



The Elite range provides robust and flexible solution to modern Building Services for the safe conveyance and distribution of water in both heating and cooling services, the key attributes are,

- Superior Material selection to ensure longevity and guarantee period of 10years.
- Robust construction with excellent abrasion and crush resistance.
- Wide selection of Industry standard connections
- Optional, Class O Armaflex insulation with built in Anti-Microbial protection.
- Delivery Service to match market demands
- Customised Design service with fast track order completion.
- Customer specific options available for OEM clients.

Applications

The Elite range is extensively used in the UK & European Building Services Sector to meet the stringent demands of Architects and Specifiers in large building projects and specifically in,

- Hot and Cold Water Systems
- Chilled Beams
- Fan Coil Units
- Heating Systems and Pumps

General Performance Data

Hose Size	Minimum Bend Radius (mm)	Working Pressure at 20°C (BAR)	Working Pressure at 90°C (BAR)	Safety Pressure at 20°C (BAR)	Flow Rate at 3 bar (lit/min)
DN10	35	15	15	45	40
DN13	45	15	15	45	57
DN20	80	10	10	30	135
DN25	100	10	10	30	200
DN32	160	10	10	30	360
DN40	180	6	6	18	540

Working pressure is stated as the continuous operating maximum pressure.

Security pressure is stated as the peak pressure to be attained for short durations or transient pressure spikes.

Bend radius is the minimum by which the hose can be bent without causing excessive stress to the hose fabric.



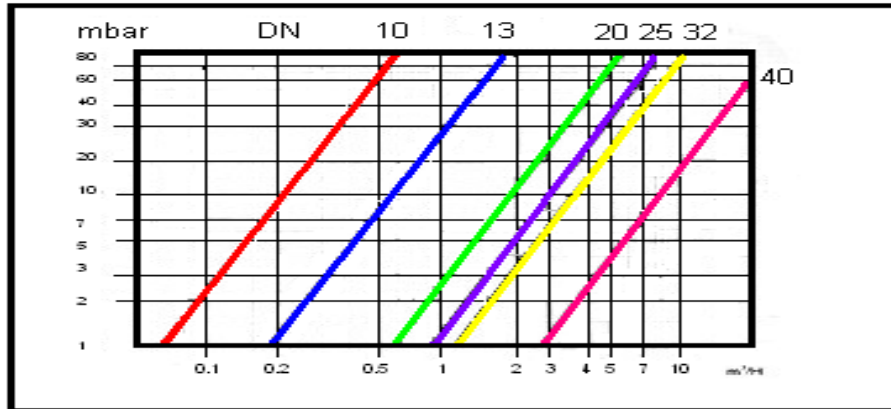
Pressure Drop

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: $P1 \text{ mbar} = F1 \times L$

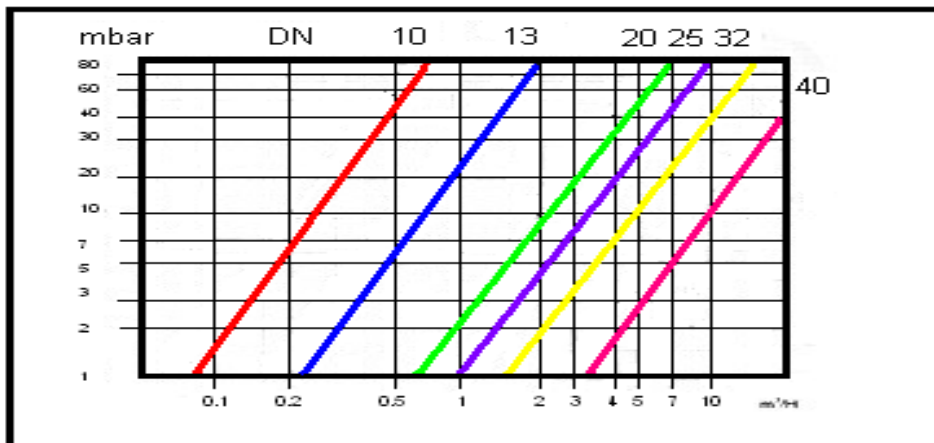
Where: $F1$ = Pressure drop (mbar) according to its flow capacity in m^3/h
 L = Length of hose (metres)



Schedule 2: Pressure Loss for Type of End Connection based in internal diameter (DN)

Formulae: $P2 = P3 \times R$

Where; $P3$ = pressure drop in mbar according to its flow capacity in m^3/h
 R = Correction factor
 0, for straight female and male end connections
 1.5, for one elbow
 3.0, for two elbows



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 ($1.0\text{m}^3/\text{hr}$)
 Length: 500mm, terminated with 1 male and 1 female elbow
 Correction factor: 1.5

$$P = (F1 \times L) + (P3 \times R)$$

$$P = (26\text{mbar} \times 0.5\text{mtr}) + (23\text{mbar} \times 1.5) = 47.5\text{mbar}$$

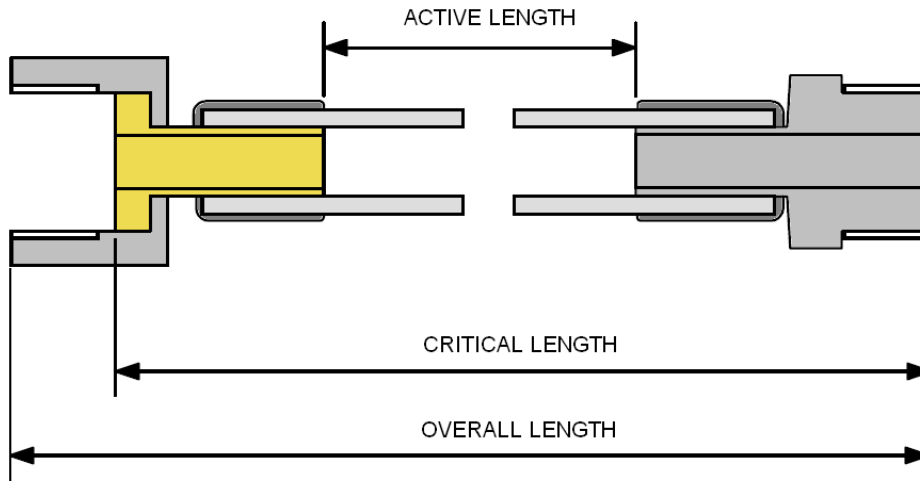


Dimensioning

Hose assemblies are quoted by their overall length as measured from end face to end face of each fitting.

Critical length is the distance between hose mating faces; note this value must be greater than actual distance between the two corresponding fixed mating parts to avoid tensile stress whilst in service.

Active length is the distance between the two ferrules, as a general rule the active length should be greater than the distance between corresponding fixed mating parts. Active length is the length by which pressure and movement is absorbed by the flexible hose.



Construction Data

End Connection Data

The Elite Range can be terminated in a range of Brass connectors to suit UK and European plumbing connections.

- Female Swivel connections: 1/2BSP to 1 1/2" BSP
- Female Elbow Connections: 1/2BSP to 1" BSP
- Male Connections: 1/2BSP to 1 1/2" BSP
- Isolation valves 15mm and 22mm
- Compression: 10mm to 28mm
- Standpipe 15mm to 28mm
- Push-fit Brass 10mm to 22mm
- Tectite Classic 15mm to 22mm
- Tema 1900 Quick Connect 1/2 INCH TO 1 INCH

Materials Specification

- Inserts Brass EN12164, CW614N (CZ121), plain and nickel plated.
- Female Nuts Brass EN12164 CW602N nickel plated
- Washers Green Fibre

Ferrule Data

The ferrule is an important part of the joint which is formed between the end fitting and flexible hose, the integrity of the final swaged joint must be maintained throughout its service life. Ferrules used on the Elite range have following physical attributes,

- Material Specification: Stainless steel AISI 304 EN 1.4301.
- Inspection Hole: DN10, DN13, and DN20, Security of braid present
- Date of Manufacture: Year Stamp



Hose Specification Data

The Elite range incorporates a non toxic liner with guaranteed life expectancy of 10 years,

Density:	1.18 gr/ cm ³
Hardness:	75 IRHD
Elongation Break:	11.5 Mpa
Elongation:	250 %
Tear strength:	300 n/cm
Operating temp:	-20°C to 100°C
Identification:	Printed with batch code and unique identification number

Hose Material Data:

Inner Liner:	Ethylene Propylene Diene Monomer (EPDM) Elastomer
External Braid:	Multi Strand Stainless Steel AISI 304 EN 10204 3.1
Identification:	Red & Blue Polyester tracer
Insulation:	Armaflex Seamless Insulation (Optional)
End Caps:	PVC End Caps (Optional)

Class O Armaflex

Elite range can be supplied fitted with Class 'O' Armaflex a closed cell, elastomeric, Nitrile rubber insulation that offers reliable protection against condensation and effectively prevents energy loss. Class O Armaflex is dust free, fibre free and CFC free with an ODP of zero. Its inherent attributes and combination of properties makes Armaflex a highly efficient method of insulating hot and cold water services, chilled water lines, heating systems, and refrigerated pipe work for condensation control, energy conservation and frost protection. Key attributes are,

Max Surface temperature:	105°C
Minimum Surface Temperature:	-50°C
Moisture resistance factor:	7000 microns
Fire rating:	Class 0

Mechanical Data

DN	ID (mm)	OD (mm)	CLASS O ARMAFLEX OD	ARMAFLEX END CAPS	Minimum Bend Radius	Minimum Burst Pressure (bar)at 20°C
DN10	10	14	na	na	40	100
DN13	13	17	33	YES	45	90
DN20	19.5	26	46	YES	80	70
DN25	23	31	60	YES	100	60
DN32	31	42	72	na	160	50
DN40	39	52	na	na	180	50

Chemical Resistance

If the application requires additives to water supply please refer to the chemical resistance charts and each material in contact with chemical under the same conditions of the final application. Ratings of chemical behavior listed on the website apply at a 48-hr exposure period.

Installation

Check the application does not exceed the rated temperature or pressure as stated above for both continuous and transient variations. Flexible hoses should be installed by a competent Plumber or Engineer. The Elite range of flexible hoses comes with a 10 year guarantee subject to the correct installation.



Quality Assurance

ISO 9001: 2008 compliant as certified by British Standards Institute under certification number FM75416. The Elite range is manufactured under strict quality assurance systems to ensure compliance, the following tables summaries the different tests available for product development and manufacturing, these are updated and subject to change.

TEST	Development	MANUFACTURING	
		Batch	Statistical
Working Pressure	Material, Process & new Product.	Client Specified	
Burst Pressure	Material, Process & new Product.		
20 bar air leakage under stress			AQL
5 bar air leak with air			AQL
Thermal Ageing and Fatigue	Material, Process & new Product.		
Tensile Pull Test	Material, Process & new Product.		
Visual Compliance	100%	100%	
Overall length	100%	AQL	

Origin

The Elite range is part of the Qualflex brand, and manufactured in the UK.

Technical Assistance

For further assistance and support with enquires please contact our Sales Team