Genie systems®

TECHNICAL SPECIFICATIONS

# Flexible Sprinkler Drops

## Unbraided Flexible Sprinkler Connection Data Sheet

**GENIE SYSTEMS Flexible Sprinkler Drops are designed to significantly reduce labor and installation costs. By eliminating the need for pipe cutting and midline connections, you save valuable time and money.**

Genie Systems flexible sprinkler connections offer braided and unbraided flexible hoses in 700mm,1000mm,1200mm and 1800mm with top loading or front loading brackets for variety of ceiling and wall applications:T-Bars, metal studs, hat channels, wood beams, concrete sidewalls, and more. The system is qualified to be installed at commercial, hotel, retail, restaurants, cultural, entertainment, educational, government, healthcare, and religious buildings.

### GENIE SYSTEMS Flexible Sprinkler Drops Appliance Standards

**1. Underwriter's Laboratories, Inc. (UL/ULC), cUL us 2443:**

- Standard for flexible sprinkler hose with fittings for fire protection service

**2. Loss Prevention Certification Board (LPCB):**

- LPS 1262 : Standard for TESTING FLEXIBLE HOSES FOR SPRINKLER SYSTEMS

**3. National Fire Protection Association (NFPA):**

- NFPA 13 : Standard for the Installation of Sprinkler Systems
- NFPA 13D : Standard for the Installation of Sprinkler Systems in One and Two-Family Dwellings and Manufactured Homes
- NFPA 13R : Standard for Installation of Sprinkler Systems in residential Occupancies up to and including four stories in height
- NFPA 13 Section 9.2.1.3.3.3 : No hangers are required for flexible connections as long as the length does not exceed 6ft.

**4. American Society for Testing and Methods (ASTM):**

- ASTM C635 : Standard specifications for the manufacture, performance, and testing of metal suspension systems for acoustical tile and lay-in panel ceilings
- ASTM C636 : Standard practice for installation of metal ceiling suspension systems for acoustical tile and lay-in panels

**5. International Building Code (IBC) Section 1621 / American Society of Civil Engineers (ASCE) 7.9.6.2.6.2 & 9.6.2.6.2.2:**

- Flexible Sprinkler Connections are an alternative solution to install without seismic escutcheons

| |
|---|
| Job Name : |
| Engineer / Architect : |
| Job Location : |
| Wholesaler : |
| Submittal Date : |
| Contractor : |

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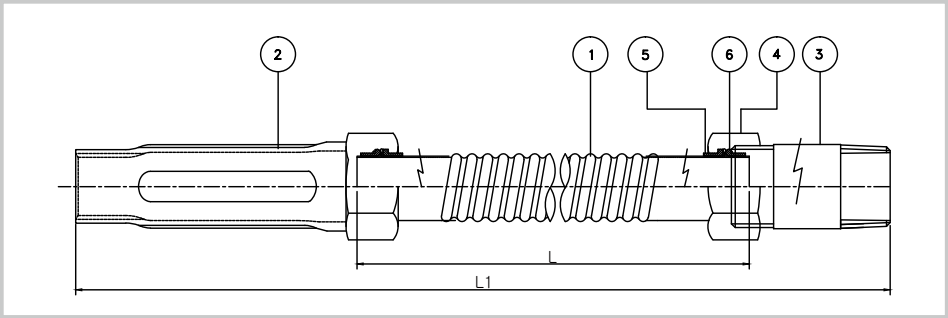
# TECHNICAL SPECIFICATIONS

## UNBRAIDED FLEXIBLE HOSE




1. FLEXIBLE TUBE
2. REDUCER
3. NIPPLE
4. SLIP NUT
5. ISOLATION-RING
6. GASKET

## SPECIFICATIONS

| | |
|---|---|
| Lengths Available | 700mm, 1000mm,1200mm, 1500mm, 1800mm |
| Outlet | 1/2" or 3/4" |
| Hose Type | Unbraided |

| | |
|---|---|
| Hose | Stainless Steel 304 |
| Nut & Nipple | Zinc-Plated Steel |
| Sealing Gasket / Isolation Ring | EPDM / NYLON |

| | |
|---|---|
| Max. Ambient Temperature Rating | 225°F |
| Max. Working Pressure Rating | 175 psig (UL/ULC) |

* Required torque to assemble reducer and nipple with the flexible hose : 300 kgf.cm

| | | |
|---|---|---|
| Minimum Bend Raius | 100mm(UL/ULC) From connection nuts | |
| Connection | Inlet | 1"NPT or BSP |
| | Outlet | 1/2" or 3/4"NPT or BSP |

## FRICTION LOSS DATA

c UL us LISTED EX15083

DJ25UB Series Unbraided Hose with Fittings

| Model | Rated Pressure, psig | Max. Ambient Temp, °F | Nom. Inlet by Outlet Size, in. | Assembly Length, ft (mm) | Max No. of 90° Bends | Min Bend Radius, mm. | Equivalent Length of 1 in. Schedule 40 Steel Pipe (C = 120), ft | Flexibility Type |
|---|---|---|---|---|---|---|---|---|
| DJ25UB-700 | 175 | 225 | 1x1/2 | 700 | 1 | 100 | 24 | Limited |
| DJ25UB-1000 | 175 | 225 | 1x1/2 | 1000 | 2 | 100 | 44 | Limited |
| DJ25UB-1200 | 175 | 225 | 1x1/2 | 1200 | 2 | 100 | 49 | Limited |
| DJ25UB-1500 | 175 | 225 | 1x1/2 | 1500 | 2 | 100 | 59 | Limited |
| DJ25UB-1800 | 175 | 225 | 1x1/2 | 1800 | 3 | 100 | 84 | Limited |
| DJ25UB-700 | 175 | 225 | 1x3/4 | 700 | 1 | 100 | 30 | Limited |
| DJ25UB-1000 | 175 | 225 | 1x3/4 | 1000 | 2 | 100 | 48 | Limited |
| DJ25UB-1200 | 175 | 225 | 1x3/4 | 1200 | 2 | 100 | 55 | Limited |
| DJ25UB-1500 | 175 | 225 | 1x3/4 | 1500 | 2 | 100 | 64 | Limited |
| DJ25UB-1800 | 175 | 225 | 1x3/4 | 1800 | 3 | 100 | 86 | Limited |

* UL : 100mm minimum bend radius, where C=120

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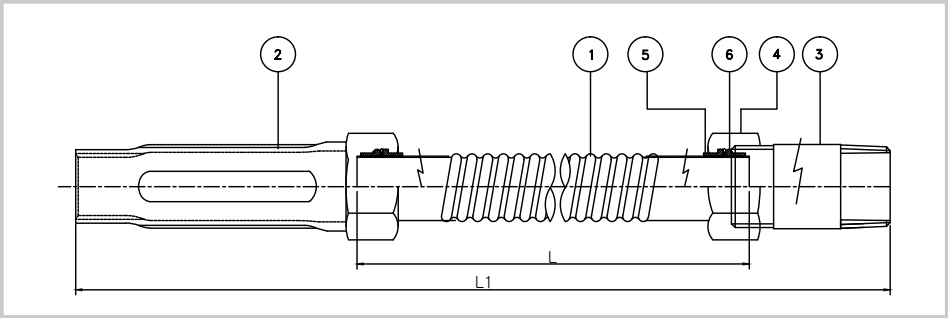
# TECHNICAL SPECIFICATIONS

## UNBRAIDED FLEXIBLE HOSE

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| | |
|---|---|
| Lengths Available | 700mm, 1000mm,1200mm, 1500mm, 1800mm |
| Outlet | 1/2" or 3/4" |
| Hose Type | Unbraided |

| | |
|---|---|
| Hose | Stainless Steel 304 |
| Nut & Nipple | Zinc-Plated Steel |
| Sealing Gasket / Isolation Ring | EPDM / NYLON |

| | |
|---|---|
| Max. Ambient Temperature Rating | 225°F |
| Max. Working Pressure Rating | 16 BAR( LPCB ) |

* Required torque to assemble reducer and nipple with the flexible hose : 300 kgf.cm

| | | |
|---|---|---|
| Minimum Bend Raius | | |
| Connection | Inlet | 1"NPT or BSP |
| | Outlet | 1/2" or 3/4"NPT or BSP |

## FRICTION LOSS DATA

### Pressure loss & equivalent length (clause 4.4.16)

The results of this test are shown in Tables 1 to 5.

Table 1 Summary of pressure loss & equivalent length for 700 mm flexible hose with one 90° bend and terminated in a ½" outlet reducer

| Flow rate (l/min) | Pressure upstream(bar) | Pressure downstream(bar) | Corrected pressure loss (bar) | Eqivalent Length |
|---|---|---|---|---|
| 40 | 0.31 | 0.20 | 0.005 | 0.40 |
| 60 | 0.75 | 0.49 | 0.077 | 3.00 |
| 80 | 1.43 | 0.93 | 0.199 | 4.56 |
| 100 | 2.22 | 1.44 | 0.321 | 4.89 |
| 120 | 3.22 | 2.08 | 0.483 | 5.23 |
| 150 | 5.01 | 3.23 | 0.751 | 5.38 |

Average equivalent length – 3.90

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# TECHNICAL SPECIFICATIONS

Table 2 Summary of pressure loss & equivalent length for 1000 mm flexible hose with two 90° bends and terminated in a straight ½" outlet reducer

| Flow rate (l/min) | Pressure upstream(bar) | Pressure downstream(bar) | Corrected pressure loss (bar) | Eqivalent Length |
|---|---|---|---|---|
| 40 | 0.34 | 0.20 | 0.035 | 2.88 |
| 60 | 0.93 | 0.52 | 0.227 | 8.86 |
| 80 | 1.66 | 0.92 | 0.439 | 10.06 |
| 100 | 2.62 | 1.43 | 0.731 | 11.09 |
| 120 | 3.79 | 2.05 | 1.083 | 11.73 |
| 150 | 6.05 | 3.24 | 1.781 | 12.76 |

Average equivalent length – 9.56

Table 3 Summary of pressure loss & equivalent length for 1200 mm flexible hose with two 90° bends and terminated in a straight ½" outlet reducer

| Flow rate (l/min) | Pressure upstream(bar) | Pressure downstream(bar) | Corrected pressure loss (bar) | Eqivalent Length |
|---|---|---|---|---|
| 40 | 0.36 | 0.20 | 0.055 | 4.53 |
| 60 | 0.97 | 0.52 | 0.267 | 10.42 |
| 80 | 1.73 | 0.92 | 0.509 | 11.67 |
| 100 | 2.75 | 1.43 | 0.861 | 13.06 |
| 120 | 4.02 | 2.07 | 1.293 | 14.00 |
| 150 | 6.32 | 3.21 | 2.081 | 14.91 |

Average equivalent length – 11.43

Table 4 Summary of pressure loss & equivalent length for 1500 mm flexible hose with two 90° bends and terminated in a straight ½" outlet reducer

| Flow rate (l/min) | Pressure upstream(bar) | Pressure downstream(bar) | Corrected pressure loss (bar) | Eqivalent Length |
|---|---|---|---|---|
| 40 | 0.37 | 0.20 | 0.065 | 5.36 |
| 60 | 0.98 | 0.52 | 0.277 | 10.81 |
| 80 | 1.76 | 0.93 | 0.529 | 12.13 |
| 100 | 2.77 | 1.43 | 0.881 | 13.37 |
| 120 | 4.03 | 2.08 | 1.313 | 14.22 |
| 150 | 6.35 | 3.22 | 2.101 | 15.06 |

Average equivalent length – 11.82

Table 5 Summary of pressure loss & equivalent length for 1800 mm flexible hose with three 90° bends and terminated in a straight ½" outlet reducer

| Flow rate (l/min) | Pressure upstream(bar) | Pressure downstream(bar) | Corrected pressure loss (bar) | Eqivalent Length |
|---|---|---|---|---|
| 40 | 0.40 | 0.19 | 0.105 | 8.66 |
| 60 | 1.05 | 0.51 | 0.357 | 13.93 |
| 80 | 1.93 | 0.92 | 0.709 | 16.25 |
| 100 | 3.05 | 1.44 | 1.151 | 17.46 |
| 120 | 4.38 | 2.05 | 1.673 | 18.12 |
| 150 | 7.04 | 3.25 | 2.761 | 19.79 |

Average equivalent length – 15.70

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