Victaulic® VicFlex™ Sprinkler Fittings
Series AH1 and AH1-CC Braided Flexible Hoses

Series AH1

Series AH1-CC

1.0 PRODUCT DESCRIPTION

Available Sizes by Component

- **Series AH1 0.8"/DN20 Nominal ID Braided Hose:** 31"/790 mm, 36"/915 mm, 48"/1220 mm, 60"/1525 mm, 72"/1830 mm Note: length includes adapter nipple and 5.75"/146 mm straight reducer.
- **Series AH1-CC 0.8"/DN20 Nominal ID Braided Hose**: 31"/790 mm, 36"/915 mm, 48"/1220 mm, 60"/1525 mm, 72"/1830 mm Note: length includes captured coupling and 5.75"/146 mm straight reducer.

Connections

- **From Branchline**
  - ¾"/20 mm BSPT Female Thread (VdS only)
  - 1"/25 mm NPT or BSPT Female Thread
  - 1"/25 mm Grooved IGS (refer to Publication 10.54 for additional IGS connections)
    - No. 116 CPVC Adapter (1"/25 mm Female CPVC Socket x 1"/25 mm Grooved IGS)
    - No. 142 Welded Outlet
    - Style 922 Outlet-T
    - Style 920N Mechanical-T Outlet
    - No. 65 Grooved End of Run Fitting
  - 1 ¼"/32 mm BSPT Female Thread (LPCB only)
- **Hose Inlet**
  - ¾"/20 mm BSPT Male Thread (VdS only)
  - 1"/25 mm Grooved IGS
  - 1"/25 mm NPT or BSPT Male Thread
  - 1 ¼"/32 mm BSPT Male Thread (LPCB only)
- **Sprinkler Reducer**
  - Sprinkler Connection: ½"/15 mm, ¾"/20 mm NPT or BSPT Female Thread
  - Straight Lengths: 5.75"/146 mm, 9"/230 mm, 13"/330 mm
  - 90° Elbows: Short elbows typically used with concealed sprinklers; Long elbows typically used with recessed pendent sprinklers.
    - Standard Short
    - Low-Profile Short
    - Standard Long
    - Low-Profile Long

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

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1.0 PRODUCT DESCRIPTION (CONTINUED)

Brackets

- Style AB2 for suspended and hard-lid ceilings and sidewalls: allows for vertical sprinkler adjustment and installation before most ceiling tiles are in place
- Style AB3 for surface mount applications: wood, metal and block walls, or ceilings
- Style AB4 for hard-lid ceilings with hat furring channel grid systems: allows for vertical sprinkler adjustment
- Style AB5 for hard-lid ceilings and sidewalls: allows for vertical sprinkler adjustment
- Style AB7 / Adjustable AB7 for suspended and hard-lid ceilings
- Style AB10 for Armstrong® TechZone™ ceilings
- Style AB11 for lay-in panel suspended T-grid ceilings or drywall suspended T-grid ceilings: allows for low-profile installation (use only with 90° low-profile elbows)
- Style AB12 for suspended and hard-lid ceilings: allows for vertical sprinkler adjustment, and allows for low-profile installation down to 4"/100 mm
- Style AB14 for stand-off mount applications: wood and metal stud/joist
- Style ABBA bracket for suspended, exposed, and hard-lid ceilings
- Style ABMM bracket for surface mount and stand off-mount applications: wood, metal and block walls, or ceilings and hard-lid ceilings
- Strut channel and pipe clamp, not supplied by Victaulic

Maximum Working Temperature

- 225°F/107°C
- 150°F/65°C (No. 116 CPVC Adapter)

Maximum Working Pressure

- 200 psi/1375 kPa (FM)
- 175 psi/1206 kPa (cULus)
- 232 psi/1600 kPa (VdS/LPCB)
- 203 psi/1.4 MPa (CCC)
- 175 psi/1206 kPa (No. 116 CPVC Adapter)

Minimum Bend Radius

- 7"/178 mm (FM/CCC)
- 3"/76.2 mm (cULus/VdS/LPCB)

Maximum Allowable Sprinkler K-Factors

- FM (½"/15 mm reducer) K5.6/8,1 (S.I.), (¾"/20 mm reducer) K14.0/20,2 (S.I.)
- cULus (½"/15 mm reducer) K8.0/11,5 (S.I.), (¾"/20 mm reducer) K8.0/20,2 (S.I.)
- VdS/LPCB (½"/15 mm reducer) K5.6/8,1 (S.I.), (¾"/20 mm reducer) K8.0/11,5 (S.I.)

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2.0 CERTIFICATIONS/LISTINGS

LPS 1261: Issue 1.2
Cert/LPCB Ref. 104I/02
104I/03

3.0 SPECIFICATIONS – MATERIAL

Series AH1

Flexible Hose: 300-Series Stainless Steel
Collar/Weld Fitting: 300-Series Stainless Steel
Gasket Seal: Victaulic EPDM
Isolation Ring: Nylon
Nut and Nipple: Carbon Steel, Zinc-Plated
Reducer: Carbon Steel, Zinc-Plated
Low Profile Elbows: Ductile Iron, Zinc-Plated or Carbon Steel, Zinc-Plated
Brackets: Carbon Steel, Zinc-Plated

Series AH1-CC

Flexible Hose: 300-Series Stainless Steel
Collar/Weld Fitting: 300-Series Stainless Steel
Gasket Seal: Victaulic EPDM
Isolation Ring: Nylon
Coupling Retainer Ring: Polyethylene
Nut: Carbon Steel, Zinc-Plated
Reducer: Carbon Steel, Zinc-Plated
Low Profile Elbows: Ductile Iron, Zinc-Plated or Carbon Steel, Zinc-Plated
Housing: Ductile iron conforming to ASTM A 536, Grade 65-45-12.
Ductile iron conforming to ASTM A 395, Grade 65-45-15, is available upon special request.

Coupling Housing Coating:

- Orange Enamel (North America, Asia Pacific)
- Red Enamel (Europe)
- Hot Dipped Galvanized

Gasket:[1]

Grade "E" EPDM (Type A)
FireLock EZ™ products have been Listed by Underwriters Laboratories Inc., Underwriters Laboratories of Canada Limited, and Approved by Factory Mutual Research for wet and dry (oil free air) sprinkler services within the rated working pressure.

[1] Services listed are General Service Guidelines only. It should be noted that there are services for which these gaskets are not compatible. Reference should always be made to the latest Victaulic Seal Selection Guide for specific gasket service guidelines and for a listing of services which are not compatible.

Bolts/Nut: Zinc electroplated carbon steel, trackhead meeting the physical and chemical requirements of ASTM A 449 and physical requirements of ASTM A 183.

Linkage: CrMo Alloy Steel zinc electroplated per ASTM B633 Zn/Fe 5, Type III Finish

No. 116 Adapter Fitting: CPVC and Brass
Seal: Victaulic EPDM

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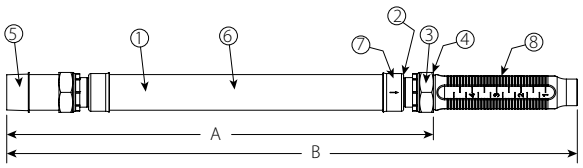
4.0 DIMENSIONS

Product Details

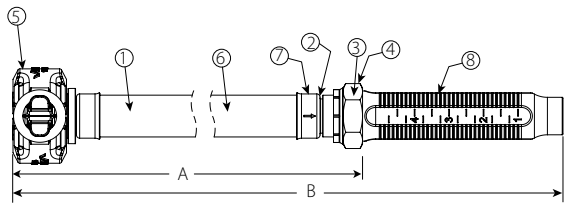
Series AH1 Braided Hose



Item	Description
1	Flexible Hose
2	Isolation Ring
3	Gasket
4	Nut
5	Adapter Nipple
6	Braid
7	Collar/Weld Fitting
8	Reducer

Hose	Dimensions	
	A inches mm	**B** inches mm
Series		
AH1-31	25.6 650	31.0 790
AH1-36	31.6 803	36.0 915
AH1-48	42.6 1082	48.0 1220
AH1-60	54.6 1387	60.0 1525
AH1-72	66.6 1692	72.0 1830

Series AH1-CC Braided Hose



Item	Description
1	Flexible Hose
2	Isolation Ring
3	Gasket
4	Nut
5	Captured Coupling
6	Braid
7	Collar/Weld Fitting
8	Reducer

Hose	Dimensions	
	A inches mm	**B** inches mm
Series		
AH1-CC-31	24.5 622	29.8 760
AH1-CC-36	29.5 749	34.8 885
AH1-CC-48	41.5 1054	46.8 1190
AH1-CC-60	53.5 1359	58.8 1495
AH1-CC-72	65.5 1664	70.8 1800

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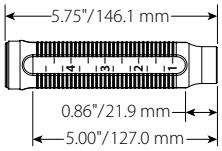
4.1 DIMENSIONS

Standard Reducer

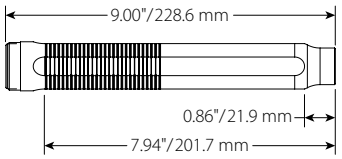


5.75" Straight Reducer

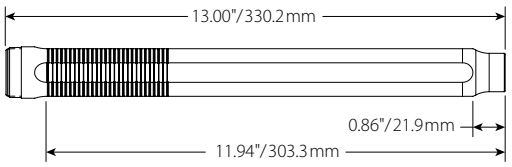
NOTE

- The center bracket can be installed anywhere along the flats of the reducer, not just the ribbed portion.
- The optional Straight Reducers are FM/VdS/LPCB Approved only.

Optional Reducers

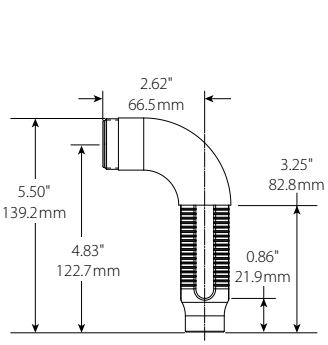


9.0" Straight Reducer

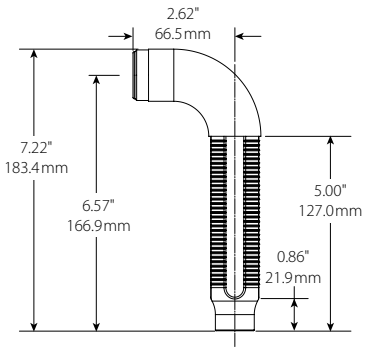


13.0" Straight Reducer

Standard Elbow Reducers



Short 90°
Elbow Reducer

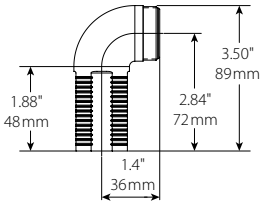


Long 90°
Elbow Reducer

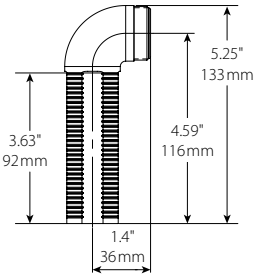
NOTES

- The Short 90° Elbow Reducer is typically used with concealed sprinklers while the Long 90° Elbow Reducer is typically used in the installation of recessed pendent sprinklers.
- FM/VdS/LPCB Approved only

Low-Profile Elbow Reducers



Short 90° Low-Profile
Elbow Reducer

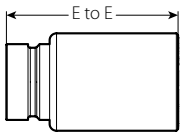


Long 90° Low-Profile
Elbow Reducer

NOTE

- Style AB11: When Low-Profile Elbows are used with the Style AB11 bracket, the Low-Profile Short Elbow is typically used with concealed sprinklers while the Low-Profile Long Elbow is typically used in the installation of recessed pendent sprinklers.

No. 116 CPVC Adapter



NOTES

- E to E is 3.0"/76.0 mm
- The No. 116 CPVC Adapter has 2 ft. (0.6 m) EQL of 1" Schedule 40 pipe.

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4.2 DIMENSIONS

VicFlex™ Brackets

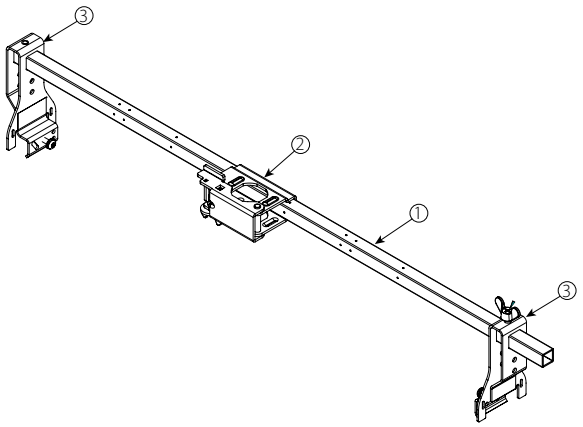
Style AB2

- Suspended Ceilings
- Hard-Lid Ceilings

Item	Description
1	24"/610 mm or 48"/1219 mm Square Bar
2	Patented Vertically Adjustable Center Bracket
3	End Bracket

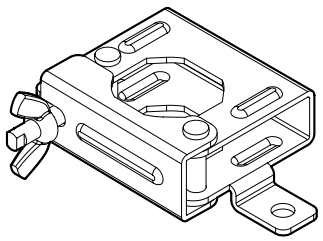
NOTE

- Both sizes FM/VdS/LPCB Approved, cULus Listed



Style AB3

- Surface Mount Applications
- FM/LPCB Approved



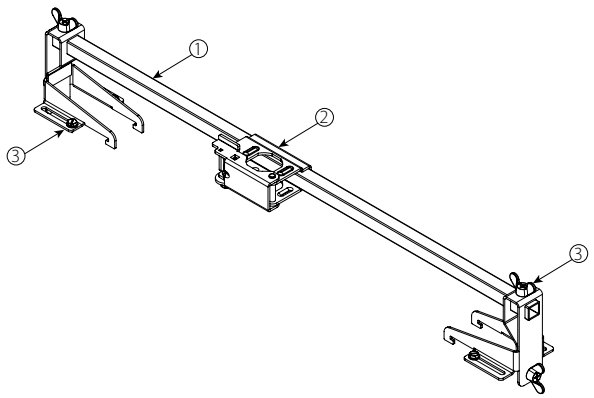
Style AB4

- Hard-Lid Ceilings with Hat Furring Channel Grid System

Item	Description
1	24"/610 mm or 48"/1219 mm Square Bar
2	Patented Vertically Adjustable Center Bracket
3	End Bracket for Hat Furring Channel

NOTE

- Both sizes FM/VdS/LPCB Approved, cULus Listed



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4.2 DIMENSIONS (CONTINUED)

VicFlex™ Brackets

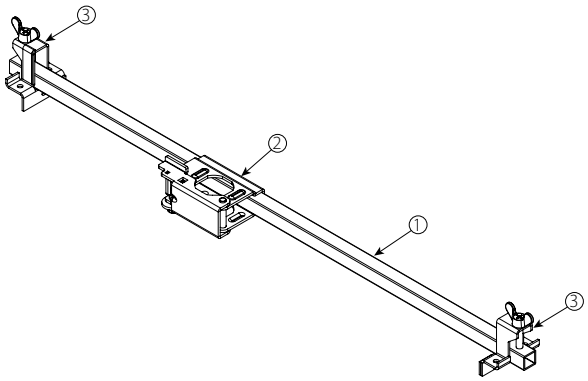
Style AB5

- Hard-Lid Ceilings

Item	Description
1	24"/610 mm or 48"/1219 mm Square Bar
2	Patented Vertically Adjustable Center Bracket
3	End Bracket

NOTE

- Both sizes FM/VdS/LPCB Approved, cULus Listed



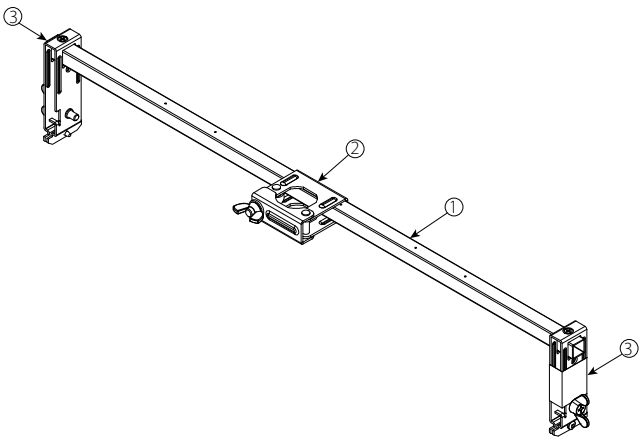
Style AB7

- Suspended Ceilings
- Hard-Lid Ceilings

Item	Description
1	24"/610 mm or 48"/1219 mm Square Bar
2	Patented 1-Bee2™ Center Bracket
3	End Bracket

NOTE

- Both sizes FM/VdS/LPCB Approved



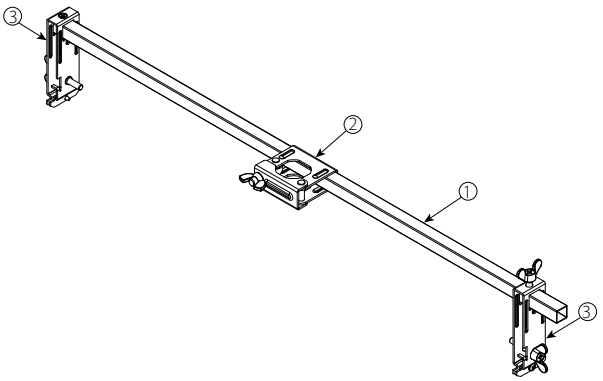
Style AB7 Adjustable

- Suspended Ceilings
- Hard-Lid Ceilings

Item	Description
1	700 mm or 1400 mm Square Bar
2	Patented 1-Bee2™ Center Bracket
3	End Bracket (adjustable)

NOTE

- Both sizes FM/VdS/LPCB Approved



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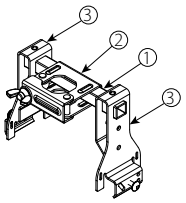
4.2 DIMENSIONS (CONTINUED)

VicFlex™ Brackets

Style AB10

- Suspended Ceilings
- Armstrong® TechZone™



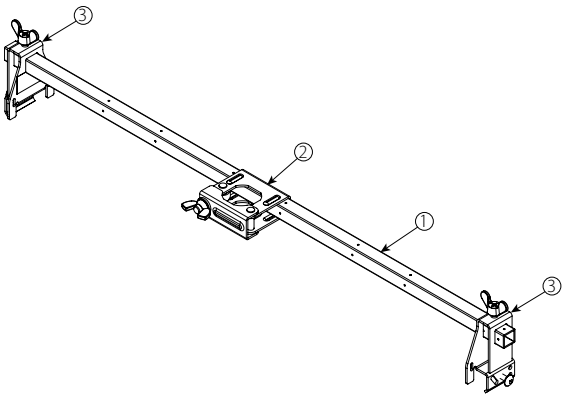
Item	Description
1	6"/152 mm Square Bar
2	Patented 1-Bee2™ Center Bracket
3	End Bracket

NOTE

- FM/VdS/LPCB Approved, cULus Listed

Style AB11

- Suspended Ceilings
- Hard-Lid Ceilings



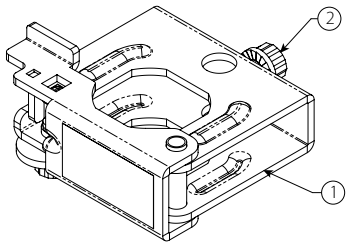
Item	Description
1	24"/610 mm or 48"/1219 mm Square Bar
2	Patented 1-Bee2™ Center Bracket
3	End Bracket

NOTE

- FM/VdS/LPCB Approved, cULus Listed

Style AB12

- Suspended Ceilings
- Hard-Lid Ceilings



Item	Description
1	Style AB12 Bracket Body
2	T25 Drive Set Screw

NOTE

- FM/VdS/LPCB Approved

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4.2 DIMENSIONS (CONTINUED)

VicFlex™ Brackets

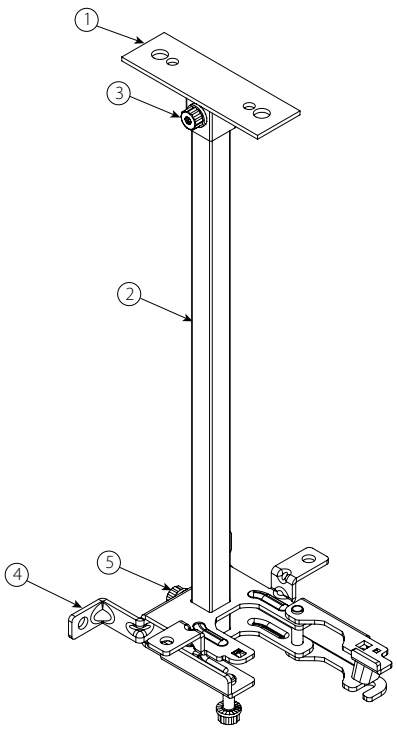
Style ABBA

- Floor-Above Mount
- Cantilever Mount
- Temporary Mount in Exposed Ceilings

Item	Description
1	Style ABBA Mounting Plate
2	Style ABBA Square Bar
3	Cap Screw, Serrated Flange, M6 x 1 x 20, T25 Torx Drive Recessed
4	Style ABMM Bracket Body
5	Cap Screw, Serrated Flange, M6 x 1 x 15.24, T25 Torx Drive Recessed

NOTE

- FM/LPCB Approved



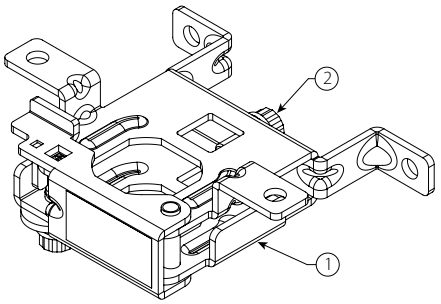
Style ABMM

- Surface Mount
- Stand-off Mount

Item	Description
1	Style ABMM Bracket Body
2	Cap Screw, Serrated Flange, M6 x 1 x 15.24, T25 Torx Drive Recessed

NOTE

- FM/LPCB Approved



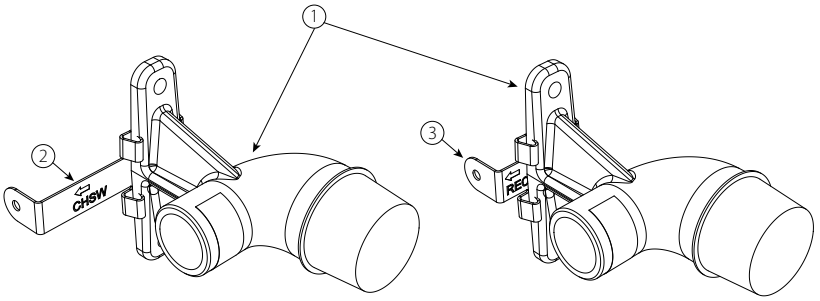
Style AB14

- Stand-off Mount
- Pendent or Sidewall Sprinklers

Item	Description
1	Style AB14 Elbow Bracket
2	Offset Mounting Bracket for Concealed Sprinklers
3	Offset Mounting Bracket for Recessed Sprinklers

NOTE

- Style AB14 Elbow Brackets are provided with both offset mounting brackets.



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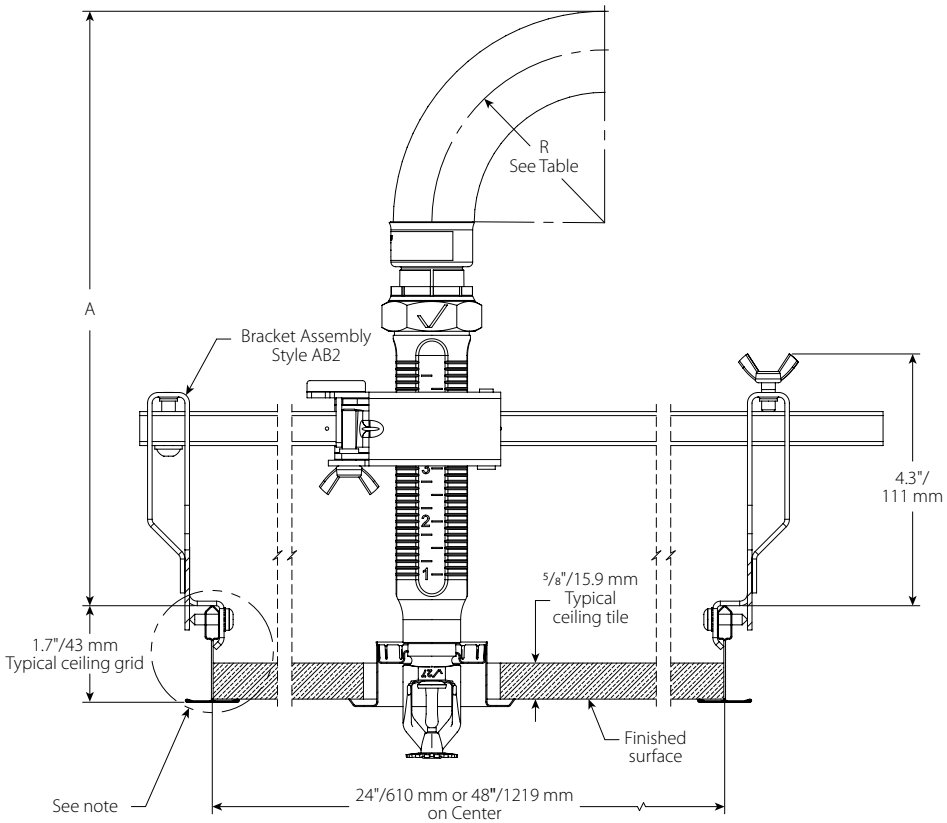
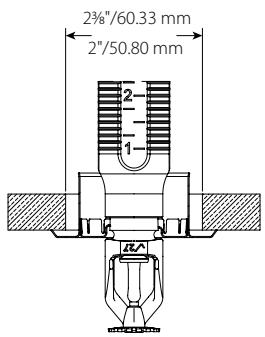
4.3 DIMENSIONS

Clearances

Series AH1 Braided Hose and Style AB2 Bracket with Suspended T-grid Ceilings



V2707 ¾"/19 MM MAX. RECESS



V2707 MAX. EXTENSION

Dimension		Hose Clearance					
		Straight Reducer				Long Elbow	Short Elbow
		V2707 ¾" Max Recess inches mm	V3802 ½" Max Recess inches mm	V2707 ¾" Max Recess inches mm	V3802 ½" Max Recess inches mm	V2707 ¾" Max Recess inches mm	V3802 ½" Max Recess inches mm
R	Bend Radius	3.0 76.2		7.0 178		—	—
A	Minimum Required Installation Space	9.6 244	11.1 282	13.6 345	15.1 384	5.8 147	5.8 147

NOTE

- Variations of ceiling grids, sprinkler heads, brackets, and hoses are permitted but may result in clearance differences from the figures above.

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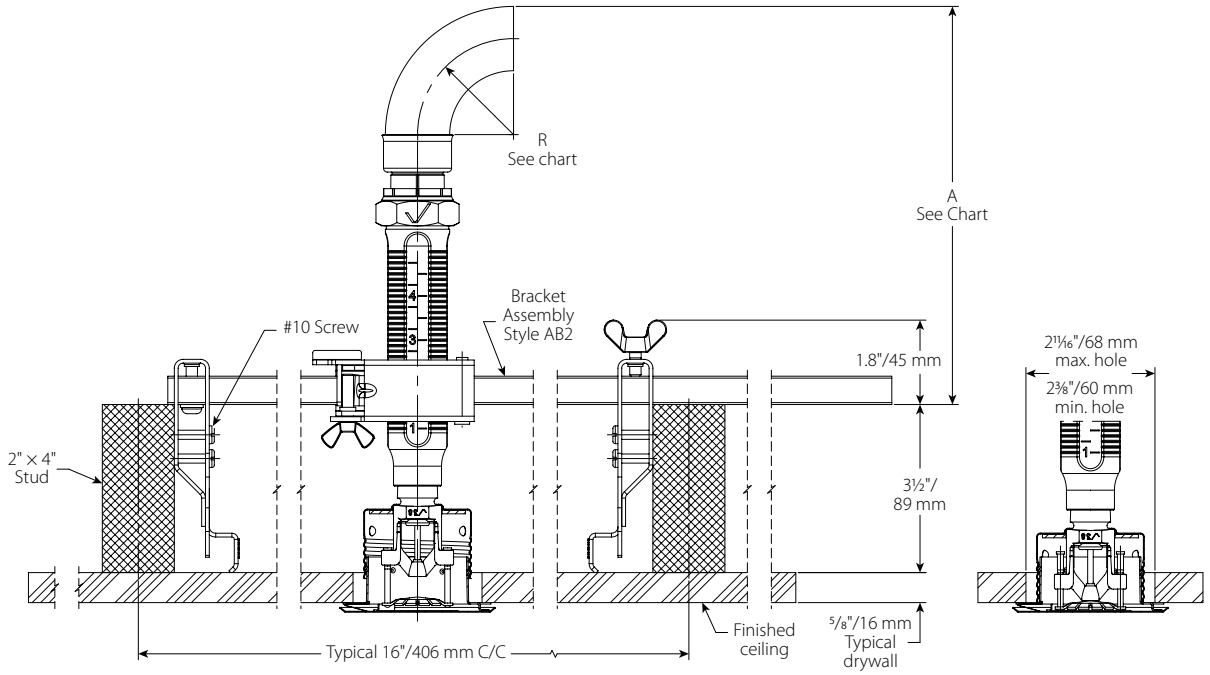
4.4 DIMENSIONS

Clearances

Series AH1 Braided Hose and Style AB2 Bracket with Wood/Metal Joist Ceilings



V38 ½"/13 mm MAX. RECESS **V38 MAX. EXTENSION**

Dimension		Hose Clearance					
		Straight Reducer					
		V2707 ¾" I 20 mm Max Recess inches mm	V3802 ½" I 13 mm Max Recess inches mm	V2709 ¾" I 20 mm Sidewall inches mm	V2707 ¾" I 20 mm Max Recess inches mm	V3802 ½" I 13 mm Max Recess inches mm	V2709 ¾" I 20 mm Sidewall inches mm
R	Bend Radius	3.0 80			7.0 175		
A	Minimum Required Installation Space	7.2 183	8.6 218	7.1 180	11.2 285	12.6 320	11.1 282

Dimension		Hose Clearance		
		Long Elbow		Short Elbow
		V2707 ¾" I 20 mm Max Recess inches mm	V2709 ¾" I 20 mm Sidewall inches mm	V3802 ½" I 13 mm Max Recess inches mm
R	Bend Radius	—		—
A	Minimum Required Installation Space	3.3 84	3.6 91	3.3 84

NOTE

- Variations of ceiling grids, sprinkler heads, brackets, and hoses are permitted but may result in clearance differences from the figures above.

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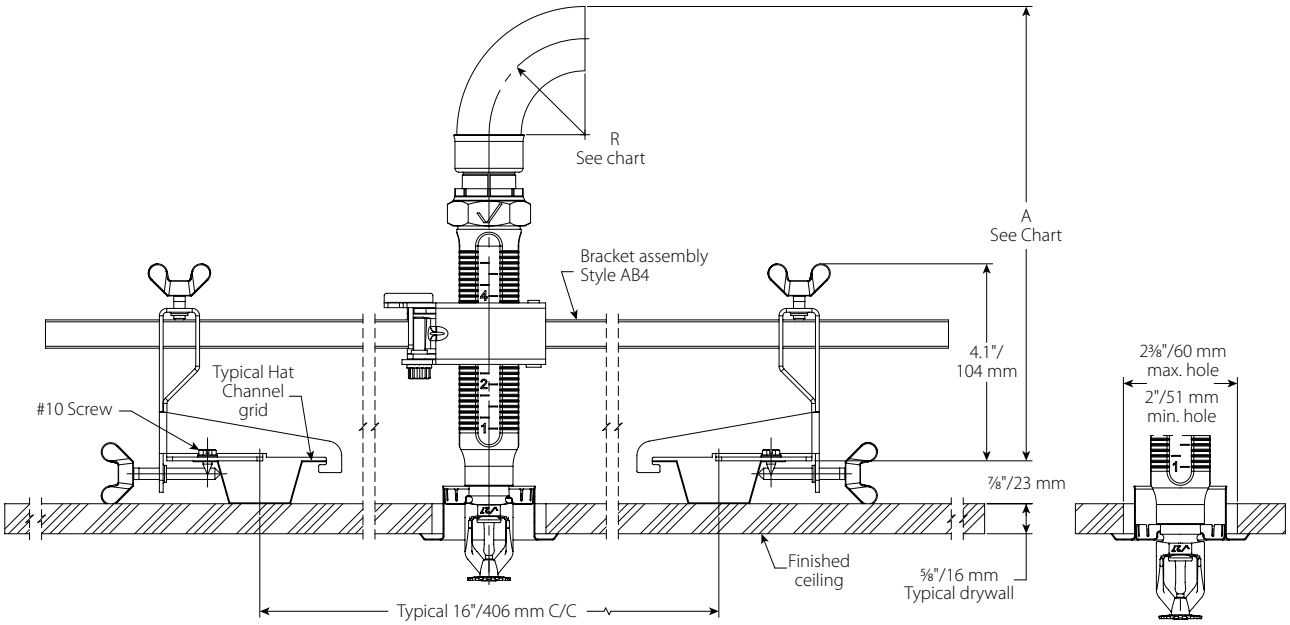
4.5 DIMENSIONS

Clearances

Series AH1 Braided Hose and Style AB4 Bracket with Hat Furring Channel Ceiling



V27 ¾"/19 mm MAX. RECESS

V27 MAX. EXTENSION

Dimension		Hose Clearance					
		Straight Reducer				Long Elbow	Short Elbow
		V27 Pendent inches mm	**V38** inches mm	**V27 Pendent** inches mm	**V38** inches mm	**V27 Pendent** inches mm	**V38** inches mm
R	Bend Radius	3.0 80		7.0 175		—	—
A	Minimum Required Installation Space	9.8 249	11.2 285	13.8 351	15.2 386	8.0 203	5.9 150

NOTE

- Variations of ceiling grids, sprinkler heads, brackets, and hoses are permitted but may result in clearance differences from the figures above.

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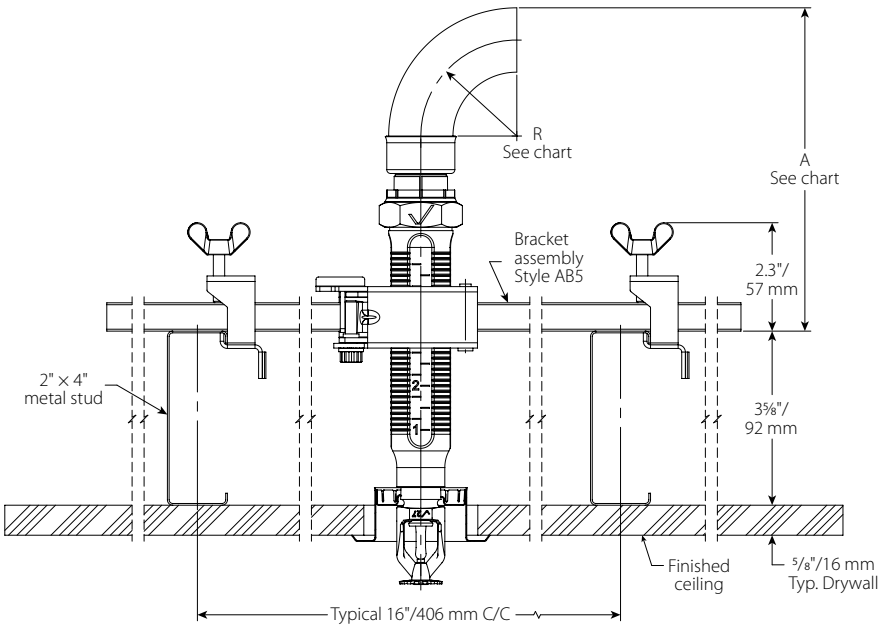
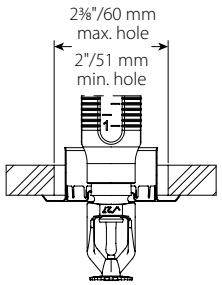
4.6 DIMENSIONS

Clearances

Series AH1 Braided Hose and Style AB5 Bracket with Metal Joist Ceiling



V27 ¾"/19 mm MAX. RECESS



V27 MAX. EXTENSION

Dimension		Hose Clearance					
		Straight Reducer					
		V2707 ¾" I 20 mm Max Recess inches mm	V3802 ½" I 13 mm Max Recess inches mm	V2709 ¾" I 20 mm Sidewall inches mm	V2707 ¾" I 20 mm Max Recess inches mm	V3802 ½" I 13 mm Max Recess inches mm	V2709 ¾" I 20 mm Sidewall inches mm
R	Bend Radius		3.0 80			7.0 175	
A	Minimum Required Installation Space	7.0 178	8.7 221	7.1 180	11.0 279	12.7 323	11.1 282

Dimension		Hose Clearance				
		Long Elbow			Low-Profile Long Elbow	Short Elbow
		V2707 ¾" I 20 mm Max Recess inches mm	V3802 ½" I 13 mm Max Recess inches mm	V2709 ¾" I 20 mm Sidewall inches mm	V3802 ½" I 13 mm Max Recess inches mm	V3802 ½" I 13 mm Max Recess inches mm
R	Bend Radius		—		—	—
A	Minimum Required Installation Space	3.5 89	4.9 124	3.6 91	2.9 74	3.3 84

NOTE

- Variations of ceiling grids, sprinkler heads, brackets, and hoses are permitted but may result in clearance differences from the figures above.

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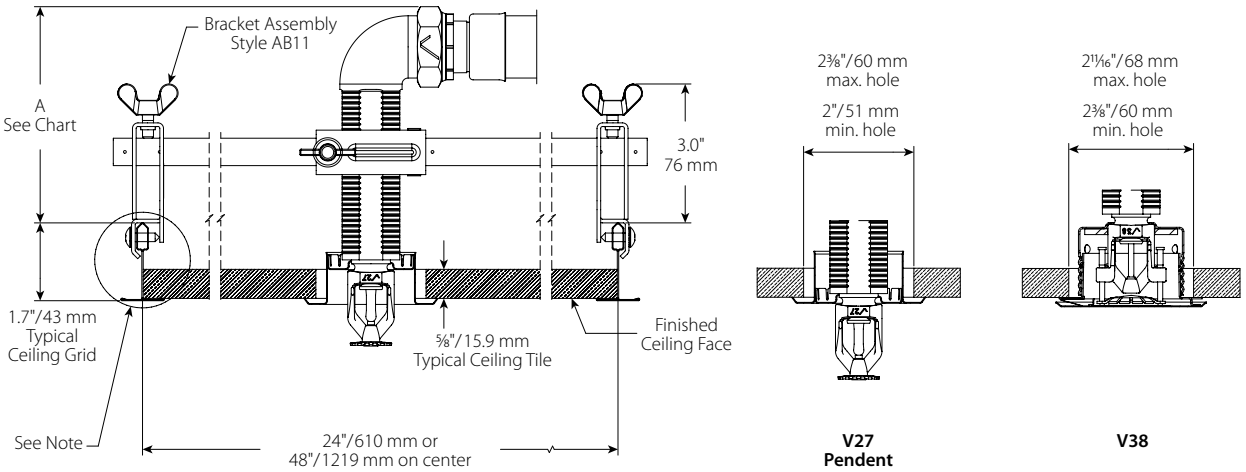
4.7 DIMENSIONS

Clearances

Series AH1 Braided Hose and Style AB11 Bracket (LOW-PROFILE SOLUTION) with Suspended T-Grid Ceilings



Dimension		Hose Clearance	
		Low-Profile Long Elbow	Low-Profile Short Elbow
		V2707 ¾" I 20 mm Max Recess" inches mm	V3802 ½" I 13 mm Max Recess inches mm
A	Minimum Required Installation Space	4.0 102	3.9 99

NOTE

- Variations of ceiling grids, sprinkler heads, brackets, and hoses are permitted but may result in clearance differences from the figures above.

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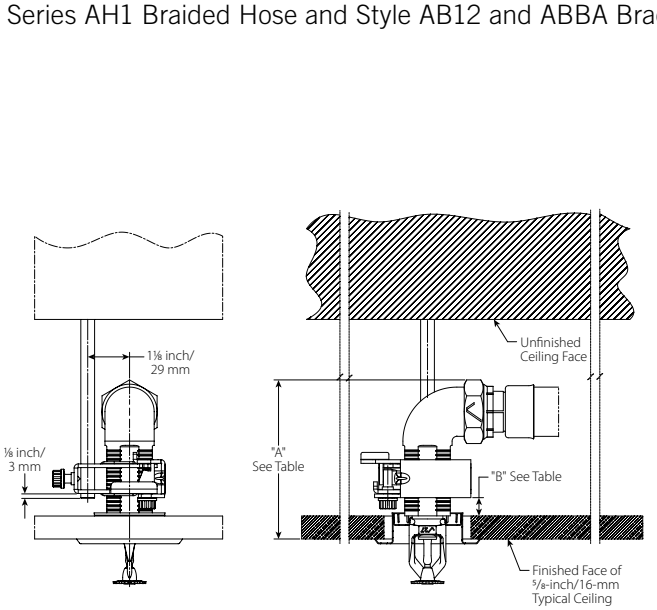
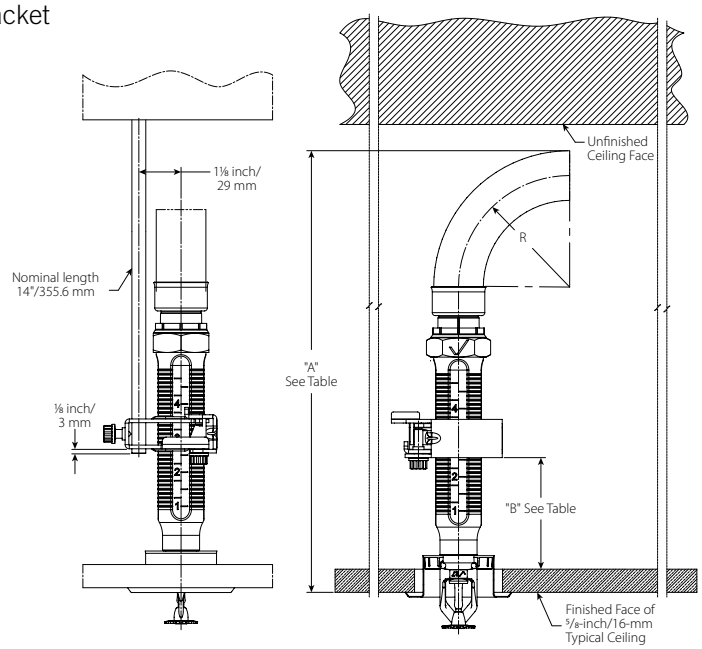
4.8 DIMENSIONS

Clearances

Series AH1 Braided Hose and Style AB12 and ABBA Bracket



V2707 ½"/12.7 mm MAX. RECESS



V2707 ¾"/19 mm MAX. RECESS

Dimension		Hose Clearance									
		Low-Profile Short Elbow		Low-Profile Long Elbow		Standard Short Elbow		Standard Long Elbow		Standard Straight Reducer	
		¾"/19mm Recessed* inches mm	Concealed inches mm	¾"/19mm Recessed inches mm	Concealed inches mm	¾"/19mm Recessed inches mm	Concealed inches mm	¾"/19mm Recessed inches mm	Concealed inches mm	¾"/19mm Recessed inches mm	Concealed inches mm
R	Bend Radius	—		—		—		—		7 175.0	
A	Minimum Required Installation Space	4.0 101.6	5.5 139.7	5.6 142.2	7.2 182.9	5.9 149.9	7.5 190.5	7.7 195.6	9.3 236.2	15.0 381.0	16.6 421.6
B	Distance from Top of Typical Ceiling Tile to Bottom of Gate	0.5 12.7	2.0 50.8	1.5 38.1	1.5 38.1	1.5 38.1	1.5 38.1	3.0 76.2	3.0 76.2	3.0 76.2	3.0 76.2

* Adjustability will be limited

NOTE

- For Style AB12 Bracket Sprinkler location relative to 3/8" threaded rod is 1 1/8"/29 mm center-to-center.
- Variations of ceiling grids, sprinkler heads, brackets, and hoses are permitted but may result in clearance differences from the figures above.

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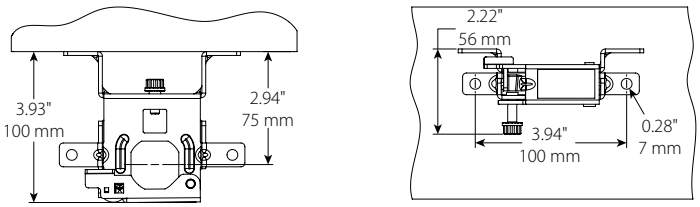
4.9 DIMENSIONS

Stand-off Dimensions

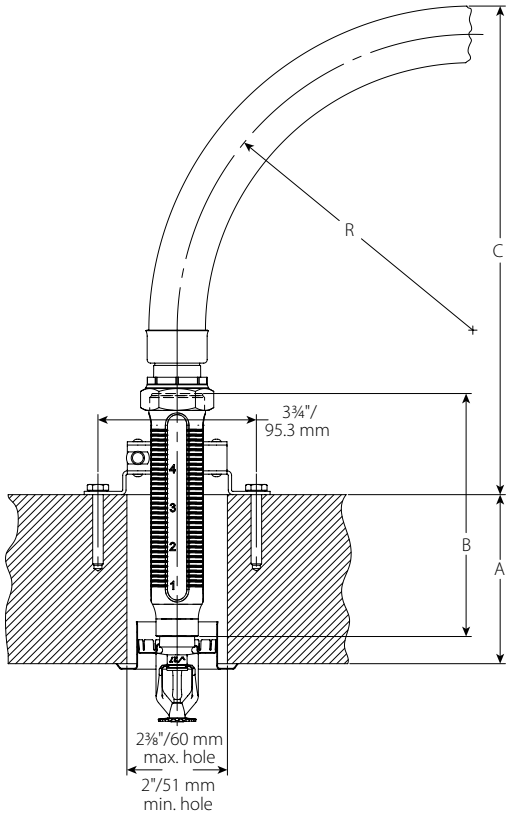
Style ABMM Bracket



4.10 DIMENSIONS

Clearances

Series AH1 Braided Hose and Style AB3 and ABMM Bracket for Surface Mount Application



Dimension		Hose Clearance																
		inches mm							inches mm									
R	Bend Radius	7 175							8 200									
A	Wall Thickness	4 100			6 150		8 200	10 250	2 50			4 100			6 150		8 200	10 250
B	Outlet Length	5.75 146.1	9 228.6	13 330.2	9 228.6	13 330.2	13 330.2	13 330.2	5.75 146.1	9 228.6	13 330.2	5.75 146.1	9 228.6	13 330.2	9 228.6	13 330.2	13 330.2	13 330.2
C	Distance from Top of Ceiling to Top of Hose	9.6 243	12.8 325	16.8 427	10.8 275	14.8 376	12.8 325	10.8 275	12.6 319	15.8 402	19.8 503	10.6 268	13.8 351	17.8 452	11.8 300	15.8 402	13.8 351	11.8 300

NOTE

- Variations of ceiling grids, sprinkler heads, brackets, and hoses are permitted but may result in clearance differences from the figures above.
- See installation instructions for mounting screw type and size.

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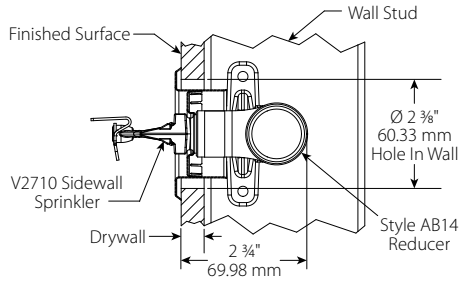
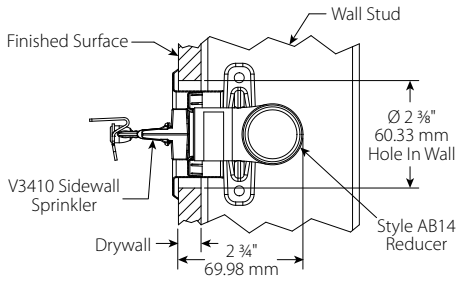
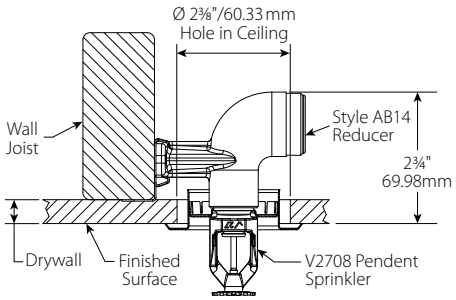
4.11 DIMENSIONS

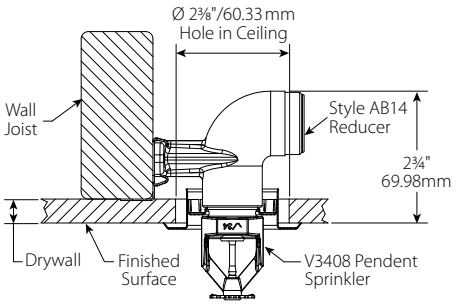
Clearances Above Ceiling

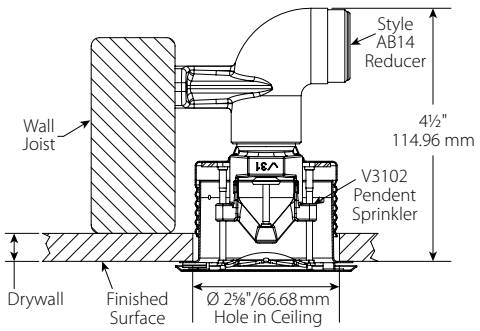
Series AH1 Braided Hose and Style AB14 Reducer

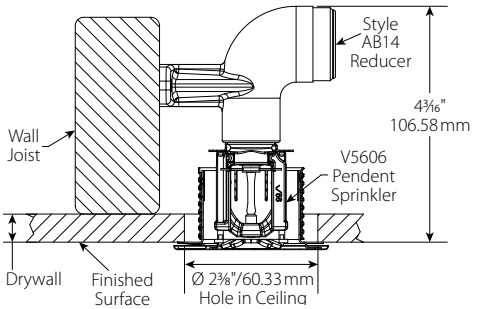












NOTE

- Variations of ceiling grids, sprinkler heads, brackets, and hoses are permitted but may result in clearance differences from the figures above.

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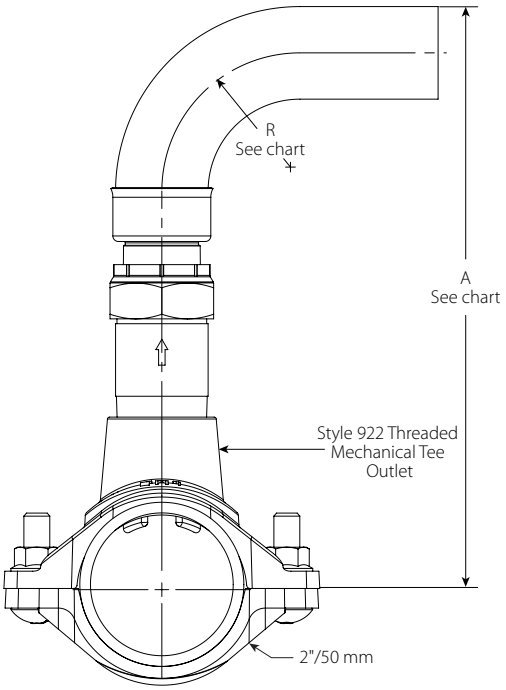
4.12 DIMENSIONS

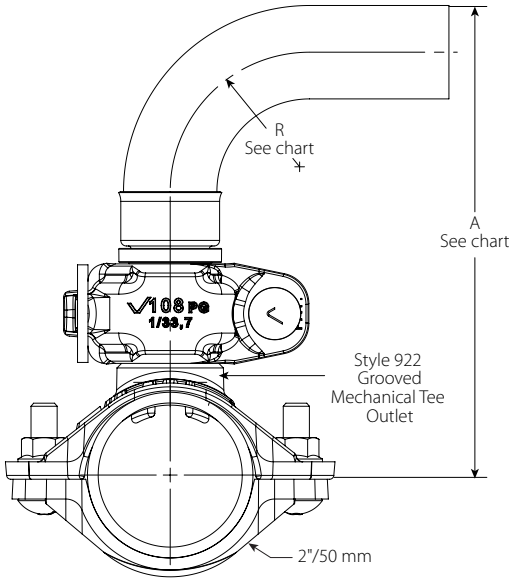
Branchline Clearances

Series AH1 Braided Hose with Style 922 Threaded Outlet



Dimension		Hose Clearance inches mm				
R	Bend Radius	3 80	4 100	5 125	6 150	7 175
A	Min.	9.4 238	10.4 263	11.4 289	12.4 314	13.4 339

Series AH1-CC Braided Hose with Style 922 Grooved Outlet



Dimension		Hose Clearance inches mm				
R	Bend Radius	3 80	4 100	5 125	6 150	7 175
A	Min.	7.7 197	8.7 222	9.7 247	10.7 273	11.7 298

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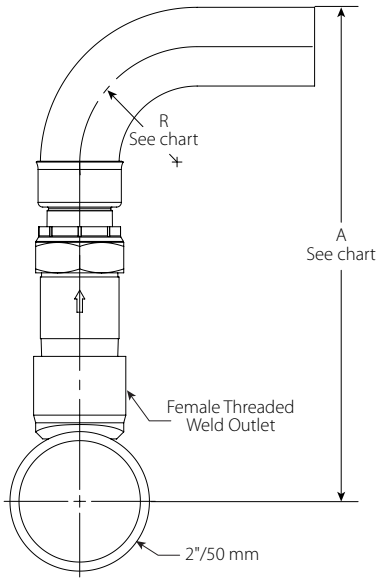
4.13 DIMENSIONS

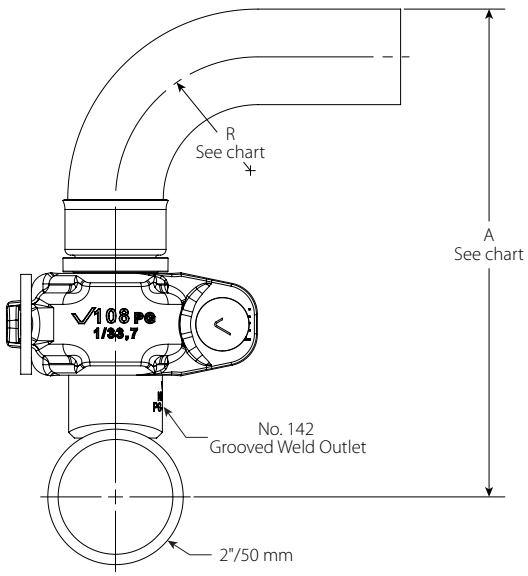
Branchline Clearances

Series AH1 Braided Hose with Female Threaded Outlet



Dimension		Hose Clearance inches mm				
R	Bend Radius	3 80	4 100	5 125	6 150	7 175
A	Min.	9.4 239	10.4 264	11.4 290	12.4 315	13.41 341

Series AH1-CC Braided Hose with Grooved Outlet



Dimension		Hose Clearance inches mm				
R	Bend Radius	3 80	4 100	5 125	6 150	7 175
A	Min.	8.1 205	9.1 231	10.1 256	11.1 281	12.1 307

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5.0 PERFORMANCE – FRICTION LOSS DATA

Series AH1 and AH1-CC Braided Hoses with Straight 5.75"/146 mm Reducers Style AB2, AB4, AB5 and AB10 VicFlex™ Brackets

Hose	Reducer		UL	
Length inches mm	**Type**	**Nominal Outlet Size** inches DN	**Equivalent Length of 1"/DN25 Sch. 40 pipe** feet meters	**Maximum Bends**
31 790	Straight	½ DN15	41.0 12.5	3
		¾ DN20	39.0 11.9	
36 915	Straight	½ DN15	49.0 14.9	4
		¾ DN20	48.0 14.6	
48 1220	Straight	½ DN15	62.0 18.9	4
		¾ DN20	59.0 18.0	
60 1525	Straight	½ DN15	72.0 21.9	4
		¾ DN20	73.0 22.3	
72 1830	Straight	½ DN15	87.0 26.5	5
		¾ DN20	90.0 27.4	

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5.1 PERFORMANCE – FRICTION LOSS DATA

Series AH1 Braided Hose with 90° Low-Profile Elbow Style AB11 VicFlex™ Bracket

Hose	Reducer		UL	
Length inches mm	**Type**	**Nominal Outlet Size** inches DN	**Equivalent Length of 1"/DN25 Sch. 40 pipe** feet meters	**Maximum Bends**
31 790	LP Elbow	½ DN15	37.0 11.3	3
		¾ DN20	44.0 13.4	
36 915	LP Elbow	½ DN15	47.0 14.3	4
		¾ DN20	53.0 16.2	
48 1220	LP Elbow	½ DN15	58.0 17.7	4
		¾ DN20	68.0 20.7	
60 1525	LP Elbow	½ DN15	70.0 21.3	4
		¾ DN20	77.0 23.5	
72 1830	LP Elbow	½ DN15	83.0 25.3	5
		¾ DN20	99.0 30.2	

5.2 PERFORMANCE – FRICTION LOSS DATA

Series AH1 and AH1-CC Braided Hoses with AB14 Elbows Style AB14 VicFlex™ Bracket

Hose	Reducer		UL	
Length inches mm	**Type**	**Nominal Outlet Size** inches DN	**Equivalent Length of 1"/DN25 Sch. 40 pipe** feet meters	**Maximum Bends**
31 790	AB14 Elbow	½ DN15	45.0 13.7	3
		¾ DN20	48.0 14.6	
36 915	AB14 Elbow	½ DN15	47.0 14.3	4
		¾ DN20	60.0 18.3	
48 1220	AB14 Elbow	½ DN15	59.0 18.0	4
		¾ DN20	76.0 23.2	
60 1525	AB14 Elbow	½ DN15	85.0 25.9	4
		¾ DN20	95.0 29.0	
72 1830	AB14 Elbow	½ DN15	93.0 28.3	5
		¾ DN20	105.0 32.0	

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5.3 PERFORMANCE – FRICTION LOSS DATA

Series AH1 and AH1-CC Braided Hoses Equivalent Length Design Guide

Hose		Equivalent Length of 1"/DN25 mm Sch. 40 pipe				
Length inches mm	**Nominal Outlet Size** inches DN	**1 Bend** feet meters	**2 Bends** feet meters	**3 Bends** feet meters	**4 Bends** feet meters	**5 Bends** feet meters
31 790	½ DN15	28.0 8.5	34.0 10.4	41.0 12.5	—	—
	¾ DN20	28.0 8.5	33.0 10.1	39.0 11.9		
36 915	½ DN15	34.0 10.4	39.0 11.9	44.0 13.4	49.0 14.9	—
	¾ DN20	33.0 10.1	39.0 11.9	44.0 13.4	48.0 14.6	
48 1220	½ DN15	44.0 13.4	50.0 15.2	56.0 17.1	62.0 18.9	—
	¾ DN20	44.0 13.4	50.0 15.2	55.0 16.8	59.0 18.0	
60 1525	½ DN15	55.0 16.8	61.0 18.6	66.0 20.1	72.0 21.9	—
	¾ DN20	55.0 16.8	61.0 18.6	67.0 20.4	73.0 22.3	
72 1830	½ DN15	68.0 20.7	72.0 21.9	76.0 23.2	82.0 25.0	87.0 26.5
	¾ DN20	67.0 20.4	71.0 21.6	75.0 22.9	83.0 25.3	90.0 27.4

NOTES

- Values at 3"/76.2 mm center line bend radius for use with 5.75"/146 mm straight reducers
- The values in this table are provided by the manufacturer for reference only. For friction loss data in accordance with the UL Certification, refer to Sections 5.0 and 5.1 of this publication.

How to use this Design Guide:

- For some systems, it may be advantageous for the designer to calculate the system hydraulics using shorter equivalent lengths associated with fewer than the maximum allowable number of bends. In this case, the designer may select a design number of bends for the job and use the associated equivalent length from the design guide to determine the system hydraulics.
- It is possible that the actual installed condition of some of the flexible drops may have more bends than the designer selected. When this happens, the design guide may be used to find equivalent lengths based on the actual installed number of bends for particular sprinkler installations. The system hydraulics can be recalculated using actual equivalent lengths to verify the performance of the system.

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5.4 PERFORMANCE – FRICTION LOSS DATA

Series AH1 and AH1-CC Braided Hoses
Style AB2, AB3, AB4, AB5, AB7, AB7 Adj., AB10, AB12, ABBA and ABMM VicFlex™ Brackets

Hose	Sprinkler	Reducer		FM	
Length inches mm	**K-factor** Imperial S.I	**Nominal Outlet Size** inches DN	**Type**	**Equivalent Length of 1"/DN25 Sch. 40 pipe** feet meters	**Maximum Bends**
31 790	5.6 8.1	½ DN15	Straight	35.7 10.9	2
			Elbow	30.4 9.3	
	8.0 11.5	¾ DN20	Straight	32.9 10.0	
			Elbow	32.4 9.9	
	11.2 16.1	¾ DN20	Straight	32.9 10.0	
			Elbow	32.4 9.9	
	14.0 20.2	¾ DN20	Straight	32.9 10.0	
			Elbow	32.4 9.9	
36 915	5.6 8.1	½ DN15	Straight	42.1 12.8	2
			Elbow	36.9 11.2	
	8.0 11.5	¾ DN20	Straight	39.2 11.9	
			Elbow	38.9 11.9	
	11.2 16.1	¾ DN20	Straight	39.2 11.9	
			Elbow	38.9 11.9	
	14.0 20.2	¾ DN20	Straight	39.2 11.9	
			Elbow	39.2 11.9	
48 1220	5.6 8.1	½ DN15	Straight	57.5 17.5	3
			Elbow	52.2 15.9	
	8.0 11.5	¾ DN20	Straight	54.4 16.6	
			Elbow	54.5 16.6	
	11.2 16.1	¾ DN20	Straight	54.4 16.6	
			Elbow	54.5 16.6	
	14.0 20.2	¾ DN20	Straight	54.4 16.6	
			Elbow	54.5 16.6	

FM NOTES

- Series AH1 and AH1-CC hoses have been tested and Approved by FM Global for use in wet, dry and preaction systems per NFPA 13, 13R, and 13D and FM data sheets 2-0, 2-5, and 2-8. FM 1637 and Vds standards for safety include, but are not limited to, pressure cycling, corrosion resistance, flow characteristics, vibration resistance, leakage, mechanical and hydrostatic strength.
- EXAMPLE: A 48-inch hose installed with two 30° bends and two 90° bends is permitted and considered equivalent to the data in the table shown above. In this example, the total number of degrees is 240°, which is less than the allowable 270°.

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5.5 PERFORMANCE – FRICTION LOSS DATA (CONTINUED)

Series AH1 and AH1-CC Braided Hoses
Style AB2, AB3, AB4, AB5, AB7, AB7 Adj., AB8, AB10, AB12, ABBA and ABMM VicFlex™ Brackets

Hose	Sprinkler	Reducer		FM	
Length inches mm	**K-factor** Imperial S.I	**Nominal Outlet Size** inches DN	**Type**	**Equivalent Length of 1"/DN25 Sch. 40 pipe** feet meters	**Maximum Bends**
60 1525	5.6 8.1	½ DN15	Straight	72.9 22.2	2
			Elbow	68.2 20.8	
	8.0 11.5	¾ DN20	Straight	69.5 21.2	
			Elbow	70.1 21.4	
	11.2 16.1	¾ DN20	Straight	69.5 21.2	
			Elbow	70.1 21.4	
	14.0 20.2	¾ DN20	Straight	69.5 21.2	
			Elbow	70.1 21.4	
72 1830	5.6 8.1	½ DN15	Straight	88.4 26.9	2
			Elbow	83.8 25.5	
	8.0 11.5	¾ DN20	Straight	84.7 25.8	
			Elbow	85.7 26.1	
	11.2 16.1	¾ DN20	Straight	84.7 25.8	
			Elbow	85.7 26.1	
	14.0 20.2	¾ DN20	Straight	84.7 25.8	
			Elbow	85.7 26.1	

FM NOTES

- Series AH1 and AH1-CC hoses have been tested and Approved by FM Global for use in wet, dry and preaction systems per NFPA 13, 13R, and 13D and FM data sheets 2-0, 2-5, and 2-8. FM 1637 and Vds standards for safety include, but are not limited to, pressure cycling, corrosion resistance, flow characteristics, vibration resistance, leakage, mechanical and hydrostatic strength.
- EXAMPLE: A 48-inch hose installed with two 30° bends and two 90° bends is permitted and considered equivalent to the data in the table shown above. In this example, the total number of degrees is 240°, which is less than the allowable 270°.

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5.6 PERFORMANCE – FRICTION LOSS DATA

Series AH1 and AH-1-CC Braided Hoses with 90° Low-Profile Elbows Style AB5, AB11, AB12, ABBA and ABMM VicFlex™ Brackets

Hose	Reducer		Sprinkler	FM	
Length inches mm	**Type**	**Nominal Outlet Size** inches DN	**K-factor** Imperial S.I.	**Equivalent Length of 1"/DN25 Sch. 40 pipe** feet meters	**Maximum Bends**
31 790	LP Elbow	½ DN15	5.6 8.1	31.4 9.6	2
		¾ DN20	8.0 11.5	32.3 9.8	
			11.2 16.1	32.3 9.8	
			14.0 20.2	32.3 9.8	
36 915	LP Elbow	½ DN15	5.6 8.1	37.7 11.5	2
		¾ DN20	8.0 11.5	38.8 11.8	
			11.2 16.1	38.8 11.8	
			14.0 20.2	38.8 11.8	
48 1220	LP Elbow	½ DN15	5.6 8.1	52.8 16.1	3
		¾ DN20	8.0 11.5	54.4 16.6	
			11.2 16.1	54.4 16.6	
			14.0 20.2	54.4 16.6	
60 1525	LP Elbow	½ DN15	5.6 8.1	67.8 20.7	4
		¾ DN20	8.0 11.5	70.1 21.4	
			11.2 16.1	70.1 21.4	
			14.0 20.2	70.1 21.4	
72 1830	LP Elbow	½ DN15	5.6 8.1	82.9 25.3	4
		¾ DN20	8.0 11.5	85.7 26.1	
			11.2 16.1	85.7 26.1	
			14.0 20.2	85.7 26.1	

FM NOTES

- Series AH1 and AH1-CC hoses have been tested and Approved by FM Global for use in wet, dry and preaction systems per NFPA 13, 13R, and 13D and FM data sheets 2-0, 2-5, and 2-8. FM 1637 and Vds standards for safety include, but are not limited to, pressure cycling, corrosion resistance, flow characteristics, vibration resistance, leakage, mechanical and hydrostatic strength.
- EXAMPLE: A 48-inch hose installed with two 30° bends and two 90° bends at a 7-inch bend radius is permitted and considered equivalent to the data in the table shown above. In this example, the total number of degrees is 240°, which is less than the allowable 270°.

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5.7 PERFORMANCE – FRICTION LOSS DATA

Series AH1 and AH1-CC Braided Hoses with AB14 Elbows Style AB14 VicFlex™ Bracket

Hose	Reducer		Sprinkler	FM	
Length inches mm	**Type**	**Nominal Outlet Size** inches DN	**K-factor** Imperial S.I.	**Equivalent Length of 1"/DN25 Sch. 40 pipe** feet meters	**Maximum Bends**
31 790	AB14 Elbow	½ DN15	5.6 8.1	68.1 20.8	2
		¾ DN20	8.0 11.5	44.7 13.6	
36 915	AB14 Elbow	½ DN15	5.6 8.1	70.5 21.5	2
		¾ DN20	8.0 11.5	49.9 15.2	
48 1220	AB14 Elbow	½ DN15	5.6 8.1	76.4 23.3	3
		¾ DN20	8.0 11.5	62.5 19.1	
60 1525	AB14 Elbow	½ DN15	5.6 8.1	82.2 25.1	4
		¾ DN20	8.0 11.5	75.2 22.9	
72 1830	AB14 Elbow	½ DN15	5.6 8.1	88.1 26.9	4
		¾ DN20	8.0 11.5	87.8 26.8	

FM NOTES

- Series AH1 and AH1-CC hoses have been tested and Approved by FM Global for use in wet, dry and preaction systems per NFPA 13, 13R, and 13D and FM data sheets 2-0, 2-5, and 2-8. FM 1637 and Vds standards for safety include, but are not limited to, pressure cycling, corrosion resistance, flow characteristics, vibration resistance, leakage, mechanical and hydrostatic strength.
- EXAMPLE: A 48-inch hose installed with two 30° bends and two 90° bends at a 7-inch bend radius is permitted and considered equivalent to the data in the table shown above. In this example, the total number of degrees is 240°, which is less than the allowable 270°.

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5.8 PERFORMANCE – FRICTION LOSS DATA

Series AH1 and AH1-CC Braided Hoses
Style AB2, AB4, AB5, AB7, AB7 Adj., AB10, AB11 and AB12 VicFlex™ Brackets

Hose	Reducer	VdS	
Length mm inches	Nominal Outlet Size DN inches	Equivalent Length according to EN 10255 DN 20 (26.9 x 2.65mm) meters feet	Maximum Bends
790 31	DN15 ½ DN20 ¾	3.2 10.5	3
915 36	DN15 ½ DN20 ¾	3.7 12.1	3
1220 48	DN15 ½ DN20 ¾	4.9 16.1	3
1525 60	DN15 ½ DN20 ¾	6.1 20.0	4
1830 72	DN15 ½ DN20 ¾	7.3 24.0	4

VDS CEILING MANUFACTURERS LIST

AB1, AB2, AB7, AB10, AB11, AB12

1. AMF
2. Armstrong
3. Chicago Metallic
4. Dipling
5. Durlum
6. Geipel
7. Gema-Armstrong
8. Hilti
9. Knauf
10. Lafarge
11. Linder
12. Odenwald
13. Richter
14. Rigips
15. Rockfon Pagos
16. Suckow & Fischer
17. USG Donn

AB4

No specific approval

AB5

1. Hilti
2. Knauf
3. Lafarge
4. Lindner
5. Rigips

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5.9 PERFORMANCE – FRICTION LOSS DATA

LPS 1261: Issue 1.2
Cert/LPCB Ref. 104I/02
104I/03

Series AH1 and AH1-CC Braided Hoses
Style AB2, AB3, AB4, AB5, AB7, and AB10 VicFlex™ Brackets

Hose	Reducer	LPCB	
Length mm inches	Nominal Outlet Size DN inches	Equivalent Length according to EN 10255 DN 25 (33.7 x 3.25mm) meters feet	Maximum Bends
790 31	DN15 ½	10.4 34.1	2
	DN20 ¾	11.3 37.1	
915 36	DN15 ½	13.4 44.0	3
	DN20 ¾	13.9 45.6	
1220 48	DN15 ½	16.2 53.1	3
	DN20 ¾	16.5 54.1	
1525 60	DN15 ½	19.2 63.0	3
	DN20 ¾	19.7 64.6	
1830 72	DN15 ½	22.8 74.8	3
	DN20 ¾	23.5 77.1	

5.10 PERFORMANCE – FRICTION LOSS DATA

Series AH1 Braided Hose

Hose	CCC	
	Equivalent Length of 1"/DN25 Sch. 40 pipe according to G5135.16 tested at 114 lpm (30 gpm)	
Length mm inches	Straight Configuration meters feet	Bend Configuration meters feet
790 31	4.78 15.7	5.80 19.0
915 36	5.59 18.3	10.15 33.3
1220 48	9.75 32.0	16.25 53.3
1525 60	12.15 39.9	22.94 75.3
1830 72	14.26 46.8	25.98 85.2

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6.0 NOTIFICATIONS

⚠ WARNING

- **Read and understand all instructions before attempting to install any Victaulic products.**
- **Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.**
- **Wear safety glasses, hardhat, and foot protection.**

Failure to follow these instructions could result in death or serious personal injury and property damage.

- **These products shall be used only in fire protection systems that are designed and installed in accordance with current, applicable National Fire Protection Association (NFPA) standards, or equivalent local and national fire protection standards, and in accordance with applicable building and fire codes. These standards and codes contain important information regarding protection of systems from freezing temperatures, corrosion, mechanical damage, etc.**
- **The installer shall understand the use of this product and why it was specified for the particular application.**
- **The installer shall understand common industry safety standards and potential consequences of improper product installation.**
- **It is the system designer's responsibility to verify suitability of materials for use with the intended fluid media within the piping system and external environment.**
- **The material specifier shall evaluate the internal and external effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on materials to confirm system life will be acceptable for the intended service.**
- **It is the responsibility of the owner of a building or their authorized agent to provide the sprinkler system installer with any knowledge that the water supply might be contaminated with or conducive to the development of microbiologically influenced corrosion (MIC), including as required by NFPA 13. Failure to identify adverse water quality issues may affect the *VicFlex* product and void the manufacturer's warranty.**

Failure to follow installation requirements and local and national codes and standards could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.

Victaulic VicFlex™ Braided Hoses may be painted/coated or caulked around, including fire barrier sealant, provided that the substance is compatible with stainless steel and zinc-plated carbon steel or ductile iron. Care shall be taken to ensure that the sprinkler and associated components do not come into contact with paint/coatings and caulking.

Victaulic VicFlex™ Braided Hoses that penetrate through non-fire rated gypsum wall (drywall) will function as designed, provided the components are installed in accordance with the respective installation instructions referenced in this document.

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7.0 REFERENCE MATERIALS – CHARACTERISTICS

VicFlex™ Maximum Load Values

Series AH1 Hose with 24" Bracket

Hose Length inches mm	Total Load		Maximum Uniform Load	
	lb	N	lb/linear ft	N/linear m
31 790	4.8	21.4	2.4	35.0
36 915	5.0	22.2	2.5	36.5
48 1220	5.6	24.9	2.8	40.9
60 1525	6.1	27.1	3.1	44.5
72 1830	6.6	29.4	3.3	48.2

Series AH1 Hose with 48" Bracket

Hose Length inches mm	Total Load		Maximum Uniform Load	
	lb	N	lb/linear ft	N/linear m
31 790	5.7	25.4	2.9	41.6
36 915	5.9	26.2	3.0	43.1
48 1220	6.5	28.9	3.3	47.4
60 1525	7	31.1	3.5	51.1
72 1830	7.6	33.8	3.8	55.5

Total Load is defined as the sum of the weights of the following:

- Water-filled flexible sprinkler hose with threaded end fittings, including a typical fire sprinkler
- Bracket Assembly (any applicable Victaulic bracket model of the relevant associated size)

ASTM C635: Suspension System Load-Carrying Capabilities (excerpted)

Suspension System	Duty Classification	Minimum Allowable Uniform Load	
		lb/linear ft	N/linear m
Direct Hung	Light	5.0	73.0
	Intermediate	12.0	175.0
	Heavy	16.0	233.0

SUMMARY: All direct-hung suspension system duty classifications per ASTM C635 are able to withstand the maximum water-filled weight of the *VicFlex* sprinkler hose and bracket.

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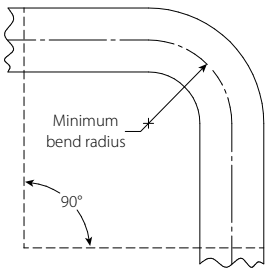
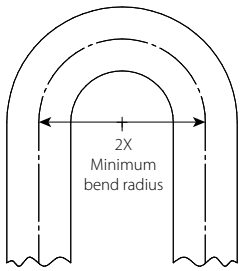
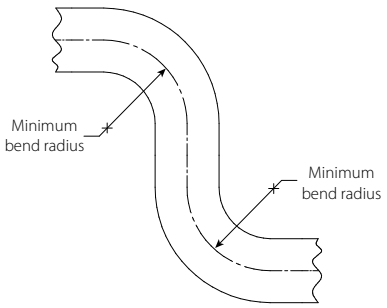
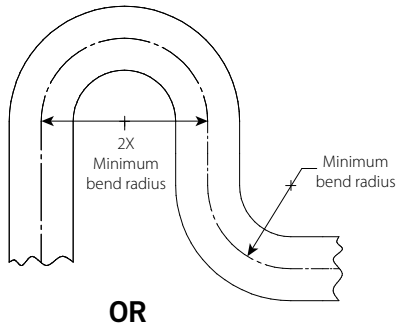
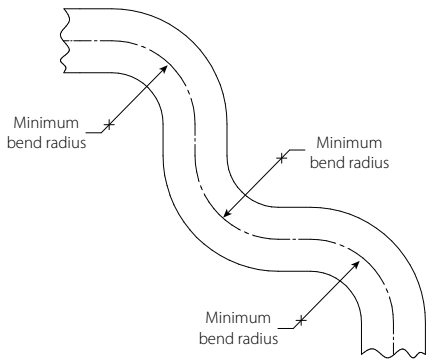
7.0 REFERENCE MATERIALS – CHARACTERISTICS (CONTINUED)

Flexible Hose In-Plane Bend Characteristics

One Bend	Two Bends	Three Bends
	 **OR** 	 **OR** 

NOTE

- For out-of-plane (three-dimensional) bends, care must be taken to avoid imparting torque on the hose.

I-*VicFlex*: Field Installation Handbook

I-RES: Field Installation Handbook

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for determining the suitability of Victaulic products for their end-use application, in accordance with industry standards, project specifications, and Victaulic's published performance, maintenance, and safety data, as well as all warnings and installation instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, warranty, installation instructions, or this disclaimer.

Installation

Always refer to and follow the Victaulic Installation Handbook or installation instructions for the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at victaulic.com.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

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