Hydralectric
HOSE AND VALVE TECHNOLOGY

Hydralectric, 5 High Road
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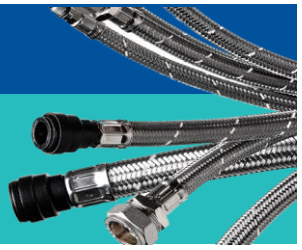
TECHNICAL DATA SHEET

PREMIER PLUS HOSE RANGE



DESCRIPTION

The Premier plus range provides safe and taint-free conveyance of potable water between the mains water supply and free standing applications. Premier plus range is supplied with a liner manufactured TPS Thermoplastic Styrene which has elastomer properties for flexibility and kink resistance.
The blend of silicon and thermoplastic polymer reduces the formation of biofilm derived from bacteria present in the water supply and odours commonly associated with more traditional EPDM lined hoses.
The range is designed to achieve robust and flexible solutions with the following attributes:

- **Water Regulation Advisory Scheme (WRAS) approval pending.**
- **Robust construction with excellent abrasion and crush resistance**
- **Eliminate risks associated with taint and odour contamination**
- **Excellent flexibility and kink resistance**
- **Wide selection of standard plumbing connections**
- **Customised design options available for OEM clients**

APPLICATION

The Premier plus Range is used extensively in the UK for Domestic and Commercial potable water applications in:

- **Water Filtration Applicances**
- **Water Softeners**
- **Drinking Water Fountains or Faucets**
- **Point of Use Water Dispensers**
- **Drinks Vending Machines**

GENERAL PERFORMANCE DATA

HOSE REF	MIN BEND RADIUS (MM)	WORKING PRESSURE AT 20°C (BAR)	WORKING PRESSURE AT 65°C (BAR)	SECURITY PRESSURE AT 20°C (BAR)	FLOW RATE AT 3 BAR (L/MIN)
DN8	35	12	6	18	28
DN10	50	12	6	18	40
DN13	50	12	6	18	57
DN20	80	12	6	18	135

Working: Pressure & temperature are stated as the maximum continuous value

Security: Pressure is stated as the peak pressure to be attained for short durations or transient pressure spikes
Installations where water hammer exceeds the limits stated will invalidate warranty

Bend: Minimum by which the hose can be bent without causing excessive stress to the hose fabric or kink

PRESSURE

The calculation of pressure drop is based on the hose internal diameter and estimation of losses for different types of end connections. These are explained as follows:

Schedule 1: Pressure loss for hose based on internal diameter (DN) and length

Formulae: P1 mbar = F1 x L
F1 = Pressure drop (mbar) according to flow capacity in m^3/h
L = Length of hose (metres)

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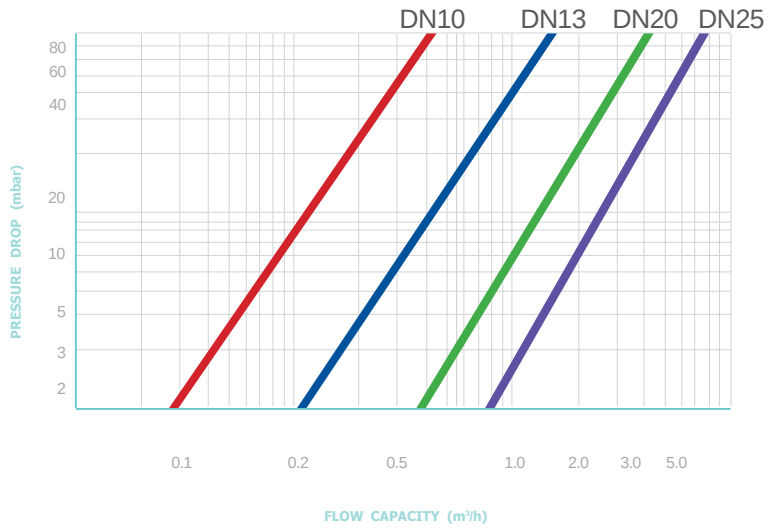
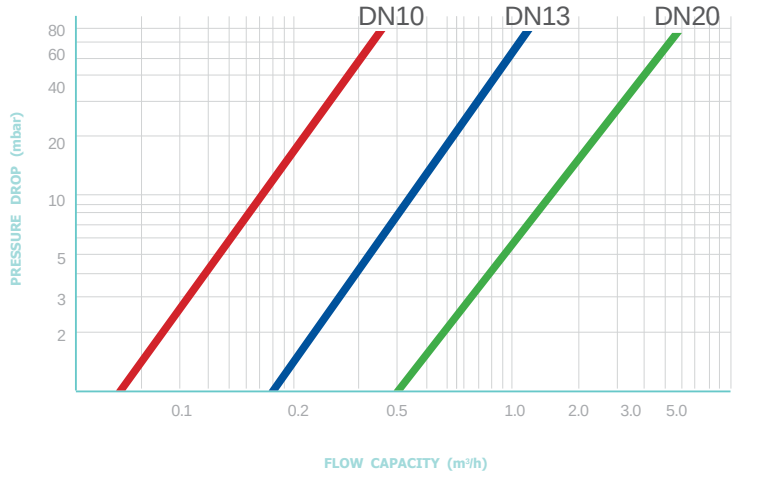


Schedule 2: Pressure loss for type of end connection based in internal diameter (DN)

Formula: P2 = P3 x R
P3 = pressure drop in mbar according to its flow capacity in m³/h
R = Correction factor for end connections
2 x Straight female/ male connections = 0
1 x Elbow = 1.5
2 x Elbows = 3.0



Therefore pressure drop (mbar) can be calculated for any given hose assembly adding P1 and P2

Example:

Flexible Hose: DN13
Flow capacity: 1000 lit/hr (1.0m³/hr)
Length: 500mm, terminated with 1 male and 1 female elbow would be calculated as follows
Correction factor: 1.5

P = (F1 x L) + (P3 x R)
P = (26mbar x 0.5mtr) + (23mbar x 1.5) = 47.5mbar

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GENERAL CONSTRUCTION DATA

END CONNECTION	SIZE RANGE	MATERIAL	STANDARD
FEMALE SWIVEL	1/4BSP - 1"BSP	CW614N/CW617N	EN12164/5
FEMALE SWIVEL ELBOW	3/8BSP - 1"BSP	CW614N	EN 12164
MALE TAPER	1/4BSP - 1"BSP	CW614N	EN12164
COMPRESSION 15MM	15mm	CW614N/CW617N	EN1254-2, ISO 6957
COMPRESSION 22MM	22mm	CW614N/CW617N	EN1254-2, ISO 6957
COMPRESSION ISO VALVE	15mm	CW614N/CW617N	EN1254-2
COMPRESSION ISO VALVE	22mm	CW614N/CW617N	EN1254-2
STANDPIPE	15mm - 28mm	CW614N/CW617N	EN12164/5
PUSH-FIT BRASS	10mm - 22mm	CW614N/CW617N	EN12164/5
MONO BLOCK	8mm to 12mm	CW614N	EN12164
PUSH FIT PLASTIC	15mm – 22mm	Acetyl Black	BS6920
FEMALE SWIVEL	1/2BSP- 3/4BSP	Nylon Black	BS6920
FEMALE ELBOW SWIVEL	3/4BSP	Nylon Black	BS6920
STANDPIPE	22mm	Acetyl Black	BS6920
WASHER	1/2BSP - 1"BSP	Fibre & Silicon	BS6920
O RINGS & WASHERS	Various	EPDM	BS6920
HOSE LINER	DN10 - DN25	Thermoplastic Styrene (TPS)	BS6920
HOSE BRAID	DN10 - DN26	Stainless Steel 304	EN 10204 3.1
FERRULE	DN10 - DN27	Stainless Steel 304	EN 10088-2

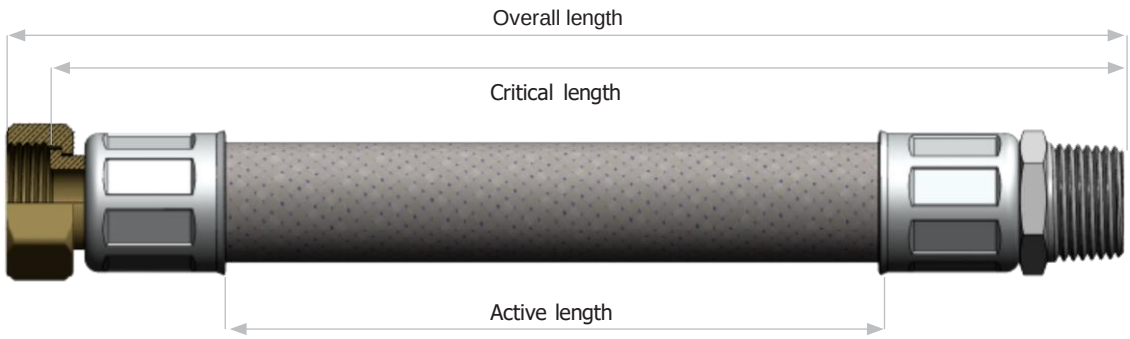
Note:

- **External Brass fittings are supplied with nickel plated finish to avoid tarnishing**
- **Male Taper fittings should be used with female swivel or push fit connections to avoid twisting and torsion stress**
- **Compression Joints tested for Stress Corrosion Cracking to ISO 6957:1998**

LENGTH

Hose assemblies are quoted by their overall length; as measured from end face to end face for each fitting. The standard manufacturing tolerance on overall length is:

- **<500mm +/- 5.00mm**
- **>500mm +/- 10.00mm**



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Critical length is the distance between hose mating faces. This must be 10% greater than the actual distance between the two corresponding fixed mating parts to avoid tensile stress whilst in service.

Active length is the length by which pressure and movement is absorbed by the flexible hose.

HOSE DATA

The Premier plus range incorporates a patented silicone vulcanite (TPSiV) - a polymer blend of Polypropylene, Polyethylene, and cross linked to silicon. Processing TPSiV relies on simple extrusion process and recycling of any waste material. The liner is manufactured under closely controlled conditions to ensure compliance to requirements against BS6920. The hose and liner are identified by:

- **Batch code and identification code for traceability**
- **White tracer for easy identification in service**

FERRULE DATA

The ferrule is an integral part of the swage joint, between the end fitting and the flexible hose. The integrity of the ferrule must be maintained throughout its service.
Note: Do not use grippers or spanners to secure against the end connections

The ferrule contains important information:

- **WRAS Identification: QWRAS**
- **Temperature: 6 bar @ 65°C**
- **Date of manufacture: Year and month code e.g. 2016 A**

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
A	B	C	F	G	H	L	N	P	S	T	V

STANDARDS

Water Regulations Advisory Scheme (WRAS) approved and complies with requirements of:

- **The Water Supply (Water Fittings) Regulations 1999**
- **The Water Byelaws 2004 Scotland**
- **Water Supply (Water Fittings) Regulations Northern Ireland 2009**

QUALITY ASSURANCE

Hydralectric is ISO 9001:2008 certified by British Standards Institute under certification number FM7541. The Premier plus range is manufactured under strict quality assurance systems to ensure integrity, the following tables summaries the different tests available for product development and manufacturing, these are updated and subject to change.

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TEST	DEVELOPMENT	PRODUCTION
WORKING PRESSURE	Material, Process & new Product.	QA Audit
BURST PRESSURE	Material, Process & new Product.	QA Audit
THERMAL AGEING AND FATIGUE	Material, Process & new Product.	QA Audit
TENSILE PULL TEST	Material, Process & new Product.	Audit
VISUAL COMPLIANCE		100%
OVERALL LENGTH		100%

INSTALLATION

Check the application does not exceed the rated temperature or pressure as stated for both continuous and transient variations. Premier plus range must not be exposed to water or ambient temperature below 5°C. Flexible hoses should be installed by a competent Plumber or Engineer in accordance with standards and recommendations of BS 6700:2006. The Installation guide is available on Hydralectric website **www.hydralectric.com**.

CHEMICAL RESISTANCE

The Premier plus range is designed for use with hot and cold potable water supplies. The Premier plus range should not be used in closed systems or in the presence of chemical inhibitors or solder fluxes.

Caution: Brass Fittings used on cold water lines will gather condensation and may become exposed to environments which are alkaline and corrosive, please see Installation Guide Part 2 for guidance and best practices.

TECHNICAL ASSISTANCE

Please contact out Sales or Technical Support team on **0044 (0) 1932 334200**, or visit our website **www.hydralectric.com**