

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**
 - 3/4"/20mm BSPT female thread (VdS only)
 - 1"/25mm NPT or BSPT female Thread
 - 1"/25mm Grooved IGS (refer to Submittal 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
 - 3/4"/20mm BSPT male thread (VdS only)

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

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

1.0 PRODUCT DESCRIPTION (CONTINUED)

• **Sprinkler Reducer**

- Sprinkler Connection: ½" and ¾"/15mm and 20mm NPT or BSPT
- Straight Lengths: 5.75", 9", 13"/140mm, 230mm, 330mm
- 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.

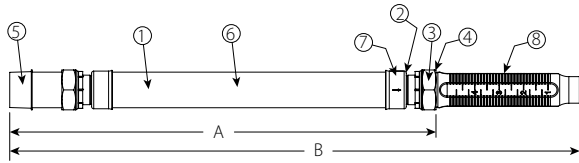
Linkage: CrMo Alloy Steel zinc electroplated per ASTM B633 Zn/Fe 5, Type III Finish.

No. 116 Adapter Fitting: CPVC and Brass

Seal: Victaulic EPDM

4.0 DIMENSIONS

Product Details - Series AH1 Braided Hose

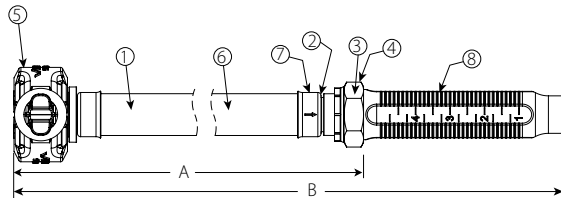


Item	Description
1	Flexible Hose
2	Isolation Ring
3	Gasket
4	Nut
5	Branch Line Nipple
6	Braid
7	Collar/Weld Fitting
8	Reducer

Hose Length Dimensions

Hose Length inches mm	A inches mm	B inches mm
31	25.3	31.0
790	641	790
36	31.3	36.0
915	794	915
48	42.3	48.0
1220	1073	1220
60	54.3	60.0
1525	1378	1525
72	66.3	72.0
1830	1683	1830

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 Length inches mm	A inches mm	B inches mm
31	24.5	29.8
790	622	757
36	29.5	34.8
915	749	884
48	41.5	46.8
1220	1054	1189
60	53.5	58.8
1525	1359	1494
72	65.5	70.8
1830	1664	1798

4.1 DIMENSIONS (CONTINUED)

Standard Reducer



5.75"/140 mm straight reducer

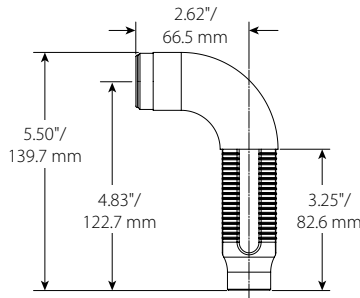
Optional Reducers



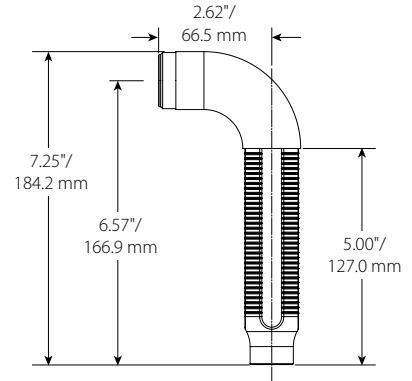
9.0"/229 mm straight reducer



13.0"/330 mm straight reducer



Short 90° elbow reducer

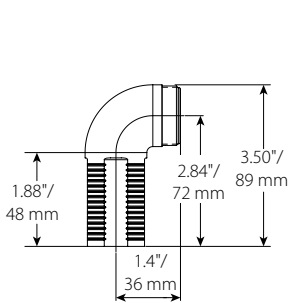


Long 90° elbow reducer

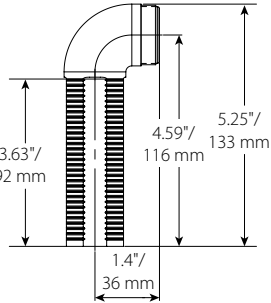
NOTE

- 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

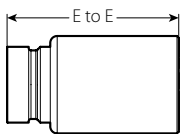


Long 90° elbow reducer

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

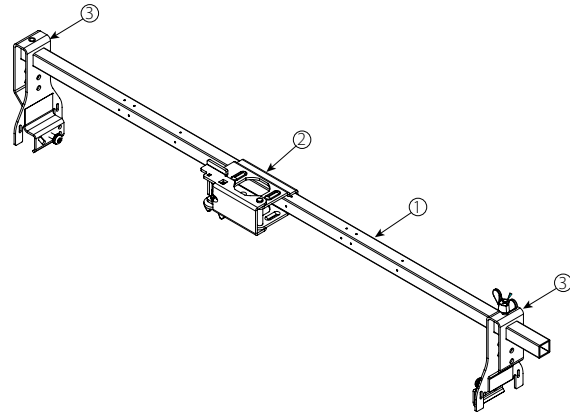
Style AB2

- 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

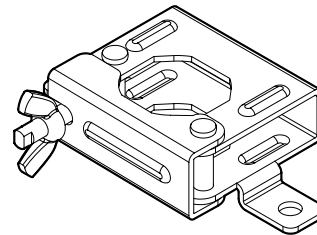
NOTE

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



Style AB3

- Surface Mount Applications
- FM/LPCB Approved



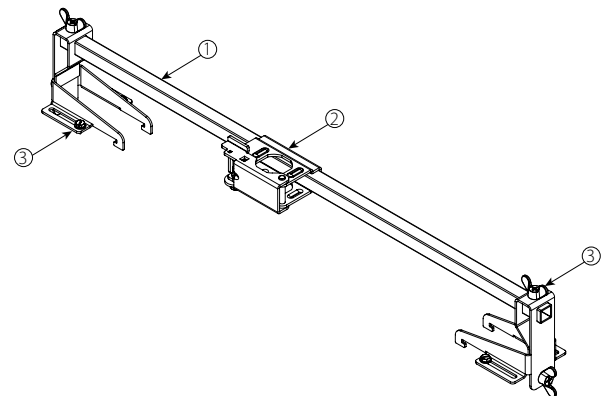
Style AB4

- 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

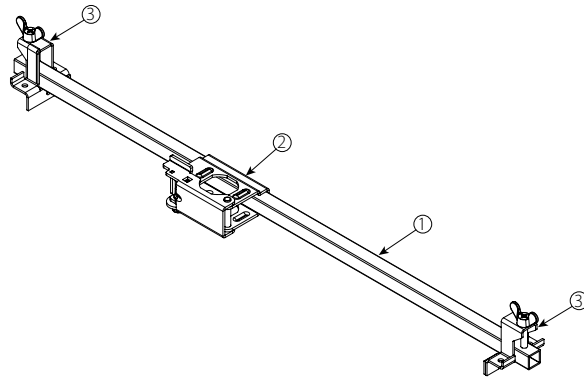
Style AB5

- 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



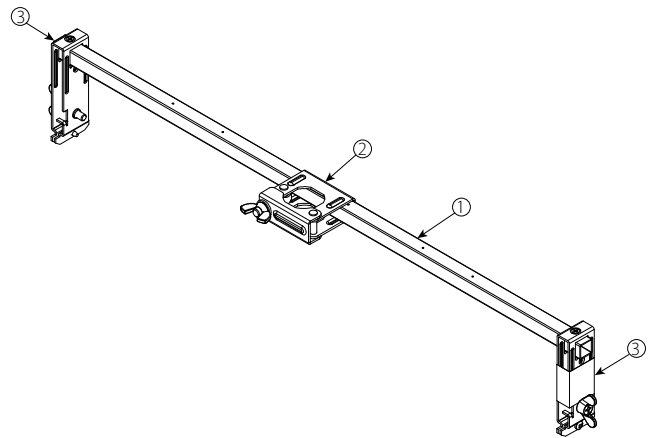
Style AB7

- 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.



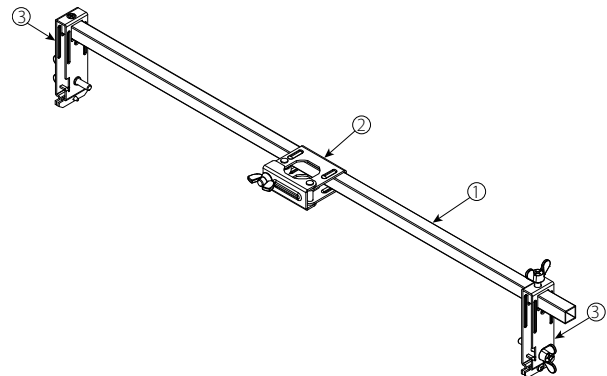
Style AB7 Adjustable

- 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.



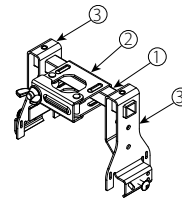
4.4 DIMENSIONS

VicFlex Brackets

Style AB10

- Suspended ceilings
- Armstrong® TechZone™

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



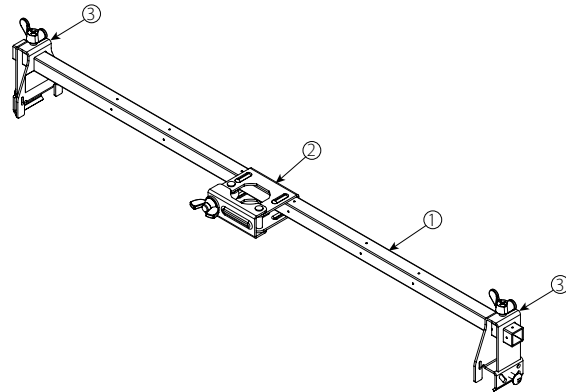
NOTE

- 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



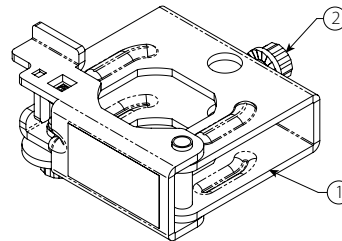
NOTE

- FM/VdS Approved, cULus listed.

Style AB12

- Suspended ceilings
- Hard-Lid ceilings

Item	Description
1	Style AB12 Bracket Body
2	#2 Square Drive Set Screw



NOTE

- FM/VdS Approved.

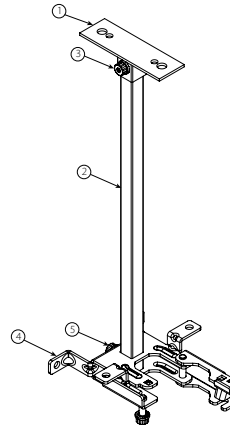
4.5 DIMENSIONS

VicFlex Brackets

Style ABBA

- Floor-above mount
- Cantilever mount
- Temporary mount in exposed ceilings

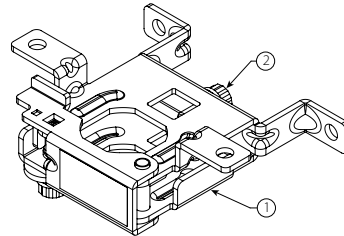
Item	Description
1	Style ABBA Mounting Plate
2	Style ABBA Square Bar
3	Cap Screw, Serated Flange, M6 x 1 x 20, T25 Torx Drive Recessed
4	Style ABMM Bracket Body
5	Cap Screw, Serated Flange, M6 x 1 x 15.24, T25 Torx Drive Recessed



Style ABMM

- Surface mount
- Stand-off mount

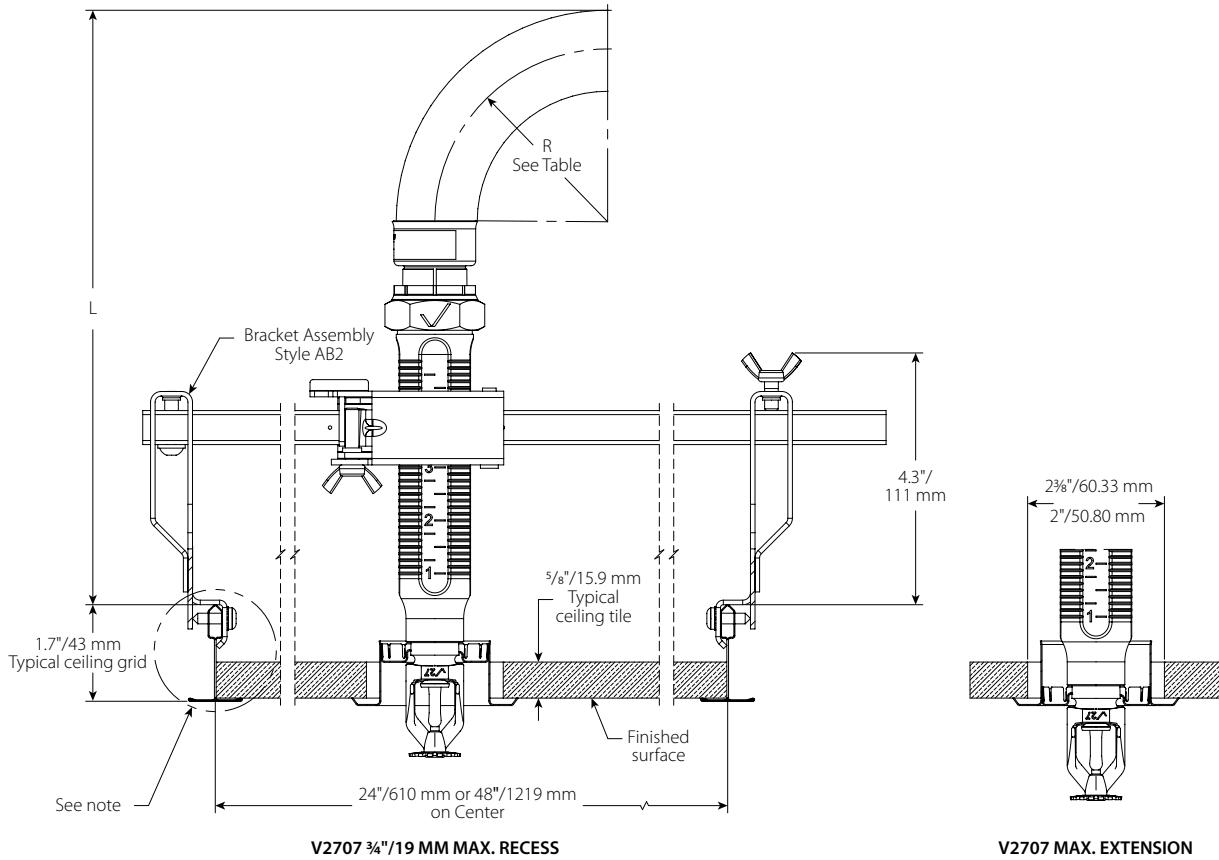
Item	Description
1	Style ABMM Bracket Body
2	Cap Screw, Serated Flange, M6 x 1 x 15.24, T25 Torx Drive Recessed



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

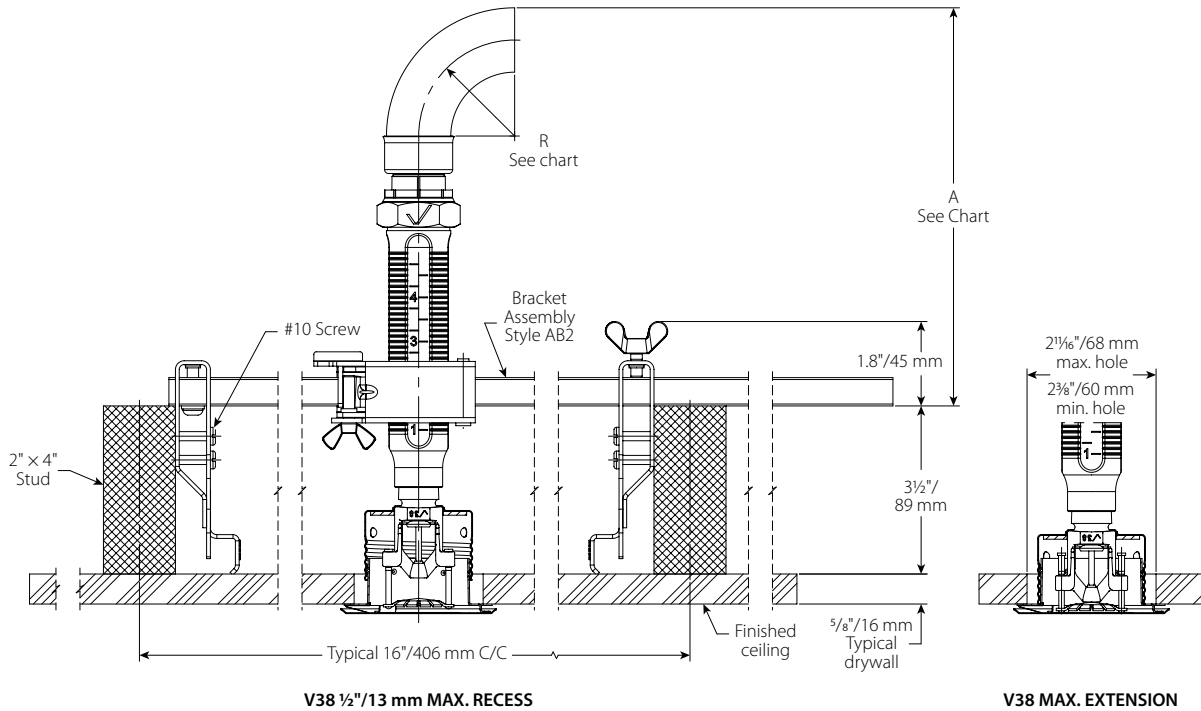
NOTE

- 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	V3802 ½" 13 mm Max Recess	V2709 ¾" 20 mm Sidewall	V2707 ¾" 20 mm Max Recess	V3802 ½" 13 mm Max Recess	V2709 ¾" 20 mm Sidewall
"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	V2709 ¾" 20 mm Sidewall	V3802 ½" 13 mm Max Recess
"R" Minimum Bend Radius	-		
"A" Minimum Required Installation Space	3.3 84	3.6 91	3.3 84

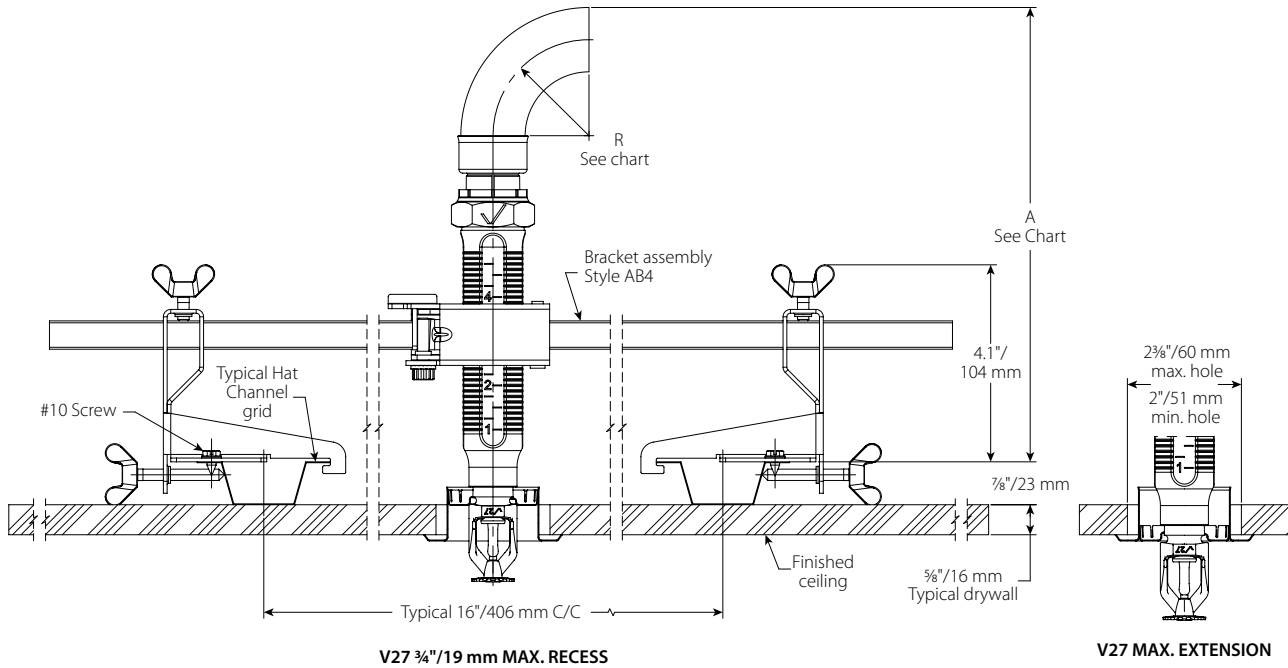
NOTE

- 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 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 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

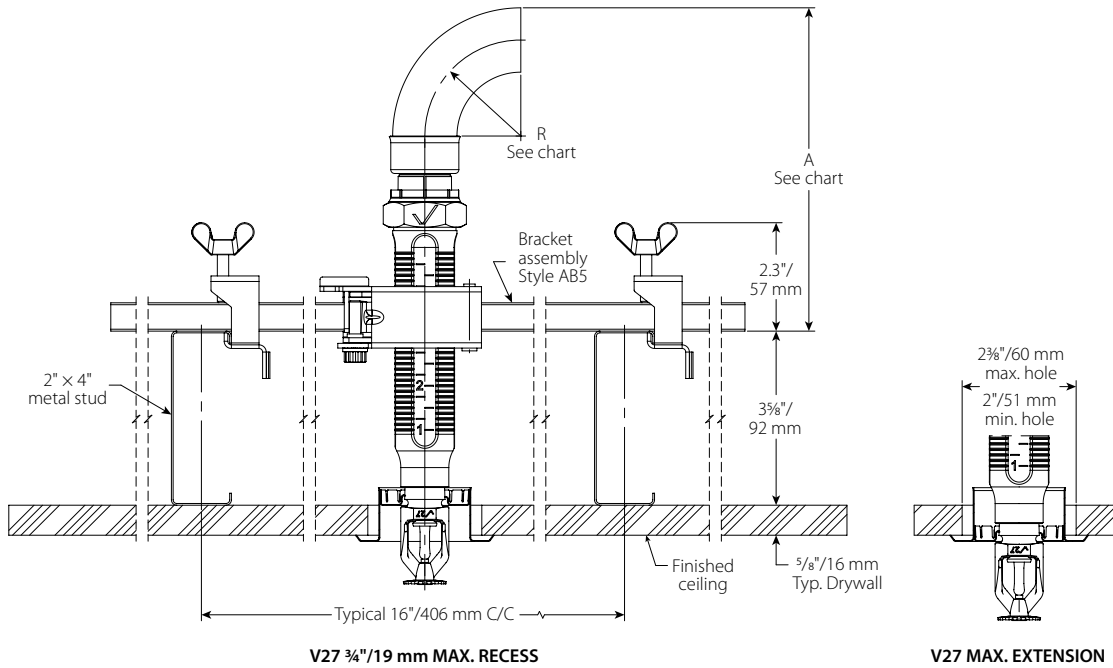
NOTE

- 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 3/4" 20 mm Max Recess inches mm	V3802 1/2" 13 mm Max Recess inches mm	V2709 3/4" 20 mm Sidewall inches mm	V2707 3/4" 20 mm Max Recess inches mm	V3802 1/2" 13 mm Max Recess inches mm	V2709 3/4" 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 3/4" 20 mm Max Recess inches mm	V3802 1/2" 13 mm Max Recess inches mm	V2709 3/4" 20 mm Sidewall inches mm	V3802 1/2" 13 mm Max Recess inches mm	V3802 1/2" 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

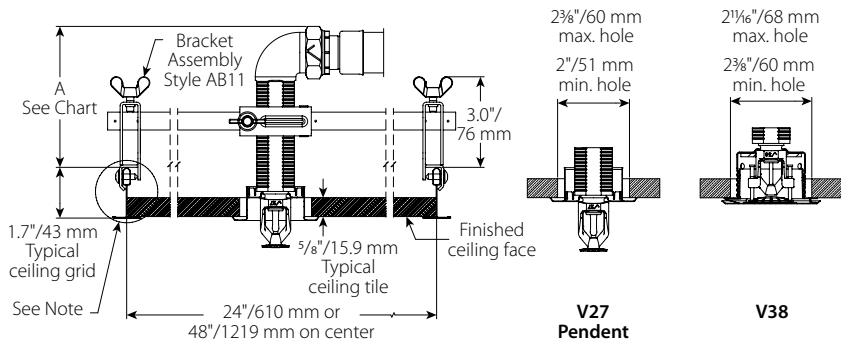
NOTE

- 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 3/4" 20 mm Max Recess"	V3802 1/2" 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.

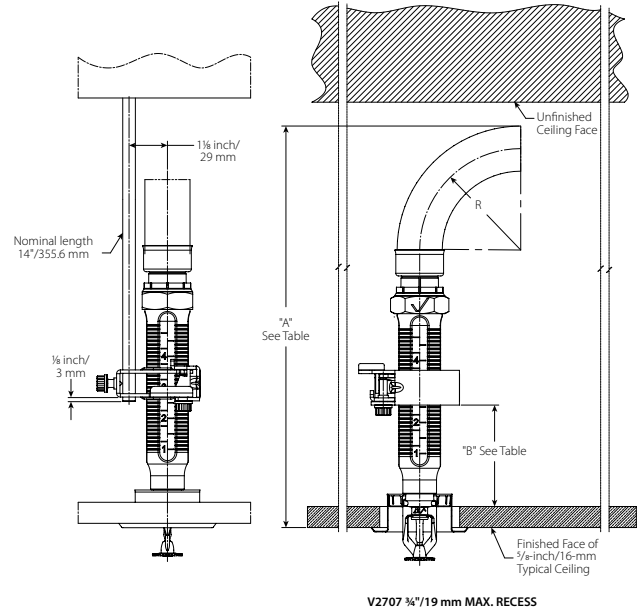
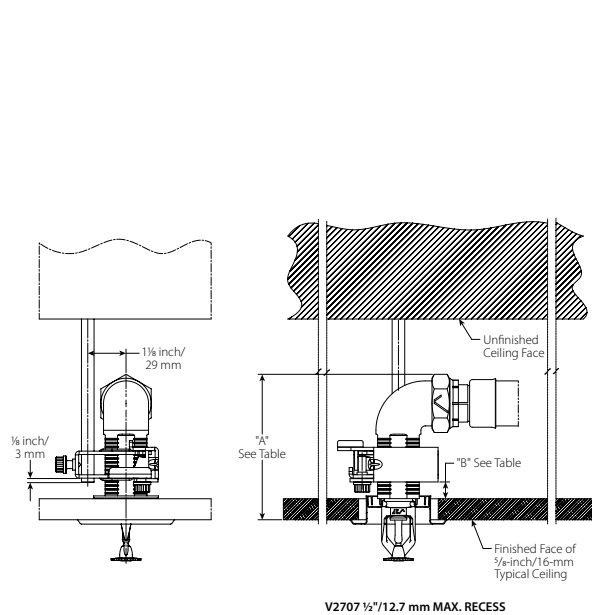
4.11 DIMENSIONS

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	4.0 101.6	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

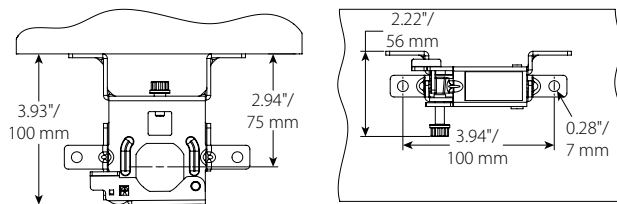
NOTE

- 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

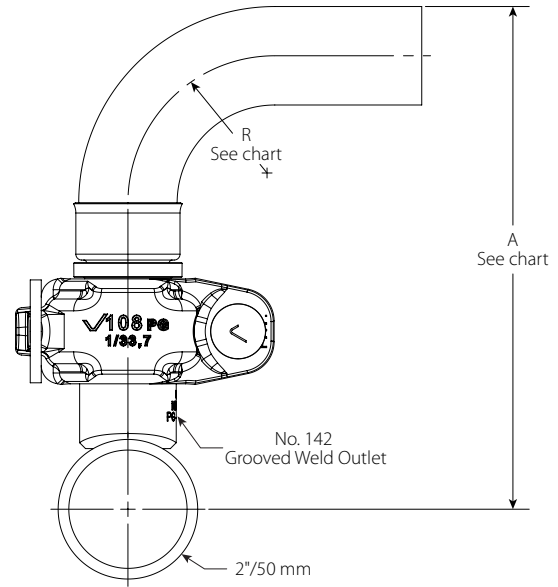
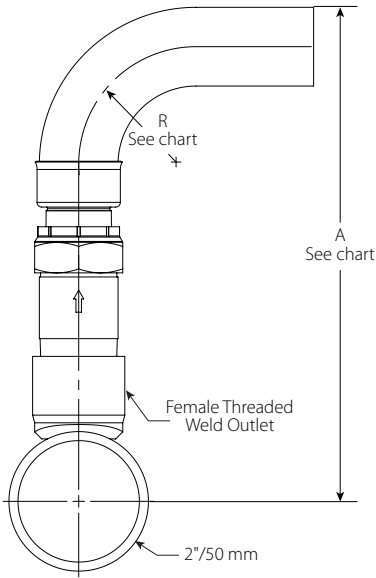


4.13 DIMENSIONS

BRANCHLINE CLEARANCES

Series AH1 Braided Hose with female threaded outlet

Series AH1-CC Braided Hose with grooved outlet



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

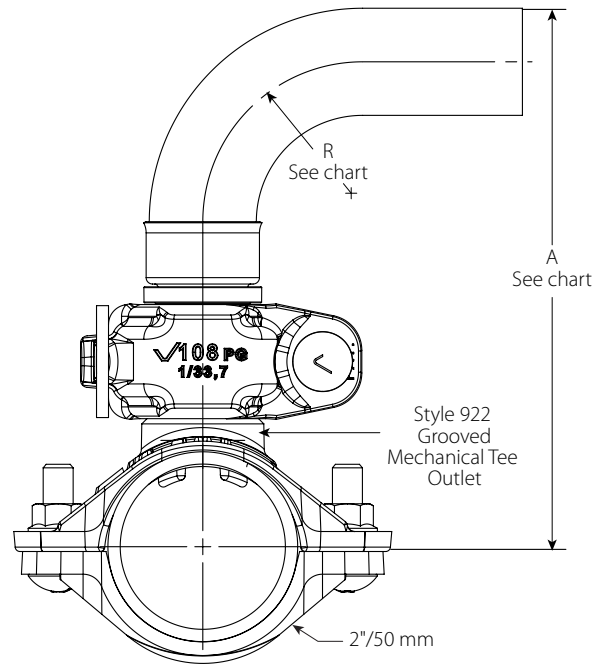
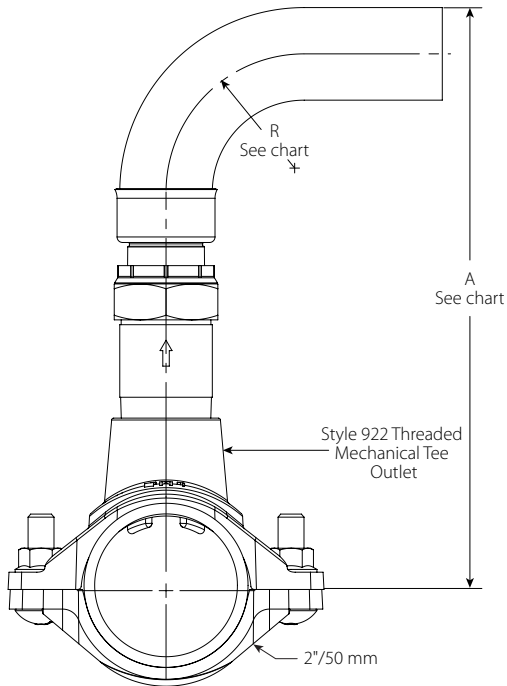
Hose Clearance Chart						
Dimension		inches	inches	inches	inches	inches
		mm	mm	mm	mm	mm
R	Minimum Bend Radius	3	4	5	6	7
		80	100	125	150	175
A	Min.	8.1	9.1	10.1	11.1	12.1
		205	231	256	281	307

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

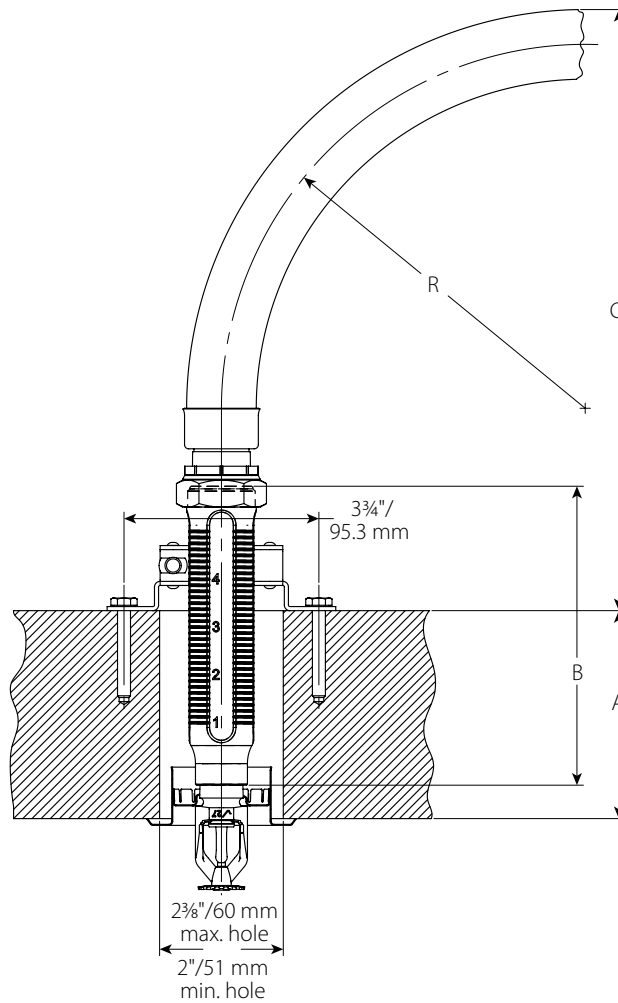
Hose Clearance Chart						
Dimension		inches	inches	inches	inches	inches
		mm	mm	mm	mm	mm
R	Minimum Bend Radius	3	4	5	6	7
		80	100	125	150	175
A	Min.	7.7	8.7	9.7	10.7	11.7
		197	222	247	273	298

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	9	13	9	13	13	13	5.75	9	13	5.75	9	13	9	13	13	13
	146.1	228.6	330.2	228.6	330.2	330.2	330.2	146.1	228.6	330.2	146.1	228.6	330.2	228.6	330.2	330.2	330.2
Hose Clearance "C"	9.6	12.8	16.8	10.8	14.8	12.8	10.8	12.6	15.8	19.8	10.6	13.8	17.8	11.8	15.8	13.8	11.8
	243	325	427	275	376	325	275	319	402	503	268	351	452	300	402	351	300
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 AB1, AB2, AB4, AB5 and AB10 Brackets

Length of Stainless Steel Flexible Hose	Outlet Size	Equivalent Length of 1"/33.7 mm Sch. 40 Pipe (C=120)	Maximum Number of 90° Bends at 3"/76.2 mm Bend Radius
inches mm	inches mm type	feet meters	
31 775	1/2 15 Straight	52 15.8	3
	3/4 20 Straight	55 16.8	3
36 900	1/2 15 Straight	63 19.2	4
	3/4 20 Straight	66 20.1	4
48 1200	1/2 15 Straight	78 23.8	4
	3/4 20 Straight	80 24.4	4
60 1500	1/2 15 Straight	88 26.8	4
	3/4 20 Straight	90 27.4	4
72 1800	1/2 15 Straight	112 34.1	5
	3/4 20 Straight	118 36.0	5

5.0 PERFORMANCE – FRICTION LOSS DATA (CONTINUED)



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

Hose Length inches mm	Outlet Size inches mm	Equivalent Length of 1"/33.7 mm Sch. 40 Pipe feet meters	Maximum Number of 90° Bends at 3"/76.2 mm Bend Radius
31 775	½ 15	63 19.2	3
	¾ 20	65 19.8	3
36 900	½ 15	76 23.2	4
	¾ 20	76 23.2	4
48 1200	½ 15	99 30.2	4
	¾ 20	98 29.9	4
60 1500	½ 15	108 32.9	4
	¾ 20	102 31.1	4
72 1800	½ 15	124 37.8	5
	¾ 20	132 40.2	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"/76.2 mm center line bend radius

Length of Stainless Steel Flexible Hose inches/mm	Outlet Size inches/mm	1 Bend feet/meters	2 Bends feet/meters	3 Bends feet/meters	4 Bends feet/meters	5 Bends feet/meters
31/775	½"/15	32/9.8	42/12.8	52/15.9	N.A	N.A
	¾"/20	33/10.1	44/13.4	55/16.8	N.A	N.A
36/900	½"/15	33/10.1	43/13.1	53/16.2	63/19.2	N.A
	¾"/20	36/11.0	46/14.0	56/17.1	66/20.1	N.A
48/1200	½"/15	46/14.0	57/17.4	68/20.7	78/23.8	N.A
	¾"/20	51/15.5	60/18.3	71/21.6	88/26.8	N.A
60/1500	½"/15	56/17.1	67/20.4	77/23.5	88/26.8	N.A
	¾"/20	58/17.7	69/21.0	80/24.4	90/27.4	N.A
72/1800	½"/15	69/21.0	79/24.1	91/27.7	102/31.1	112/34.1
	¾"/20	73/22.6	84/25.6	95/29.0	106/32.3	118/36.0

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 AB1, AB2, AB3, AB4, AB5, AB7, AB7 Adj., AB8, AB10, AB12, ABBA and ABMM VicFlex Brackets

inches/mm	Imperial/S.I.	inches/mm/type	Equivalent Length of 1"/33.7mm Sch. 40 Pipe feet/meters	Maximum Number of 90° Bends at 7"/178mm Bend Radius
31/775	5.6/8.1	½"/15/Straight	53.8/16.4	2
		½"/15/90° Elbow	53.8/16.4	
36/900	5.6/8.1	½"/15/Straight	63.7/19.4	2
		½"/15/90° Elbow	63.1/19.2	
48/1200	5.6/8.1	½"/15/Straight	87.9/26.8	3
		½"/15/90° Elbow	85.8/26.1	
60/1500	5.6/8.1	½"/15/Straight	112.2/34.1	4
		½"/15/90° Elbow	108.4/33.0	
72/1800	5.6/8.1	½"/15/Straight	136.5/41.6	4
		½"/15/90° Elbow	131.1/39.9	
31/775	8.0/11.5	¾"/20/Straight	44.4/13.5	2
		¾"/20/90° Elbow	47.6/14.5	
36/900	8.0/11.5	¾"/20/Straight	55.6/16.9	2
		¾"/20/90° Elbow	57.5/17.5	
48/1200	8.0/11.5	¾"/20/Straight	82.8/25.2	3
		¾"/20/90° Elbow	81.7/24.9	
60/1500	8.0/11.5	¾"/20/Straight	110.1/24.9	4
		¾"/20/90° Elbow	105.9/32.2	
72/1800	8.0/11.5	¾"/20/Straight	137.3/41.8	4
		¾"/20/90° Elbow	130.2/39.7	
31/775	11.2/16.1	¾"/20/Straight	45.5/13.8	2
		¾"/20/90° Elbow	47.1/14.3	
36/900	11.2/16.1	¾"/20/Straight	66.3/20.2	2
		¾"/20/90° Elbow	57.5/17.5	
48/1200	11.2/16.1	¾"/20/Straight	82.7/25.2	3
		¾"/20/90° Elbow	82.8/25.2	
60/1500	11.2/16.1	¾"/20/Straight	109.1/33.2	4
		¾"/20/90° Elbow	108.1/32.9	
72/1800	11.2/16.1	¾"/20/Straight	135.5/41.3	4
		¾"/20/90° Elbow	133.4/40.6	
31/775	14.0/20.2	¾"/20/Straight	44.3/13.5	2
		¾"/20/90° Elbow	46.4/14.1	
36/900	14.0/20.2	¾"/20/Straight	55.5/16.9	2
		¾"/20/90° Elbow	56.7/17.3	
48/1200	14.0/20.2	¾"/20/Straight	83.0/25.3	3
		¾"/20/90° Elbow	82.1/25.0	
60/1500	14.0/20.2	¾"/20/Straight	110.4/33.6	4
		¾"/20/90° Elbow	107.5/32.7	
72/1800	14.0/20.2	¾"/20/Straight	137.9/42.0	4
		¾"/20/90° Elbow	132.8/40.4	

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

Length of Stainless Steel Flexible Hose inches/mm	K-Factor Imperial/S.I.	Outlet Size inches/mm	Equivalent Length of 1"/33.7mm Sch. 40 Pipe feet/meters	Maximum Number of 90° Bends at 7"/178mm Bend Radius
31/775	5.6/8.1	½"/15	49.0/14.9	2
36/900	5.6/8.1	½"/15	58.5/17.8	2
48/1200	5.6/8.1	½"/15	81.5/24.8	3
60/1500	5.6/8.1	½"/15	104.4/31.8	4
72/1800	5.6/8.1	½"/15	127.4/38.8	4
31/775	8.0/11.5	¾"/20	47.6/14.5	2
36/900	8.0/11.5	¾"/20	57.7/17.6	2
48/1200	8.0/11.5	¾"/20	81.9/25.0	3
60/1500	8.0/11.5	¾"/20	106.1/32.3	4
72/1800	8.0/11.5	¾"/20	130.5/39.8	4
31/775	11.2/16.1	¾"/20	48.6/14.8	2
36/900	11.2/16.1	¾"/20	58.2/17.7	2
48/1200	11.2/16.1	¾"/20	82.2/25.1	3
60/1500	11.2/16.1	¾"/20	104.2/31.8	4
72/1800	11.2/16.1	¾"/20	127.5/38.8	4
31/775	14.0/20.2	¾"/20	47.9/14.6	2
36/900	14.0/20.2	¾"/20	58.0/17.7	2
48/1200	14.0/20.2	¾"/20	82.2/25.1	3
60/1500	14.0/20.2	¾"/20	106.4/32.4	4
72/1800	14.0/20.2	¾"/20	130.8/39.9	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 AB1, AB2, AB4, AB5, AB7, AB7 Adj., AB8, AB10, AB11 and AB12 Brackets

Length of Stainless Steel Flexible Hose mm/inches	Outlet Size mm/inches/type	Equivalent Length of steel pipe according to EN 10255 DN 20 (26,9 x 2,65) meters/feet	Maximum Number of 90° Bends at 3"/76.2mm Bend Radius meters/feet
790/31	15mm/1/2"/Straight	4.0/12.9	3
	20 mm/3/4"/Straight		
915/36	15mm/1/2"/Straight	4.6/15.0	3
	20 mm/3/4"/Straight		
1220/48	15mm/1/2"/Straight	6.1/20.0	3
	20 mm/3/4"/Straight		
1525/60	15mm/1/2"/Straight	7.6/25.0	4
	20 mm/3/4"/Straight		
1830/72	15mm/1/2"/Straight	9.2/30.0	4
	20 mm/3/4"/Straight		

VDS CEILING MANUFACTURERS LIST

AB1, AB2, AB7, AB10, AB11, AB12

AB4

AB8

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

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

5.0 PERFORMANCE – FRICTION LOSS DATA (continued)



Series AH1 and AH1-CC Braided Hose
Style AB1, AB2, AB3, AB4, AB5, AB7, AB8 and AB10 Brackets

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

Length of Stainless Steel Flexible Hose mm/inches	Outlet Size mm/inches/type	Equivalent Length of steel pipe according to EN 10255 DN 25 (33,7 x 3,25)	Maximum Number of 90° Bends at 3"/76.2mm Bend Radius
		meters/feet	
790/31	15mm/1/2"/Straight	12.7/41.8	2
	20 mm/3/4"/Straight		
	15mm/1/2"/90° Elbow	13.6/44.6	2
	20 mm/3/4"/90° Elbow		
915/36	15mm/1/2"/Straight	16.4/53.8	3
	20 mm/3/4"/Straight		
	15mm/1/2"/90° Elbow	16.9/55.4	3
	20 mm/3/4"/90° Elbow		
1220/48	15mm/1/2"/Straight	19.6/64.3	3
	20 mm/3/4"/Straight		
	15mm/1/2"/90° Elbow	19.9/65.1	3
	20 mm/3/4"/90° Elbow		
1525/60	15mm/1/2"/Straight	24.0/78.8	3
	20 mm/3/4"/Straight		
	15mm/1/2"/90° Elbow	24.5/80.2	3
	20 mm/3/4"/90° Elbow		
1830/72	15mm/1/2"/Straight	27.8/91.1	3
	20 mm/3/4"/Straight		
	15mm/1/2"/90° Elbow	28.5/93.4	3
	20 mm/3/4"/90° Elbow		



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	1120	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

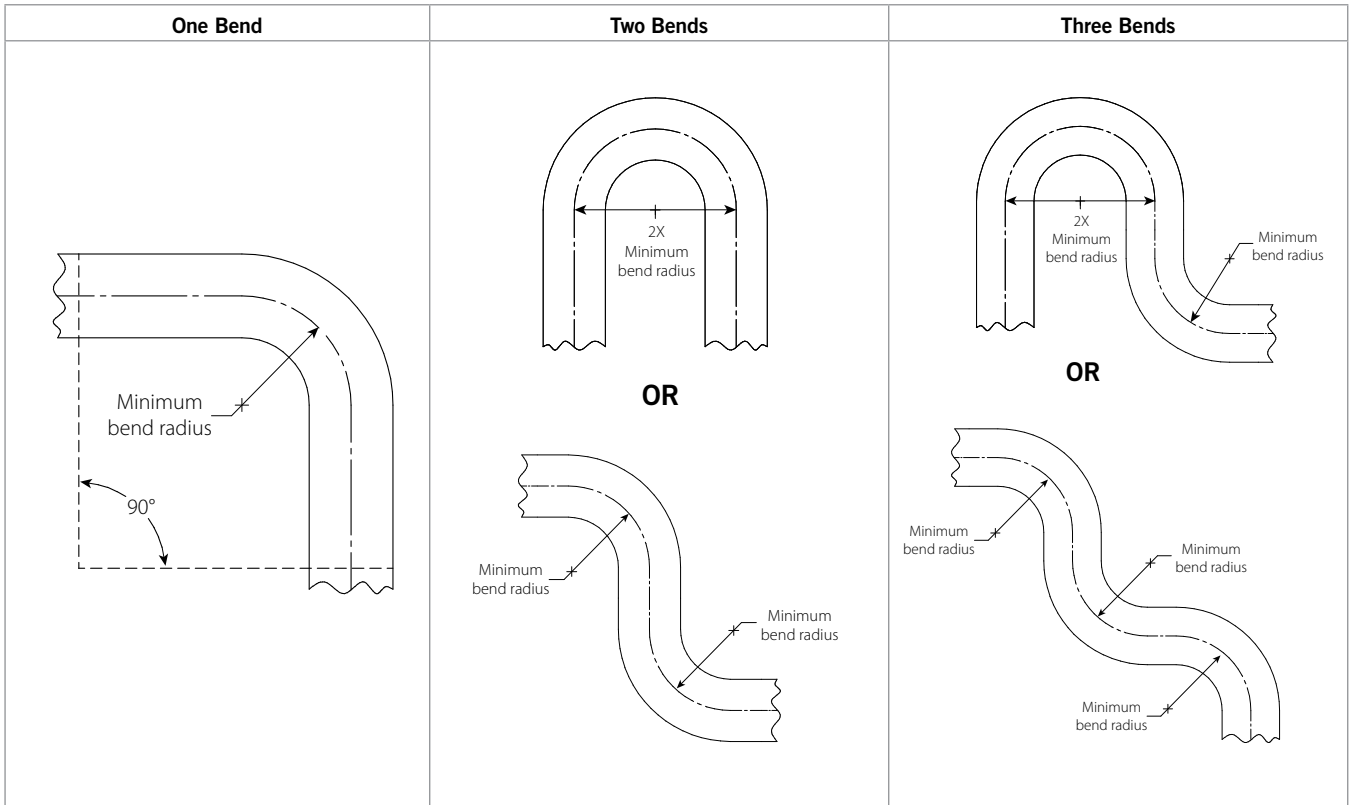
- It is the responsibility of the system designer to verify suitability of 300-series stainless steel flexible hose for use with the intended fluid media within the piping system and external environments.
- The effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, 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



NOTE

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

[I-VicFlex-AB1-AB2-AB10](#)

[I-VicFlex-AB3](#)

[I-VicFlex-AB4](#)

[I-VicFlex-AB5](#)

[I-VicFlex-AB7](#)

[I-VicFlex-AB12](#)

[I-VicFlex-ABBA](#)

[I-VicFlex-ABMM](#)

[I-RES](#)

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.

Intellectual Property Rights

No statement contained herein concerning a possible or suggested use of any material, product, service, or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Victaulic or any of its subsidiaries or affiliates covering such use or design, or as a recommendation for the use of such material, product, service, or design in the infringement of any patent or other intellectual property right. The terms "Patented" or "Patent Pending" refer to design or utility patents or patent applications for articles and/or methods of use in the United States and/or other countries.

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.

Trademarks

Victaulic and all other Victaulic marks are the trademarks or registered trademarks of Victaulic Company, and/or its affiliated entities, in the U.S. and/or other countries.