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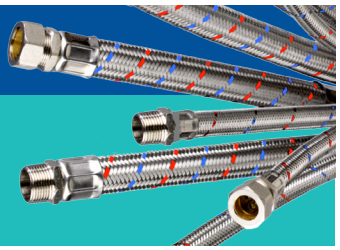
TECHNICAL DATA SHEET

ELITE HOSE RANGE



DESCRIPTION

The Elite range provides robust and flexible solution for the safe conveyance and distribution of water in both heating and cooling services. The key attributes are:

- **Superior material selection to ensure longevity**
- **Robust construction with excellent abrasion and crush resistance**
- **Wide selection of industry standard connections**
- **Customer specific options available for OEM clients**

APPLICATION

The Elite range is extensively used to provide flexible water connection between water services and applications in:

- **Gas and oil fired boilers**
- **Chilled beams**
- **Fan Coil units**
- **Heating systems and pumps**

GENERAL PERFORMANCE DATA

HOSE SIZE	BEND MAXIMUM RADIUS (MM)	WORKING PRESSURE AT 20°C (BAR)	WORKING PRESSURE AT 85°C (BAR)	SECURITY PRESSURE AT 20°C (BAR)	FLOW RATE AT 3 BAR (LIT/MIN)
DN10	40	12	10	18	40
DN12	45	12	10	18	57
DN20	80	10	10	18	135
DN25	100	10	10	18	200

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

Note: Brass Push fit Connections have a maximum rating of 6 Bar at 85°C

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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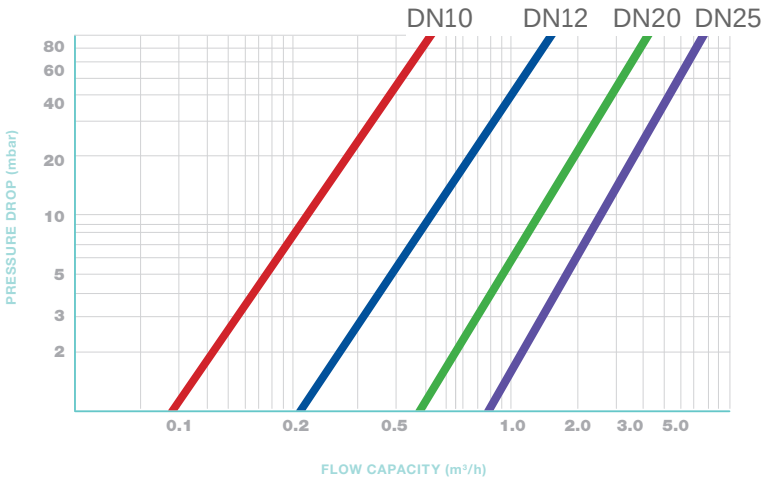
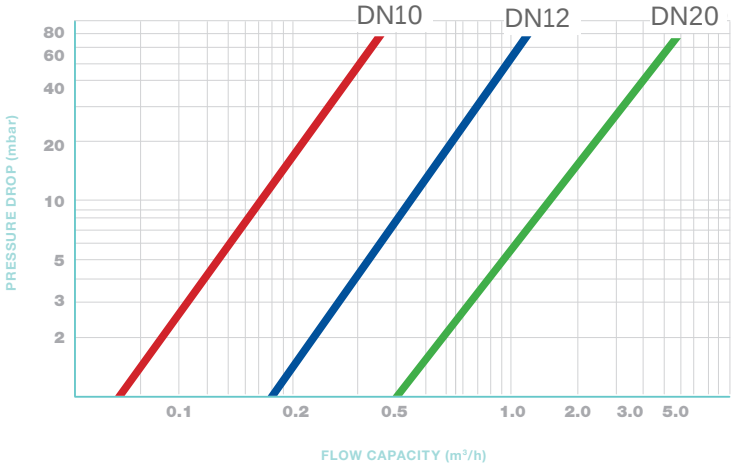


Schedule 2: Pressure loss for type of end connection based in internal diameter (DN)

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: DN12
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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TECHNICAL DATA SHEET

ELITE HOSE RANGE

GENERAL CONSTRUCTION DATA

END CONNECTION	SIZE RANGE	MATERIAL	STANDARD
FEMALE SWIVEL	1/2BSP - 1"BSP	CW614N/CW617N	EN12164/5
FEMALE SWIVEL ELBOW	1/2BSP - 1"BSP	CW614N	EN 12164
MALE TAPER	1/2BSP - 1"BSP	CW614N	EN12164
COMPRESSION 15MM	15mm - 28mm	CW614N/CW617N	EN1254-2, ISO 6957
COMPRESSION ISO VALVE	15mm - 22mm	CW614N/CW617N	EN1254-2
STANDPIPE	15mm - 28mm	CW614N/CW617N	EN12164/5
PUSH-FIT BRASS	10mm - 22mm	CW614N/CW617N	EN12164/5
WASHER	1/2BSP - 1"BSP	Fibre - Green	
O RINGS	15mm - 22mm	EPDM	BS6920
HOSE LINER	DN10 - DN25	EPDM	
HOSE BRAID	DN10 - DN26	Stainless Steel 304	EN 10204 3.1
FERRULE	DN10 - DN25	Stainless Steel 305	EN 10088-2

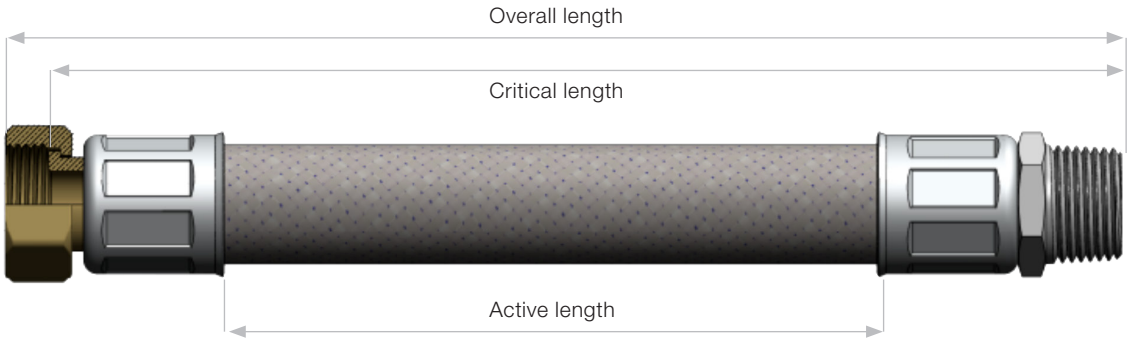
Note:

- **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**



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.

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TECHNICAL DATA SHEET

ELITE HOSE RANGE

HOSE DATA

The Elite range incorporates a non toxic liner manufactured from Ethylene Propylene Diene Monomer (EPDM). The liner has specifically been formulated to achieve longevity when used in closed water systems and subject to thermal endurance testing to simulate service life of not less than 10years. The hose and liner are identified by:

- **Batch code and identification code for traceability**
- **Red/Blue tracer for easy identification in service**

INSULATION

Elite range can be supplied fitted with a closed cell, nitrile elastomeric insulation layer, providing highly efficient method of insulating hot and cold water services, chilled water lines, and energy conservation and frost protection. Key attributes are:

- **Reduce heat loss or gain by 80%**
- **Personnel protection against high surface temperatures**
- **Protect against freezing and surface aging**
- **Prevent surface condensation**
- **Increase operational efficiency of heating, cooling and other fluid management systems**
- **Fire Rating: Class 0, BS 476 (UK), B2, DIN 4102 (Germany)**

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:

- **Brand Name: Qualflex**
- **Temperature: 10 bar @ 85°C**
- **Date of manufacture: Year and month code e.g. 2016 A**

Month coding:

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

QUALITY ASSURANCE

Hydralectric is ISO 9001: 2008 certified by British Standards Institute under certification number FM592672. The Elite 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.

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%

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INSTALLATION

Check the application does not exceed the rated temperature or pressure as stated for both continuous and transient variations. Flexible hoses should be installed by a competent Plumber or Engineer in accordance with standards and recommendations of BS 6700:2006. Installation guide parts 1 & 2 available on Hydralectric website **www.hydralectric.com**.

CHEMICAL RESISTANCE

It is the responsibility of the installer to ensure the hose material is compatible with additives used in the final application. Chemical resistance information is available on the Hydralectric website http://www.hydralectric.com/h/chemical-resistance.

Ensure the pipe connection to Elite flexible hose range are free from solder fluxes; failure may impair service life and invalidate product warranty.

Caution: Brass Fittings used on cold water lines will gather condensation and may become exposed to environments which are alkaline and corrosive, see installation guides 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**