

DT
DURA-TUBE®

DF
DURA-FIT®

Slimmer • Reliable • Affordable



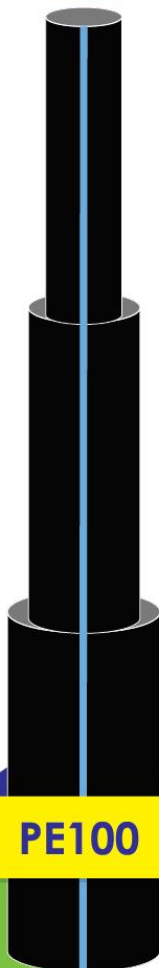
Total PE Piping Systems for Hot & Cold Water Plumbing Applications

DURA-TUBE® & DURA-FIT®

Product Overview

HDPE Pipes PN12.5 / PN16

Cold Water



PE100

easy-PRESS™
Thermoplastic
Press Fittings



smart-FUSE™
Socket
Fusion Fittings



wired-FUSE™
Electro
Fusion Fittings



DN/OD

16mm
20mm
25mm
32mm
40mm
50mm
63mm
75mm
90mm
110mm
125mm
140mm
160mm
180mm
200mm
225mm
250mm
280mm
315mm

solid-PRESS™
Brass
Press Fittings



Hot Water



PEX Pipes S4

*Slimmer
Reliable
Affordable*



** Terms & conditions applied

DT® **DF**®
DURA-TUBE® DURA-FIT®

Product Standard : MS 1058-2 : 2005 & ISO 4427-2 : 2007

High Density Polyethylene (HDPE) Pipe has been the dominant and preferred piping for water pressure pipes application due to its advantages in flexibility, easy installation, corrosion & chemical resistance, durability, high performance and in terms of economical aspects. HDPE pipes have the widest ranges among other piping materials. The introduction of PE-100 material enables the pipes to be produced thinner, yet maintaining the pressure ratings. Hence, the pipes become lighter, increased flow rate and with further cost saving.

Advantages of PE100 vs PE80

1. PE100 materials can withstand a minimum circumferential stress (or hoop stress) of 10MPa for 50 years at 20°C. This compares with a performance of 8MPa for 50 years at 20°C for PE80 materials. The higher long term creep resistance of PE100 materials translates into higher operating pressures at the same wall thickness, or alternatively, thinner walled pipe at the same operating pressure, offering greater hydraulic capacity than PE80 materials.
2. PE100 materials have improved notch resistance compared with PE80 resins. This means they are even less sensitive to surface damage during laying.
3. Pipes made from PE100 have improved resistance to rapid crack growth. This means that if a fast crack begins to grow in a PE100 pipe, it will be arrested after propagating only a short distance.

The products are tested and conformed to the stringent standard requirements and performance specifications, thus it ensures that the product quality is consistently maintained.

Performance Specifications

Items	Units	Characteristic	Parameter	
			PE-80	PE-100
Hydrostatic strength	MPa	20°C (100h) : No break & leakage	9.0	12.4
		80°C (165h) : No break & leakage	4.6	5.5
		80°C (1,000h) : No break & leakage	4.0	5.0
Elongation at break	%	≥ 350		
Thermal stability (Oxidation induction time)	min	> 20	200°C	
Melt flow rate (MFR)	g/10min	Changes of MFR by processing < 25%	190°C, 5kgs	
Longitudinal reversion	%	≤ 3	110°C	

PE100 Dimensions

Nominal (mm)	Outer diameter (mm)		Wall thickness (mm) PN12.5 (SDR13.6)		Wall thickness (mm) PN16 (SDR11)	
	Min	Max	Min	Max	Min	Max
20	20.0	20.3	-	-	2.0	2.3
25	25.0	25.3	2.0	2.3	2.3	2.7
32	32.0	32.3	2.4	2.8	3.0	3.4
40	40.0	40.4	3.0	3.5	3.7	4.2
50	50.0	50.4	3.7	4.2	4.6	5.2
63	63.0	63.4	4.7	5.3	5.8	6.5
75	75.0	75.5	5.6	6.3	6.8	7.6
90	90.0	90.6	6.7	7.5	8.2	9.2
110	110.0	110.7	8.1	9.1	10.0	11.1
125	125.0	125.8	9.2	10.3	11.4	12.7
140	140.0	140.9	10.3	11.5	12.7	14.1
160	160.0	161.0	11.8	13.1	14.6	16.2
180	180.0	181.0	13.3	14.8	16.4	18.2
200	200.0	201.2	14.7	16.3	18.2	20.2
225	225.0	226.4	16.6	18.4	20.5	22.7
250	250.0	251.5	18.4	20.4	22.7	25.1
280	280.0	281.7	20.6	22.8	25.4	28.1
315	315.0	316.9	23.2	25.7	28.6	31.6

Product Standard : ISO 17885 : 2016

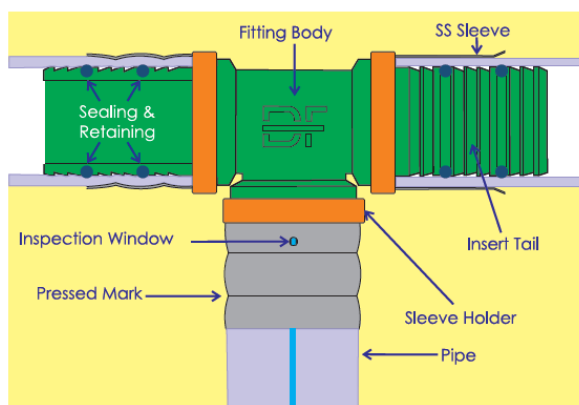
The design and working principal of our **solid-PRESS™** (Brass Press Fitting) have more than 40 years of proven track record as a practical and reliable jointing mechanism in internal hot & cold potable water plumbing applications. **easy-PRESS™** (Thermoplastic Press Fitting), with its body made of durable plastic material instead of brass, is an economical alternative aiming at cold potable water plumbing application ONLY with same jointing mechanism but offered at a fraction of the cost of **solid-PRESS™**.

The Thermoplastic Press Fitting has been designed to provide what today's plumbers are looking for – a **slimmer, reliable & affordable** solution! The choice of base-body material is based on high performance polypropylene thermoplastic that comprises requirements of high impact & pressure strength, flexural strength, crack resistance, chemical resistance and durability. The stainless steel sleeves hold the joints firmly and permanently. The mechanical “press” mechanism has been a long-proven technology. This installation method is fast and easy by using guided professional tools.

Key features :

- Sleek & slim design
- Double seals – Double protection
- Conforming to latest Standard ISO-17885 (with MRS test certificate)
- Solid stainless steel sleeves structure
- Professional tools – error-proof installation
- Consistent installation mechanism
- Inspection windows to assure full insertion
- Distinguishable pressed marks

The products are tested and conformed to the stringent standard requirements and performance specifications.



Performance Specifications

Items	Units	Characteristic	Parameters
Pressure test	Bar	20°C (1h) : No break & leakage 95°C (1,000h) : No break & leakage	41 6.6
Leak tightness under internal pressure	MPa	20°C (1h) : Leak tight	2.4
Long term pressure	MPa	20°C (1,000h) : Leak tight	1.92
Resistance to pull out	N	23°C (1h) : No pull out	1,200
Leak tightness subjected to bending	MPa	20°C (1h) : Leak tight	2.4

Installation Procedures

01

CUT the pipe squarely with proper cutter

02

REAM the pipe with reamer to achieve smooth & round edge

03

INSERT the pipe into the fitting (inspect full insertion thru windows)

04

PRESS the stainless steel sleeve with the pressing tool (pressed lines are formed)

DURA-FIT®

wired-FUSE™ PE Electro Fusion Fittings

Product Standard : BS EN 12201-3 : 2011

The PE Electro Fusion Fitting is the most advanced and automated system amongst the PE fusion joining mechanism and it is also been proven to be most efficient, reliable and error proof system in particularly for larger diameter pipes. It is chosen in view of the practicality aspect when installing the larger pipes.

The embedded heating wires have been pre-insulated and hence they are spaced consistently during the molding process. The choices of quality tools and control boxes allow for easy installation and the control boxes provide computerized electro fusion data which is the full-proof operation. Each electro fusion fitting comes complete with a barcode. The entire process is executed and fully monitored by this computerized control box which ensures safe and dependable connections. Joint data is retrievable, hence enable traceability and quality analysis works to be done effectively.

Installation Procedures

01	02	03	04
			
MARK the insertion depth by measuring the depth of insertion from fitting	PEEL or scrape the pipe at insertion depth and clean the joint surface area	INSERT the pipe into the fitting. Scan or key-in the fuse parameters (wattage and time)	FUSE the pipe-fitting joints by applying electric current through the terminals

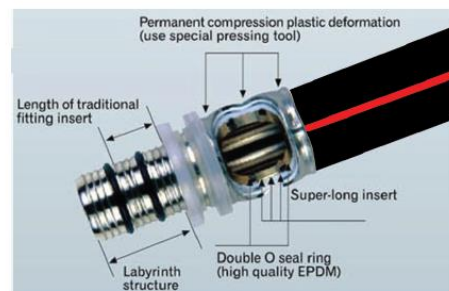
DURA-FIT®

solid-PRESS™ Brass Press Fittings

Product Standard : AS 4176-3 : 2010 & AS 2537 : 1994

The Brass Press Fitting is made of solid brass body with nickel plated to achieve strongest structure and for hygiene purpose. This high performance and durable fitting is highly recommended for hot water and under high pressure condition. The mechanical "press" mechanism has been a long-proven technology. This installation method is fast and easy by using guided professional tools.

- Solid and durable structure
- Double seals – Double protection
- Solid stainless steel sleeves
- Professional tools – error-proof installation
- Consistent installation mechanism
- Inspection windows to assure full insertion
- Sleek & slim design
- Distinguishable pressed marks



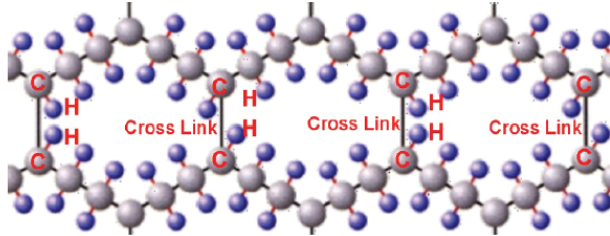
Installation Procedures

01	02	03	04
			
CUT the pipe squarely with proper cutter	REAM the pipe with reamer to achieve smooth & round edge	INSERT the pipe into the fitting (inspect full insertion thru windows)	PRESS the stainless steel sleeve with the pressing tool (pressed lines are formed)

Product Standard : AS 2492 : 2007 & AS 4176-2 : 2010 (PEX-AL-PEX Pipe)

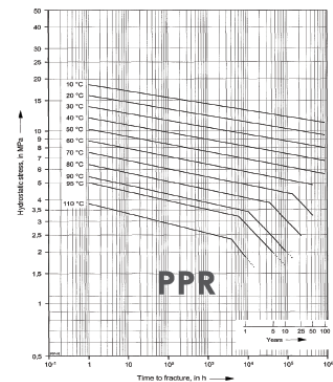
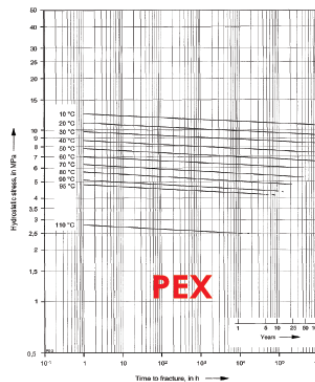
PEX (Cross-linked Polyethylene) is a high performance and flexible polymer pipe. It is formed by chemically bonding individual polyethylene molecules in order to enhance the physical properties and to improve the performance of the original base resin in higher temperature and pressure conditions.

Polyethylene - crosslinked



Durability

PEX pipes are designed based on 50 years working life-time. It is being "cross-linked", thus demonstrating a more superior durability and consistent performance for internal pressure at different temperatures and against times according to the reference curve as shown.

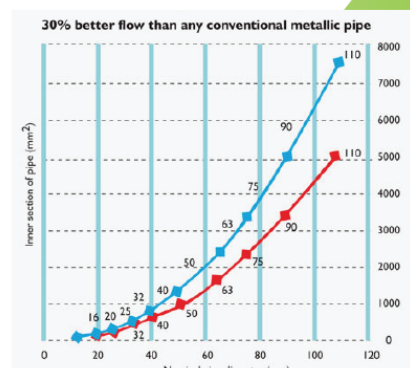


Performance Specifications

Dimension, OD (mm)	16	20	25	32
Inner diameter (mm)	12	16	20	26
Wall thickness (mm)	2.0	2.0	2.5	3.0
Working pressure (PN) at 20°C	12.5	12.5	12.5	12.5
Working temperature (C°)	- A range of - 45°C to 95°C - Peak temperature : 110°C (max duration of 1 hour) - Peak temperature : 110°C (max duration of 1 hour) 95°C at 4 Bars / 70°C at 8 Bars			
Coefficient of thermal expansion (mm/m*K)	0.130 – 0.150			
Thermal conductivity (Wm/mK)	0.41 (vs copper at 28.0)			
Length in straight tube (M)	5	5	5	5

Smooth Surface for Higher Flow Rate

Base on "Hazen-Williams" equation, PEX pipes have smoother surface (low roughness coefficient), hence able to increase the flow rate. And in terms of dimensional calculation, use of relatively smaller pipe inner diameter can be considered yet achieving equivalent flow rate.



■ Plastic Pipes
 ■ Metallic Pipes

DURA-TUBE® & DURA-FIT®

Product List

HDPE Pipes

PE100 PN12.5 (5m)



DN25 | DN32 | DN40 | DN50 | DN63
DN75 | DN90 | DN110 | DN125
DN160 | DN200

PE100 PN16 (5m)



DN20 | DN25 | DN32 | DN40 | DN50
DN63 | DN75 | DN90 | DN110
DN125 | DN160 | DN200

PEX Pipes

PEX S4 (5m)



DN16 | DN20 | DN25

** Standard packing for pipe is 5m straight tube. Roll forms are upon request.

easy-PRESS™ Thermoplastic Press Fittings

Equal Socket



S20 | S25 | S32

Reducing Socket



S25x20 | S32x20 | S32x25

Male Socket



S20x½"M | S20x¾"M | S25x½"M
S25x¾"M | S25x1"M | S32x¾"M | S32x1"M

Equal Elbow



L20 | L25 | L32

Reducing Elbow



L25x20 | L32x25

Male Elbow



L20x½"M

Female Elbow



L20x½"F | L25x½"F

Equal Tee



T20 | T25 | T32

Reducing Tee



T25x20 | T32x20 | T32x25

Female Tee



T20x½"F

Female Socket



S20x½"F | S25x¾"F | S32x1"F

Tank Connector



TC25x¾"M | TC32x1"M

Pressing Tool (individual)



PT20 | PT25 | PT32

Pipe Reamer



R20-32

Pipe Cutter



PC20-32

wired-FUSE™

PE Electro Fusion Fittings

Equal Socket	Reducing Socket	Equal Elbow	45° Elbow	Spigot Flange Adaptor
				
S90 S110 S125 S160 S200	S90x63 S110x63 S110x90 S125x90 S125x100 S160x90 S160x110 S200x110 S200x160	L90 L110 L125 L160 L200	L90x45° L110x45° L125x45° L160x45° L200x45°	FS90 FS110 FS125 FS160 FS200
Equal Tee	Reducing Tee	Male Tee (fabricated)	Tapping Saddle	Electro Fusion MC
				
T90 T110 T125 T160 T200	T90x63 T110x63 T110x90 T125x90 T125x110 T160x90 T160x110	T90x2" M T110x2" M	TS110x32 TS160x32 TS200x32	MC50-315

solid-PRESS™

Brass Press Fittings

Equal Socket	Reducing Socket	Male Socket	Female Socket
			
S16 S20 S25	S20x16 S25x16 S25x20	S16x½"M S20x½"M S20x¾"M S25x¾"M S25x1"M	S16x½"F S20x½"F S20x¾"F S25x¾"F S25x1"F
Equal Elbow	Reducing Elbow	Male Elbow	Female Elbow
			
L16 L20 L25	L20x16 L25x20	L16x½"M L20x¾"M L25x¾"M L25x1"M	L16x½"F L20x½"F L20x¾"F L25x¾"F L25x1"F
Equal Tee	Reducing Tee	Female Tee	Pressing Tool (individual)
			
T16 T20 T25	T20x16 T25x16 T25x20	T16x½"F T20x½"F T20x¾"F T25x¾"F T20x1"F	PT16 PT20 PT25
F Swivel Socket	F Swivel Elbow	Pipe Reamer	
			
SW16x½"F SW20x½"F	LW16x½"F LW20x½"F	RX16-25	

DURA-TUBE® & DURA-FIT®

Product Warranty

PTS Tech Solutions Sdn. Bhd. (www.PTSTECHS.com) provides warranty to its products (under brand names of DURA-TUBE® & DURA-FIT®) to be free of defects in workmanship and under normal use, service and when used for the purpose under the conditions for which they are intended.

This warranty shall not apply to any DURA-TUBE® and DURA-FIT® products that have been altered, repaired and/or used in any way, stored outside, or have been subjected to misuse, negligence, accident and/or have not been installed in accordance with installation instructions.

Installation of DURA-FIT® easy-PRESS™ series Thermoplastic Press Fittings & solid-PRESS™ series Brass Press Fittings requiring the use of relevant tools which include the reamer to ream the pipe in order to ensure the smooth insertion to the end of the fittings and pressing tool with appropriate sizes and U-profile type where "pressed lines" will be used to judge the proper and final installation inspection.

Installation of DURA-FIT® smart-FUSE™ series PE Socket Fusion Fittings requiring the use of PTSTECHS tailor-made welding bushes (20mm – 110mm). There are two enhancement features (under patent pending) which are smart-INSERT™ (SR-2) that has to be used for 20mm – 32mm pipe installation and smart-RING™ (SR-1) that has to be used for 40mm – 110mm pipe installation.

Installation of DURA-FIT® wired-FUSE™ series PE Electro Fusion Fittings requiring 39.5V to fuse and must be carried out using PTSTECHS supplied or equivalent approved brand of electrofusion welder. The welder is rated at 3.5kW output power and 75V output voltage with temperature compensating feature operating at 230/240 VAC requiring power supplied through portable power generator rated at 6.5kW (minimum). If pipe is more than 1.5% out of roundness the use of Re-round Clamp is required to ensure proper installation. The fused area on pipe must be peeled and cleaned prior to inserting into the fitting.

All installation instruction must be adhered to, or our Product Warranty is null and void. Installation of fittings must be carried out by properly trained and qualified operator(s) and/or by witness of the factory representative.

The obligation of PTSTECHS under this warranty shall be limited to replacement of any parts that may prove defective under normal use. PTSTECHS shall have the right to inspect the said products and purchaser shall, if requested, return defective product prepaid to PTSTECHS. Purchaser shall assume all responsibility and expenses for removal, reinstallation and freight charges in connection with the foregoing remedy.

PTSTECHS shall not be liable for indirect, special, incidental or consequential damage or penalties and does not assume any liability of purchaser to other, or to anyone for injury to persons and/or property. Any claim regarding shortage or damages from shipment of products must be submitted in writing to PTSTECHS within 10 days after receipts of shipment. Buyer shall not loss or damage on delivery order and provide a delivery receipt stating such with driver's signature.

Purchasers are responsible for passing on this Limited Warranty to their customers.

In addition, PTSTECHS is in its best effort to offer the Product Liability Assurance up to the RM1,000,000.00 annually for 10 years at the time of purchase that cover the losses to the 3rd parties in any forms of injury and property damages. However, the amount of insured sums and scopes of coverage is upon revision base on the on-going changes of market needs and situation without prior notice.

PTS[•]TECHS

PTS Tech Solutions Sdn. Bhd. (www.PTSTECHS.com) has been set-up to promote green technology & solutions based on the high technologies innovation, creativity in ideas, renewable / optimizing resources and environmental friendly preservation.

The main green product lines are the high performance thermoplastic engineered pipes & fittings which are flexible in usage and innovative in design. These products have been widely used in the developed countries worldwide due to their higher strength in engineering properties, energy efficiency, cost saving, easy handling, durability and eco-friendliness.

PTSTECHS sets to be the forefront by introducing DURA-TUBE® Pipes and DURA-FIT® Fittings series as the new lines of high grade, high quality piping solutions, providing integrated systems from pipes and fittings to professional tools and accessories.

With more than 20 years of experiences in various industrial and engineering fields, we have played an essential role to introduce new products & solutions by closely co-operating with our global strategic partners who have the well-established and advanced manufacturing technology capability with ISO9001/ISO14001 certifications in the quality and environmental management systems, apart from the accredited products testing and certifications in their respective fields.

At **PTSTECHS**, we endeavor to provide our customers and partners with diversity in choices, satisfaction in quality and best in product & service value. We continue to strive for excellences by expanding new product ranges, streamlining efficiency and innovating new ideas with passion that would lead to making the world healthier, cleaner and greener...

PTS Tech Solutions Sdn Bhd (1059059-T)

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