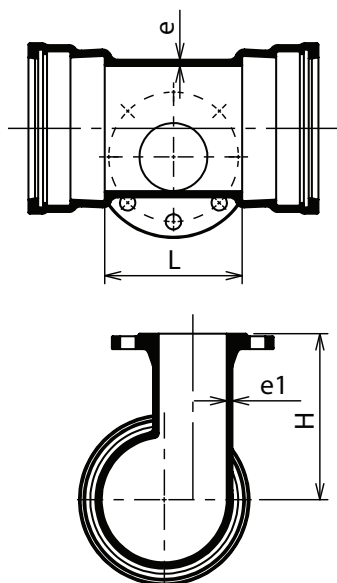
Dimensions in millimeters

Flanged Bell Mouth		
Size/DN	D	L
80	150	135
100	175	140
125	230	150
150	290	155
200	345	170
250	405	180
300	460	200
350	520	220
400	575	240
450	635	260
500	7560	275
600	865	300
700	925	360
750	980	380
800	1095	415
900	1210	450
1000	1325	485
1100	1140	520
1200	1670	590
1400	1785	625
1500	1900	660
1600	2130	730

Plug
Size/DN
80
100
125
150
200
250
300
350
400
450
500
600
700
750
800
900
1000
1100
1200
1400
1500
1600

End Cap		
Size/DN	e	L
80	16.0	105
100	16.0	105
125	16.0	110
150	17.0	120
200	19.0	120
250	21.5	125
300	23.5	130
350	26.0	130
400	28.0	130
450	30.0	140
500	32.5	140
600	37.0	140
700	34.5	175
800	38.0	185
900	39.0	200
1000	41.0	210
1100	44.5	225
1200	48.0	245

Note: Special Fittings are available as per customer requirements.



Dimensions in millimeters

**Double Socket Invert Tee
With Flanged Branch**

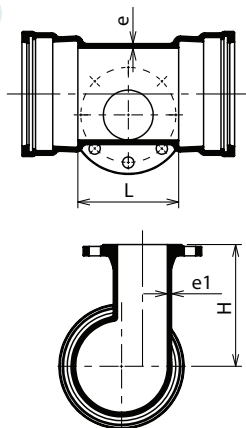
Size/DN		e	e1	L	H
Body	Branch				
80	80	7.0	7.0	170	165
100	80	7.2	7.0	170	175
100	100	7.2	7.2	190	180
125	80	7.5	7.0	170	190
125	100	7.5	7.2	195	195
125	125	7.5	7.5	225	200
150	80	7.8	7.0	170	205
150	100	7.8	7.2	195	210
150	150	7.8	7.8	255	220
200	80	8.4	7.0	175	235
200	100	8.4	7.2	200	240
200	150	8.4	7.8	255	250
200	200	8.4	8.4	315	260
250	80	9.0	7.0	180	265
250	100	9.0	7.2	200	270
250	150	9.0	7.8	260	280
250	200	9.0	8.4	315	290
250	250	9.0	9.0	375	300
300	80	9.6	7.0	180	295
300	100	9.6	7.2	210	300
300	150	9.6	7.8	260	310
300	200	9.6	8.4	325	320
300	250	9.6	9.0	380	330
300	300	9.6	9.6	440	340
350	80	10.2	7.0	185	325
350	100	10.2	7.2	205	330
350	150	10.2	7.8	265	340
350	200	10.2	8.4	325	350
350	250	10.2	9.0	380	360
350	300	10.2	9.6	440	370
350	350	10.2	10.2	495	380

**Double Socket Invert Tee
With Flanged Branch**

Size/DN		e	e1	L	H
Body	Branch				
400	80	10.8	7.0	185	355
400	100	10.8	7.2	210	360
400	150	10.8	7.8	270	370
400	200	10.8	8.4	325	380
400	250	10.8	9.0	385	390
400	300	10.8	9.6	440	400
400	400	10.8	10.8	560	420
450	80	11.4	7.0	190	385
450	100	11.4	7.2	215	390
450	150	11.4	7.8	270	400
450	200	11.4	8.4	330	410
450	250	11.4	9.0	390	420
450	300	11.4	9.6	445	430
450	400	11.4	10.8	560	450
450	450	11.4	11.4	620	460
500	80	12.0	7.0	195	415
500	100	12.0	7.2	215	420
500	150	12.0	7.8	275	430
500	200	12.0	8.4	330	440
500	250	12.0	9.0	390	450
500	300	12.0	9.6	450	460
500	350	12.0	10.2	505	470
500	400	12.0	10.8	565	480
500	500	12.0	10.12	680	500
600	80	13.2	7.0	200	475
600	100	13.2	7.2	220	480
600	150	13.2	7.8	280	490
600	200	13.2	8.4	340	500
600	300	13.2	9.6	455	520
600	400	13.2	10.8	570	540
600	500	13.2	12.0	685	560
600	600	13.2	13.2	800	580

Note: Special Fittings are available as per customer requirements.

Special Fittings



Dimensions in millimeters

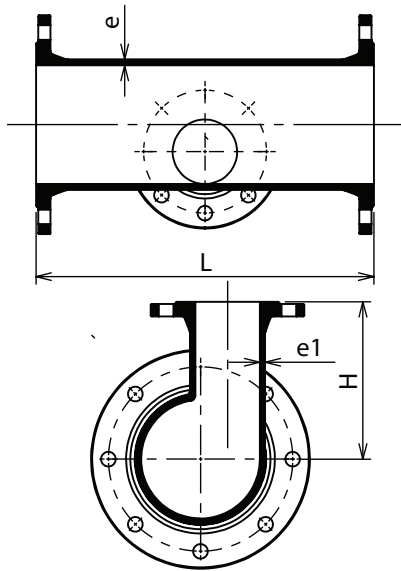
**Double Socket Invert Tee
With Flanged Branch**

Size/DN		e	e1	L	H
Body	Branch				
700	100	14.4	7.2	230	510
700	150	14.4	7.8	285	520
700	200	14.4	8.4	345	525
700	300	14.4	9.6	460	540
700	400	14.4	10.8	557	555
700	500	14.4	12.0	690	570
700	600	14.4	13.2	810	585
700	700	14.4	14.4	925	600
750	100	15.0	7.2	230	540
750	150	15.0	7.8	290	550
750	200	15.0	8.4	345	555
750	300	15.0	9.6	465	570
750	400	15.0	10.8	580	585
750	500	15.0	12.0	695	600
750	600	15.0	13.2	810	615
750	700	15.0	14.4	925	630
750	750	15.0	15.0	985	640
800	100	15.6	7.2	235	570
800	150	15.6	7.8	290	580
800	200	15.6	8.4	350	585
800	300	15.6	9.6	465	600
800	400	15.6	12.0	580	615
800	500	15.6	14.4	700	630
800	600	15.6	15.6	815	645
800	700	15.6	7.8	930	660
800	800	15.6	10.8	1045	675
900	150	16.8	7.8	300	640
900	200	16.8	8.4	355	645
900	400	16.8	10.8	590	675
900	600	16.8	13.2	820	705
900	800	16.8	15.6	1050	735
900	900	16.8	16.8	1170	750
1000	150	18.0	7.8	305	700

**Double Socket Invert Tee
With Flanged Branch**

Size/DN		e	e1	L	H
Body	Branch				
1000	200	18.0	8.4	360	705
1000	400	18.0	10.8	595	735
1000	600	18.0	13.2	1290	765
1000	800	18.0	15.6	1290	795
1000	1000	18.0	18.0	1290	825
1100	200	19.2	8.4	370	765
1100	400	19.2	10.8	600	795
1100	600	19.2	13.2	830	825
1100	800	19.2	15.6	1065	855
1100	1000	19.2	18.0	1295	885
1100	1100	19.2	19.2	1410	900
1200	200	20.4	8.4	375	825
1200	400	20.4	10.8	605	855
1200	600	20.4	13.2	840	885
1200	800	20.4	15.6	1070	915
1200	1000	20.4	18.0	1300	945
1200	1200	20.4	20.4	1535	957
1400	400	22.8	10.8	800	950
1400	600	22.8	13.2	1030	980
1400	800	22.8	15.6	1260	1010
1400	1000	22.8	18.0	1495	1040
1400	1200	22.8	20.4	1725	1070
1400	1400	22.8	22.8	1960	1100
1500	400	24.0	10.8	805	1005
1500	600	24.0	13.2	1035	1035
1500	800	24.0	15.6	1270	1065
1500	1000	24.0	18.0	1500	1095
1500	1200	24.0	20.4	1730	1125
1500	1400	24.0	22.8	1965	1155
1500	1500	24.0	24.0	2080	1170
1600	400	25.2	10.8	810	1060
1600	600	25.2	13.2	1040	1090
1600	800	25.2	15.6	1275	1120
1600	1000	25.2	18.0	1505	1150
1600	1200	25.2	20.4	1740	1180
1600	1400	25.2	22.8	1970	1210
1600	1600	25.2	25.2	2200	1240

Note: Special Fittings are available as per customer requirements.



Dimensions in millimeters

All Flanged Invert Tee

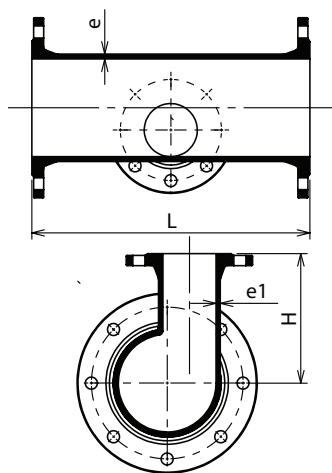
Size/DN		e	e1	L	H
Body	Branch				
80	80	7.0	7.0	330	165
100	80	7.2	7.0	360	175
100	100	7.2	7.2	360	180
125	80	7.5	7.0	400	190
125	100	7.5	7.2	400	195
125	125	7.5	7.5	400	200
150	80	7.8	7.0	440	205
150	100	7.8	7.2	440	210
150	150	7.8	7.8	440	220
200	80	8.4	7.0	520	235
200	100	8.4	7.2	520	240
200	150	8.4	7.8	520	250
200	200	8.4	8.4	520	260
250	80	9.0	7.0	700	235
250	100	9.0	7.2	700	275
250	150	9.0	7.8	700	325
250	200	9.0	8.4	700	325
250	250	9.0	9.0	700	350
300	80	9.6	7.0	800	265
300	100	9.6	7.2	800	300
300	150	9.6	7.8	800	350
300	200	9.6	8.4	800	350
300	250	9.6	9.0	800	350
300	300	9.6	9.6	800	400
350	80	10.2	7.0	850	295
350	100	10.2	7.2	850	325
350	150	10.2	7.8	850	325
350	200	10.2	8.4	850	325
350	250	10.2	9.0	850	325
350	300	10.2	9.6	850	425
350	350	10.2	10.2	850	425

All Flanged Invert Tee

Size/DN		e	e1	L	H
Body	Branch				
400	80	10.8	7.0	900	325
400	100	10.8	7.2	900	350
400	150	10.8	7.8	900	350
400	200	10.8	8.4	900	350
400	250	10.8	9.0	900	350
400	300	10.8	9.6	900	450
400	400	10.8	10.8	900	450
450	80	11.4	7.0	950	355
450	100	11.4	7.2	950	375
450	150	11.4	7.8	950	375
450	200	11.4	8.4	950	375
450	250	11.4	9.0	950	375
450	300	11.4	9.6	950	475
450	400	11.4	10.8	950	475
450	450	11.4	11.4	950	475
500	80	12.0	7.0	1000	385
500	100	12.0	7.2	1000	400
500	150	12.0	7.8	1000	400
500	200	12.0	8.4	1000	400
500	250	12.0	9.0	1000	400
500	300	12.0	9.6	1000	500
500	350	12.0	10.2	1000	500
500	400	12.0	10.8	1000	500
500	500	12.0	12.0	1000	500
600	80	13.2	7.0	1100	445
600	100	13.2	7.2	1100	450
600	150	13.2	7.8	1100	450
600	200	13.2	8.4	1100	450
600	250	13.2	9.6	1100	550
600	300	13.2	9.6	1100	550
600	400	13.2	10.8	1100	550
600	500	13.2	12.0	1100	550
600	600	13.2	13.2	1100	550

Note: Special Fittings are available as per customer requirements.

Special Fittings



Dimensions in millimeters

All Flanged Invert Tee

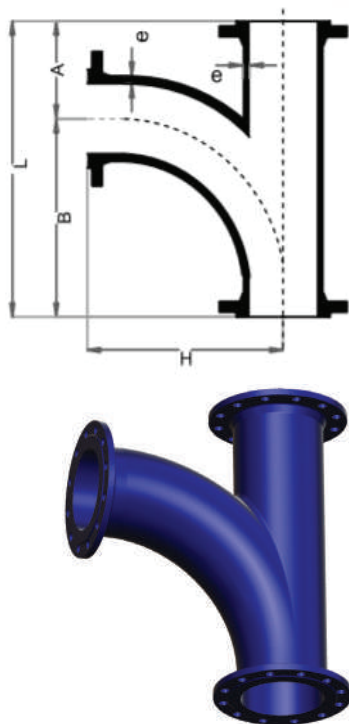
Size/DN		e	e1	L	H
Body	Branch				
700	100	14.4	7.2	540	510
700	150	14.4	7.8	600	520
700	200	14.4	8.4	650	525
700	300	14.4	9.6	760	540
700	400	14.4	10.8	870	55
700	500	14.4	12.0	1000	570
700	600	14.4	13.2	1200	585
700	700	14.4	14.4	1200	600
750	100	15.0	7.2	550	540
750	150	15.0	7.8	610	550
750	200	15.0	8.4	670	555
750	300	15.0	9.6	780	570
750	400	15.0	10.8	890	585
750	500	15.0	12.0	1020	600
750	600	15.0	13.2	1130	615
750	700	15.0	14.4	1250	630
750	750	15.0	15.0	1275	640
800	100	15.6	7.2	560	570
800	150	15.6	7.8	620	580
800	200	15.6	8.4	690	585
800	300	15.6	9.6	800	600
800	400	15.6	10.8	910	615
800	500	15.6	12.0	1030	630
800	600	15.6	13.2	1350	645
800	700	15.6	14.4	1350	660
800	800	15.6	15.6	1350	675
900	150	16.8	7.8	650	640
900	200	16.8	8.4	730	645
900	400	16.8	10.8	950	675
900	600	16.8	13.2	1500	705
900	800	16.8	15.6	1500	735
900	900	16.8	16.8	1500	750

All Flanged Invert Tee

Size/DN		e	e1	L	H
Body	Branch				
1000	150	18.0	7.8	720	700
1000	200	18.0	8.4	770	705
1000	400	18.0	10.8	990	735
1000	600	18.0	13.2	1650	765
1000	800	18.0	15.6	1650	795
1000	1000	18.0	18.0	1650	825
1100	200	19.2	8.4	760	765
1100	400	19.2	10.8	980	795
1100	600	19.2	13.2	1210	825
1100	800	19.2	15.6	1470	855
1100	1000	19.2	18.0	1690	885
1100	1100	19.2	19.2	1900	900
1200	200	20.4	8.4	780	825
1200	400	20.4	10.8	1070	855
1200	600	20.4	13.2	1240	885
1200	800	20.4	15.6	1470	915
1200	1000	20.4	18.0	1700	945
1200	1200	20.4	20.4	1950	975
1400	400	22.8	10.8	1050	950
1400	600	22.8	13.2	1550	980
1400	800	22.8	15.6	1760	1010
1400	1000	22.8	18.0	2015	1040
1400	1200	22.8	20.4	2015	1070
1400	1400	22.8	22.8	2200	1100
1500	400	24.0	10.8	1070	1005
1500	600	24.0	13.2	1350	1035
1500	800	24.0	15.6	1570	1065
1500	1000	24.0	18.0	1790	1095
1500	1200	24.0	20.4	2010	1125
1500	1400	24.0	22.8	2230	1155
1500	1500	24.0	24.0	2340	1170
1600	400	25.2	10.8	1100	1060
1600	600	25.2	13.2	1600	1090
1600	800	25.2	15.6	1835	1120
1600	1000	25.2	18.0	2065	1150
1600	1200	25.2	20.4	2300	1180
1600	1400	25.2	22.8	2300	1210
1600	1600	25.2	25.2	2480	1240

Note: Special Fittings are available as per customer requirements.

Dimensions in millimeters



Body		All Flanged Radial Tee				
Size/DN		e	A	B	H	L
	Branch					
80	80	7.0	165	380	380	545
100	100	7.2	180	400	400	580
150	150	7.8	220	450	450	670
200	200	8.4	260	500	500	760
250	250	9.0	350	550	550	900
300	300	9.6	400	600	600	1000
350	350	10.2	450	650	650	1100
400	400	10.8	500	700	700	1200
450	450	11.4	550	750	750	1300
500	500	12.0	600	800	800	1400
600	600	13.2	700	900	900	1600
700	700	14.4	800	1000	1000	1800
800	800	15.6	900	1100	1100	2000
900	900	16.8	1000	1200	1200	2200
1000	1000	18.0	1100	1300	1300	2400
1100	1100	19.2	1200	1400	1400	2600
1200	1200	20.4	1300	1500	1500	2800

**Double Flanged Pipe**

Size/DN

80
100
125
150
200
250
300
350
400
450
500
600
700
750
800
900
1000
1100
1200
1400
1500
1600

**Flanged Spigot Pipe With Puddle**

Size/DN

80
100
125
150
200
250
300
350
400
450
500
600
700
750
800
900
1000
1100
1200
1400
1500
1600

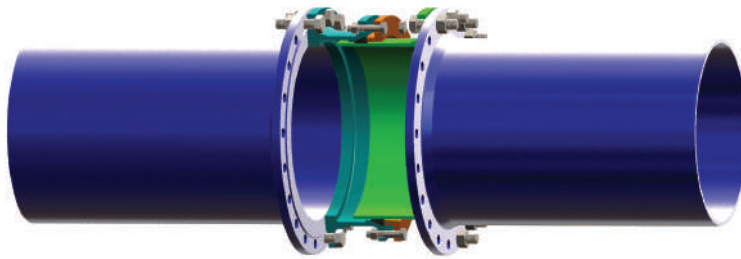
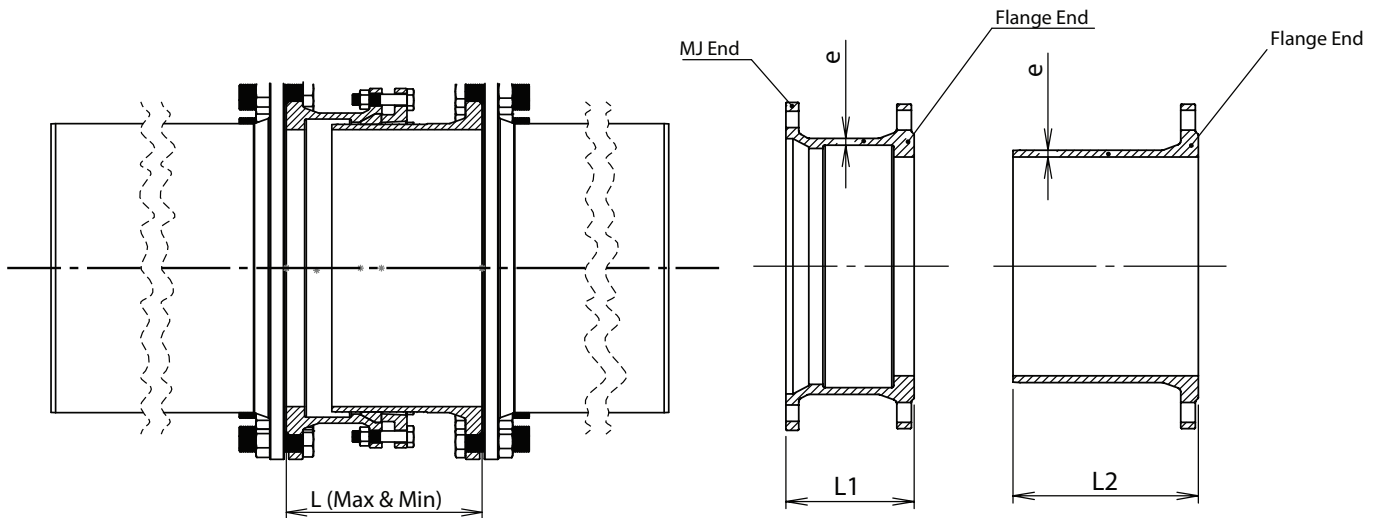
Note: Special Fittings are available as per customer requirements.



Dimensions in millimeters

Double Flanged Pipe With Puddle
Size/DN
80
100
125
150
200
250
300
350
400
450
500
600
700
750
800
900
1000
1100
1200
1400
1500
1600

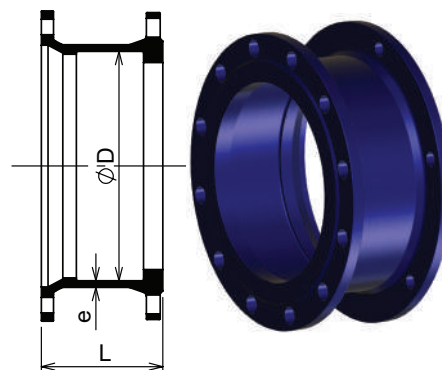
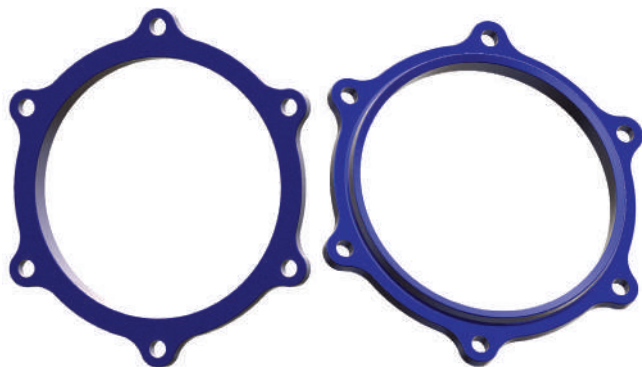
Socket Flanged Pipe
Size/DN
80
100
125
150
200
250
300
350
400
450
500
600
700
750
800
900
1000
1100
1200
1400
1500
1600



Dimensions in millimeters

Dismantling Joints						
Size/DN	L (approx.)		L1	L2	L3	e
	Max.	Min.				
80	315	250	150	225	150	7.0
100	315	250	150	225	150	7.2
150	345	270	160	245	155	7.8
200	360	275	180	250	160	8.4
250	365	290	180	260	170	9.0
300	375	295	180	260	170	9.6
350	375	300	180	265	170	10.2
400	415	335	200	300	175	10.8
450	415	335	200	300	190	11.4
500	430	350	210	310	190	12.0
600	450	375	210	330	190	13.2
700	485	395	225	350	210	14.4
750	500	410	230	360	210	15.0
800	500	410	230	360	210	15.6
900	515	425	240	370	210	16.8
1000	535	445	250	385	210	18.0
1100	550	455	260	395	220	19.2
1200	565	470	270	405	225	20.4

Note: Special Fittings are available as per customer requirements.

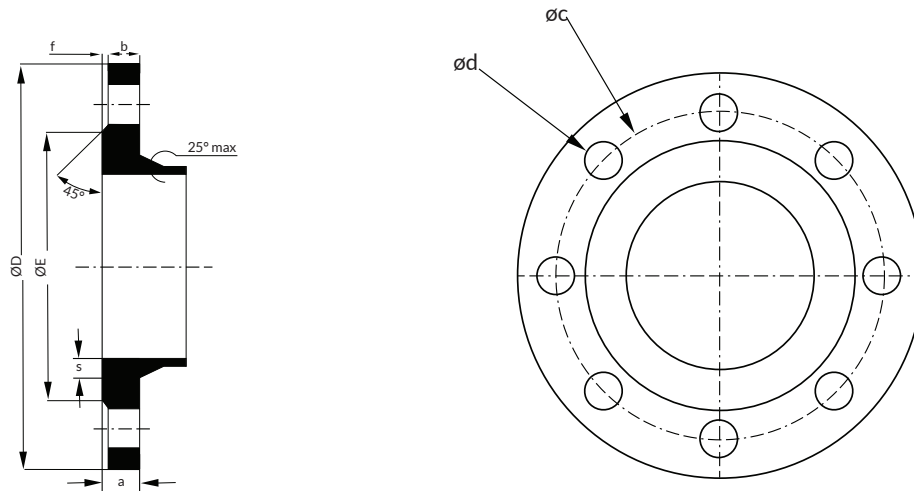


Dimensions in millimeters

Mechanical Joint Gland
Size/DN
80
100
125
150
200
250
300
350
400
450
500
600
700
750
800
900
1000
1100
1200
1400
1500
1600

Flanged Adaptor
Size/DN
80
100
125
150
200
250
300
350
400
450
500
600
700
750
800
900
1000
1100
1200
1400
1500
1600

Note: Special Fittings are available as per customer requirements.



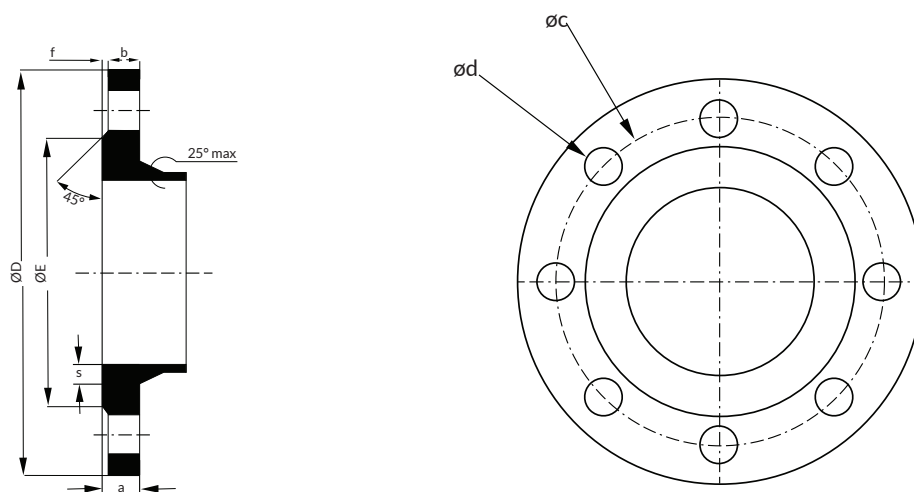
Dimensions in millimeters

Dimension Chart as per PN 10

Nominal DIA DN	D	E	C	b	f	a	s	No of Holes	Hole DIA (Ød)	Bolt Size in Metric
80	200	132	160	16.0	3	19.0	15.0	*4/8	19	M16
100	220	156	180	16.0	3	19.0	15.0	8	19	M16
125	250	184	210	16.0	3	19.0	15.0	8	19	M16
150	285	211	240	16.0	3	19.0	15.0	8	23	M20
200	340	266	295	17.0	3	20.0	15.0	8	23	M20
250	*395/400	319	350	19.0	3	22.0	16.0	12	23	M20
300	*445/455	370	400	20.5	4	24.5	17.5	12	23	M20
350	505	429	460	20.5	4	24.5	19.5	16	23	M20
400	565	480	515	20.5	4	24.5	19.5	16	28	M24
450	615	530	565	*21.0/21.5	4	25.5	20.0	20	28	M24
500	670	582	620	22.5	4	26.5	21.0	20	28	M24
600	780	682	725	25.0	5	30.0	24.0	20	31	M27
700	895	794	840	27.5	5	32.5	24.0	24	31	M27
750	960	857	900	29.0	5	34.0	24.0	24	31	M27
800	1015	901	950	30.0	5	35.0	24.5	24	34	M30
900	1115	1001	1050	32.5	5	37.5	26.5	28	34	M30
1000	1230	1112	1160	35.0	5	40.0	28.0	28	37	M33
1100	1340	1231	1270	*38.0/38.5	5	43.0	30.0	*28/32	37	M33
1200	1455	1328	1380	40.0	5	45.0	31.5	32	*40/41	M36
1400	1675	1530	1590	41.0	5	46.0	32.0	36	*43/44	M39
1600	1915	1750	1820	44.0	5	49.0	34.5	40	*49/50	M45

*IS 8329:2000/EN 1092-2:1997

Note: Tolerances as per IS 8329:2000 and EN 1092-2:1997



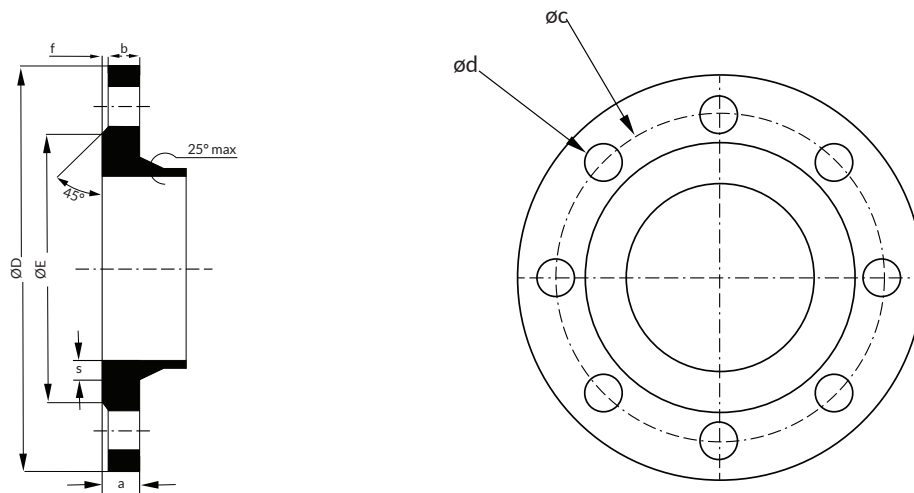
Dimensions in millimeters

Dimension Chart as per PN 16

Nominal DIA DN	D	E	C	b	f	a	s	No of Holes	Hole DIA (ϕd)	Bolt Size in Metric
80	200	132	160	16.0	3	19.0	15.0	8	19	M16
100	220	156	180	16.0	3	19.0	15.0	8	19	M16
125	250	184	210	16.0	3	19.0	15.0	8	19	M16
150	285	211	240	16.0	3	19.0	15.0	8	23	M20
200	340	266	295	17.0	3	20.0	16.0	12	23	M20
250	400	319	355	19.0	3	22.0	17.5	12	28	M24
300	455	370	410	20.5	4	24.5	19.5	12	28	M24
350	520	429	470	22.5	4	26.5	21.0	16	28	M24
400	580	480	525	24.0	4	28.0	22.5	16	31	M27
450	640	548	585	26.0	4	30.0	24.0	20	31	M27
500	715	609	650	27.5	4	31.5	25.0	20	34	M30
600	840	720	770	31.0	5	36.0	27.0	20	37	M33
700	910	794	840	34.5	5	39.5	27.5	24	37	M33
750	970	857	900	36.0	5	41.0	28.0	24	37	M33
800	1025	901	950	38.0	5	43.0	30.0	24	*40/41	M36
900	1125	1001	1050	*41.0/41.5	5	46.0	32.5	28	*40/41	M36
1000	1255	1112	1170	45.0	5	50.0	35.0	28	*43/44	M39
1100	1355	1218	1270	48.5	5	53.5	37.5	32	*43/44	M39
1200	1485	1328	1390	52.0	5	57.0	40.0	32	*49/50	M45
1400	1685	1530	1590	55.0	5	60.0	42.0	36	*49/50	M45
1600	1930	1750	*1620/1820	60.0	5	65.0	45.5	40	*56/57	M52

*IS 8329:2000/EN 1092-2:1997

Note: Tolerances as per IS 8329:2000 and EN 1092-2:1997



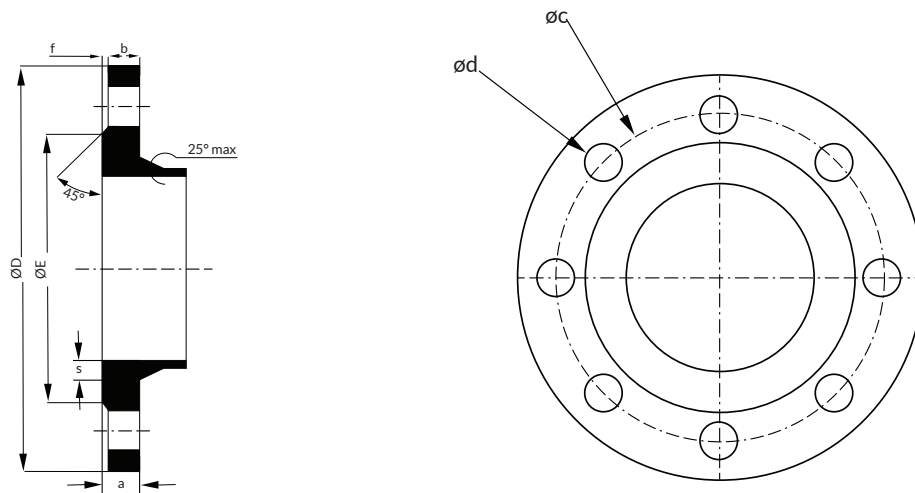
Dimensions in millimeters

Dimension Chart as per PN 25

Nominal DIA DN	D	E	C	b	f	a	s	No of Holes	Hole DIA (Ød)	Bolt Size in Metric
80	200	132	160	16.0	3	19.0	15.0	8	19	M16
100	235	156	190	16.0	3	19.0	15.0	8	23	M20
125	270	184	220	16.0	3	19.0	15.0	8	28	M24
150	300	211	250	17.0	3	20.0	16.0	8	28	M24
200	360	274	310	19.0	3	22.0	17.5	12	28	M24
250	425	330	370	21.5	3	24.5	19.5	12	31	M27
300	485	389	430	23.5	4	27.5	22.0	16	31	M27
350	555	448	490	26.0	4	30.0	24.0	16	34	M30
400	620	503	550	28.0	4	32.0	25.5	16	37	M33
450	670	548	600	30.5	4	34.5	27.5	20	37	M33
500	730	609	660	32.5	4	36.5	29.0	20	37	M33
600	845	720	770	37.0	5	42.0	33.5	20	*40/41	M36
700	960	820	875	41.5	5	46.5	33.5	24	*43/44	M39
750	1020	883	940	45.0	5	50.0	34.0	24	43	M39
800	1085	928	990	46.0	5	51.0	35.5	24	*49/50	M45
900	1185	1028	1090	50.5	5	55.5	39.0	28	*49/50	M45
1000	1320	1140	1210	55.0	5	60.0	42.0	28	*56/57	M52
1100	1420	1240	1310	*60.5/59.5	5	65.5	45.0	32	*56/57	M52
1200	1530	1350	1420	64.0	5	69.0	48.5	32	*56/57	M52
1400	1755	1560	1640	69.0	5	74.0	52.0	36	62	M56
1600	1975	1780	1860	76.0	5	81.0	56.5	40	62	M56

*IS 8329:2000/EN 1092-2:1997

Note: Tolerances as per IS 8329:2000 and EN 1092-2:1997

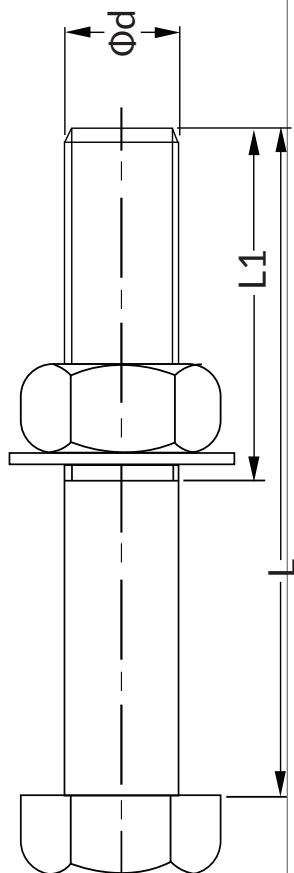


Dimensions in millimeters

Dimension Chart as per PN 40										
Nominal DIA DN	D	E	C	b	f	a	s	No of Holes	Hole DIA (ϕx)	Bolt Size in Metric
80	200	132	160	16.0	3	19.0	15.0	8	19	M16
100	235	166	190	16.0	3	19.0	15.0	8	23	M20
125	270	184	220	20.5	3	23.5	16.5	8	28	M24
150	300	211	250	23.0	3	26.0	18.0	8	28	M24
200	375	284	320	27.0	3	30.0	21.0	12	31	M27
250	450	345	385	31.5	3	34.5	24.0	12	34	M30
300	515	409	450	35.5	4	39.5	27.5	16	34	M30
350	580	465	510	40.0	4	44.0	31.0	16	37	M33
400	660	535	585	44.0	4	48.0	33.5	16	*40/41	M36
450	685	560	610	*46.0/45.0	4	50.0	35.0	20	*40/41	M36
500	755	615	670	48.0	4	52.0	36.5	20	*43/44	M39
600	890	735	795	53.0	5	58.0	40.5	20	*49/50	M45

*IS 8329:2000/EN 1092-2:1997

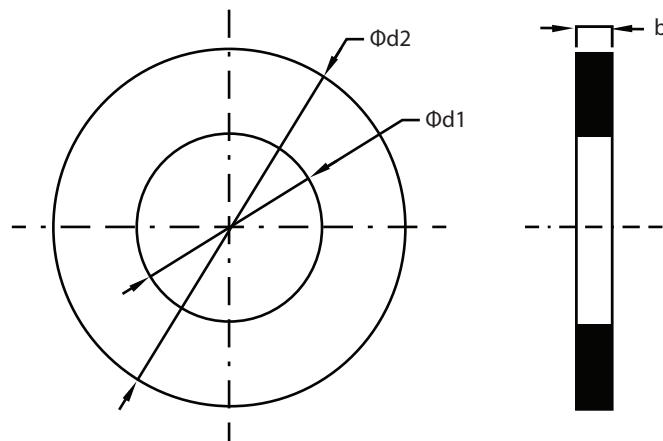
Note: Tolerances as per IS 8329:2000 and EN 1092-2:1997



Dimensions in millimeters

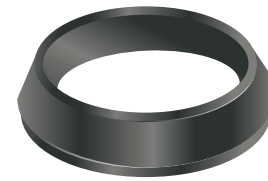
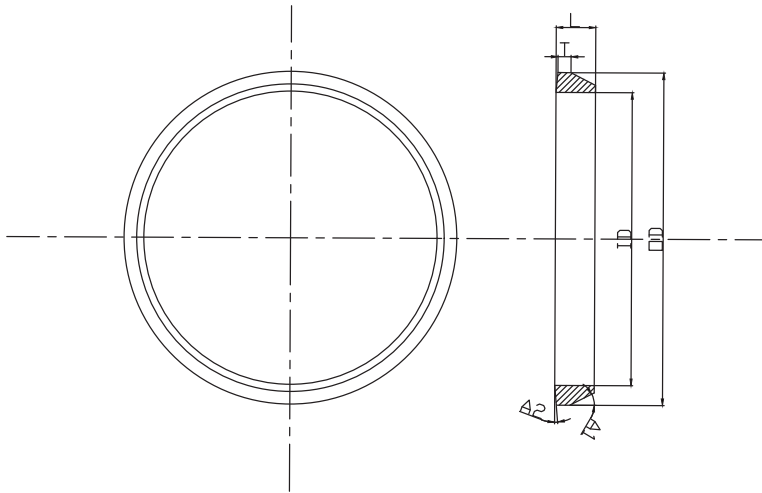
Bolts and Nuts for Flanges

Nominal DIA DN	PN - 10				PN - 16				PN - 25				PN - 40			
	Bolt Size	No. of nuts & bolts set	(L)	App. Wt.	Bolt Size	No. of nuts & bolts set	(L)	App. Wt.	Bolt Size	No. of nuts & bolts set	(L)	App. Wt.	Bolt Size	No. of nuts & bolts set	(L)	App. Wt.
80	M16	4	85.00	0.23	M16	8	85.00	0.23	M16	8	85.00	0.23	M16	8	85.00	0.23
100	M16	8	90.00	0.24	M16	8	90.00	0.24	M20	8	100.00	0.41	M20	8	100.00	0.41
125	M16	8	90.00	0.24	M16	8	90.00	0.24	M24	8	110.00	0.71	M24	8	110.00	0.71
150	M20	8	100.00	0.41	M20	8	100.00	0.41	M24	8	110.00	0.71	M24	8	110.00	0.71
200	M20	8	100.00	0.41	M20	12	100.00	0.41	M24	12	110.00	0.71	M27	12	130.00	1.01
250	M20	12	110.00	0.56	M24	12	110.00	0.56	M27	12	130.00	1.01	M30	12	140.00	1.35
300	M20	12	120.00	0.58	M24	12	130.00	0.58	M27	16	1130.00	1.01	M30	16	140.00	1.35
350	M20	16	130.00	0.58	M24	16	130.00	0.58	M30	16	140.00	1.35	--	--	--	--
400	M24	16	140.00	0.91	M27	16	150.00	0.91	M33	16	1150.00	1.75	--	--	--	--
450	M24	20	130.00	0.83	M27	20	130.00	0.83	M33	20	150.00	1.75	--	--	--	--
500	M24	20	150.00	0.99	M30	20	160.00	0.99	M33	20	160.00	1.85	--	--	--	--
600	M27	20	170.00	1.37	M33	20	180.00	1.37	M36	20	180.00	2.46	--	--	--	--
700	M27	24	150.00	1.24	M33	24	150.00	1.24	M39	24	1180.00	2.91	--	--	--	--
750	M27	24	160.00	1.28	M33	24	160.00	1.28	M39	24	190.00	3.01	--	--	--	--
800	M30	24	160.00	1.66	M36	24	160.00	1.66	M45	24	1190.00	4.71	--	--	--	--
900	M30	28	180.00	1.76	M36	28	180.00	1.76	M45	28	230.00	4.71	--	--	--	--
1000	M33	28	160.00	2.14	M39	28	180.00	2.14	M52	28	230.00	7.44	--	--	--	--
1100	M33	28	180.00	2.35	M39	32	210.00	2.35	M52	32	230.00	7.54	--	--	--	--
1200	M36	32	1180.00	3.61	M45	32	210.00	3.61	M52	32	1260.00	8.04	--	--	--	--
1400	M39	36	180.00	4.37	M45	36	230.00	4.37	M56	36	260.00	9.30	--	--	--	--
1600	M45	40	190.00	4.87	M52	40	230.00	5.94	M56	40	260.00	9.30	--	--	--	--

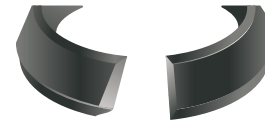


Dimensions in millimeters

Dimension detail of Rubber Gasket for Flange Joints						
Nominal DIA DN	d1	b	PN10 d2	PN16 d2	PN25 d2	PN40 d2
80	84.0	3	132	132	132	132
100	103.6	3	156	156	156	156
125	129.0	3	184	184	184	184
150	154.4	3	211	211	211	211
200	205.2	3	266	266	274	284
250	256.0	3	319	319	330	345
300	306.8	3	370	370	389	389
350	357.6	3	429	429	448	448
400	407.4	3	480	480	503	535
450	457.2	3	527	548	548	560
500	508.0	3	582	609	609	615
600	608.6	3	682	720	720	735
700	709.2	5	794	794	820	--
750	760.0	5	857	857	883	--
800	810.8	5	901	901	928	--
900	911.4	5	1001	1001	1028	--
1000	1012.0	5	1112	1112	1140	--
1100	1113.6	5	1231	1218	1240	--
1200	1214.2	5	1328	1328	1350	--
1400	1416.4	5	1530	1530	1560	--
1600	1617.6	5	1750	1750	1780	--



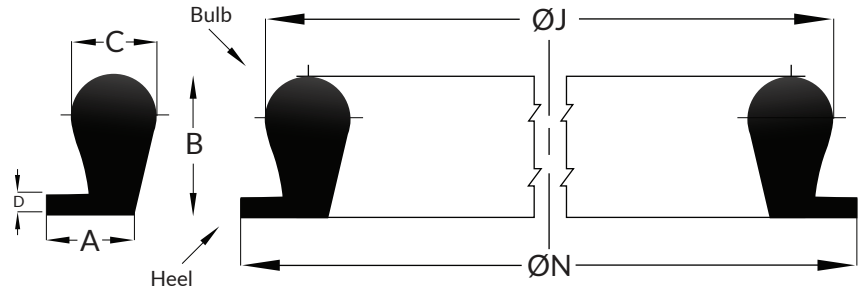
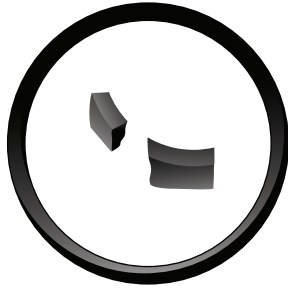
Rubber Gasket for Mechanical Joint



Rubber Gasket Cross Section

Dimensions in millimeters

Dimension Detail for MJ Rubber Gasket						
Nominal DIA DN	OD	ID	L	T	A1	A2
80	126	98	27	8	27°	5°
100	148	118	27	8	27°	5°
150	200	170	27	8	27°	5°
200	252	222	29	10	27°	5°
250	306	274	31	10	27°	5°
300	358	326	32	10	27°	5°
350	413	378	36	12	27°	5°
400	464	429	36	12	27°	5°
450	520	480	40	12	27°	5°
500	573	532	44	14	27°	5°
600	678	635	47	15	27°	5°
700	788	738	50	16	27°	5°
750	840	790	50	16	27°	5°
800	892	842	53	17	27°	5°
900	995	945	55	19	27°	5°
1000	1098	1048	57	21	27°	5°
1100	1220	1152	60	24	27°	5°
1200	1324	1255	60	24	27°	5°
1400	--	--	--	--	--	--
1600	--	--	--	--	--	--



Dimensions in millimeters

Rubber Gasket For Push-on Joints

Nominal Diameter	Bulb		Heel			Height	Appx. Wt.
DN	C	ØJ	A	D	ØN	B	Kg
80	16	122.0	10.0	5.0	124.0	26.0	0.130
100	16	142.0	10.0	5.0	144.0	26.0	0.145
125	16	169.0	10.0	5.0	171.0	26.0	0.175
150	16	196.0	10.0	5.0	198.0	26.0	0.215
200	18	252.5	10.0	6.0	254.6	30.0	0.340
250	18	305.0	11.0	6.0	308.0	32.0	0.490
300	20	362.5	12.0	7.0	364.5	34.0	0.635
350	20	416.0	12.0	7.0	418.0	34.0	0.740
400	22	472.0	13.0	8.0	474.0	36.0	1.020
450	22	525.0	13.0	8.0	527.0	38.0	1.080
500	24	580.0	14.0	9.0	582.0	43.0	1.480
600	26	689.0	15.0	10.0	601.0	46.0	2.200
700	29	799.0	17.5	10.0	801.5	51.0	3.050
750	30	854.0	18.5	10.3	856.5	52.3	3.450
800	30	906.0	18.5	10.3	908.5	52.5	3.650
900	30	1009.0	18.5	10.3	1012.0	52.9	5.385
1000	30	1118.0	18.5	10.3	11120.0	52.9	6.800
1200	-	-	-	-	-	-	-
1400	-	-	-	-	-	-	-
1600	-	-	-	-	-	-	-

Tolerances on dimensions of Rubber Gaskets for Push-on Joint

Dimension (mm)	Nominal Diameter (mm)	Tolerance (mm)
Bulb		
C	80 to 600	±0.5
	700 to 1050	±1.0
ØJ	80 to 125	±1.0
	150 to 300	±1.5
	350 to 400	±2.0
	450 to 500	±3.0
	700 to 800	±4.0
	900 to 1050	±5.0
Heel		
A	80 to 250	±0.3
	300 to 450	±0.4
	500 to 1050	±0.5
	80 to 250	±0.3
	300 to 700	±0.4
	750 to 1050	±0.5
ØN	80 to 125	±1.0
	150 to 200	±1.3
	350 to 400	±2.0
	430 to 600	±3.0
	700 to 800	±4.0
	900 to 1050	±5.0
B	80 to 150	±0.5
	200 to 500	±0.8
	700 to 1050	±1.0

					
Kitemark™ Certificate					
This is to certify that:		Rashmi Metals Limited (DIP Division) VSI-Copinhathpur PO-Chungang,Chungang, Paschim Medinipur West Bengal 721301 India			
Holds Certificate Number:		KM 793696			
In respect of:		BS EN 545 Ductile iron pipes, fittings, accessories and their joints for water pipelines			
This issues the right and licence to use the Kitemark in accordance with the Kitemark Terms and Conditions governing the use of the Kitemark, as may be updated from time to time by BSI Assurance UK Ltd (the "Conditions"). All defined terms in this Certificate shall have the same meaning as in the Conditions. The use of the Kitemark is authorized in respect of the Product(s) detailed on the Certificate provided at or from the above address.					
		 Shahn Barham, Group Product Certification Director			
For and on behalf of BSI:					
First Issued: 2023-09-28 Latest Issue: 2023-09-28		Effective Date: 2023-09-28 Expiry Date: 2026-09-25			
		Page 1 of 7			

This certificate has been issued by and remains the property of BSI Assurance UK Limited, Kitemark Court, 389, Marsh Road, Weybridge, Surrey, Middlesex, TW20 9BS, United Kingdom and should be returned immediately upon request.

To check the validity telephone +44 (0) 1845 660100, an electronic certificate can be authenticated [online](#).

BSI Assurance UK Limited, registered in England under number 7893321 at 389 Marsh Road, Weybridge, Surrey TW20 9BS, UK.
A member of BSI Group of Companies.

	 आजोबा अमृत महोत्सव	 भारतीय सरकार Government of India	भारतीय मानक ब्यूरो भारत सरकार, भारत के मंत्रालय में अखिल भारतीय प्रशासन BUREAU OF INDIAN STANDARDS Ministry of Commerce & Industries, Food & Public Distribution Department of India
डिपॉजिटरी/Depo No: S1002230886		दिनांक/Date: 13.06.2023	
विषय: भारतीय मानक अधिनियम, 1986 के अनुसार की जांच पर आधारित उत्पाद वर्गीकरण सहसंकेत संख्या CML: S1002230886 की प्राप्ति।			
Subject: Grant of BIS Product Certification License No. - CML/S1002230886 as per IS:829-2000			
निर्माता का नाम/Manufacturer (फैक्ट्री का पता/Factory Address)			
निदेशन एगेंट/काउन्सलर, ए.पी. मोदी, डीएमएच सीएससी नॉटिफिकेशन – 721301 सीएससी राजस्थान			
M/s. Rajesh Machine Tools Pvt Ltd VSI Corporation, PO-Chengalpet, Kharagpur Paschim Medinipur-721301 West Bengal			
ट्रेड मार्क/Trade Mark, Draw Number/DWG No.,			
आगे के अंतर्देष्टे के चरणों में, हमने आपको यह सूचित करने की प्रक्रिया शुरू की है कि आपकी विशिष्टताओं को ध्यान में रखते हुए आपका प्रमाणन के अंतर्गत होना और आपका प्रमाणन मुद्रांकन आवश्यक बनाया गया है।			
With reference to your application, we are pleased to inform you that the Certification Marks License has been granted to you to use the Standard Mark in respect of the following:-			
अंतर्देष्टे/Products: CENTIFUGALLY CAST (SPIN) DUCTILE IRON PRESSURE PIPES FOR WATER, GAS AND SEWAGE.			
केंद्र/Center/Plant/Facility/Type/विशेषता/Variety: Centrifugally Cast (Spin) Ductile Iron Pressure Pipes For Water, Gas And Sewage, Class Designation K3, Pressure Rating PN 10 and PN 16, Type of Pipe 1. Flanged Pipes Welded, Nominal Size DN 80 mm up to and including DN 600 mm and 2. Flanged Pipes Soldered, Nominal Size DN 80 mm up to and including DN 650 mm.			
भारतीय मानक अधिनियम, 1986 के अनुसार/As per IS:829-2000			
भारतीय मानक के अधिनियम द्वारा पूर्ण रूप से नियंत्रित उत्पादों को पहचानने के लिए, इस लाइसेंस प्रदान किया गया है।			

QUALITY CERTIFICATES

BUREAU VERITAS
Certification

Certificate of Conformity
Awarded to:

RASHMI METALIKS LTD (DIP Division)
HEAD OFFICE:
Premata Building, 39, Shaheed-Saras, Kolkata, West Bengal, PIN – 700017 INDIA
PRODUCTION PLANT:
Mouza-Changsal, Jetha, Gopinathpur, J.L. n° 359, 360 & 361, NH-16 Kharagpur, Paschim Medinipur, West Bengal – 721301 INDIA

Bureau Veritas Italia S.p.A. certify that the following products:
Ductile iron fittings for pipes for water and sewerage applications
from DN 80 to DN 1200
Commercial Brand
RASHMI

Designed and produced by Rashmi Metaliks Limited
have been evaluated and found in conformity against the requirements of the following standard:

EN 545:2006 ISO 2531:1998 Ductile iron pipes, fittings, accessories and their joints for water application	EN 598:2007+A1:2009 ISO 7186:2011 Ductile iron pipes, fittings, accessories and their joints for sewerage application
--	---

Certification according requirements stated in:
QHSE-REG-02.TOR Bureau Veritas
IND-REP-48-CP Bureau Veritas

This certificate has not to be intended as related to Notify Body activity according to UE Construction Products Regulation CPR 305/2011 neither can be used for the CE marking

Original Emission Date: 06/06/2023
Last Emission Date: 06/06/2023
Expiration Date: 05/06/2026

Subject to the continued satisfactory operation, to check the certificate validity please refer to website: www.bureauveritas.it
Further clarifications regarding the scope of this certificate and the applicability of standard's requirements may be obtained by consulting the organization.

ACCREDIA
Prestazione di servizi di certificazione

Scheme Technical Manager
Date: 06/06/2023
Certificate N°: **1319/002 Rev.0**
Bureau Veritas Italia S.p.A. – Viale Monza, 347 – 20126 MILAN – ITALY

BUREAU VERITAS
Certification

Certificate of Conformity
Awarded to:

RASHMI METALIKS LIMITED
HEAD OFFICE:
Premata Building, 39, Shaheed-Saras, Kolkata, West Bengal, PIN – 700017 INDIA
PRODUCTION PLANT:
Mouza-Changsal, Jetha, Gopinathpur, J.L. n° 359, 360 & 361, NH-16 Kharagpur, Paschim Medinipur, West Bengal – 721301 INDIA

Bureau Veritas Italia S.p.A. certify that the process of application of coatings for the following products:
Ductile iron fittings for pipes for water and sewerage applications
from DN 80 to DN 1200
Commercial Brand
RASHMI

Designed and produced by Rashmi Metaliks Limited
have been evaluated and found in conformity against the requirement listed in Annex 1/1 of this certificate

Certification according requirements stated in:
QHSE-REG-02.TOR Bureau Veritas
IND-REP-48-CP Bureau Veritas

Original Emission Date: 06/06/2023
Last Emission Date: 06/06/2023
Expiration Date: 05/06/2026

Subject to the continued satisfactory operation, to check the certificate validity please refer to website: www.bureauveritas.it
Further clarifications regarding the scope of this certificate and the applicability of standard's requirements may be obtained by consulting the organization.

ACCREDIA
Prestazione di servizi di certificazione

Scheme Technical Manager
Date: 03/04/2023
Certificate N°: **1319/001 Rev.0**
Bureau Veritas Italia S.p.A. – Viale Monza, 347 – 20126 MILAN – ITALY

BUREAU VERITAS
Certification

Certificate of Conformity
Awarded to:

RASHMI METALIKS LTD (DIP Division)
HEAD OFFICE:
Premata Building, 39, Shaheed-Saras, Kolkata, West Bengal, PIN – 700017 INDIA
PRODUCTION PLANT:
Mouza-Changsal, Jetha, Gopinathpur, J.L. n° 359, 360 & 361, NH-16 Kharagpur, Paschim Medinipur, West Bengal – 721301 INDIA

Bureau Veritas Italia S.p.A. certify that the following products:
Ductile iron fittings for pipes for water and sewerage applications
from DN 80 to DN 1200
Commercial Brand
RASHMI

Designed and produced by Rashmi Metaliks Limited
have been evaluated and found in conformity against the requirements of the following standard:

EN 545:2010 ISO 2531:2009 Ductile iron pipes, fittings, accessories and their joints for water application	EN 598:2007+A1:2009 ISO 7186:2011 Ductile iron pipes, fittings, accessories and their joints for sewerage application
--	---

Certification according requirements stated in:
QHSE-REG-02.TOR Bureau Veritas
IND-REP-48-CP Bureau Veritas

This certificate has not to be intended as related to Notify Body activity according to UE Construction Products Regulation CPR 305/2011 neither can be used for the CE marking

Original Emission Date: 06/06/2023
Last Emission Date: 06/06/2023
Expiration Date: 05/06/2026

Subject to the continued satisfactory operation, to check the certificate validity please refer to website: www.bureauveritas.it
Further clarifications regarding the scope of this certificate and the applicability of standard's requirements may be obtained by consulting the organization.

ACCREDIA
Prestazione di servizi di certificazione

Scheme Technical Manager
Date: 06/06/2023
Certificate N°: **1319/001 Rev.0**
Bureau Veritas Italia S.p.A. – Viale Monza, 347 – 20126 MILAN – ITALY

BUREAU VERITAS
Certification

Certificate of Conformity
Awarded to:

RASHMI METALIKS LIMITED
HEAD OFFICE:
Premata Building, 39, Shaheed-Saras, Kolkata, West Bengal, PIN – 700017 INDIA
PRODUCTION PLANT:
Gokulpur, P.O. Shyamnagar, Kharagpur, West Bengal – 721304 INDIA

Bureau Veritas Italia S.p.A. certify that the process of application of coatings for the following products:
Ductile iron pipes for water and sewerage applications
from DN 80 to DN 1200 Push-On
from DN 40 to DN 600 Restrained Flexible Joint
from DN 80 to DN 1000 Flanged Joint
(welding flanged operation is carried out at Gopinathpur, Mouza Changua plant)
Commercial Brand
RASHMI AGUA

Designed and produced by Rashmi Metaliks Limited
have been evaluated and found in conformity against the requirement listed in Annex 1/1 of this certificate

Certification according requirements stated in:
QHSE-REG-02.TOR Bureau Veritas
IND-REP-48-CP Bureau Veritas

Original Emission Date: 07/11/2017
Last Emission Date: 31/08/2023
Expiration Date: 17/04/2025

Subject to the continued satisfactory operation, to check the certificate validity please refer to website: www.bureauveritas.it
Further clarifications regarding the scope of this certificate and the applicability of standard's requirements may be obtained by consulting the organization.

ACCREDIA
Prestazione di servizi di certificazione

Scheme Technical Manager
Date: 31/08/2023
Certificate N°: **1053/001 Rev.4**
Bureau Veritas Italia S.p.A. – Viale Monza, 347 – 20126 MILAN – ITALY

BUREAU VERITAS
Certification

Certificate of Conformity
Awarded to:

RASHMI METALIKS LIMITED
HEAD OFFICE:
Premata Building, 39, Shaheed-Saras, Kolkata, West Bengal, PIN – 700017 INDIA
PRODUCTION PLANT:
Gokulpur, P.O. Shyamnagar, Kharagpur, West Bengal – 721304 INDIA

Bureau Veritas Italia S.p.A. certify that the process of application of coatings for the following products:
Ductile iron pipes for water and sewerage applications
from DN 80 to DN 1200 Push-On
from DN 40 to DN 600 Restrained Flexible Joint

Designed and produced by Rashmi Metaliks Limited
have been evaluated and found in conformity against the requirement listed in Annex 1/1 of this certificate

Certification according requirements stated in:
QHSE-REG-02.TOR Bureau Veritas
IND-REP-48-CP Bureau Veritas

Original Emission Date: 07/11/2017
Last Emission Date: 03/04/2023
Expiration Date: 17/04/2025

Subject to the continued satisfactory operation, to check the certificate validity please refer to website: www.bureauveritas.it
Further clarifications regarding the scope of this certificate and the applicability of standard's requirements may be obtained by consulting the organization.

ACCREDIA
Prestazione di servizi di certificazione

Scheme Technical Manager
Date: 03/04/2023
Certificate N°: **1053/001 Rev.3**
Bureau Veritas Italia S.p.A. – Viale Monza, 347 – 20126 MILAN – ITALY



CONTACT US

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HEAD OFFICE: 9, A.J.C. Bose Road, Ideal Centre, 1st Floor, Kolkata – 700 017

TEL.: (033) 22894255/56, **FAX:** 2289-4254

FACTORY: Khatranga, Changua, **Dist.:** West Midnapur (W. B.), INDIA. **TEL.:** (03222) 234533

For Domestic Inquires: info@rashmigroup.com, salesgovt@rashmigroup.com

For Export Enquires: exportsales@rashmigroup.com

Website: www.rashmigroup.com. **CIN No.:** U27109WB2004PLC097737

International Sales Offices

United Arab Emirates
RASHMI PIPE & FITTING FZCO
Cluster R, Jumeirah Lake
Towers (JLT), Dubai, UAE

United Kingdom
RASHMI METALIKS UK LTD.
3rd Floor, 5 Lloyd's Avenue,
EC3N 3AE London, UK

Singapore
RASHMI AQUA PTE LTD.
137 Telok Ayer Street, #05-02
Singapore (068602)