BARNVALE
DESIGN AND INNOVATION

TECHNICAL SPECIFICATION

Flexible Hoses





Description

Our hose range provides a robust and flexible solution for safe conveyance and distribution of water in both heating and cooling services.

Key Attributes

- 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

Our 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	Working Pressure At 20°C	Working Pressure At 85°C	Security Pressure At 20°C	Flow Rate At 3 Bar
DN10	40	12	10	18	40
DN13	45	12	10	18	57
DN20	80	10	10	18	135
DN25	100	10	10	18	200

Working Security

Pressure & temperature are stated as the maximum continuous value.

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:

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Schedule 1

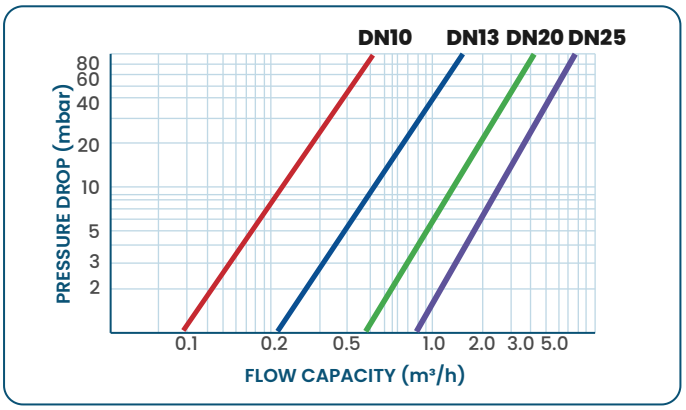
Pressure loss for hose based on internal diameter (DN) and length.

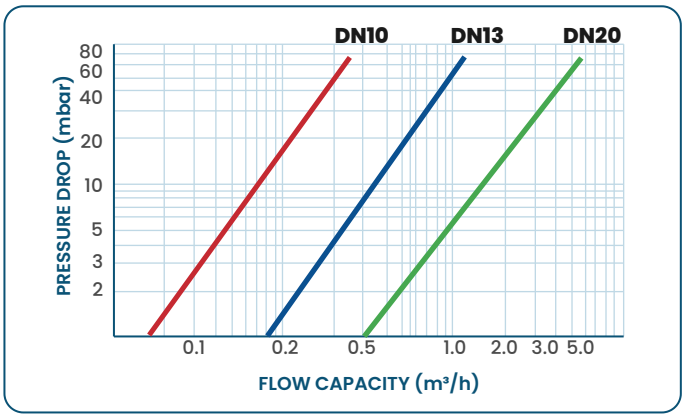
Formula: P1 mbar = F1 x L
F1 = Pressure drop (mbar) to flow capacity in m³/h
L = Length of hose (metres)

Schedule 2

Pressure loss for hose based on 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 Elbows = 3.0





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

General Construction Data			
End Connection	**Size Range**	**Material**	**Standard**
Female Swivel	1/2" BSP - 1" BSP	CW614N/CW617N	EN12164/5
Female Swivel Elbow	1/2" BSP - 1" BSP	CW614N	EN12164
Male Taper	1/2" BSP - 1" BSP	CW614N	EN12164
Compression 15mm	15mm - 28mm	CW614N/CW617N	EN1254-2, ISO 6957
Compression ISO Valve	15mm - 28mm	CW614N/CW617N	EN12154-2
Standpipe	15mm - 28mm	CW614N/CW617N	EN12164/5
Push-Fit Brass	10mm - 22mm	CW614N/CW617N	EN12164/5
Washer	1/2" BSP - 1" BSP	Fibre - Green	
O Rings	15mm - 28mm	EPDM	BS6920
Hose Liner	DN10 - DN25	EPDM	
Hose Braid	DN10 - DN26	Stainless Steel 304	EN10204 3.1
Ferrule	DN10 - DN25	Stainless Steel 305	EN10088-2

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

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.