



CAST IRON SOIL PIPES & FITTINGS

HUBLESS TYPE
ISO 6594
BS EN 877





INTRODUCTION

ABOUT US

Incorporated on 11th of August 1997 as a company of industry and trading, specialize in producing sewerage, water supply and drainage system pipe and fittings and complete set of accessories. Our sales network could be found everywhere in local and overseas market. We welcome all special casting by providing sample or by drawing from clients. All needs from clients are our responsibility.

EXPERIENCE

The Company consists of a panel of key personnel's who are well versed in Designing, Costing, Estimating, Planning and Supervising. Our previous experience is stated as below:-

- 1) Supply of hydro-mechanical product to high rise buildings, apartments, condominiums, flats, hotels, shopping complexes, hospitals, factories and warehouse.
- 2) Supply of Heavy Duty Cast Iron, Ductile Iron and Pipe Fitting for water and waste water management projects such as : Reservoirs, waste water treatment plant, water treatment plants, dams and etc.

A. Sewerage System :-

- i. Ductile Iron Pipes & Fittings - BS EN 545
- ii. Ductile Iron Manhole Cover - BS EN 124

B. Water Supply System:-

- i. Ductile Iron Pipes & Fittings - BS EN 545 / BS 4772
- ii. Ductile Iron Mechanical Flange Adaptor & Coupling

C. Sanitary, Soil & Drainage System:-

- i. 'TCP' Hubless Cast Iron Pipes & Fittings – ASTM A 888 / CISPI 301
– ISO 6594 & BS EN 877
- ii. 'TCP' Floor Drain & Floor Clean-Out
- iii. 'TCP' Roof Drain
- iv. 'TCP' Scupper Drain, Air Vent Cap & Area Drain
- v. Mild Steel Pipe Hanger Or Bracket

D. Filtration System:-

- i. Rose Strainer With Stainless Steel Basket

VISION

Norwards aims to be world class, committed to customer satisfaction and to encourage the spirit of leadership amongst our dedicated team to creating a healthy environment for continuous growth, profit and prosperity. Norwards Company is willing to take **“Quality First, Clients First”** and **“Honesty and Belief”** as the enterprise policy together with all staffs.

We sincerely welcome overseas and domestic partners to the company “Goal” for further co-operation and common development.



PHILOSOPHY & QUALITY ASSURANCE

Norwards Company is committed to providing goods and services which meet customer's expectations and needs.

- ▶ The aim is to achieve “Quality Right The First Time” and “Tested Through Time”.
- ▶ Norwards shall constantly strive for continuous improvement through teamwork, training and motivation.

QUALITY POLICY

1. Norwards is committed to providing goods and services which meet customer's requirements, expectations and needs.
2. The aim is to achieve “**Quality First, Clients First**”.
3. Norwards shall constantly strive for continuous improvement through teamwork, training and motivation.

ENVIRONMENTAL POLICY

Norwards Industries Sdn. Bhd. is committed to :

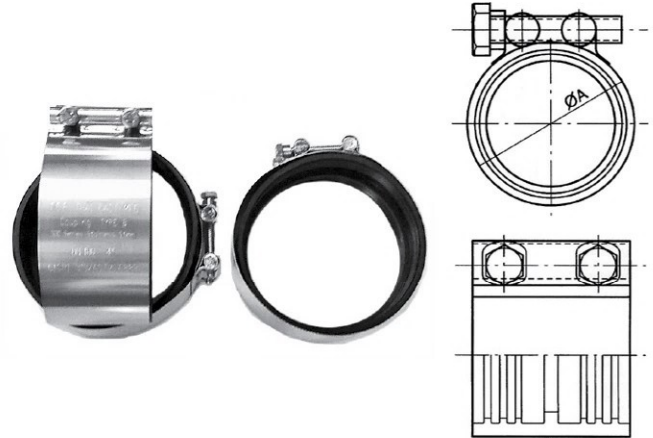
1. Meet environmental legislation and regulation as applicable, on and on-going basis, with an aim to improve the quality of life.
2. Strive for prevention of pollution through continuous improvement of process, technology and equipment, wherever applicable.
3. Aim to achieve continuous improvement of environmental performance through setting of objectives and targets and reviewing results.
4. Promote conservation of resources.

Communicate environmental policy to all employees and to ensure that this policy is available to all interested parties.

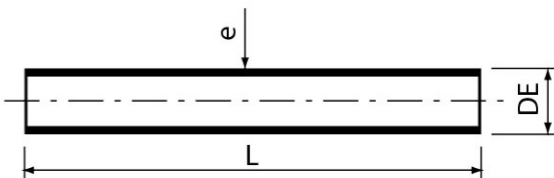



'TCP' Stainless Steel Coupling

Diameter (mm)	Diameter (Inch)
50	2
75	3
100	4
150	6
200	8
250	10
300	12



'TCP' Hubless Cast Iron Pipes

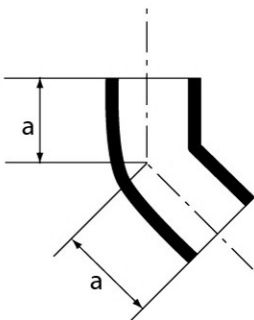


Symbol : 
Tolerance on L : ±20mm

Nominal Diameter (mm)	External Diameter, DE (mm)	Diameter Tolerance (mm)	Nominal Wall Thickness, e Norm. (mm)	Minimum Wall Thickness, e Min. (mm)	Pipe Length, L (mm)	Mass (Approximate) For A Working Length (L) of 3M, (kg)
50	58	+2.0 ; -1.0	3.5	3.0	3000	13.0
75	83	+2.0 ; -1.0	3.5	3.0	3000	18.9
100	110	±2.0	3.5	3.0	3000	25.2
150	160	±2.0	4.0	3.5	3000	42.2
200	210	±2.5	5.0	4.0	3000	69.3
250	274	±2.5	5.5	4.5	3000	99.8
300	326	±2.5	6.0	5.0	3000	129.7

'TCP' Hubless Cast Iron Fittings

45° Cast Iron Bend

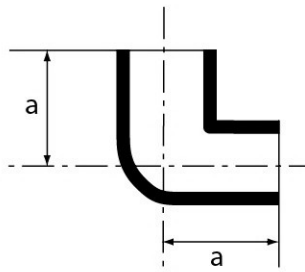
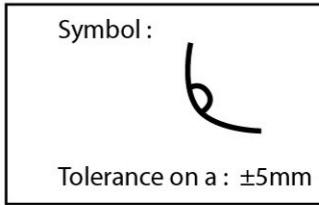


Symbol :  Tolerance on a : ±5mm

Nominal Diameter (mm)	Length, a (mm)	Nominal Wall Thickness, e Norm. (mm)	Minimum Wall Thickness, e Min. (mm)	Mass (Approximate) (kg)
50	50	4.2	3.0	0.5
75	60	4.2	3.0	1.0
100	70	4.2	3.0	4.6
150	90	5.3	3.5	3.5
200	110	6.0	4.0	6.2
250	130	7.0	4.5	10.8
300	155	8.0	5.0	17.5



88° Cast Iron Bend

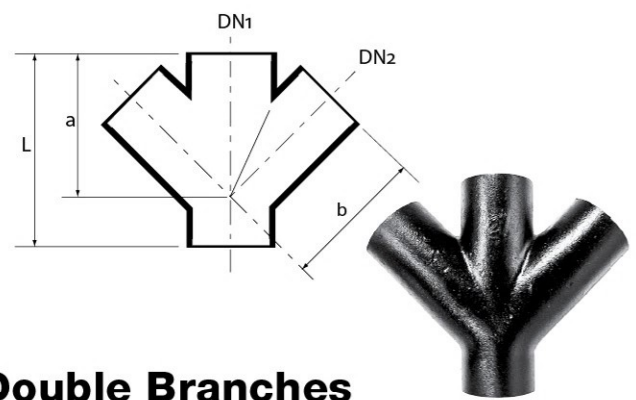
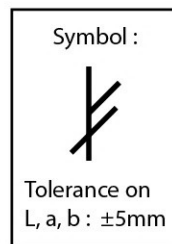
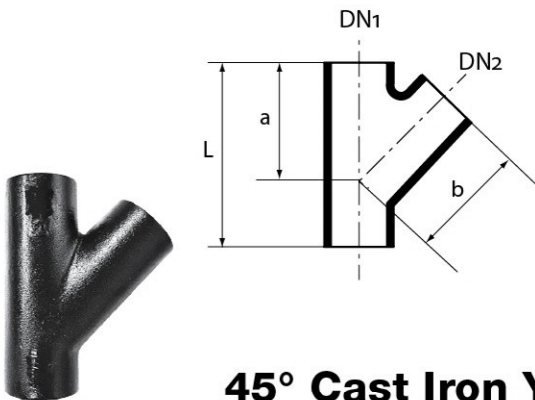


Nominal Diameter (mm)	Length, a (mm)	Nominal Wall Thickness, e Norm. (mm)	Minimum Wall Thickness, e Min. (mm)	Mass (Approximate) (kg)
50	75	4.2	3.0	0.7
75	95	4.2	3.0	1.4
100	110	4.2	3.0	2.0
150	145	5.3	3.5	4.9
200	180	6.0	4.0	8.8
250	220	7.0	4.5	17.3
300	260	8.0	5.0	27.4

'TCP' Hubless Cast Iron Fittings

45° Cast Iron Y Single Branches

45° Cast Iron Y Double Branches



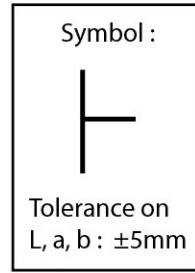
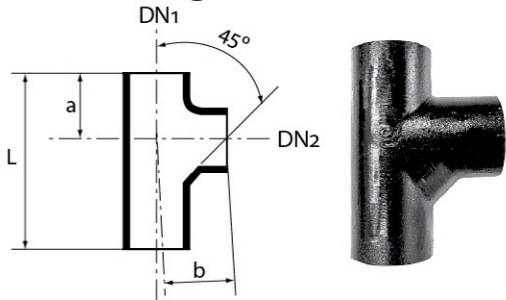
45° Cast Iron Y Single/Double Branches

NOMINAL SIZE		L	a	b
DN1	DN2	(mm)	(mm)	(mm)
50	50	160	115	115
75	50	180	135	135
75	75	215	155	155
100	50	185	150	150
100	75	220	170	170
100	100	260	190	190
150	100	280	225	225
150	150	355	265	265
200	150	375	300	300
200	200	455	340	340
250	200	470	380	380
250	250	560	430	430
300	250	580	465	465
300	300	660	505	505

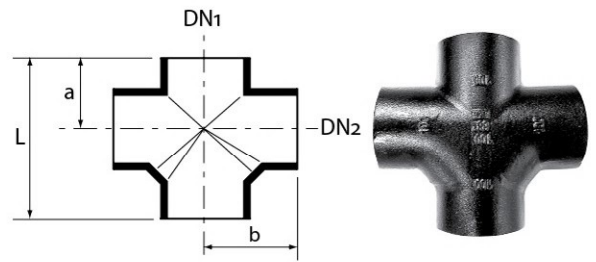


'TCP' Hubless Cast Iron Fittings

88° Cast Iron Sanitary T Single Branches



88° Cast Iron Sanitary T Double Branches



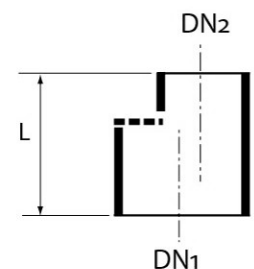
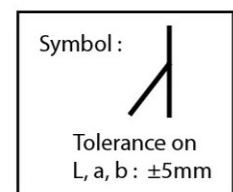
88° Cast Iron Sanitary T Single/Double Branches

NOMINAL SIZE		L (mm)	a (mm)	b (mm)
DN1	DN2			
50	50	145	65	75
75	50	155	73	90
75	75	180	85	95
100	50	170	75	105
100	75	190	88	115
100	100	220	105	115
150	50	200	100	140
150	75	220	100	140
150	100	245	115	145
150	150	295	145	155
200	100	270	126	175
200	150	325	152	185
200	200	365	180	180
250	250	455	225	225
300	300	530	265	265

'TCP' Hubless Cast Iron Fittings

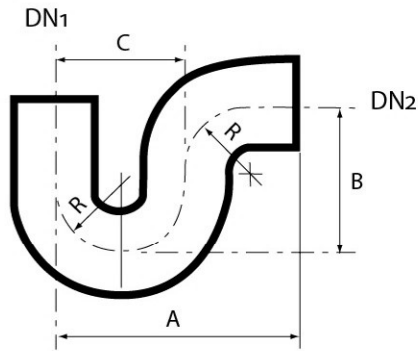
Reducer

NOMINAL SIZE		L (mm)	Mass (Approximate) (kg)
DN1	DN2		
75	50	80	0.7
100	50	80	0.9
100	75	90	1.1
150	75	100	2.1
150	100	105	2.2
200	100	115	4.1
200	150	125	4.3
250	150	135	6.8
250	200	145	7.0
300	200	160	11.4
300	250	170	11.4



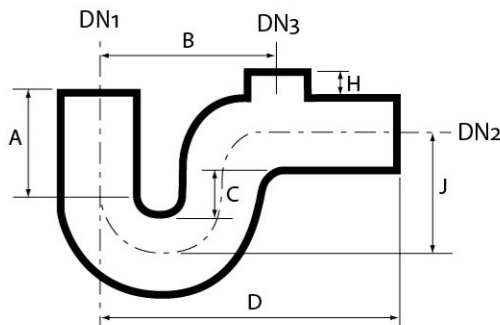
'TCP' Hubless Cast Iron Fittings

P-Trap



NOMINAL SIZE		A	B	C	R
DN1	DN2	(mm)	(mm)	(mm)	(mm)
50	50	150	105	77	45
75	75	194	134	115	64
100	100	220	118	130	70

P-Trap With Vent

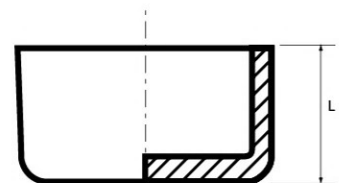


NOMINAL SIZE			A	B	C	D	J	H
DN1	DN2	DN3	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
100	100	50	105	230	10	340	125	50
100	75	50	110	240	45	361	140	55

'TCP' Hubless Cast Iron Fittings

Clean-out Plug / End Cap

Nominal Size (mm)	Length (mm)
50	30
75	35
100	40
150	50
200	60
250	70
300	80



Cast iron is introduced because of its strength and easy installation. It is now top of the list for owners, developers and contractors. Regardless of project types and specifications, we guarantee that you will have the following advantages:-

- **THE CLEAR CUT WINNER**

Detailed comparison why TCP Hubless pipe system is a winner.

- **LOW THERMAL EXPANSION**

Cast iron pipes expand and contract at low rate similar to those of building materials such as steel, concrete and masonry, eliminating the need for costly expansion joints.

- **SUPERIOR NOISE SUPPRESSION**

Cast iron soil pipe has been proven by laboratory tests to have a superior noise suppression characteristic.

- **AGAINST CORROSION**

Studies have also shown that cast iron soil pipe provides great resistance to commonly used corrosive chemicals.

- **AGAINST FIRE**

Cast iron exceeds the standard requirements. It can be used to penetrate fire separations without the need for costly devices, and will not produce large quantities of toxic gases in a fire situation.

- **HIGH RIGIDITY**

Overall, no other drainage materials come close to cast iron soil pipe for rigidity and ability to maintain dimensional stability.

- **COST & CONVENIENCE**

It is so easy to assemble that it cuts down installation time and cost.

THE CLEAR CUT WINNER

SL. NO.	PROPERTY	ASBESTOS CEMENT	SWR PVC PIPES	SAND CAST C.I. PIPES	TCP C.I. PIPES
1.	Impact Strength	Low	Minimum	Good	High Strength
2.	Durability	1-4 Years	4-5 Years (After Which It Becomes Brittle)	20 Years	Lifelong
3.	Inside Bore	Not Very Smooth	Smooth	Rough	Very Smooth
4.	Choking	Frequent Choking	No Choking	Frequent Choking	No Choking
5.	Maintenance	Frequent Maintenance	Less Maintenance	Frequent Maintenance	No Maintenance
6.	Repair	Repair Not Possible	Repair Not Possible	Not Easy To Repair	No Repair Required
7.	Installation Time	High	Low	High	Minimum
8.	Conforms To International Standard	No	No	No	DIN/ISO/CISPI 301
9.	Resistance To Fire and Heat	Low	Very Low	Good	Good
10.	Resale Value	No	No	Yes	Yes

MANUFACTURER:

SOLE AGENT: