HANSEN™

Est. 1997
Build on Trust.
Delivered with Quality.

# FITTINGS & PIPES



# NYLON 6
## COMPRESSION FITTINGS
## FOR HDPE PIPES

**It's Every Plumber's Dream**

PATENT NO.: MY-127837-A
SIRIM CERTIFIED TO:
SIRIM 11:2017 (FITTING)
License No.: PC 003953
MS1058 : PART 2 : 2005 (PIPE)
SPAN CERTIFIED

No Compression Rings
No 'O' Rings
No Crimping
No Solvent Cement
No Fusion
No PTFE Tape

Web Edition for October 2026

# NYLON 6

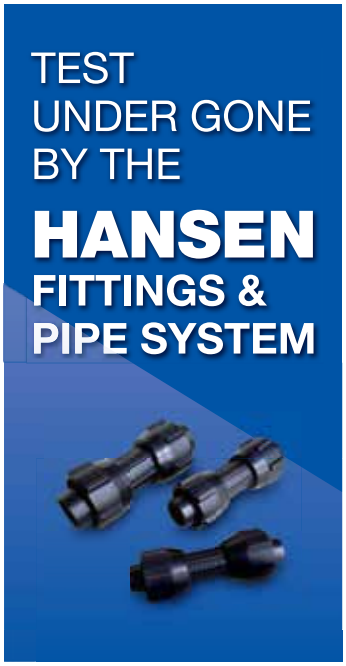
## A HIGH PERFORMANCE MATERIAL

Approved by the Water Supply (Water Quality) Regulations 1989 & Water Regulations Advisory Committee (WRAS) of UK for its use in potable water, this material is superior to existing materials being used in terms of strength and ability to withstand heat. The fittings are designed and comply to Sirim 11:2017.

### MECHANICAL PROPERTIES

Hansen fittings, together with high density polyethylene (HDPE) pipes, provide an unsurpassable potable water system. These sleek fittings are slim enough to be buried in walls and are able to withstand very high pressures.

| Mechanical Properties | Test Conditions | Units | Standards | Nylon 6 |
|---|---|---|---|---|
| Tensile Modulus | 1 mm/min | MPa | ISO 527 | 3600 |
| Tensile Stress at break | 5 mm/min | MPa | ISO 527 | 75 |
| Tensile Strain at break | 5 mm/min | % | ISO 527 | 12 |
| Flexural Modulus | 2 mm/min | MPa | ISO 178 | 3100 |
| Flexural Strenght | 5 mm/min | MPa | ISO 178 | 120 |
| Temperature of Deflection under load method Af | MPa | °C | ISO 75 | 190 |
| Coefficient of Linear Thermal Expansion | 23 to 55°C | $10^{-4}$ / K | ASTM E 831 | 0.3 |
| Water Absorbtion | Saturation Value in water at 23°C | % | ISO 62 | 8.5 |
| Density | | gm / $cm^3$ | ISO 1183 | 1.23 |




### Resistance to pull out of assembled joint

The jointed assembly is applied a constant tension for 1 hour and complies with ISO 3501.

### Hydrostatic pressure test

The fitting body shall withstand without leakage for 1 hour an internal pressure of 4 times its maximum sustained working pressure; 64 Bar. The fitting joint with HDPE pipe shall withstand without leakage for 1 hour an internal positive pressure of 24 bar, 1.5 times its maximum sustained working pressure.

### Hydrostatic requirement when subjected to bending stress

When the assembly is bent to a radius of 20 times the diameter of the pipe, the jointed assembly shall withstand for 1 hour without leakage an internal positive pressure of 24 bar.

### External pressure requirement

The jointed assembly shall withstand for 1 hour without leakage, a pressure of 0.80 bar above atmospheric pressure.

### Effect on water

Complies to MS1583; supply of water intended for human consumption.

### Opacity

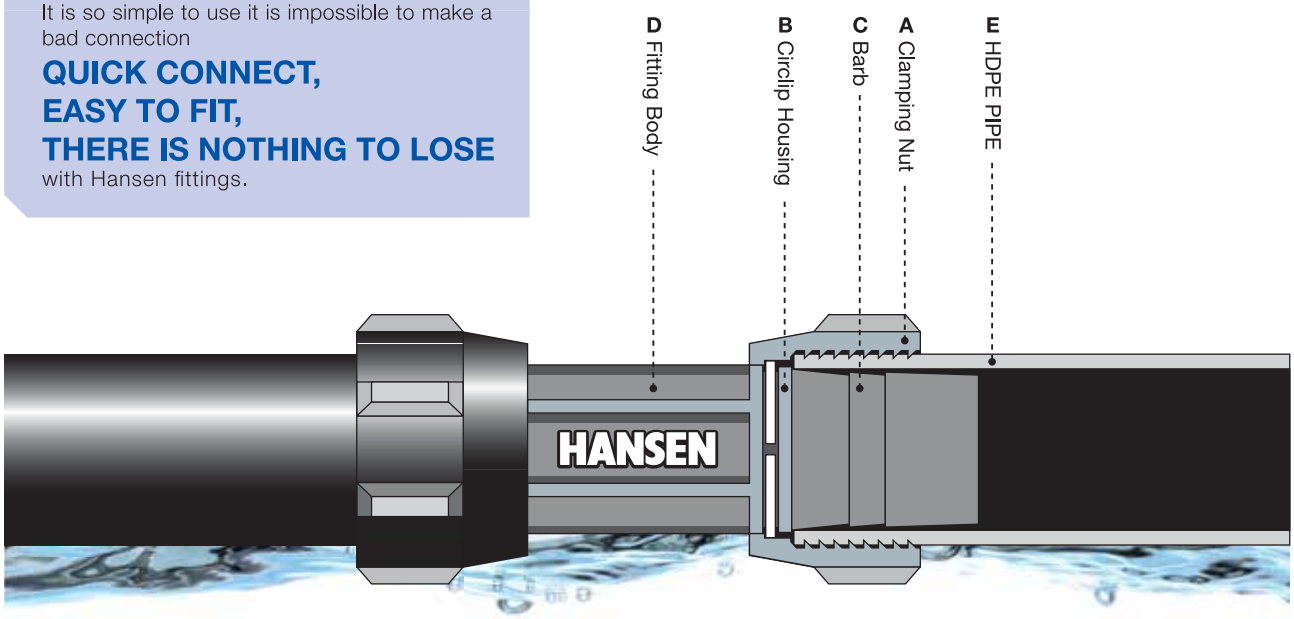
The wall of the fittings shall not transmit more than 0.2% of the visible light falling on it.

# HOW IT WORKS

It is so simple to use it is impossible to make a bad connection

**QUICK CONNECT,
EASY TO FIT,
THERE IS NOTHING TO LOSE**

with Hansen fittings.




Push the Hansen fitting **D** into the pipe **E** (High Density Polyethylene Pipe) up to the circlip housing **B**.

Wind the nut onto the pipe a few turns by hand and tighten with a spanner until fully engaged against circlip housing **B**. Barb **C** on the Hansen fitting has 2 functions.

It seals and holds the polypipe in place from the inside. The clamping nut **A** also has 2 functions. It clamps the pipe down onto the barb **C** creating a high pressure seal and also gives a permanent vice like hold on the outside of the polypipe **E**.

## INSTALLATION METHOD



**1**

Cut the HDPE pipe square with pipe cutters, knife or saw to the required length.



**2**

Push the fittings into the pipe as far as possible.



**3**

Wind the nut onto pipe a few turns. Tighten with spanner or stillson.



**4**

Simply the best. No fusion, crimping or solvent cement required. Leak proof. Nothing to lose.

# SANSICO HANSEN

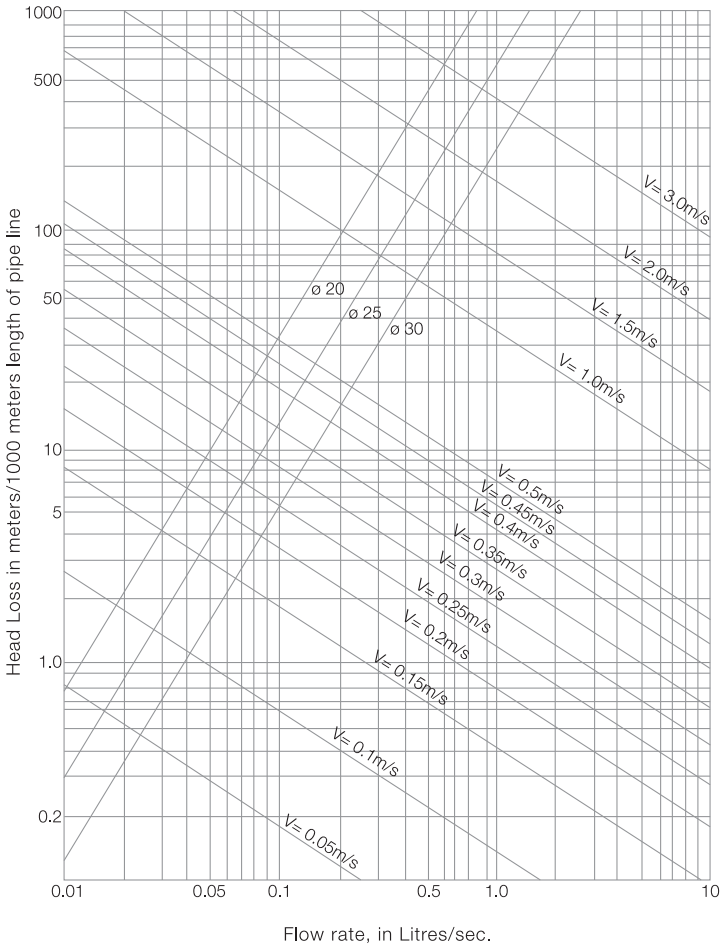
## HIGH DENSITY POLYETHYLENE PIPES FOR COLD WATER SYSTEM

(BBB SANISCO HANSEN / CS HANSEN SANSICO)

Our pipes are SIRIM approved and manufactured using approved raw materials, high density polyethylene and comply to ***MS 1058***. The main advantages of polyethylene pipes for the transport of pressure fluids can be summarised as follows:

- ease, reliability and cost efficiency of jointing and laying operations.
- non toxic, low abrasion and flexibility.
- excellent resistance to water hammer phenomena.
- absence of scale on inside walls results in consistancy of pipeline hydraulic performance.
- immune to corrosion phenomena and has very good resistance to a wide range of chemicals.

### *FLOW DIAGRAM*
### *for high density polyethylene (hdpe) pipes*




V = Velocity in m/sec
ø = Nominal pipe size in mm



## HYDRAULIC PROPERTIES

The velocity of flow in hdpe does not normally exceed 1-2 meters per second in distribution mains. The hydraulically smooth bore of a hdpe pipe gives excellent flow characteristics through its operational life and the hydraulic friction co-efficient normally used in the design of hdpe pipes working under pressure are:

- ***Colebook-White*** $k$ = 0.003 mm (max 0.01 mm to allow for some deposition with age)
- ***Hazen Williams*** c = 150

The Colebook-White based formula is recognised by engineers through out the world as the most accurate basis for hydraulic design.

$$Q = \frac{\pi D^2}{4} \cdot \sqrt{2gD\frac{H}{L}} \cdot \log_{10}\left[\frac{D}{\frac{k}{3.7} + \frac{2.51\vartheta}{\sqrt{2gD\frac{H}{L}}}}\right]^2$$

$Q$ = discharge ($m^3/s$)
$D$ = pipe internal diameter (m)
$g$ = 9.8 $m/s^2$
$\frac{H}{L}$ = hydraulic gradient (m/m)
$k$ = Colebrook-White roughness co-efficient (m)
$\vartheta$ = Kinematic viscosity of water ($m^2/s$)

# PIPE SIZES

## SANSICO HANSEN HDPE PIPE

| Pipe OD | OD Size | | Pipe Series | PE 100 | | | |
|---|---|---|---|---|---|---|---|
| | Min | Max | | PN | e min | e max | Weight |
| mm | mm | mm | SDR | | mm | mm | kg/m |
| 20 | 20.0 | 20.3 | 9 | 20 | 2.3 | 2.7 | 0.131 |
| 25 | 25.0 | 25.3 | 11 | 16 | 2.3 | 2.7 | 0.171 |
| 32 | 32.0 | 32.3 | 11 | 16 | 3.0 | 3.4 | 0.279 |
| 40 | 40.0 | 40.4 | 11 | 16 | 3.7 | 4.2 | 0.431 |
| 50 | 50.0 | 50.4 | 11 | 16 | 4.6 | 5.2 | 0.669 |

# BENEFITS OF POLYETHYLENE (HDPE) PIPES

- A comprehensive range of high density polyethylene pipes and fittings provides a complete system for potable water.
- UV Stabilized
- Proven joint systems (used in Europe, USA, Canada, New Zealand, Australia, Indonesia and Thailand) offer long term, leak-free performance. Sleek joint system for use in confined areas or locations susceptible to ground movement and small enough to conceal in the wall.
- ***No Compression Rings, No 'O' rings, No Crimping, No Solvent Cement, No Fusion, No PTFE Tape*** - fast, leak proof and simple installation, requires no special site equipment or skilled labour. Low installation costs combined with the long life of Hansen pipe and fittings make it the ***cost-effective choice***.
- Excellent hydraulic flow characteristics.
- Materials used are not permeated or degraded by organic or inorganic contaminants in the soil. They do not rust, or corrode.
- The high strength of Nylon and high density Polyethylene makes it suitable for high stress applications where fatigue or pressure surge may be experienced and gives security against unforeseen circumstances like ground subsidence.
- ***Patented System*** - no "backyard" manufacturers or imitations. You are assured of high quality leak proof products.
- Test results from reputed testing bodies (SIRIM, etc) are available on request.
  -support bracket min 1m / bracket recommended.

| | |
|---|---|
| **Compatible with high density polyethylene (HDPE) pipe manufactured to** | MS 1058 |
| | BS 6572 |
| | BS 6730 |
| | ISO 161-1 |
| | DIN 8074 |

# SITE PHOTOS











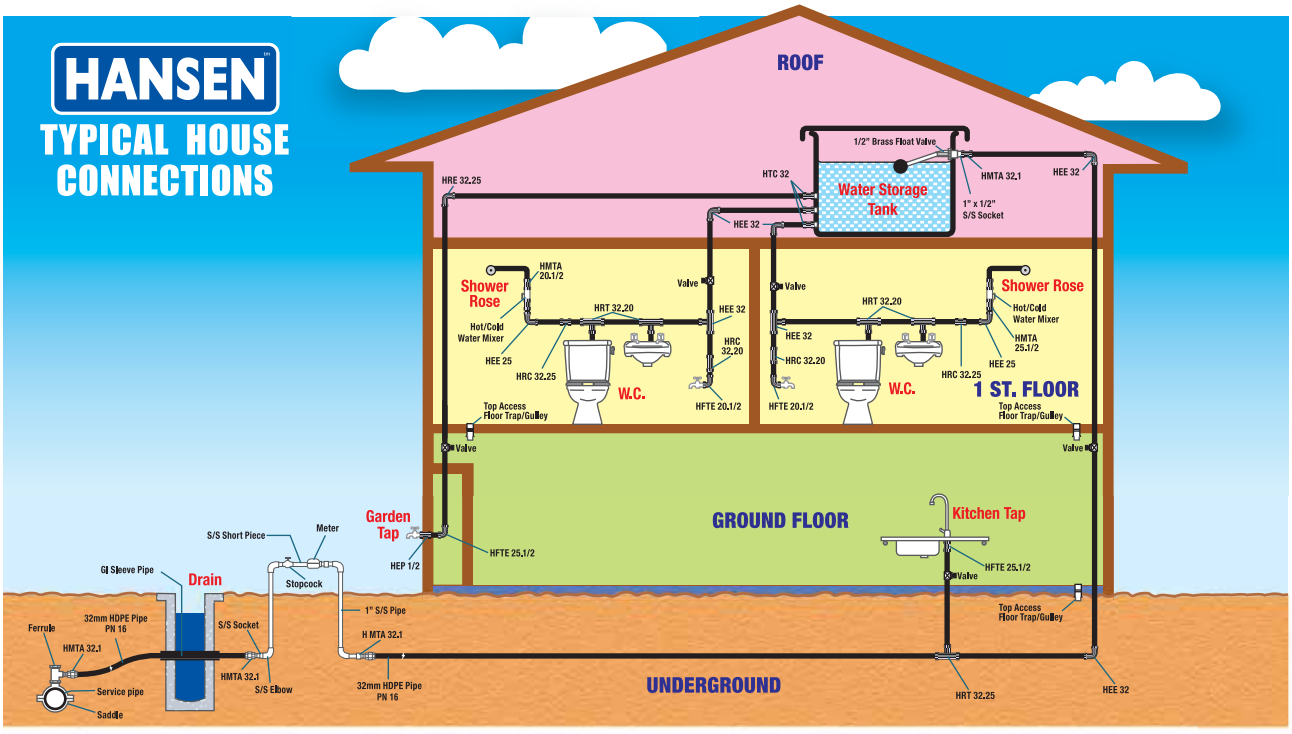
# SITE PHOTOS







# FULL HOUSE PLAN

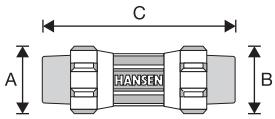


# FITTINGS SPECIFICATIONS

Hansen Fittings are compatible with high density polyethylene (HDPE) pipes manufactured to MS1058: Part 2: 2002 - 20mm fittings (PN20 PE100), 25mm, 32mm, 40mm & 50mm (PN16 PE100)

## Equal Coupling

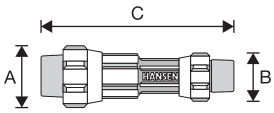





| Code | Size (mm) | A | B | C |
|---|---|---|---|---|
| HEC 20 | 20 x 20 | 30 | 30 | 85 |
| HEC 25 | 25 x 25 | 36 | 36 | 94 |
| HEC 32 | 32 x 32 | 44 | 44 | 105 |
| HEC 40 | 40 x 40 | 48 | 48 | 116 |
| HEC 50 | 50 x 50 | 61 | 61 | 126 |

## Reducing Coupling

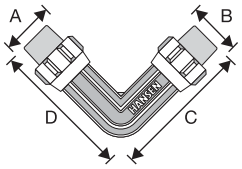





| Code | Size (mm) | A | B | C |
|---|---|---|---|---|
| HRC 25.20 | 25 x 20 | 36 | 30 | 109 |
| HRC 32.20 | 32 x 20 | 44 | 30 | 118 |
| HRC 32.25 | 32 x 25 | 44 | 36 | 122 |
| HRC 40.32 | 40 x 32 | 48 | 44 | 119 |
| HRC 50.32 | 50 x 32 | 61 | 44 | 124 |
| HRC 50.40 | 50 x 40 | 61 | 48 | 132 |

## Equal Elbow

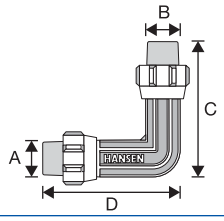





| Code | Size (mm) | A | B | C | D |
|---|---|---|---|---|---|
| HEE 20 | 20 x 20 | 30 | 30 | 72 | 72 |
| HEE 25 | 25 x 25 | 36 | 36 | 83 | 83 |
| HEE 32 | 32 x 32 | 44 | 44 | 97 | 97 |
| HEE 40 | 40 x 40 | 48 | 48 | 115 | 115 |
| HEE 50 | 50 x 50 | 61 | 61 | 125 | 125 |

## Reducing Elbow



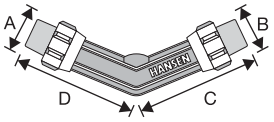



| Code | Size (mm) | A | B | C | D |
|---|---|---|---|---|---|
| HRE 25.20 | 25 x 20 | 36 | 30 | 77 | 77 |
| HRE 32.25 | 32 x 25 | 44 | 36 | 89 | 91 |
| HRE 40.32 | 40 x 32 | 48 | 44 | 112 | 113 |
| HRE 50.40 | 50 x 40 | 61 | 48 | 119 | 122 |

## 45° Equal Elbow

NEW

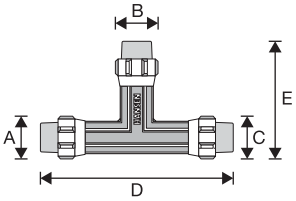





| Code | Size (mm) | A | B | C | D |
|---|---|---|---|---|---|
| 45° HEE 25 | 25 x 25 | 36 | 36 | 87 | 87 |
| 45° HEE 32 | 32 x 32 | 44 | 44 | 79 | 79 |

## Equal Tee

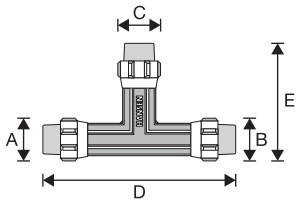





| Code | Size (mm) | A | B | C | D | E |
|---|---|---|---|---|---|---|
| HET 20 | 20 x 20 x 20 | 30 | 30 | 30 | 128 | 73 |
| HET 25 | 25 x 25 x 25 | 36 | 36 | 36 | 144 | 83 |
| HET 32 | 32 x 32 x 32 | 44 | 44 | 44 | 166 | 97 |
| HET 40 | 40 x 40 x 40 | 48 | 48 | 48 | 199 | 115 |
| HET 50 | 50 x 50 x 50 | 61 | 61 | 61 | 209 | 124 |

## Reducing Tee

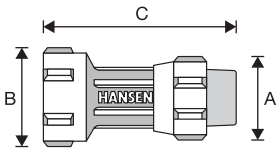





| Code | Size (mm) | A | B | C | D | E |
|---|---|---|---|---|---|---|
| HRT 25.20 | 25 x 25 x 20 | 36 | 36 | 30 | 144 | 78 |
| HRT 32.20 | 32 x 32 x 20 | 44 | 44 | 30 | 160 | 84 |
| HRT 32.25 | 32 x 32 x 25 | 44 | 44 | 36 | 160 | 89 |
| HRT 40.32 | 40 x 40 x 32 | 48 | 48 | 44 | 199 | 113 |
| HRT 50.32 | 50 x 50 x 32 | 61 | 61 | 44 | 209 | 116 |
| HRT 50.40 | 50 x 50 x 40 | 61 | 61 | 48 | 209 | 127 |

## Female Thread Adaptor (BSPT Female)

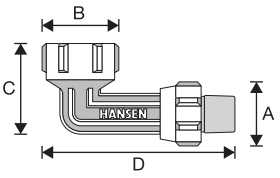





| Code | Size (mm) | A | B | C |
|---|---|---|---|---|
| HFTA 20.½ | 20 x ½" | 30 | ½" BSPT Female | 72 |
| HFTA 25.¾ | 25 x ¾" | 36 | ¾" BSPT Female | 80 |
| HFTA 32.1 | 32 x 1" | 44 | 1" BSPT Female | 90 |

## Female Thread Elbow (BSPT Female)

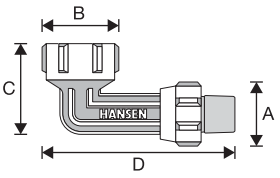





| Code | Size (mm) | A | B | C | D |
|---|---|---|---|---|---|
| HFTE 20.½ | 20 x ½" | 30 | ½" BSPT Female | 44 | 79 |
| HFTE 25.½ | 25 x ½" | 36 | ½" BSPT Female | 50 | 91 |
| HFTE 25.¾ | 25 x ¾" | 36 | ¾" BSPT Female | 50 | 91 |
| HFTE 32.1 | 32 x 1" | 44 | 1" BSPT Female | 61 | 107 |

## Female Brass Thread Elbow (BSPT Female)

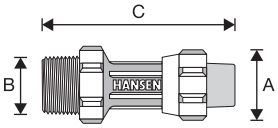





| Code | Size (mm) | A | B | C | D |
|---|---|---|---|---|---|
| HFTE-B 20.½ | 20 x ½" | 30 | ½" BSPT Female | 44 | 79 |
| HFTE-B 25.½ | 25 x ½" | 36 | ½" BSPT Female | 50 | 91 |
| | | | | | |
| | | | | | |

## Male Thread Adaptor (BSPT Male)

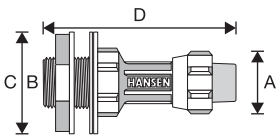





| Code | Size (mm) | A | B | C |
|---|---|---|---|---|
| HMTA 20.½ | 20 x ½" | 30 | ½" BSPT Male | 83 |
| HMTA 25.½ | 25 x ½" | 36 | ½" BSPT Male | 87 |
| HMTA 25.¾ | 25 x ¾" | 36 | ¾" BSPT Male | 90 |
| HMTA 32.1 | 32 x 1" | 44 | 1" BSPT Male | 100 |
| HMTA 32.¾ | 32 x ¾ | 44 | ¾" BSPT Male | 97 |
| HMTA 40.1¼ | 40 x 1¼" | 48 | 1¼" BSPT Male | 113 |
| HMTA 50.1½ | 50 x 1½" | 61 | 1½" BSPT Male | 124 |

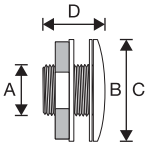
## Tank Connector (BSPT Male & Female)






| Code | Size (mm) | A | B | C | D |
|---|---|---|---|---|---|
| HTC 25.¾ | 25 x ¾" | 36 | ¾" BSPT Male | 70 | 105 |
| HTC 32.1 | 32 x 1" | 44 | 1" BSPT Male | 54 | 117 |
| | | | | | |

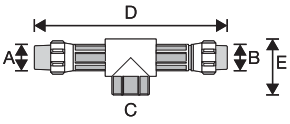





| Code | Size (mm) | A | B | C | D |
|---|---|---|---|---|---|
| HTC 40.1¼ | 40 x 1¼" | 42 | 1¼" BSPT Female | 86 | 50 |
| HTC 50.1½ | 50 x 1½" | 45 | 1½" BSPT Female | 90 | 59 |
| | | | | | |

## Tee with Female Thread Branch (BSPT Female)

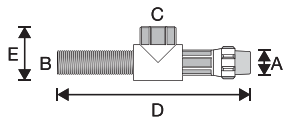





| Code | Size (mm) | A | B | C | D | E |
|---|---|---|---|---|---|---|
| HTFTB 20.20.½ | 20 x 20 x ½" | 30 | 30 | ½" BSPT Female | 175 | 47 |
| HTFTB 25.25.½ | 25 x 25 x ½" | 36 | 36 | ½" BSPT Female | 159 | 47 |
| HTFTB 32.25.½ | 32 x 25 x ½" | 44 | 36 | ½" BSPT Female | 168 | 47 |
| HTFTB 32.32.½ | 32 x 32 x ½" | 44 | 44 | ½" BSPT Female | 174 | 47 |
| HTFTB 25.25.1 | 25 x 25 x 1" | 36 | 36 | 1" BSPT Female | 164 | 53 |
| HTFTB 32.25.1 | 32 x 25 x 1" | 44 | 36 | 1" BSPT Female | 175 | 53 |
| HTFTB 32.32.1 | 32 x 32 x 1" | 44 | 44 | 1" BSPT Female | 180 | 53 |

## Male Tee with Female Branch (BSPT Male & Female)

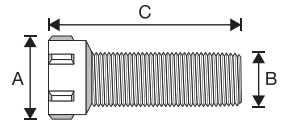





| Code | Size (mm) | A | B | C | D | E |
|---|---|---|---|---|---|---|
| HMTFB 25.½.½ | 25 x ½" x ½" | 20 | ½" BSPT Male | ½" BSPT Female | 164 | 47 |
| HMTFB 25.¾.½ | 25 x ¾" x ½" | 26 | ¾" BSPT Male | ½" BSPT Female | 166 | 47 |
| HMTFB 32.½.½ | 32 x ½" x ½" | 20 | ½" BSPT Male | ½" BSPT Female | 171 | 47 |
| HMTFB 32.¾.½ | 32 x ¾" x ½" | 26 | ¾" BSPT Male | ½" BSPT Female | 173 | 47 |

## Extension Piece (BSPT Female & Male)

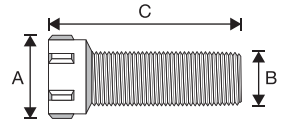





| Code | Size (mm) | A | B | C |
|---|---|---|---|---|
| HEP ½ | ½" x ½" | ½" BSPT Female | ½" BSPT Male | 58 |
| | | | | |

## Extension Piece Brass Threaded (BSPT Female & Male)

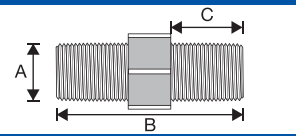





| Code | Size (mm) | A | B | C |
|---|---|---|---|---|
| HEP-B ½ | ½" x ½" | ½" BSPT Female | ½" BSPT Male | 58 |
| | | | | |

## Equal Nipple (BSPT Male)

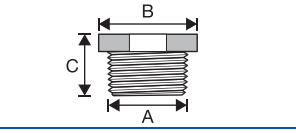





| Code | Size (mm) | A | B | C |
|---|---|---|---|---|
| HEN ½.½ | ½" x ½" | ½" BSPT Male | 42 | 16 |
| | | | | |

## Bush (BSPT Male & Female)






| Code | Size (mm) | A | B | C |
|---|---|---|---|---|
| HB 1.¾ | 1" x ¾" | 1" BSPT Male | ¾" BSPT Female | 29 |
| HB ¾.½ | ¾" x ½" | ¾" BSPT Male | ½" BSPT Female | 26 |

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SANSICO
HANSEN

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E-mail : enquiry@sansico.com.my

# Notes