

Victaulic® VicFlex™ Sprinkler Fittings

Series AH1 and AH1-CC Braided Flexible Hose



Series AH1



Series AH1-CC

1.0 PRODUCT DESCRIPTION

Available Sizes by Component

Series AH1 0.8"/DN20 ID Braided Hose: 31, 36, 48, 60, 72"/790, 914, 1220, 1525, 1830 mm. Note: length includes adapter nipple and 5.75"/140 mm straight reducer.

Series AH1-CC 0.8"/DN20 ID Braided Hose: 31, 36, 48, 60, 72"/790, 914, 1219, 1525, 1830 mm. Note: length includes captured coupling and 5.75"/140 mm straight reducer.

Connections

- **From Branchline**
 - ¾"/20mm BSPT female thread (VdS only)
 - 1"/25mm NPT or BSPT female Thread
 - 1"/25mm Grooved IGS (refer to [Publication 10.54](#) for additional IGS connections)
 - No. 116 CPVC Adapter (1"/25mm Female CPVC Socket x 1"/25mm Grooved IGS)
 - No. 142 Welded Outlet
 - Style 922 Outlet-T
 - Style 920N Mechanical-T Outlet
 - No. 65 Grooved End of Run Fitting
- **Hose Inlet**
 - 1"/25mm Grooved IGS
 - 1"/25mm NPT or BSPT male thread
 - ¾"/20mm BSPT male thread (VdS only)

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

1.0 PRODUCT DESCRIPTION (CONTINUED)

• **Sprinkler Reducer**

- Sprinkler Connection: ½" and ¾"/15 mm and 20 mm NPT or BSPT
- Straight Lengths: 5.75, 9, 13"/140, 230, 330 mm
- 90° Elbows
 - Standard Short
 - Low Profile Short
 - Standard Long
 - Low Profile Long

(Short elbows typically used with concealed sprinklers. Long elbows typically used with recessed pendent sprinklers)

Brackets

- Style AB2 for suspended and hard-lid ceilings, allows for vertical sprinkler adjustment, and installation before most ceiling tiles 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, allows for vertical sprinkler adjustment
- Style AB7 for suspended and hard-lid ceilings
- Style AB7 Adjustable 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 installations (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"/100mm
- 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 Approval)
- 175 psi/1206 kPa (cULus Listed)
- 1600 kPa/232 psi (VdS/LPCB Approved)
- 1.4 MPa (CCC Approval)
- 175 psi/1206 kPa (No. 116 CPVC Adapter)

Minimum Bend Radius

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

1.0 PRODUCT DESCRIPTION (CONTINUED)

Maximum Allowable Sprinkler K-Factors

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

2.0 CERTIFICATION/LISTINGS



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 (½ or ¾"): Carbon Steel, Zinc-Plated
Low Profile Elbows: Ductile Iron, 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: Polyethelene
Nut: Carbon Steel, Zinc-Plated
Reducer (½"/15 mm or ¾"/20 mm): Carbon Steel, Zinc-Plated
Low Profile Elbows: Ductile Iron, 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 Gasket 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.

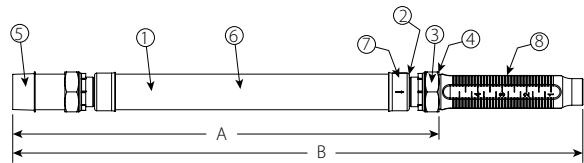
Linkage: CrMo Alloy Steel zinc electroplated per ASTM B633 Zn/Fe 5, Type III Finish.

No. 116 Adapter Fitting: CPVC and Brass

Seal: Victaulic EPDM

4.0 DIMENSIONS

Product Details - Series AH1 Braided Hose

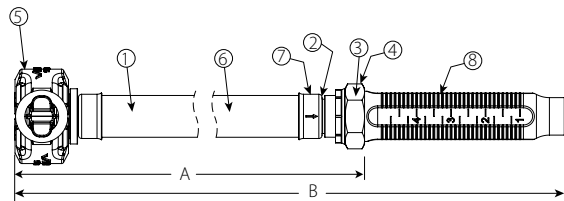


Item	Description
1	Flexible Hose
2	Isolation Ring
3	Gasket
4	Nut
5	Branch Line Nipple
6	Braid
7	Collar/Weld Fitting
8	Reducer

Hose Length Dimensions

Hose	Dimensions	
Model	A inches mm	B inches mm
AH1-31	25.7 653	31.0 788
AH1-36	31.7 806	36.0 915
AH1-48	42.7 1085	48.0 1220
AH1-60	54.7 1390	60.0 1524
AH1-72	66.7 1695	72.0 1829

Series AH1-CC



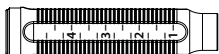
Item	Description
1	Flexible Hose
2	Isolation Ring
3	Gasket
4	Nut
5	Style 108 Coupling
6	Braid
7	Collar/Weld Fitting
8	Reducer

Hose Length Dimensions

Hose	Dimensions	
Model	A inches mm	B inches mm
AH1-CC-31	24.5 623	29.8 757
AH1-CC-36	29.5 750	34.8 884
AH1-CC-48	41.5 1055	46.8 1189
AH1-CC-60	53.5 1359	58.8 1494
AH1-CC-72	65.5 1664	70.8 1799

4.1 DIMENSIONS (CONTINUED)

Standard Reducer

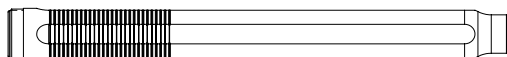


5.75"/140 mm straight reducer

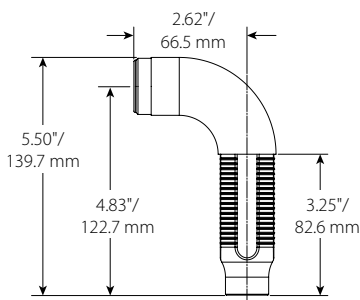
Optional Reducers



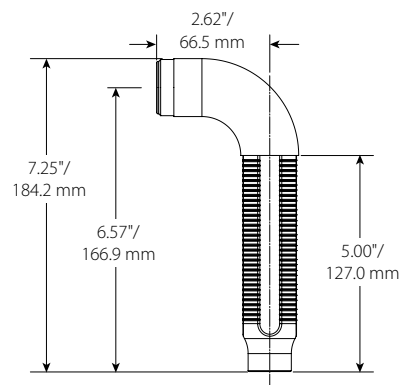
9.0"/229 mm straight reducer



13.0"/330 mm straight reducer



Short 90° elbow reducer

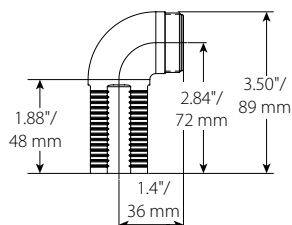


Long 90° elbow reducer

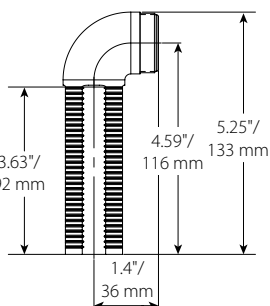
NOTES

- The Short 90° elbow reducer is typically used with concealed sprinklers while the longer 90° elbow is typically used in the installation of recessed pendent sprinklers.
- FM/VdS Approved only.

Low Profile



Short 90° elbow reducer

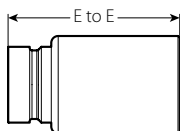


Long 90° elbow reducer

NOTE

- Style AB11: When low profiles elbows are 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 Adapters have 2 ft (0.6 m). EQL of 1" Schedule 40 pipe

4.2 DIMENSIONS

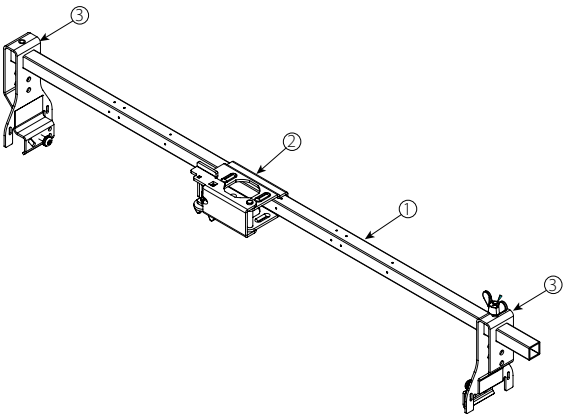
Style AB2

- Suspended Ceilings
- Hard-Lid Ceilings

Item	Description
1	24"/610 mm or 48"/1220 mm Square Bar
2	Patented Vertically Adjustable Center Bracket
3	End Bracket

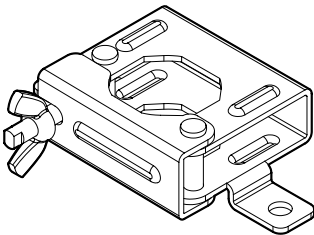
NOTE

- Both sizes FM/VdS/LPCB approved, cULus listed



Style AB3

- Surface Mount Applications
- FM/LPCB Approved



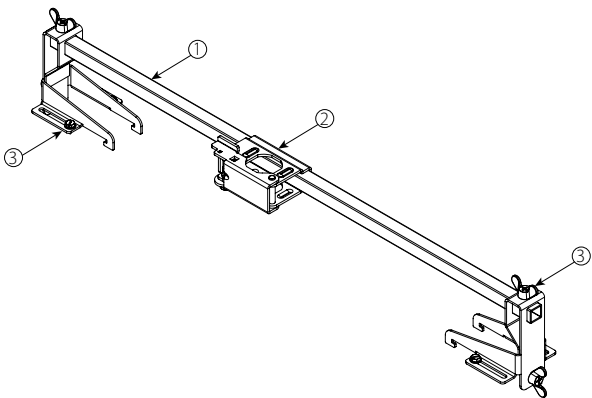
Style AB4

- Hard-Lid Ceilings with Hat furring channel grid system

Item	Description
1	24"/610 mm or 48"/1220 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



4.3 DIMENSIONS

VicFlex Brackets

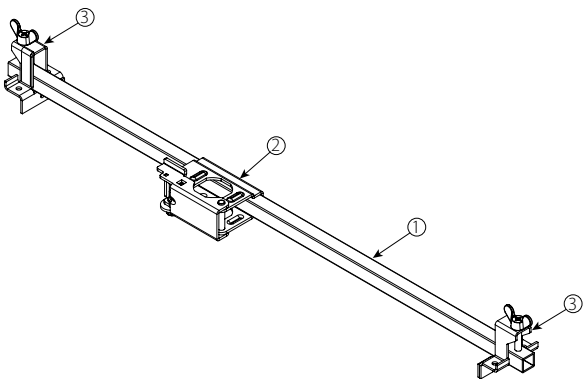
Style AB5

- Hard-Lid Ceilings

Item	Description
1	24"/610 mm or 48"/1220 mm Square Bar
2	Patented Vertically Adjustable Center Bracket
3	End Bracket

NOTE

- Both sizes FM/VdS/LPCB approved, cULus listed



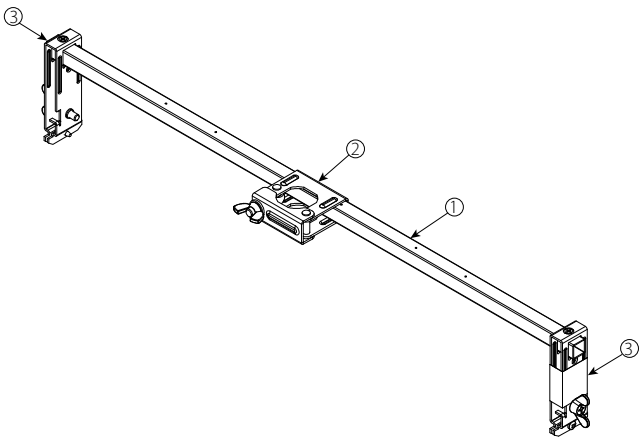
Style AB7

- Suspended Ceilings
- Hard-Lid Ceilings

Item	Description
1	24"/610 mm or 48"/1220 mm Square Bar
2	Patented 1-Bee2® Center Bracket
3	End Bracket

NOTE

- Both sizes FM/VdS/LPCB approved.



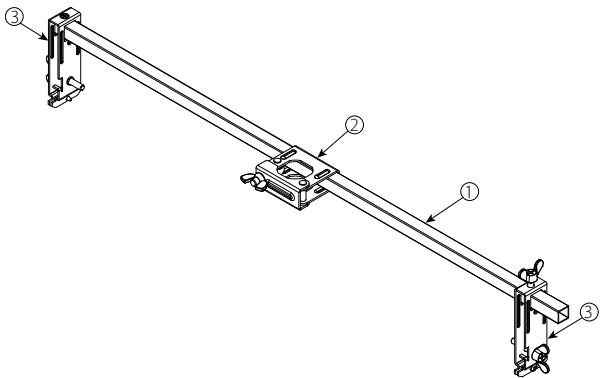
Style AB7 Adjustable

- 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.



4.4 DIMENSIONS

VicFlex Brackets

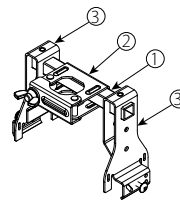
Style AB10

- Suspended ceilings
- Armstrong® TechZone™

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

NOTE

- FM/VdS/LPCB approved, cULus listed.



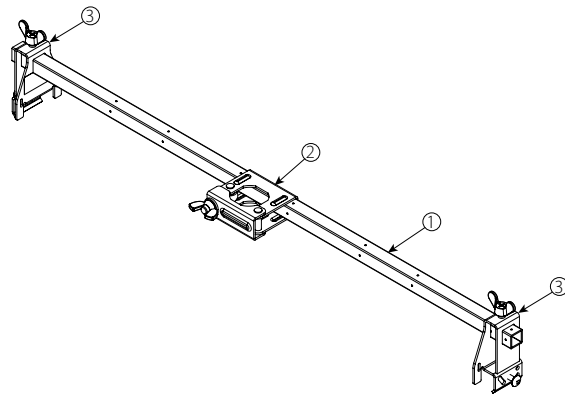
Style AB11

- 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 Approved, cULus listed.



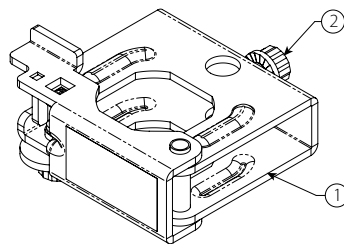
Style AB12

- Suspended ceilings
- Hard-Lid ceilings

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

NOTE

- FM/VdS Approved.



4.5 DIMENSIONS

VicFlex Brackets

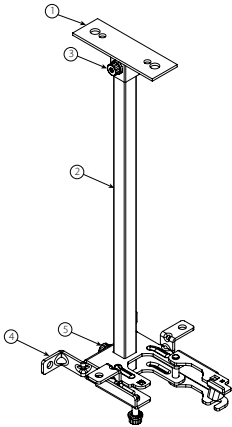
Style ABBA

- 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, Serated Flange, M6 x 1 x 20, T25 Torx Drive Recessed
4	Style ABMM Bracket Body
5	Cap Screw, Serated Flange, M6 x 1 x 15.24, T25 Torx Drive Recessed

NOTE

- FM Approved.



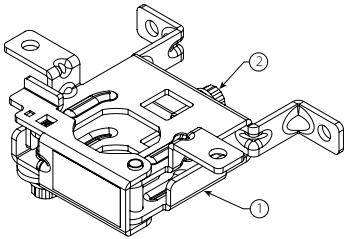
Style ABMM

- Surface mount
- Stand-off mount

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

NOTE

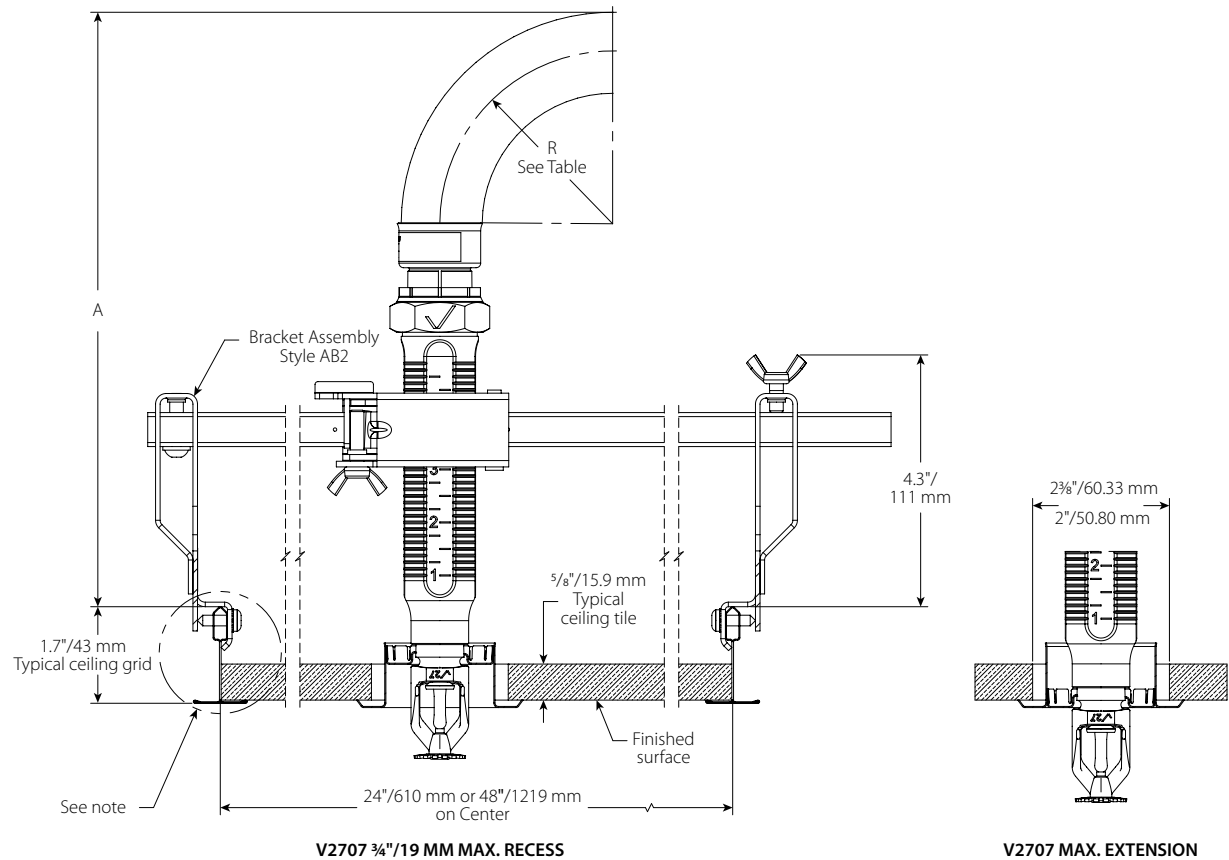
- FM Approved.



4.6 DIMENSIONS

Clearances

Series AH2 Braided Hose and Style AB2 Bracket



Hose Clearance Chart						
	Straight Reducer				Long Elbow	Short Elbow
	V2707 3/4" Max Recess inches mm	V3802 1/2" Max Recess inches mm	V2707 3/4" Max Recess inches mm	V3802 1/2" Max Recess inches mm	V2707 3/4" Max Recess inches mm	V3802 1/2" Max Recess inches mm
"R" Minimum Bend Radius	3.0 76.2		7.0 177.8		—	
"A" Minimum Required Installation Space	9.6 244	11.1 282	13.6 345	15.1 384	5.8 147	5.8 147

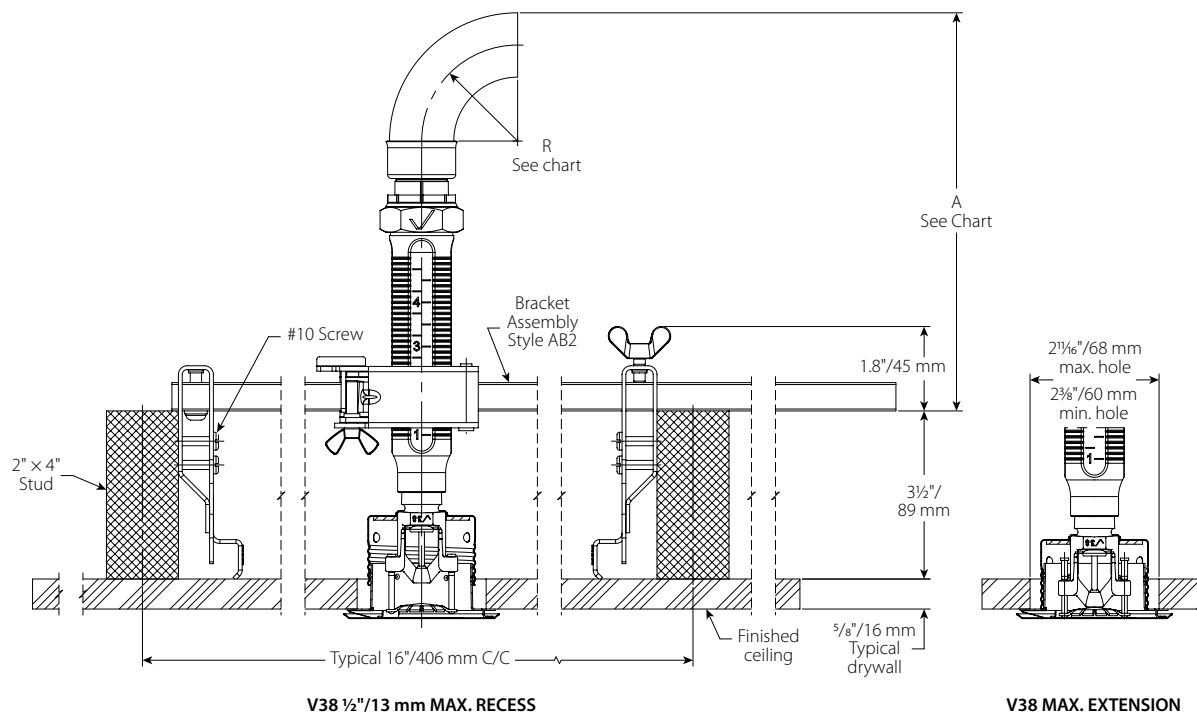
NOTE

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

4.7 DIMENSIONS

Clearances

Series AH2 Braided Hose and Style AB2 Bracket



Hose Clearance Chart						
	Straight Reducer					
	V2707 ¾" 20 mm Max Recess inches mm	V3802 ½" 13 mm Max Recess inches mm	V2709 ¾" 20 mm Sidewall inches mm	V2707 ¾" 20 mm Max Recess inches mm	V3802 ½" 13 mm Max Recess inches mm	V2709 ¾" 20 mm Sidewall inches mm
"R" Minimum 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

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

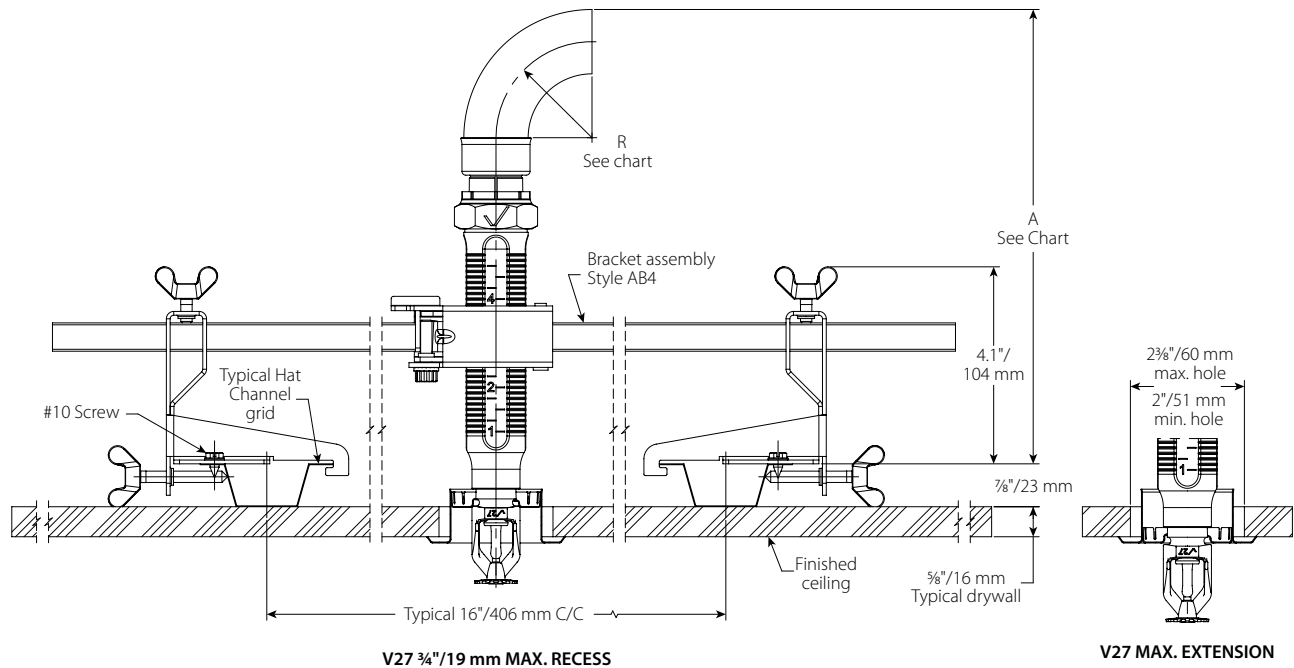
NOTE

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

4.8 DIMENSIONS

Clearances

Series AH2 Braided Hose and Style AB4 Bracket



Hose Clearance Chart						
					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" Minimum Bend Radius	3.0 80	3.0 80	7.0 175	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

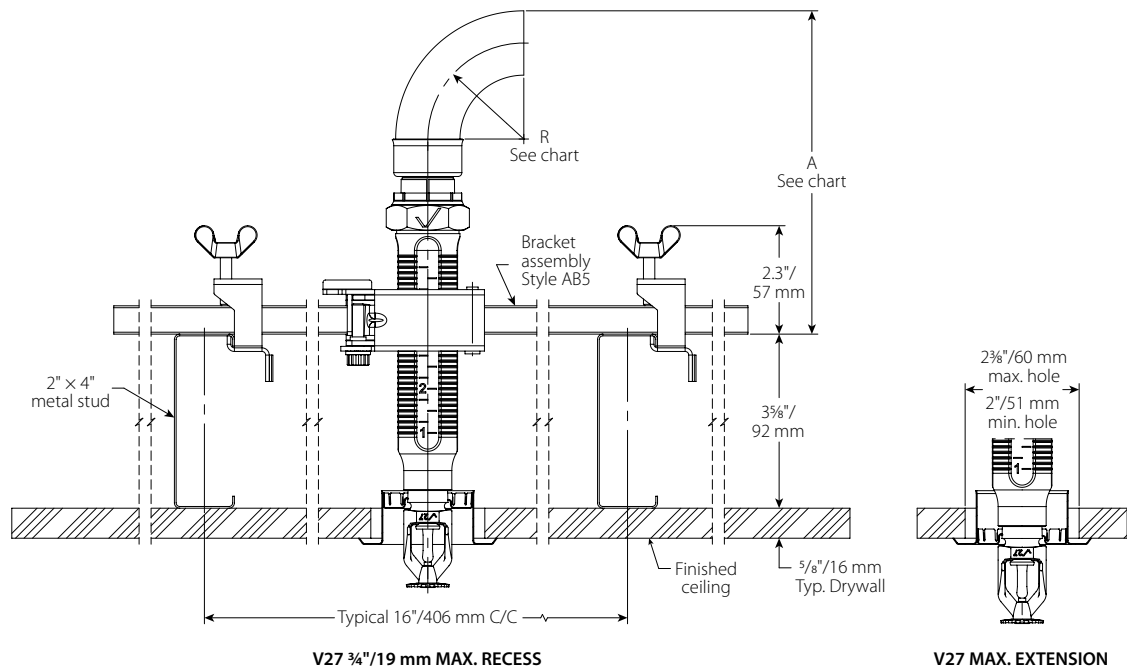
NOTE

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

4.9 DIMENSIONS

Clearances

Series AH2 Braided Hose and Style AB5 Bracket



Hose Clearance Chart						
	V2707 ¾" 20 mm Max Recess inches mm	V3802 ½" 13 mm Max Recess inches mm	V2709 ¾" 20 mm Sidewall inches mm	V2707 ¾" 20 mm Max Recess inches mm	V3802 ½" 13 mm Max Recess inches mm	V2709 ¾" 20 mm Sidewall inches mm
"R" Minimum 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

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

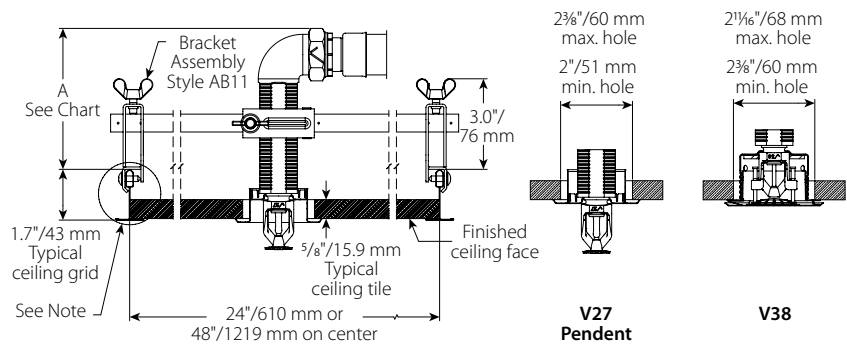
NOTE

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

4.10 DIMENSIONS

Clearances

Series AH2 Braided Hose and Style AB11 Bracket (LOW PROFILE SOLUTION)



Hose Clearance Chart		
	Low-Profile Long Elbow	Low-Profile Short Elbow
	V2707 ¾" 20 mm Max Recess"	V3802 ½" 13 mm Max Recess
	inches mm	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.

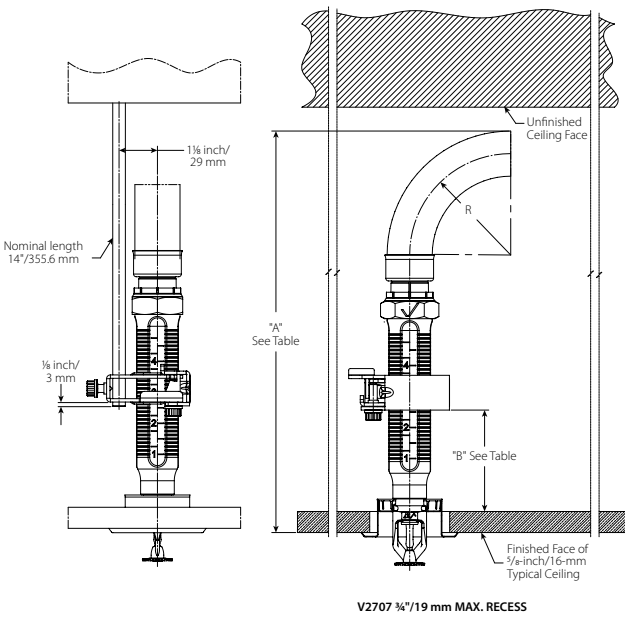
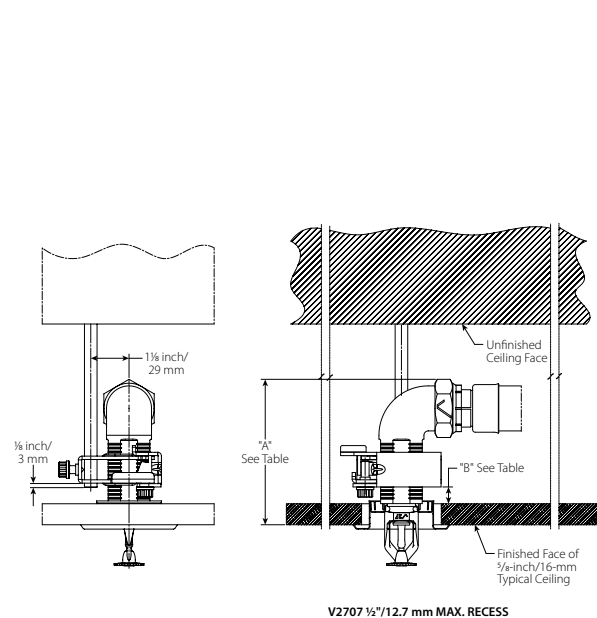
4.11 DIMENSIONS

CLEARANCES ABOVE CEILING

Series AH1 Braided Hose and Style AB12 and ABBA Bracket

Suspended Ceiling Grid with Recessed Sprinkler
with Low Profile Short Elbow

Suspended Ceiling Grid with Recessed Sprinkler and
Straight 5.75"/140mm Reducer



Dimension		Low Profile Short Elbow		Low Profile Long Elbow		Standard Short Elbow		Standard Long Elbow		Standard Straight Reducer	
		3/4"/19mm Recessed*	Concealed	3/4"/19mm Recessed	Concealed	3/4"/19mm Recessed	Concealed	3/4"/19mm Recessed	Concealed	3/4"/19mm Recessed	Concealed
		inches	inches	inches	inches	inches	inches	inches	inches	inches	inches
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
A	Minimum Required Installation Space	4.0	5.5	5.6	7.2	5.9	7.5	7.7	9.3	15.0	16.6
		101.6	139.7	142.2	182.9	149.9	190.5	195.6	236.2	381.0	421.6
B	Distance from Top of Typical Ceiling Tile to Bottom of Gate	0.5	2.0	1.5	1.5	1.5	1.5	3.0	3.0	3.0	3.0
		12.7	50.8	38.1	38.1	38.1	38.1	76.2	76.2	76.2	76.2

* Adjustability will be limited

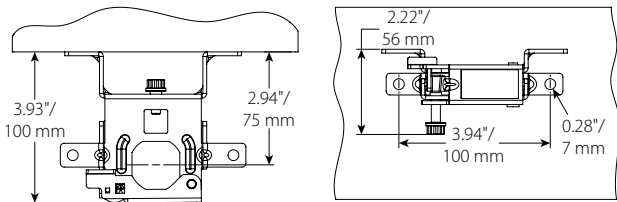
NOTE

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

4.12 DIMENSIONS

Style ABMM Bracket

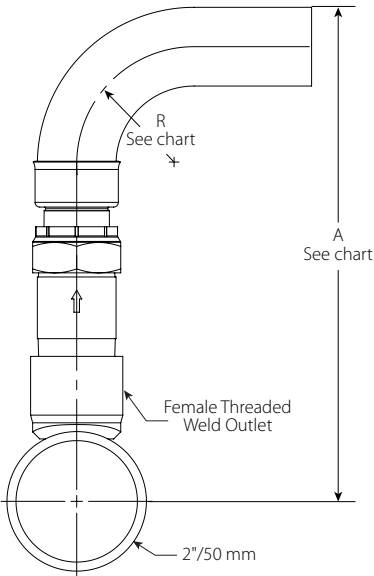
Stand-off Dimensions



4.13 DIMENSIONS

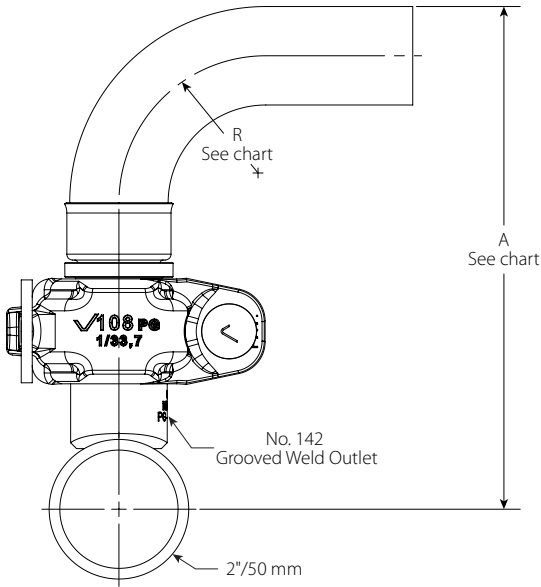
BRANCHLINE CLEARANCES

Series AH1 Braided Hose with female threaded outlet



Hose Clearance Chart						
Dimension		inches mm	inches mm	inches mm	inches mm	inches mm
R	Minimum 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



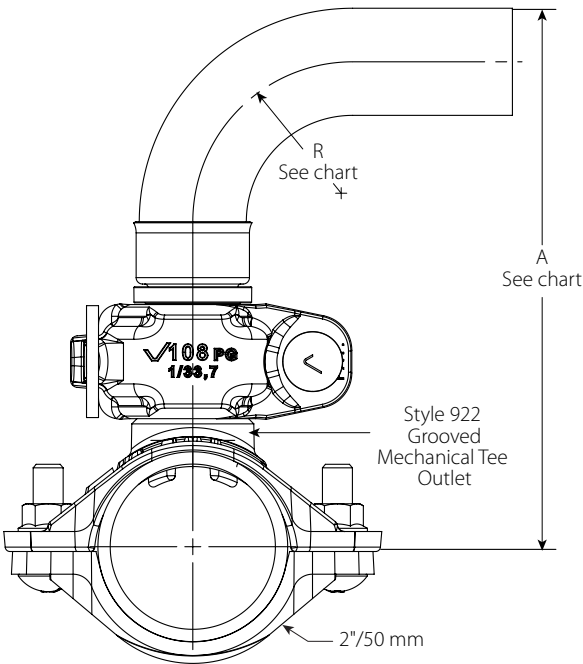
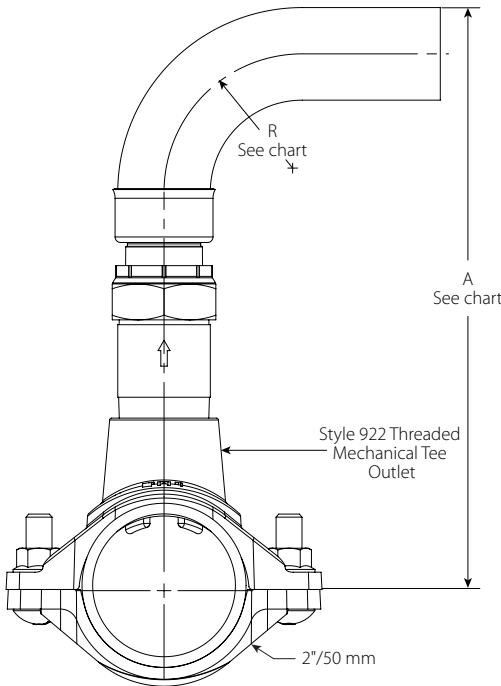
Hose Clearance Chart						
Dimension		inches mm	inches mm	inches mm	inches mm	inches mm
R	Minimum Bend Radius	3 80	4 100	5 125	6 150	7 175
A	Min.	8.1 205	9.1 231	10.1 256	11.1 281	12.1 307

4.14 DIMENSIONS

BRANCHLINE CLEARANCES

Series AH1 Braided Hose with Style 922 threaded outlet

Series AH1-CC Braided Hose with Style 922 grooved outlet



Hose Clearance Chart						
Dimension		inches mm	inches mm	inches mm	inches mm	inches mm
R	Minimum 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

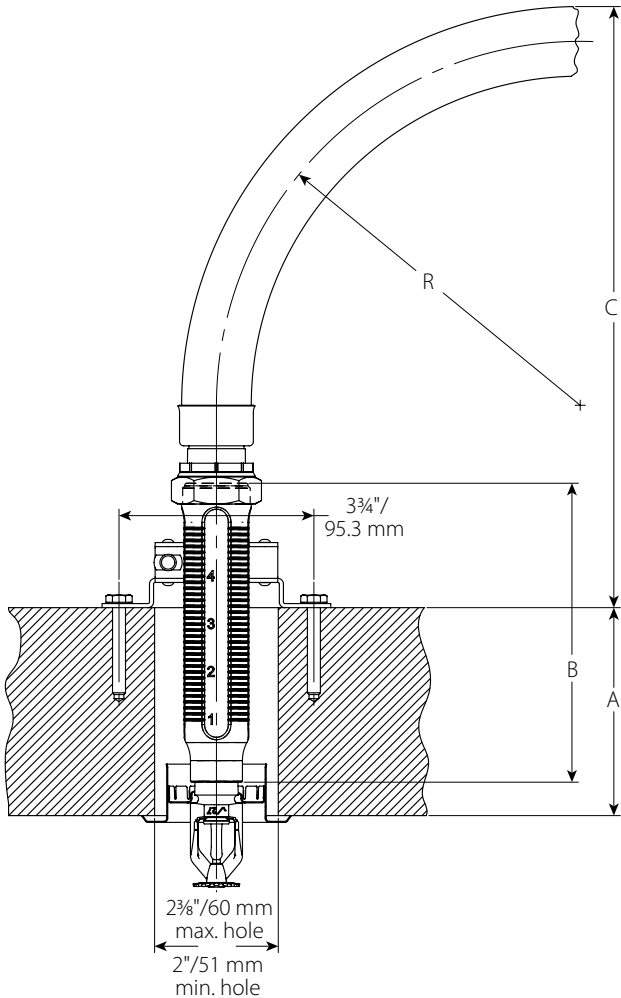
Hose Clearance Chart						
Dimension		inches mm	inches mm	inches mm	inches mm	inches mm
R	Minimum Bend Radius	3 80	4 100	5 125	6 150	7 175
A	Min.	7.7 197	8.7 222	9.7 247	10.7 273	11.7 298

4.15 DIMENSIONS

CLEARANCES ABOVE CEILING

Series AH1 Braided Hose and Style AB3 and ABMM Bracket

Surface Mount Application with Recessed Sprinkler



Hose Clearances																	
Wall Thickness "A"	4 100				6 150				8 200				10 250				
Outlet Length "B"	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
Hose Clearance "C"	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
Bend Radius "R"	7 175								8 200								

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.

5.0 PERFORMANCE – FRICTION LOSS DATA



Series AH1 and AH1-CC Braided Hose with Straight 5.75" Reducers
Style AB2, AB4, AB5 and AB10 Brackets

Length inches mm	Type	Nominal Outlet Size inches DN	Equivalent Length of 1"/33.7mm Sch. 40 pipe feet meters	Max Bends
31 790	Straight	1/2 DN15	41.0 12.5	3
31 790	Straight	3/4 DN20	39.0 11.9	3
36 915	Straight	1/2 DN15	49.0 14.9	4
36 915	Straight	3/4 DN20	48.0 14.6	4
48 1220	Straight	1/2 DN15	62.0 18.9	4
48 1220	Straight	3/4 DN20	59.0 18.0	4
60 1525	Straight	1/2 DN15	72.0 21.9	4
60 1525	Straight	3/4 DN20	73.0 22.3	4
72 1830	Straight	1/2 DN15	87.0 26.5	5
72 1830	Straight	3/4 DN20	90.0 27.4	5

5.0 PERFORMANCE – FRICTION LOSS DATA (CONTINUED)



Series AH1 Braided Hose with 90° Low Profile Elbows
Style AB11 VicFlex Bracket

Hose		Reducer		UL	
Length inches mm	Type	Nominal Outlet Size inches DN	Equivalent Length of 1"/33.7mm Sch. 40 pipe feet meters	Max Bends	
31 790	LP Elbow	1/2 DN15	37.0 11.3	3	
31 790	LP Elbow	3/4 DN20	44.0 13.4	3	
36 915	LP Elbow	1/2 DN15	47.0 14.3	4	
36 915	LP Elbow	3/4 DN20	53.0 16.2	4	
48 1220	LP Elbow	1/2 DN15	58.0 17.7	4	
48 1220	LP Elbow	3/4 DN20	68.0 20.7	4	
60 1525	LP Elbow	1/2 DN15	70.0 21.3	4	
60 1525	LP Elbow	3/4 DN20	77.0 23.5	4	
72 1830	LP Elbow	1/2 DN15	83.0 25.3	5	
72 1830	LP Elbow	3/4 DN20	99.0 30.2	5	

5.0 PERFORMANCE – FRICTION LOSS DATA

Series AH1 Braided Hose Equivalent Length Design Guide

Equivalent length values at various numbers of 90 degree bends at 3"/76.2mm center line bend radius

Hose		Bends				
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	–	–
31 790	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	–
36 915	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	–
48 1220	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	–
60 1525	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
72 1830	¾ DN20	67.0 20.4	71.0 21.6	75.0 22.9	83.0 25.3	90.0 27.4

NOTES

- Values for use with 5.75" 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, please refer to page 17 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.

5.0 PERFORMANCE – FRICTION LOSS DATA



Series AH1 and AH1-CC Braided Hose

Style AB2, AB3, AB4, AB5, AB7, AB7 Adj., AB8, AB10, 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"/33.7mm Sch. 40 pipe feet meters	Max Bends
31 790	Straight	½ DN15	5.6 8.1	35.7 10.9	2
31 790	Elbow	½ DN15	5.6 8.1	30.4 9.3	2
36 915	Straight	½ DN15	5.6 8.1	42.1 12.8	2
36 915	Elbow	½ DN15	5.6 8.1	36.9 11.2	2
48 1220	Straight	½ DN15	5.6 8.1	57.5 17.5	3
48 1220	Elbow	½ DN15	5.6 8.1	52.2 15.9	3
60 1525	Straight	½ DN15	5.6 8.1	72.9 22.2	4
60 1525	Elbow	½ DN15	5.6 8.1	68.2 20.8	4
72 1830	Straight	½ DN15	5.6 8.1	88.4 26.9	4
72 1830	Elbow	½ DN15	5.6 8.1	83.8 25.5	4
31 790	Straight	¾ DN20	8.0 11.5	32.9 10.0	2
31 790	Elbow	¾ DN20	8.0 11.5	32.4 9.9	2
36 915	Straight	¾ DN20	8.0 11.5	39.2 11.9	2
36 915	Elbow	¾ DN20	8.0 11.5	38.9 11.9	2
48 1220	Straight	¾ DN20	8.0 11.5	54.4 16.6	3
48 1220	Elbow	¾ DN20	8.0 11.5	54.5 16.6	3
60 1525	Straight	¾ DN20	8.0 11.5	69.5 21.2	4
60 1525	Elbow	¾ DN20	8.0 11.5	70.1 21.4	4
72 1830	Straight	¾ DN20	8.0 11.5	84.7 25.8	4
72 1830	Elbow	¾ DN20	8.0 11.5	85.7 26.1	4

FM NOTES

- Series AH1 has 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°.

5.0 PERFORMANCE – FRICTION LOSS DATA (CONTINUED)



Series AH1 and AH1-CC Braided Hose

Style AB2, AB3, AB4, AB5, AB7, AB7 Adj., AB8, AB10, 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"/33.7mm Sch. 40 pipe feet meters	Max Bends
31 790	Straight	3/4 DN20	11.2 16.1	32.9 10.0	2
31 790	Elbow	3/4 DN20	11.2 16.1	32.4 9.9	2
36 915	Straight	3/4 DN20	11.2 16.1	39.2 11.9	2
36 915	Elbow	3/4 DN20	11.2 16.1	38.9 11.9	2
48 1220	Straight	3/4 DN20	11.2 16.1	54.4 16.6	3
48 1220	Elbow	3/4 DN20	11.2 16.1	54.5 16.6	3
60 1525	Straight	3/4 DN20	11.2 16.1	69.5 21.2	4
60 1525	Elbow	3/4 DN20	11.2 16.1	70.1 21.4	4
72 1830	Straight	3/4 DN20	11.2 16.1	84.7 25.8	4
72 1830	Elbow	3/4 DN20	11.2 16.1	85.7 26.1	4
31 790	Straight	3/4 DN20	14.0 20.2	32.9 10.0	2
31 790	Elbow	3/4 DN20	14.0 20.2	32.4 9.9	2
36 915	Straight	3/4 DN20	14.0 20.2	39.2 11.9	2
36 915	Elbow	3/4 DN20	14.0 20.2	38.9 11.9	2
48 1220	Straight	3/4 DN20	14.0 20.2	54.4 16.6	3
48 1220	Elbow	3/4 DN20	14.0 20.2	54.5 16.6	3
60 1525	Straight	3/4 DN20	14.0 20.2	69.5 21.2	4
60 1525	Elbow	3/4 DN20	14.0 20.2	70.1 21.4	4
72 1830	Straight	3/4 DN20	14.0 20.2	84.7 25.8	4
72 1830	Elbow	3/4 DN20	14.0 20.2	85.7 26.1	4

FM NOTES

- Series AH1 has 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°.

5.0 PERFORMANCE – FRICTION LOSS DATA



Series AH1 Braided Hose with 90° Low Profile Elbows
Style AB5, AB11, AB12, ABBA and ABMM VicFlex Bracket

Hose	Reducer		Sprinkler	FM	
Length inches mm	Type	Nominal Outlet Size inches DN	K-factor Imperial S.I.	Equivalent Length of 1"/33.7mm Sch. 40 pipe feet meters	Max Bends
31 790	LP Elbow	3/4 DN20	5.6 8.1	31.4 9.6	2
36 915	LP Elbow	3/4 DN20	5.6 8.1	37.7 11.5	2
48 1220	LP Elbow	3/4 DN20	5.6 8.1	52.8 16.1	3
60 1525	LP Elbow	3/4 DN20	5.6 8.1	67.8 20.7	4
72 1830	LP Elbow	3/4 DN20	5.6 8.1	82.9 25.3	4
31 790	LP Elbow	3/4 DN20	8.0 11.5	32.3 9.8	2
36 915	LP Elbow	3/4 DN20	8.0 11.5	38.8 11.8	2
48 1220	LP Elbow	3/4 DN20	8.0 11.5	54.4 16.6	3
60 1525	LP Elbow	3/4 DN20	8.0 11.5	70.1 21.4	4
72 1830	LP Elbow	3/4 DN20	8.0 11.5	85.7 26.1	4
31 790	LP Elbow	3/4 DN20	11.2 16.1	32.3 9.8	2
36 915	LP Elbow	3/4 DN20	11.2 16.1	38.8 11.8	2
48 1220	LP Elbow	3/4 DN20	11.2 16.1	54.4 16.6	3
60 1525	LP Elbow	3/4 DN20	11.2 16.1	70.1 21.4	4
72 1830	LP Elbow	3/4 DN20	11.2 16.1	85.7 26.1	4
31 790	LP Elbow	3/4 DN20	14.0 20.2	32.3 9.8	2
36 915	LP Elbow	3/4 DN20	14.0 20.2	38.8 11.8	2
48 1220	LP Elbow	3/4 DN20	14.0 20.2	54.4 16.6	3
60 1525	LP Elbow	3/4 DN20	14.0 20.2	70.1 21.4	4
72 1830	LP Elbow	3/4 DN20	14.0 20.2	85.7 26.1	4

FM NOTES

- Series AH1 has 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.
- Differences in equivalent lengths are due to varying test methods, per FM 1637 and VdS standards. Refer to these standards for additional information regarding friction loss test methods.
- 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°.

5.0 PERFORMANCE – FRICTION LOSS DATA



Series AH1 and AH1-CC Braided Hose
Style AB2, AB4, AB5, AB7, AB7 Adj., AB8, AB10, AB11 and AB12 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	Max Bends
790 31	DN15 ½	3.2 10.5	3
790 31	DN20 ¾	3.2 10.5	3
915 36	DN15 ½	3.7 12.1	3
915 36	DN20 ¾	3.7 12.1	3
1220 48	DN15 ½	4.9 16.1	3
1220 48	DN20 ¾	4.9 16.1	3
1525 60	DN15 ½	6.1 20.0	4
1525 60	DN20 ¾	6.1 20.0	4
1830 72	DN15 ½	7.3 24.0	4
1830 72	DN20 ¾	7.3 24.0	4

VDS CEILING MANUFACTURERS LIST

AB1, AB2, AB7, AB10, AB11, AB12 AB4

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

No specific approval

AB8

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

5.0 PERFORMANCE – FRICTION LOSS DATA (continued)



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104103

Series AH1 and AH1-CC Braided Hose Style AB2, AB3, AB4, AB5, AB7, AB8 and AB10 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	Max Bends
790 31	DN15 ½	10.4 34.1	2
790 31	DN20 ¾	11.3 37.1	2
915 36	DN15 ½	13.4 44.0	3
915 36	DN20 ¾	13.9 45.6	3
1220 48	DN15 ½	16.2 53.1	3
1220 48	DN20 ¾	16.5 54.1	3
1525 60	DN15 ½	19.2 63.0	3
1525 60	DN20 ¾	19.7 64.6	3
1830 72	DN15 ½	22.8 74.8	3
1830 72	DN20 ¾	23.5 77.1	3



Series AH1 Flexible Hose Friction Loss Data

Model	Length of Flexible Hose mm inches	Equivalent Length	
		Straight Configuration meters feet	Bend Configuration meters feet
AH1-31	790	4.78	5.80
	31	15.7	19.0
AH1-36	915	5.59	10.15
	36	18.3	33.3
AH1-48	1220	9.75	16.25
	48	32.0	53.3
AH1-60	1525	12.15	22.94
	60	39.9	75.3
AH1-72	1830	14.26	25.98
	72	46.8	85.2

NOTE

- Friction loss data is in accordance with GB5135.16 tested at a flow rate of 114 liters per minute (30 gallons per minute).

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.

- 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 13, 13D, 13R, etc.) standards, or equivalent 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.

WARNING

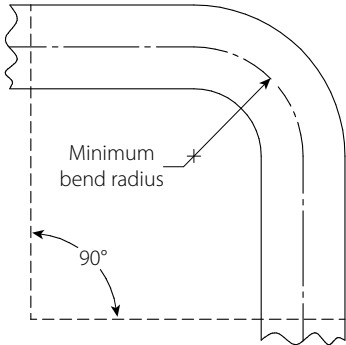
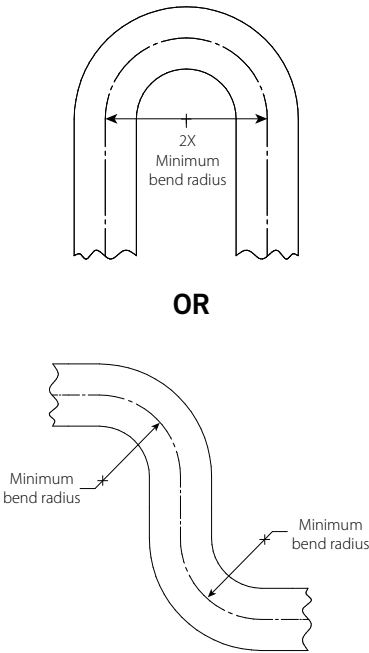
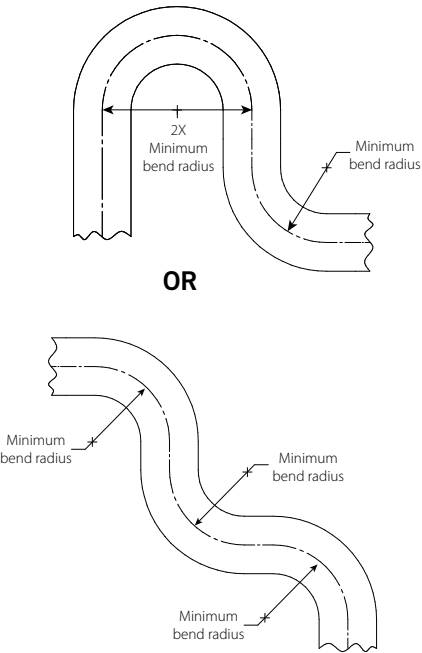
- It is the responsibility of the system designer to verify suitability of 300-series stainless steel flexible hose for use with the intended fluid media within the piping system and external environments.
- The effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on 300-series stainless steel flexible hose must be evaluated by the material specifier 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 micro-biologically 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 these instructions could cause product failure, resulting in serious personal injury and/or property damage.

Victaulic VicFlex Series AH1 and AH1-CC Flexible Sprinkler Fittings may be painted provided the paint is compatible with stainless steel and zinc-plated carbon steel or ductile iron. Care should be taken to ensure the sprinkler and associated escutcheon or coverplate are not painted.

7.0 REFERENCE MATERIALS – CHARACTERISTICS

Flexible Hose In-Plane Bend Characteristics

One Bend	Two Bends	Three Bends
		

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 making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, and the applicable building codes and related regulations as well as Victaulic performance, maintenance, safety, and warning 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, installation guide, or this disclaimer.

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Note
This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

Installation
Reference should always be made to I-VICFLEX-AB1-AB2-AB10, I-VICFLEX-AB4-AB9, I-VICFLEX-AB7, or I-VICFLEX-AB8 for the product you are installing. Handbooks are included with each shipment of Victaulic products for complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

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

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