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FLEXIBLE PIPE SYSTEM FOR WATER SUPPLY AND SEVERAL APPLICATIONS



## INTRODUCTION

T-flex pipe systems are designed for many pressure and non pressure applications such as water supply and distribution, compressed air, chemicals, hazardous wastes, utility, slurries, marine, mining, and agriculture.

T-flex pipe systems offered by Dadex are manufactured from polyethylene (PE) compound.

That is why T-flex provides professionals an option to choose the best system for the most demanding projects.

T-flex pipes have excellent abrasion resistance, superb impact resistance, and extraordinary toughness.

These pipes are resistant to a broad range of corrosive chemicals; they do not support biological growth, and resist the adherence of scale and deposits.

## MATERIAL

T-Flex pipes are made from PE 100 black compound sourced from the finest manufactures.

## PRODUCT RANGE

### HDPE T-flex pipe Dimensions:

HDPE T-Flex pipes are manufactured in nominal outside diameter of 20, 25, 32, 40, 50, 63, 75, 90, 110, 125, 160, 180, 200, 250, 280, 315, 355, 400, 450, 500, 560 and 630mm.

### Standard Lengths:

Coils up to 50m and 100m lengths are available for sizes up to 90mm.

Pipes are available in straight lengths of 6m and 12m up to 630mm.

### Identification Stripes and Colour:

T-flex pipes are commonly manufactured in black colour with blue/yellow coloured stripes or black colour only without stripes as per standard application. Standard Dadex marking identify application (water, gas, cable duct, etc.)



## TECHNICAL SPECIFICATIONS

### Pressure Rating of HDPE T-flex Pipes:

Max. working pressure of HDPE T-flex pipes range from 6, 8, 10, 12.5 and PN 16 bar. The nominal pressure (PN) corresponds to the maximum allowable working pressure in bar for pipe at 20°C, including pressure surge.

Adequate Surge allowance must be taken into account by pipe line designer.

### Max. Working Pressure of PP and PE Fittings:

10 bar (Compression Type)

8-16 bars (Butt Fusion Type)

### Cold Bending Radii (CBR):

CBR in meters at 20°C = 22 x Outside Diameter of pipe.

## STANDARDS

HDPE T-flex pipes for potable water application are manufactured according to latest international standard ISO 4427-2(E):2007 PE pipes for water supply specification DIN 8074/8075 and PS – 3580:1997.

Fittings are compatible with ISO (or metric) dimension pipe and conform to the following specifications;

PP Compression fittings: ISO 3458, 3459, 3501, 3503, & BS:5114

PE Butt Fusion fittings: DIN 16963

## FEATURES & BENEFITS

### Flexibility and Toughness

T-flex is flexible, allowing it to follow rolling terrain contours and reducing the need for fittings. It retains working flexibility even in harsh climates. Water within the pipe may freeze without damaging the pipe. Unstable soils and seasonal freeze/thaw conditions have little effect on this flexible, plastic pipe system. It also exhibits high stress/strain sustainability arising due to mechanical & thermal changes.



### Sealed Joints

T-flex pipes can be joined into long, continuous lengths by compression, butt fusion or electro fusion fittings. These jointing techniques provide leak-free joints that are as strong and chemically resistant as the pipe itself.

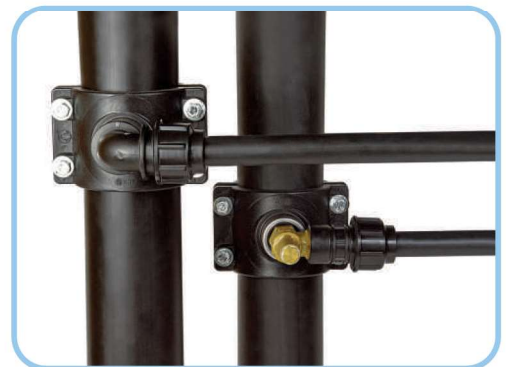


### Non-contaminating (food grade material)

The purity of the fluids being conveyed is safeguarded by the absence of easily extractable substances. The raw material used for manufacturing T-flex piping system for potable water has been evaluated and certified by authorities. Potable water products meet the requirements of standards such as ISO/DIN/EN.

### Light Weight & Easy to Install

T-flex is much lighter than ductile iron, steel and reinforced concrete. Thus it does not require heavy handling and laying equipment otherwise commonly used for conventional pipe systems this makes installation of pipes easier and quicker.



## UV Resistant

T-flex contains carbon black as UV stabilizer which is one of the most efficient and widely used UV absorbers. Carbon black converts harmful ultraviolet radiation into harmless infrared radiation or thermal energy, which dissipates through the polymer matrix neutralizing the harmful effect of UV. Thus, T-flex is UV resistant and safe to use in exposed conditions.

## FIELDS OF APPLICATION

- Acid / Caustic Lines
- Chilled Water Piping
- Crude oil
- Dredging
- Fertilizer
- Hazardous Waste
- Sea Water Effluents
- Slurries
- Utility Piping
- Compressed Air (buried)
- Brine
- Coal Slurry
- De-Watering Pipes
- Drilling Mud
- Fire Water Mains
- Out Fall Pipelines
- Sewage Treatment
- Storage tank piping
- Water Supply and Distribution
- Cable Conduits
- Cooling Water
- Drain Lines / Industrial Effluents
- Drip Irrigation / Sprinkle irrigation
- Fly ash
- Process Piping
- Sludge Piping
- Underground services
- Gas (manufactured as per ISO 4437)

## IDEAL FOR INDUSTRIAL USE

T-flex pipes offer better over-all resistance to corrosive acid, alkalis and salts. These pipes do not rust, rot or corrode.

## CHEMICAL RESISTANCE CHART\*

Common chemicals resisted by polyethylene pipes are listed below where

A=Very Good

B= Good

C= Moderate

D= Not recommended

S.No.	Chemicals	PE
1.	Acetaldehyde	C
2.	Acetamide	A
3.	Acetic Acid 80%	D
4.	Acetone	B
5.	Acetylene	A
6.	Alcohols: Amyl	B
7.	Benzyl	D
8.	Butyl	A
9.	Ethyl	B
10.	Isopropyl	A
11.	Methyl	A
12.	Aluminum Sulphate	A
13.	Ammonia	C
14.	Aniline	B
15.	Aromatic Hydrocarbons	C
16.	Arsenic Acid	B
17.	Barium Carbonate	B
18.	Barium Sulphate	B
19.	Benzaldehyde	A
20.	Benzene	C
21.	Benzonic Acid	B
22.	Benzol	C
23.	Borax	A
24.	Boric Acid	A
25.	Butadiene	D
26.	Butane	C
27.	Butylene	B
28.	Calcium Sulphate	B
29.	Butylene	B
30.	Carbon Dioxide	C
31.	Carbon Disulfide	C
32.	Carbonic Acid	B
33.	Chlorine, anhydrous	B

S.No.	Chemicals	PE
34.	Chloroform	C
35.	Chromic Acid 50%	A
36.	Citric Acid	A
37.	Copper Sulphate	B
38.	Diesel Fuel	C
39.	Ethylene Glycol	A
40.	Fatty Acids	A
41.	Ferric Chloride	A
42.	Ferric Sulphate	A
43.	Flourine	C
44.	Formaldehyde 100%	B
45.	Formic Acid	B
46.	Gasoline	C
47.	Heptane	B
48.	Hydrochloric Acid 20%	A
49.	Hydrogen Peroxide	C
50.	Iodine	A
51.	Magnesium Hydroxide	A
52.	Mercury	A
53.	Oleum 100%	D
54.	Petrolatum	B
55.	Phenol	B
56.	Phosphoric Acid	B
57.	Potassium Carbonate	A
58.	Silver Nitrate	B
59.	Sodium Bicarbonate	A
60.	Stearic Acid	B
61.	Sulphuric Acid	B
62.	Tannic Acid	B
63.	Toluene	C
64.	Zink Sulphate	A

## Dadex HDPE T-Flex Antimicrobial Pipes

Dadex is committed to water conservation as well as the supply of safe water for health and well-being of our people. To this purpose, Dadex has once again brought a revolutionary technology for the first time in the piping industry of Pakistan, by introducing antimicrobial pipes containing state of the art antimicrobial technology, developed by a UK based company having its network in 98 countries.

HDPE T-Flex pipes are also available, if required, with Dadex antimicrobial technology.

**Dadex antimicrobial pipes have 99.99% antimicrobial efficacy and provide long lasting protection against Bacteria, Fungi and Algae; hence providing safe and healthy water.**

### Why Dadex Antimicrobial Pipes

Pipes are the backbone of water distribution systems in building and infra-structure, and once incorporated, lasts as long as the life span of structure. Water distribution systems provide a suitable milieu for micro-organisms: Bacteria, Fungi and Algae. Microbes which survive in the distribution system possess the ability to grow and produce BIOFILM, a surface deposit of microorganisms, and organic and inorganic materials that accumulate within a slime layer. Biofilms induce many problems in water distribution systems like: change in color, odor, taste and turbidity of water, blockage of pipes and inefficacy of disinfection treatment. The Slimy layer of biofilm act as a slow-release mechanism for persistent contamination of water.

The microbial contamination and buildup in water distribution pipes pose a direct risk to public health because of water-borne diseases. Most common disease causing microorganisms associated with water contamination are Pseudomonas, Aeromonas, Klebsiella, E.coli, Helicobacter, Vibrio spp. Shigella, Salmonella, Legionella spp. Aspergillus, Cryptococcus and Mucor. These pathogens can cause serious illnesses like diarrhea, dysentery, gastroenteritis, allergies, skin infection, etc.

Water-borne diseases pose serious threat to public health:

- According to WHO (2014), every year more than 3.4 million people die as a result of water-related diseases, making it the leading cause of morbidity and mortality around the world.
- 1.8 million People die every year from diarrheal diseases. 90% are children under 5, mostly in developing countries.
- 88% of diarrheal disease are attributed to unsafe water supply, inadequate sanitation and hygiene. (WHO).
- Elderly people, children, people with weak immune system and pregnant women are more susceptible to water borne diseases.

Dadex has make the piping system microbe-free by incorporating antimicrobial technology, as bacteria lands on the inner pipe wall, antimicrobial technology eliminates the bacteria and support to provide safe water.

Dadex antimicrobial pipes eradicate the bacteria in pipes surfaces and protect against the development of microbial biofilm in water distribution systems. The built-in antimicrobial technology becomes an integral part of the finished product.

The antimicrobial additive being used by Dadex in antimicrobial pipes has been tested against over 50 dangerous microorganisms including: MRSA, E. coli Salmonella, Klebsiella pneumoniae, Staphylococcus aureus, Pseudomonas aeruginosa, Clostridium difficile, A. niger Corynebacterium spp, Escherichia coli. The Dadex antimicrobial products have built-in anti-fungal, anti-bacterial, anti-mold, anti-mildew and anti-algal protection, providing a broad spectrum of total antimicrobial performance.

## How Dadex HDPE T-Flex Antimicrobial Pipe Works?

The Dadex antimicrobial technology provides effective and broad spectrum anti-microbial performance

### Antimicrobial Process - 3 Stages

#### Stage-1

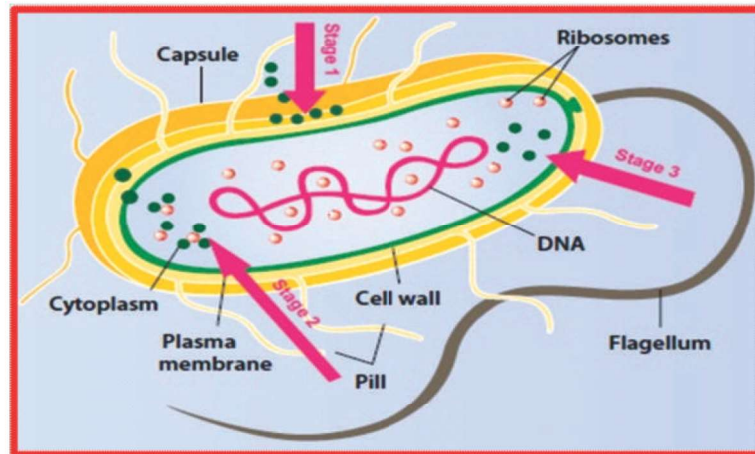
Antimicrobial ability enters the bacterial membrane and causes damage and disruption to the cellular wall before penetrating the cell.

#### Stage-2

Antimicrobial ability is highly reactive with the cell enzymes and can deactivate these vital molecules.

#### Stage-3

It interrupts the cell DNA, preventing replication and cell formation. Hence provides bacterial safe, healthy drinking water.



### Features of Dadex Antimicrobial Pipes

- Built-in antimicrobial protection against Bacteria, Fungi and Algae.
  - Dadex antimicrobial pipes are tested by Intertek for antimicrobial performance
  - Maximum protection against water borne diseases and bio-film development.
  - 99.99% antimicrobial efficacy against microorganisms
- Effective and long-lasting antimicrobial protection that keeps the pipe safe from bacteria and provides healthy water.
- Improves water quality and prevents the development of bad tastes and odors in water.

### International Standards Compliance

The Dadex antimicrobial pipes conforms to the following standards for its antimicrobial efficacy.

**Anti-fungal testing** ISO16869:2008, ASTM G21-09 and ASTM E 2180

**Anti-bacterial testing** ISO 22196:2011 and JIS Z 2801

**Anti-algae testing** ASTM D 5589-09 and prEN WD algae

**DADEX Antimicrobial Pipes - A Promise of Healthy Living !**

- **Islamabad :**

UAN : (92-51) 111 000 789, 4861034-7, Fax : (92-51) 4861033  
E-mail : islamabad@dadex.com.pk

- **Lahore :**

UAN : (92-42) 111 000 789, 35760735-6, Fax : (92-42) 35760734  
E-mail : lahore@dadex.com.pk

- **Multan :**

Tel : (92-61) 4545259, Fax : (92-61) 4784688  
E-mail : multan@dadex.com.pk

- **Faisalabad :**

Tel : (92-41) 8861981, 8787944, Fax : (92-41) 8787944  
E-mail : faisalabad@dadex.com.pk

- **Peshawar :**

Tel : (92-91) 5840316-7, Fax : (92-91) 5840317  
E-mail : peshawar@dadex.com.pk

- **Quetta :**

Tel : (92-333 7845732)  
E-mail: quetta@dadex.com.pk

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**Note :** All information contained in this literature is given in good faith. The user should, however, check that the product is suitable for purpose, in the application for which it shall be used. Please ensure compliance with all health and safety requirements. Whilst continuing its programme of continuous development, Seller reserves the right to modify or extend any published information without any prior notification. No responsibility can be accepted for any error, omissions or incorrect assumptions.

**“Seller’s Responsibility:** responsibility of seller ceases once the goods are delivered to the buyer’s representative at our factory, where delivery is taken in person. In other cases responsibility of seller shall cease once the goods are delivered to the buyer’s/carrier’s authorized representative (s). No claims of any type including in transit loss, damage, pilferage, short-delivery, etc. will be entertained by the seller and the buyer agrees to hold the seller harmless in this regard. Additionally, seller shall not be responsible for any consequential damages including but not limited to economic loss of any kind whatsoever, upon the products being delivered to the seller as per the terms of this Clause. Any claim or responsibility as stated herein will not be entertained by the seller and such action will also not be the cause of dispute by the buyer”.

## **DADEX Eternit Limited**

Dadex House : 34-A/1, Block-6, P.E.C.H.S, Shahrah-e-Faisal, Karachi, Pakistan.

Tel. # (92-21) 111 000 789, Fax # (92-21) 34313881, 34315716

E-mail : [info@dadex.com](mailto:info@dadex.com) Web : [www.dadex.com](http://www.dadex.com)

For Technical information and assistance please contact Dadex Techno Commercial Department on 111 000 789 or contact Dadex Sales Office near you.