

# Victaulic® VicFlex™ Sprinkler Fittings

## Series AH2 and AH2-CC Braided Flexible Hoses



Series AH2



Series AH2-CC

### 1.0 PRODUCT DESCRIPTION

#### Available Sizes by Component

**Series AH2 1" DN25 ID Braided Hose:** 31, 36, 48, 60, 72"/790, 915, 1220, 1525, 1830 mm. Note: length includes adapter nipple and 5.75"/140 mm straight reducer.

**Series AH2-CC 1" DN25 ID Braided Hose:** 31, 36, 48, 60, 72"/790, 915, 1220, 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 ¼"/32mm BSPT female thread (LPCB 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
- ¾"/20mm BSPT male thread (VdS only)
- 1 ¼"/32mm BSPT male thread (LPCB only)

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

## 1.0 PRODUCT DESCRIPTION (CONTINUED)

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### • **Sprinkler Reducer**

- Sprinkler Connection: ½" and ¾"/15mm and 20mm NPT or BSPT female thread
- 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 and sidewalls, 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 and sidewalls, 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 (CCCf Approved)
- 175 psi/1206 kPa (No. 116 CPVC Adapter)

### **Minimum Bend Radius**

- 7"/178 mm (FM/CCCf Approval)
- 2"/51 mm (cULus Listed)
- 3"/76.2 mm (VdS/LPCB Approved)

## 1.0 PRODUCT DESCRIPTION (CONTINUED)

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

## 2.0 CERTIFICATION/LISTINGS



### NOTE

- The *VicFlex* Series AH2 Hose has been tested and evaluated by Spears® for acceptable use with Spears® CPVC Products and is therefore covered under the Spears® FlameGuard® Installer Protection Plan.

## 3.0 SPECIFICATIONS – MATERIAL

### Series AH2:

- 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"/15 mm or ¾"/20 mm):** Carbon Steel, Zinc-Plated
- Low Profile Elbows:** Ductile Iron, Zinc-Plated

**Brackets:** Carbon Steel, Zinc-Plated

### Series AH2-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 (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:<sup>1</sup>

#### 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.

<sup>1</sup> 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.

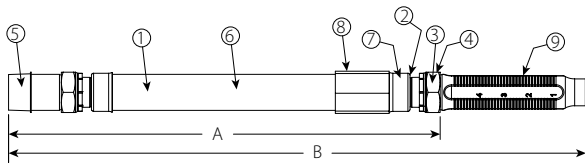
**Linkage:** CrMo Alloy Steel zinc electroplated per ASTM B633 Zn/Fe 5, Type III Finish

**No. 116 Adapter Fitting:** CPVC and Brass

**Seal:** Victaulic EPDM

## 4.0 DIMENSIONS

### Product Details - Series AH2 Braided Hose

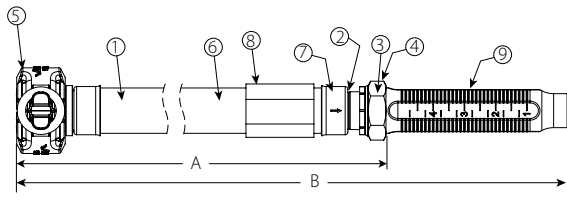


Item	Description
1	Flexible Hose
2	Isolation Ring
3	Gasket
4	Nut
5	Adapter Nipple
6	Braid
7	Collar/Weld Fitting
8	Sleeve
9	Reducer

### Hose Length Dimensions

Hose Length	A	B
inches	inches	inches
mm	mm	mm
31	25.3	31
790	641	790
36	31.3	36
915	794	915
48	42.3	48
1219	1073	1220
60	54.3	60
1525	1378	1525
72	66.3	72
1830	1683	1830

### Series AH2-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	Sleeve
9	Reducer

Hose Length	A	B
inches	inches	inches
mm	mm	mm
31	24.5	29.8
790	622	757
36	29.5	34.8
915	749	884
48	41.5	46.8
1219	1054	1189
60	53.5	58.8
1525	1359	1494
72	65.5	70.8
1830	1664	1798

## 4.0 DIMENSIONS (CONTINUED)

### Standard Reducer

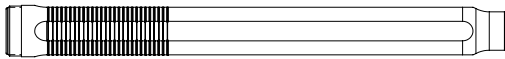


5.75"/140 mm straight reducer

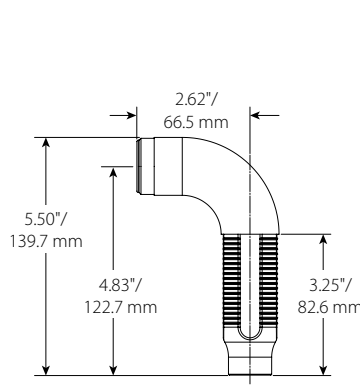
### Optional Reducers



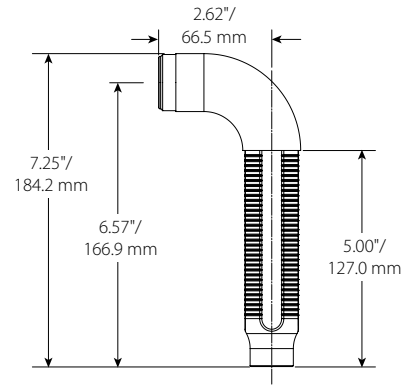
9.0"/229 mm straight reducer



13.0"/330 mm straight reducer



Short 90° elbow reducer

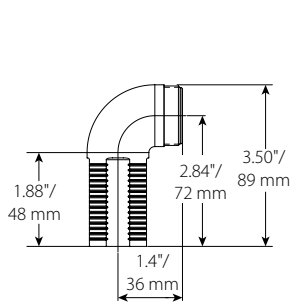


Long 90° elbow reducer

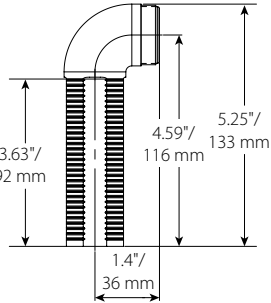
#### NOTE

- 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

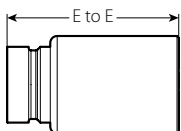


Long 90° elbow reducer

#### 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 Adapter has 2 ft. (0.6 m) EQL of 1" Schedule 40 pipe.

## 4.1 DIMENSIONS

### VicFlex Brackets

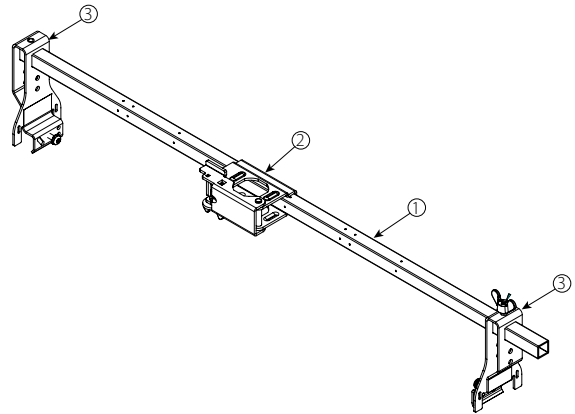
#### Style AB2

- 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

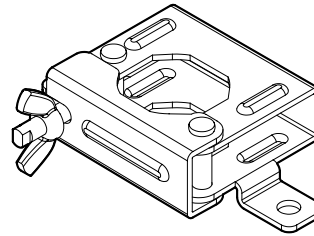
**NOTE**

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



#### Style AB3

- Surface Mount Applications
- FM/LPCB Approved



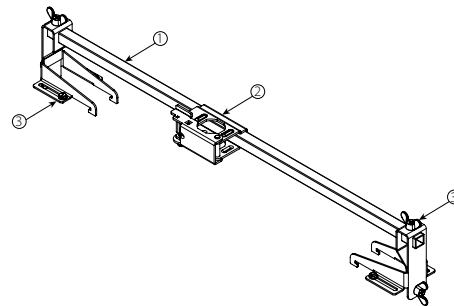
#### Style AB4

- 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.



## 4.2 DIMENSIONS

### VicFlex Brackets

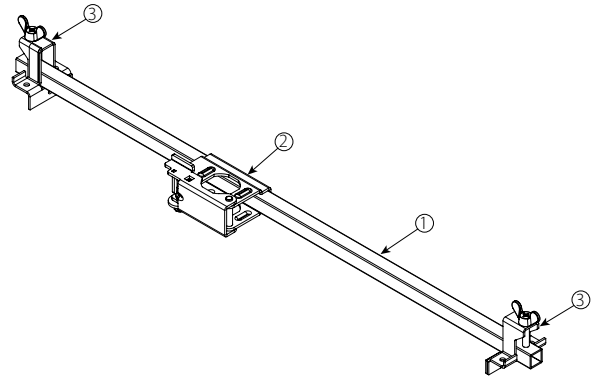
#### Style AB5

- 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.



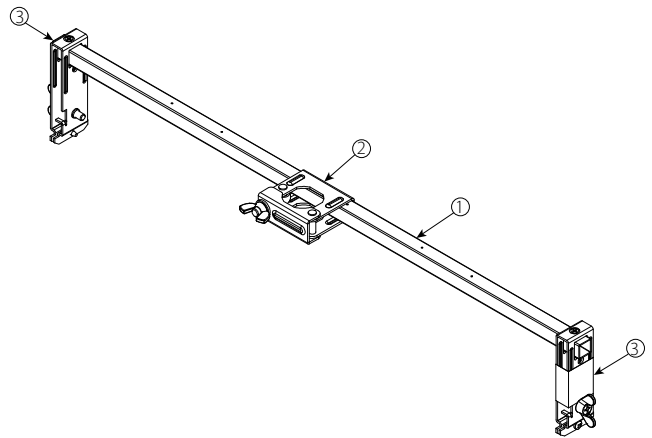
#### Style AB7

- 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.



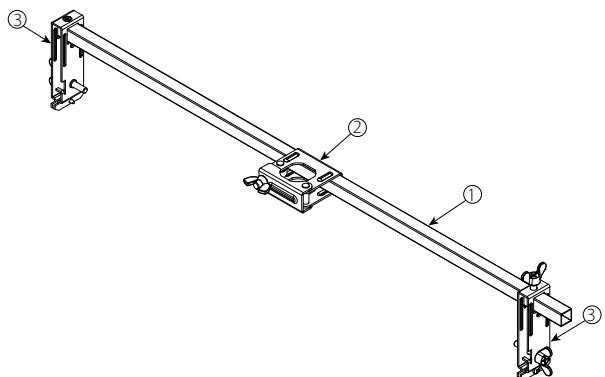
#### Style AB7 Adjustable

- 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.



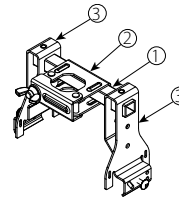
### 4.3 DIMENSIONS

#### 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



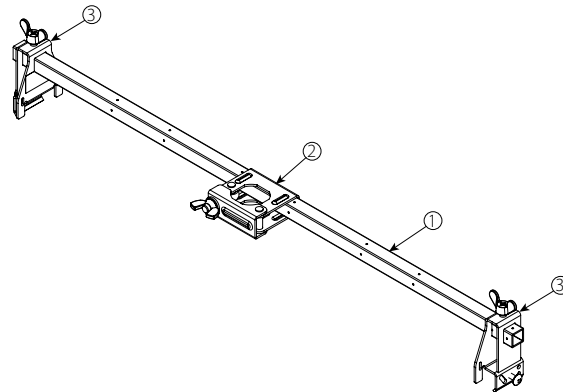
**NOTE**

- 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



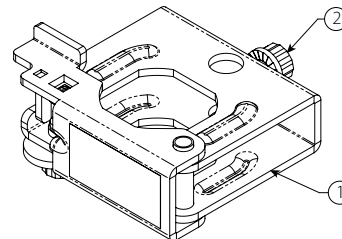
**NOTE**

- 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.



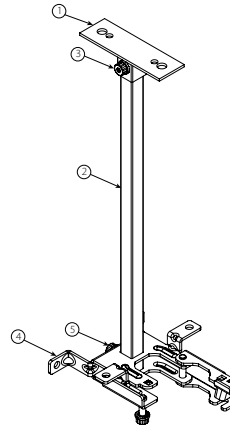
### 4.3 DIMENSIONS (CONTINUED)

#### 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, 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



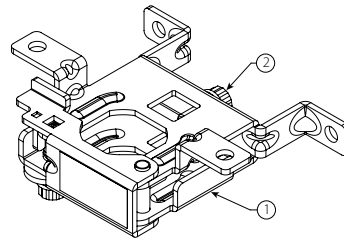
**NOTE**

- 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



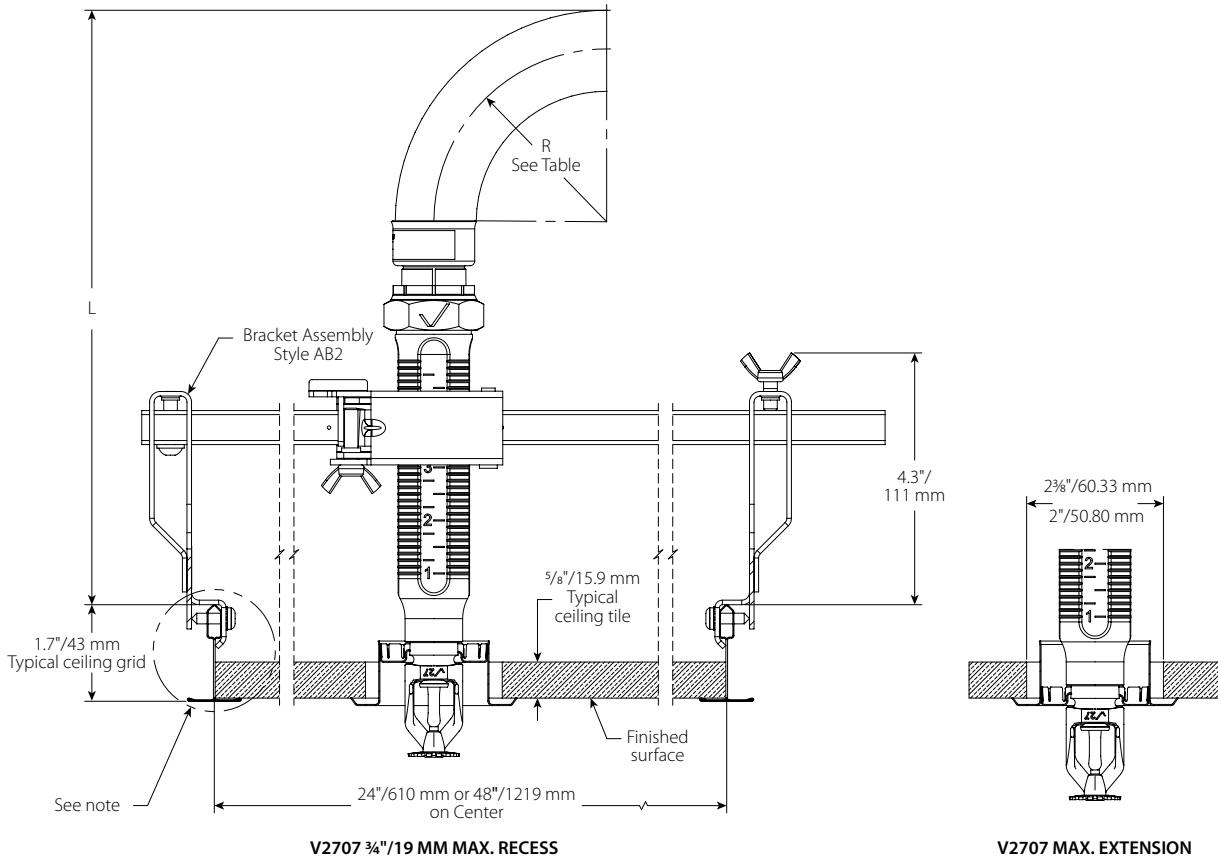
**NOTE**

- FM Approved.

## 4.4 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	V2707 3/4" Max Recess inches mm	V3802 1/2" Max Recess inches mm
"R" Minimum Bend Radius	2.0 50		3.0 80		7.0 175		-	
"A" Minimum Required Installation Space	8.6 218	10.1 269	9.6 244	11.1 281	13.6 345	15.1 383	5.8 147	5.8 147

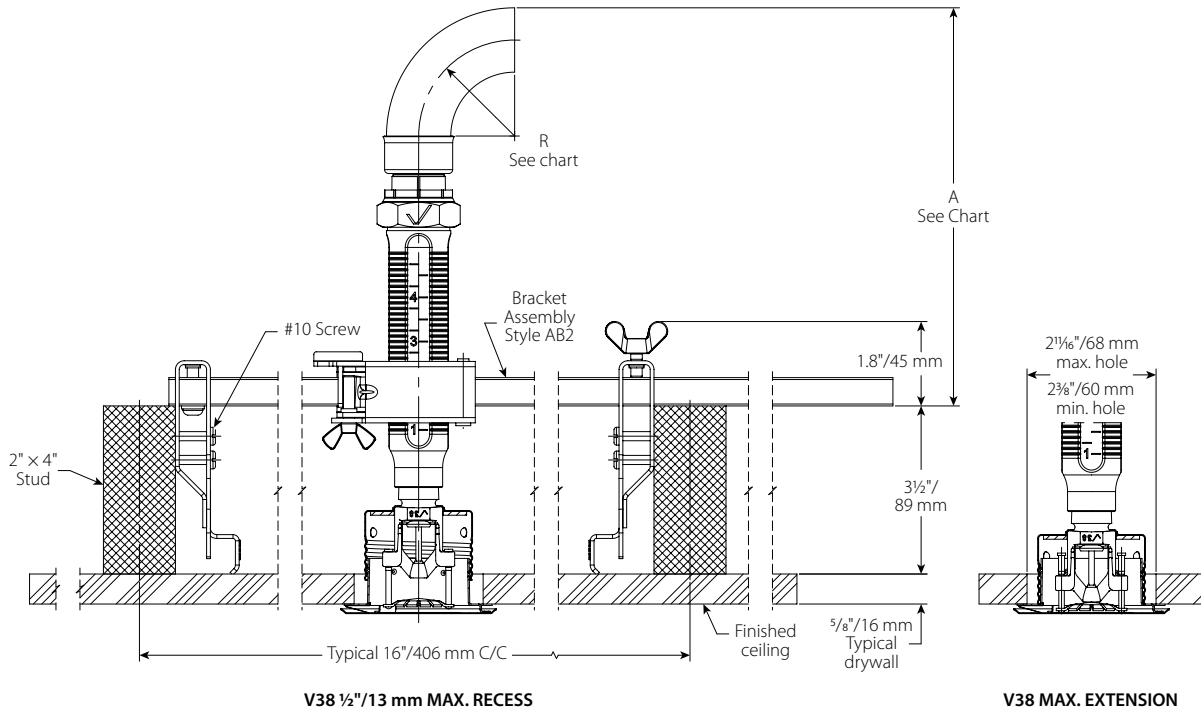
**NOTE**

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

## 4.5 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	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	2.0 50			3.0 80			7.0 175		
"A" Minimum Required Installation Space	6.2 158	7.6 193	6.1 155	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

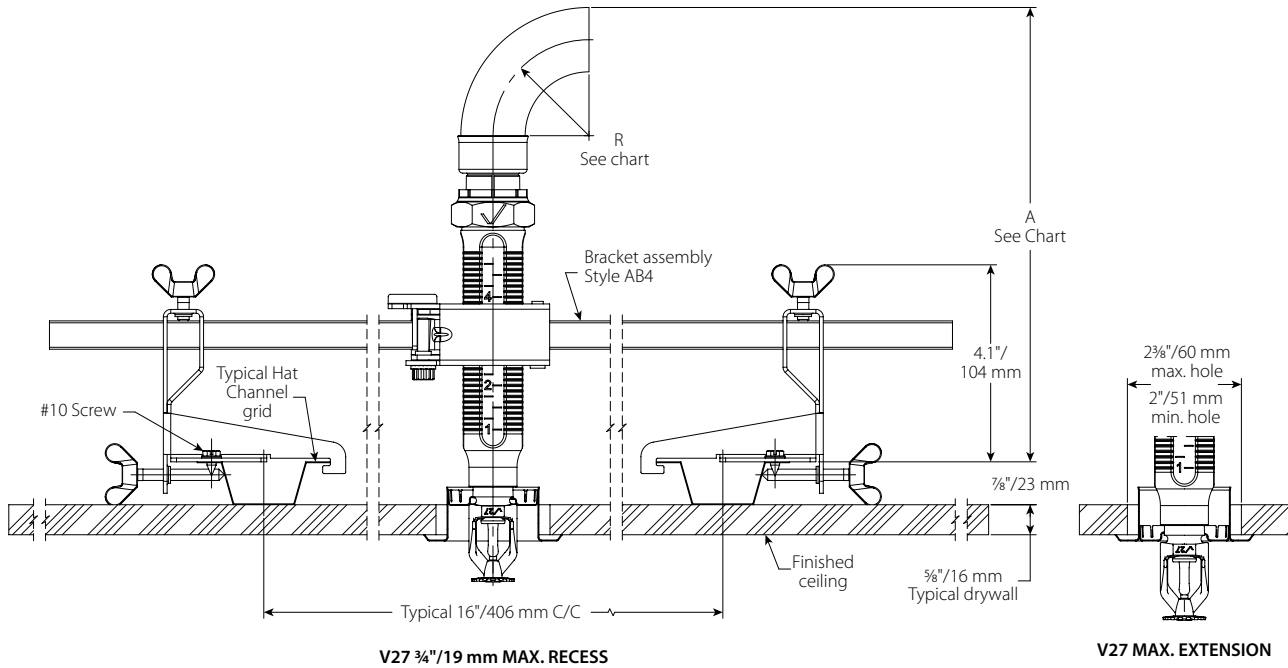
**NOTE**

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

## 4.6 DIMENSIONS

### Clearances

Series AH2 Braided Hose and Style AB4 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	V2707 3/4" Max Recess inches mm	V3802 1/2" Max Recess inches mm
"R" Minimum Bend Radius	2.0 50	2.0 50	3.0 80	3.0 80	7.0 175	7.0 175	-	
"A" Minimum Required Installation Space	8.8 224	10.2 259	9.8 249	11.2 285	13.8 351	15.2 386	8.0 203	5.9 150

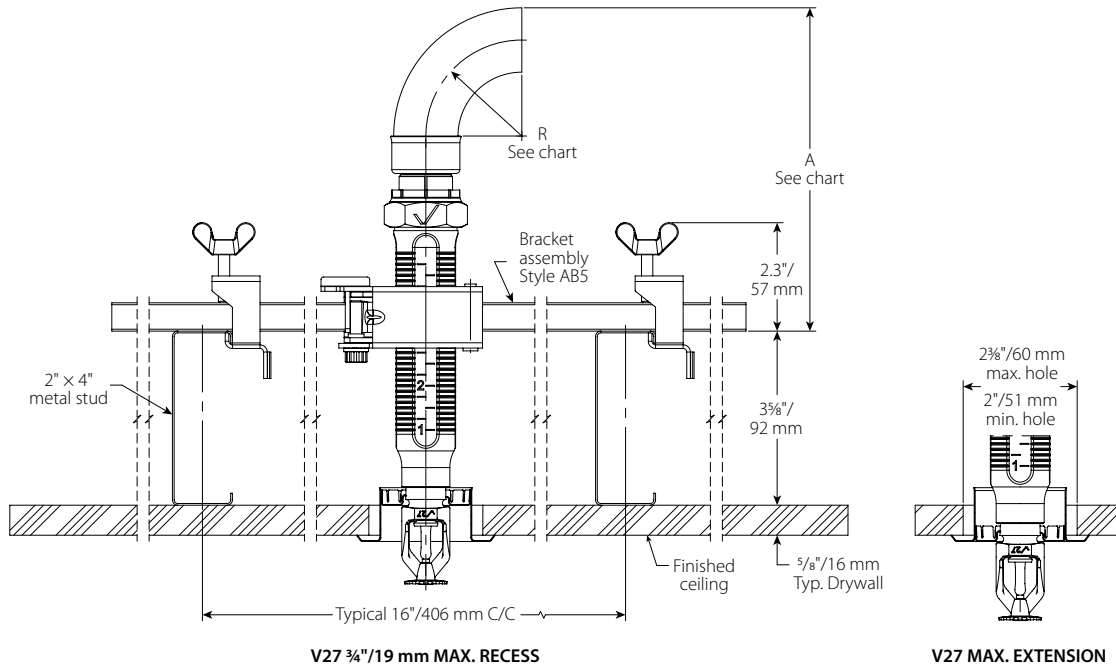
**NOTE**

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

## 4.7 DIMENSIONS

### Clearances

Series AH2 Braided Hose and Style AB5 Bracket



Hose Clearance Chart

	Straight Reducer								
	<b>"V2707 ¾"   20 mm Max Recess"</b> inches mm	<b>V3802 ½"   13 mm Max Recess</b> inches mm	<b>V2709 ¾"   20 mm Sidewall</b> inches mm	<b>V2707 ¾"   20 mm Max Recess</b> inches mm	<b>V3802 ½"   13 mm Max Recess</b> inches mm	<b>V2709 ¾"   20 mm Sidewall</b> inches mm	<b>V2707 ¾"   20 mm Max Recess</b> inches mm	<b>V3802 ½"   13 mm Max Recess</b> inches mm	<b>V2709 ¾"   20 mm Sidewall</b> inches mm
"R" Minimum Bend Radius	2.0 50			3.0 80			7.0 175		
"A" Minimum Required Installation Space	6.0 158	7.7 196	6.1 155	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
	<b>V2707 ¾"   20 mm Max Recess</b> inches mm	<b>V3802 ½"   13 mm Max Recess</b> inches mm	<b>V2709 ¾"   20 mm Sidewall</b> inches mm	<b>V3802 ½"   13 mm Max Recess</b> inches mm	<b>V3802 ½"   13 mm Max Recess</b> 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

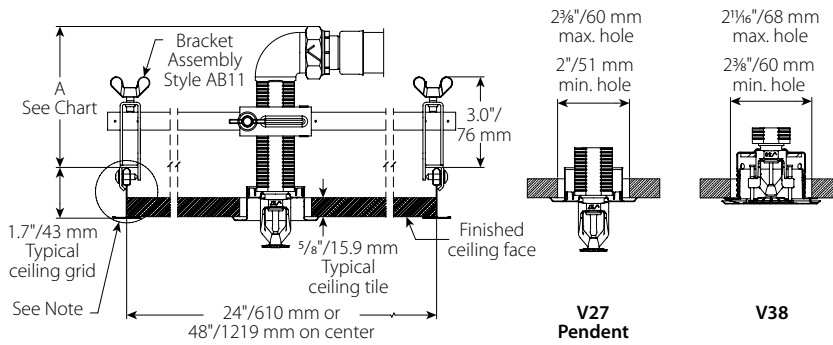
**NOTE**

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

## 4.8 DIMENSIONS

### Clearances

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



Hose Clearance Chart		
	Low-Profile Long Elbow	Low-Profile Short Elbow
	<b>V2707</b> 3/4"   20 mm Max Recess"	<b>V3802</b> 1/2"   13 mm Max Recess
	inches mm	inches mm
"A" Minimum Required Installation Space	4.0 102	3.9 99

**NOTE**

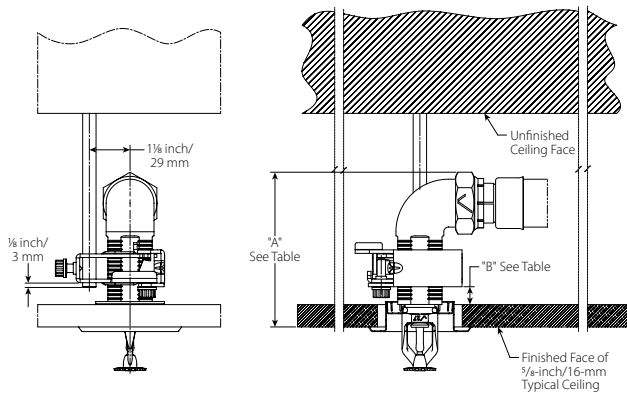
- Variations of ceiling grids, sprinkler heads, brackets, and hoses are permitted but may result in clearance differences from the figures above.

## 4.9 DIMENSIONS

### Clearances

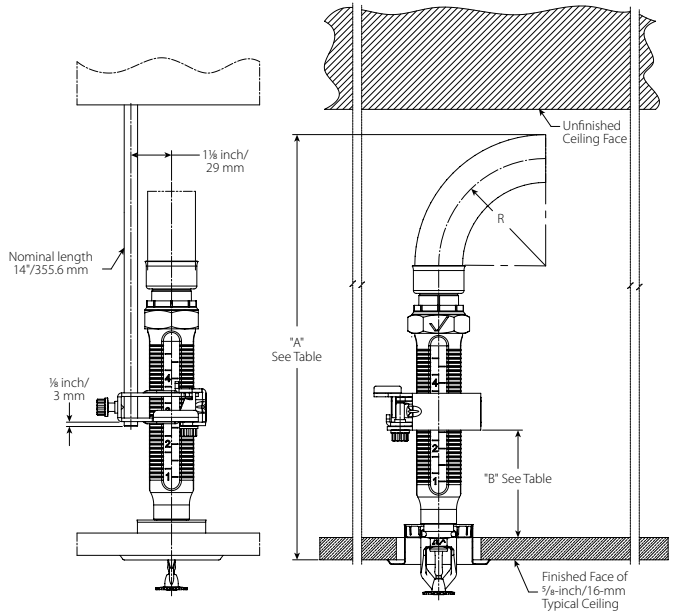
#### Style AB12 and ABBA Bracket

Suspended Ceiling Grid with Recessed Sprinkler with Low Profile Short Elbow



V2707 1/2" / 12.7 mm MAX. RECESS

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



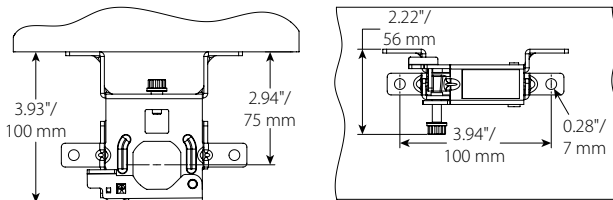
V2707 3/4" / 19 mm MAX. RECESS

Dimension		Low Profile Short Elbow		Low Profile Long Elbow		Standard Short Elbow		Standard Long Elbow		Standard Straight Reducer	
		3/4" / 19 mm Recessed*	Concealed	3/4" / 19 mm Recessed	Concealed	3/4" / 19 mm Recessed	Concealed	3/4" / 19 mm Recessed	Concealed	3/4" / 19 mm 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

#### Style ABMM Bracket

#### Stand-off Dimensions

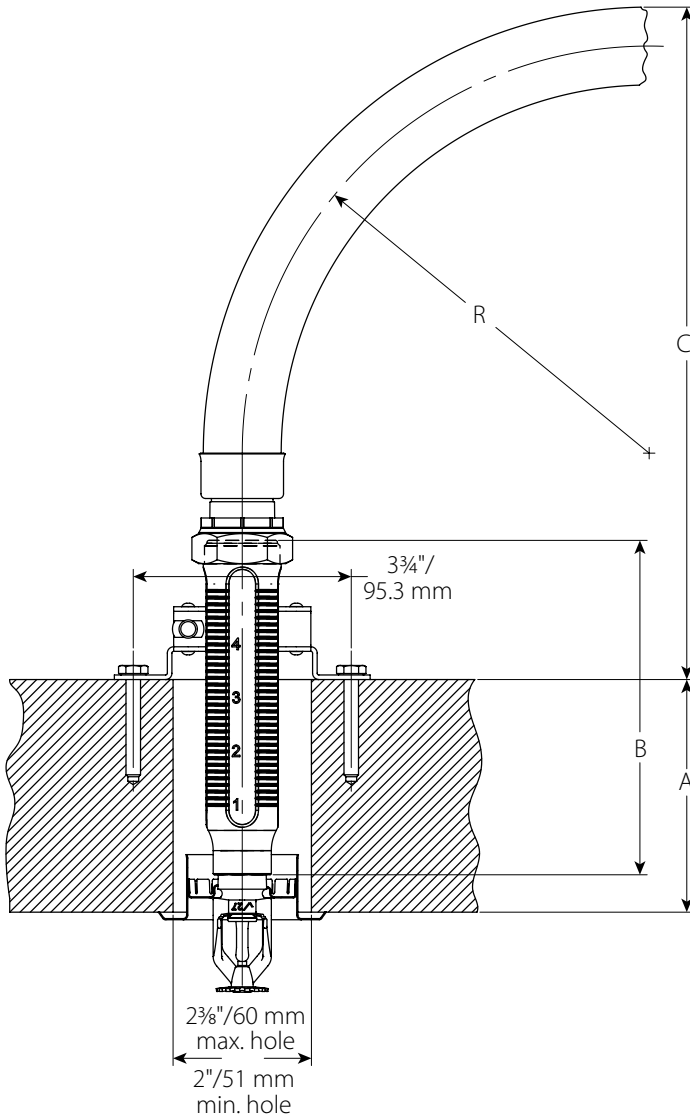


## 4.10 DIMENSIONS

### Clearances

#### Style AB3 and ABMM Bracket

Surface Mount Application with Recessed Sprinkler



Hose Clearances																					
Dimension	inches			inches			inches			inches			inches			inches			inches		
	mm			mm			mm			mm			mm			mm			mm		
Wall Thickness "A"	2			4			6	8	10	2			4			6	8	10	2		
	50			100			150	200	250	50			100			150	200	250	50		
Outlet Length "B"	5.75	9	13	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	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"	11.6	14.8	18.8	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	
	294	376	478	243	325	427	275	376	325	275	319	402	503	268	351	452	300	402	351	300	
Bend Radius "R"	7									8											
	175									200											

**NOTE**

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

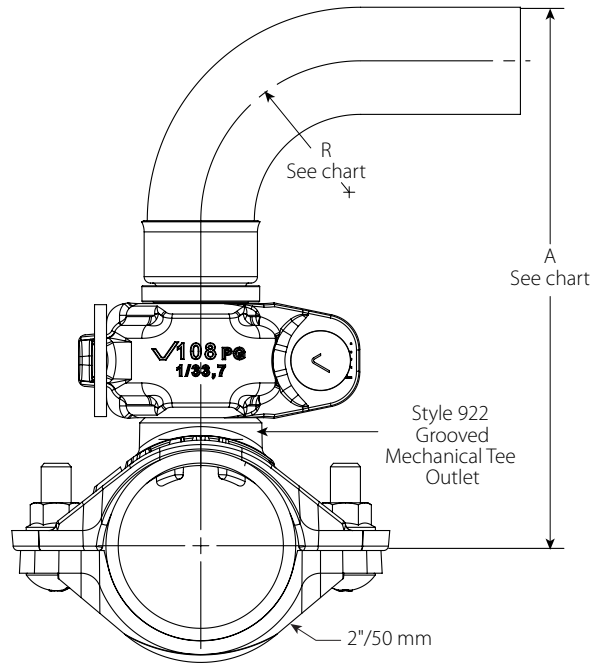
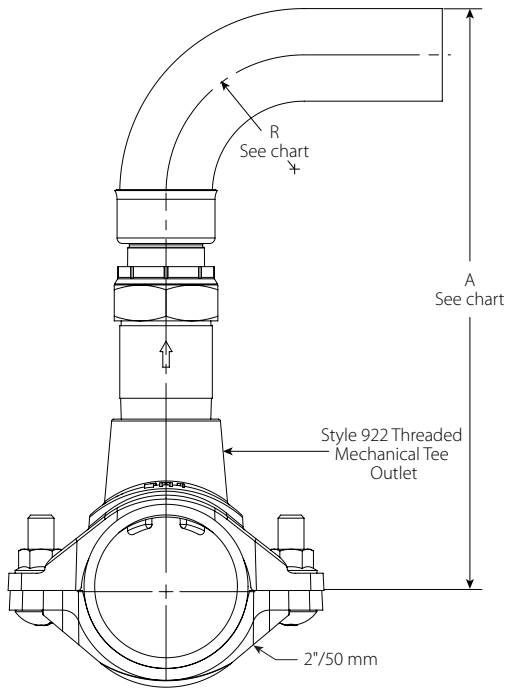


### 4.11 DIMENSIONS

#### BRANCHLINE CLEARANCES

Series AH2 Braided Hose with Style 922 threaded outlet

Series AH2-CC Braided Hose with Style 922 grooved outlet



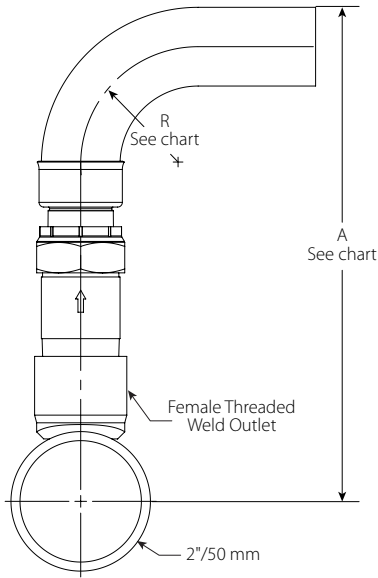
Hose Clearance Chart						
Dimension		inches mm	inches mm	inches mm	inches mm	inches mm
R	Minimum Bend Radius	3 80	4 100	5 125	6 150	7 175
A	Min.	9.4 238	10.4 263	11.4 289	12.4 314	13.4 339

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

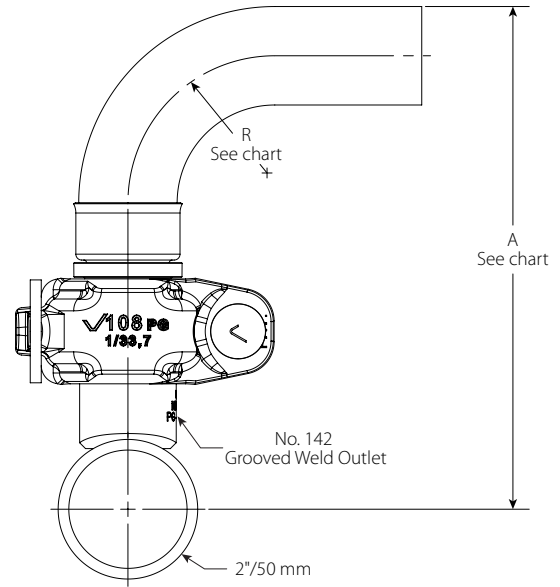
## 4.12 DIMENSIONS

### BRANCHLINE CLEARANCES

Series AH2 Braided Hose with female threaded outlet



Series AH2-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.	9.4 239	10.4 264	11.4 290	12.4 315	13.41 341

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

5.0 PERFORMANCE – FRICTION LOSS DATA



Series AH2 and AH2-CC Braided Hoses with Straight 5.75"/140 mm Reducers  
Style AB2, AB4, AB5 and AB10 Brackets

Hose Length inches mm	Reducer		UL	
	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	15.0 4.6	3
31 790	Straight	1/2 DN15	16.0 4.9	4
31 790	Straight	3/4 DN20	19.0 5.8	3
31 790	Straight	3/4 DN20	20.0 6.1	4
36 915	Straight	1/2 DN15	18.0 5.5	3
36 915	Straight	1/2 DN15	21.0 6.4	5
36 915	Straight	3/4 DN20	21.0 6.4	3
36 915	Straight	3/4 DN20	23.0 7.0	5
48 1220	Straight	1/2 DN15	21.0 6.4	3
48 1220	Straight	1/2 DN15	32.0 9.8	8
48 1220	Straight	3/4 DN20	26.0 7.9	3
48 1220	Straight	3/4 DN20	37.0 11.3	8
60 1525	Straight	1/2 DN15	27.0 8.2	3
60 1525	Straight	1/2 DN15	46.0 14.0	10
60 1525	Straight	3/4 DN20	27.0 8.2	3
60 1525	Straight	3/4 DN20	46.0 14.0	10
72 1830	Straight	1/2 DN15	31.0 9.4	3
72 1830	Straight	1/2 DN15	55.0 16.8	12
72 1830	Straight	3/4 DN20	30.0 9.1	3
72 1830	Straight	3/4 DN20	60.0 18.3	12

5.0 PERFORMANCE – FRICTION LOSS DATA (CONTINUED)



Series AH2 and AH2-CC Braided Hose with 90° Low Profile Elbows  
Style AB11 VicFlex Bracket

Hose Length inches mm	Reducer		UL	
	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	18.0 5.5	3
31 790	LP Elbow	1/2 DN15	24.0 7.3	4
31 790	LP Elbow	3/4 DN20	21.0 6.4	3
31 790	LP Elbow	3/4 DN20	24.0 7.3	4
36 915	LP Elbow	1/2 DN15	19.0 5.8	3
36 915	LP Elbow	1/2 DN15	26.0 7.9	5
36 915	LP Elbow	3/4 DN20	23.0 7.0	3
36 915	LP Elbow	3/4 DN20	28.0 8.5	5
48 1220	LP Elbow	1/2 DN15	23.0 7.0	3
48 1220	LP Elbow	1/2 DN15	43.0 13.1	8
48 1220	LP Elbow	3/4 DN20	30.0 9.1	3
48 1220	LP Elbow	3/4 DN20	42.0 12.8	8
60 1525	LP Elbow	1/2 DN15	28.0 8.5	3
60 1525	LP Elbow	1/2 DN15	49.0 14.9	10
60 1525	LP Elbow	3/4 DN20	31.0 9.4	3
60 1525	LP Elbow	3/4 DN20	50.0 15.2	10
72 1830	LP Elbow	1/2 DN15	31.0 9.4	3
72 1830	LP Elbow	1/2 DN15	65.0 19.8	12
72 1830	LP Elbow	3/4 DN20	36.0 11.0	3
72 1830	LP Elbow	3/4 DN20	63.0 19.2	12

**5.0 PERFORMANCE – FRICTION LOSS DATA (CONTINUED)**

**Series AH2 and AH2-CC Braided Hoses Equivalent Length Design Guide**

Equivalent length values at various numbers of 90 degree bends at 2"/51 mm center line bend radius

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	6 Bends feet meters	7 Bends feet meters	8 Bends feet meters	9 Bends feet meters	10 Bends feet meters	11 Bends feet meters	12 Bends feet meters
31 790	½ DN15	11.0 3.4	13.0 4.0	15.0 4.6	16.0 4.9	–	–	–	–	–	–	–	–
31 790	¾ DN20	12.0 3.7	14.0 4.3	19.0 5.8	20.0 6.1	–	–	–	–	–	–	–	–
36 915	½ DN15	14.0 4.3	16.0 4.9	18.0 5.5	19.0 5.8	21.0 6.4	–	–	–	–	–	–	–
36 915	¾ DN20	17.0 5.2	19.0 5.8	21.0 6.4	22.0 6.7	23.0 7.0	–	–	–	–	–	–	–
48 1220	½ DN15	18.0 5.5	19.0 5.8	21.0 6.4	23.0 7.0	25.0 7.6	27.0 8.2	30.0 9.1	32.0 9.8	–	–	–	–
48 1220	¾ DN20	21.0 6.4	24.0 7.3	26.0 7.9	28.0 8.5	31.0 9.4	33.0 10.1	35.0 10.7	37.0 11.3	–	–	–	–
60 1525	½ DN15	21.0 6.4	24.0 7.3	27.0 8.2	30.0 9.1	32.0 9.8	35.0 10.7	37.0 11.3	40.0 12.2	43.0 13.1	46.0 14.0	–	–
60 1525	¾ DN20	23.0 7.0	25.0 7.6	27.0 8.2	29.0 8.8	32.0 9.8	34.0 10.4	37.0 11.3	40.0 12.2	43.0 13.1	46.0 14.0	–	–
72 1830	½ DN15	27.0 8.2	29.0 8.8	31.0 9.4	34.0 10.4	37.0 11.3	40.0 12.2	43.0 13.1	46.0 14.0	48.0 14.6	50.0 15.2	52.0 15.8	55.0 16.8
72 1830	¾ DN20	26.0 7.9	28.0 8.5	30.0 9.1	33.0 10.1	37.0 11.3	40.0 12.2	44.0 13.4	48.0 14.6	51.0 15.5	54.0 16.5	57.0 17.4	60.0 18.3

**NOTES**

- Values for use with 5.75"/140 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, please refer to pages 19 and 20 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.

5.1 PERFORMANCE – FRICTION LOSS DATA



Series AH2 and AH2-CC Braided Hoses  
 Style AB2, AB3, AB4, AB5, AB7, AB7 Adj., AB8, AB10, AB12, ABBA and ABMM *VicFlex* Brackets

Length of Stainless Steel Flexible Hose	K-Factor	Outlet Size	Equivalent Length of 1"/33.7 mm Sch. 40 Pipe		Maximum Number of 90° Bends at 7"/178 mm Bend Radius
			inches mm	feet meters	
31 790	5.6 8.1	1/2 15 Straight	13.8 4.2	23.5 7.1	2
		1/2 15 90° Elbow			
36 915	5.6 8.1	1/2 15 Straight	16.6 5.1	25.6 7.8	2
		1/2 15 90° Elbow			
48 1220	5.6 8.1	1/2 15 Straight	23.4 7.1	30.7 9.3	3
		1/2 15 90° Elbow			
60 1525	5.6 8.1	1/2 15 Straight	30.2 9.2	35.9 10.9	4
		1/2 15 90° Elbow			
72 1830	5.6 8.1	1/2 15 Straight	37.0 11.3	41.1 12.5	4
		1/2 15 90° Elbow			
31 790	8.0 11.5	3/4 20 Straight	16.8 5.1	16.8 5.1	2
		3/4 20 90° Elbow			
36 915	8.0 11.5	3/4 20 Straight	20 6.0	19.7 6.0	2
		3/4 20 90° Elbow			
48 1220	8.0 11.5	3/4 20 Straight	27.8 8.4	26.6 8.1	3
		3/4 20 90° Elbow			

FM NOTES

- The Series AH2 hose 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 standard 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°.

5.1 PERFORMANCE – FRICTION LOSS DATA (CONTINUED)



Series AH2 and AH2-CC Braided Hoses  
 Style AB2, AB3, AB4, AB5, AB7, AB7 Adj., AB8, AB10, AB12, ABBA and ABMM *VicFlex* Brackets

Length of Stainless Steel Flexible Hose	K-Factor	Outlet Size	Equivalent Length of 1"/33.7 mm Sch. 40 Pipe	Maximum Number of 90° Bends at 7"/178 mm Bend Radius
60 1525	8.0 11.5	3/4 20 Straight	35.7 10.9	4
		3/4 20 90° Elbow	33.6 10.2	
72 1830	8.0 11.5	3/4 20 Straight	43.5 13.2	4
		3/4 20 90° Elbow	40.6 12.2	
31 790	11.2 16.1	3/4 20 Straight	16.5 5.0	2
		3/4 20 90° Elbow	17.8 5.4	
36 915	11.2 16.1	3/4 20 Straight	19.5 5.9	2
		3/4 20 90° Elbow	20.7 6.3	
48 1220	11.2 16.1	3/4 20 Straight	26.7 8.1	3
		3/4 20 90° Elbow	27.9 8.5	
60 1525	11.2 16.1	3/4 20 Straight	33.9 10.3	4
		3/4 20 90° Elbow	35 10.7	
72 1830	11.2 16.1	3/4 20 Straight	41.3 12.5	4
		3/4 20 90° Elbow	42.2 12.8	
31 790	14.0 20.2	3/4 20 Straight	14.9 4.5	2
		3/4 20 90° Elbow	15.5 4.72	

FM NOTES

- The Series AH2 hose 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 standard 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°.

5.1 PERFORMANCE – FRICTION LOSS DATA (CONTINUED)



Series AH2 and AH2-CC Braided Hoses  
 Style AB2, AB3, AB4, AB5, AB7, AB7 Adj., AB8, AB10, AB12, ABBA and ABMM *VicFlex* Brackets

Length of Stainless Steel Flexible Hose	K-Factor	Outlet Size	Equivalent Length of		Maximum Number of 90° Bends at 7"/178 mm Bend Radius
			1"/33.7 mm Sch. 40 Pipe		
inches mm	Imperial S.I.	inches mm type	feet meters		
36 915	14.0 20.2	3/4 20 Straight	19.4 5.9	2	
		3/4 20 90° Elbow	19.6 5.9		
48 1220	14.0 20.2	3/4 20 Straight	30.3 9.2	3	
		3/4 20 90° Elbow	29.5 8.9		
60 1525	14.0 20.2	3/4 20 Straight	33.9 10.3	4	
		3/4 20 90° Elbow	34.1 10.4		
72 1830	14.0 20.2	3/4 20 Straight	37.5 11.4	4	
		3/4 20 90° Elbow	38.6 11.7		

FM NOTES

- The Series AH2 hose 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 standard 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°.



5.2 PERFORMANCE – FRICTION LOSS DATA



Series AH2 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
31 790	5.6 8.1	½ 15	13.7 4.2	2
36 915	5.6 8.1	½ 15	17.0 5.2	2
48 1220	5.6 8.1	½ 15	25.0 7.6	3
60 1525	5.6 8.1	½ 15	33.0 10.1	4
72 1830	5.6 8.1	½ 15	41.1 12.5	4
31 790	8.0 11.5	¾ 20	13.6 4.14	2
36 915	8.0 11.5	¾ 20	16.9 5.2	2
48 1220	8.0 11.5	¾ 20	27.8 8.5	3
60 1525	8.0 11.5	¾ 20	32.6 9.9	4
72 1830	8.0 11.5	¾ 20	40.6 12.4	4
31 790	11.2 16.1	¾ 20	13.7 4.2	2
36 915	11.2 16.1	¾ 20	17.0 5.2	2
48 1220	11.2 16.1	¾ 20	24.9 7.6	3
60 1525	11.2 16.1	¾ 20	32.9 10.0	4
72 1830	11.2 16.1	¾ 20	40.9 12.5	4
31 790	14.0 20.2	¾ 20	13.5 4.1	2
36 915	14.0 20.2	¾ 20	16.8 5.1	2
48 1220	14.0 20.2	¾ 20	24.7 7.5	3
60 1525	14.0 20.2	¾ 20	32.7 9.9	4
72 1830	14.0 20.2	¾ 20	40.7 12.4	4

FM NOTES

- The Series AH2 hose 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 standard 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°.

**5.3 PERFORMANCE – FRICTION LOSS DATA**



Series AH2 and AH2-CC Braided Hose  
 Style AB2, AB4, AB5, AB7, AB7 Adj., AB8, AB10, AB11 and AB12 Brackets

Length of Stainless Steel Flexible Hose mm inches	Outlet Size DN inches	Equivalent Length of steel pipe according to EN 10255 DN 25 (33,7 x 3,25) meters feet	Maximum Number of 90° Bends at 3"/76.2mm Bend Radius
790 31	DN15 ½	5.5 18.0	3
	DN20 ¾		
915 36	DN15 ½	6.4 21.0	3
	DN20 ¾		
1220 48	DN15 ½	8.5 27.9	3
	DN20 ¾		
1525 60	DN15 ½	10.7 35.1	4
	DN20 ¾		
1830 72	DN15 ½	12.8 42.0	4
	DN20 ¾		

**VdS Ceiling Manufacturers List**

**AB2, AB7, AB10 ,AB11**

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, AB8**

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

5.3 PERFORMANCE – FRICTION LOSS DATA



Series AH2 and AH2-CC Braided Hose  
Style AB2, AB3, AB4, AB5, AB7, AB8,  
and AB10 Brackets



Series AH2 Braided Hose  
Style AB2, AB3, AB4, AB5, AB7, AB8, AB10  
and AB12 Brackets

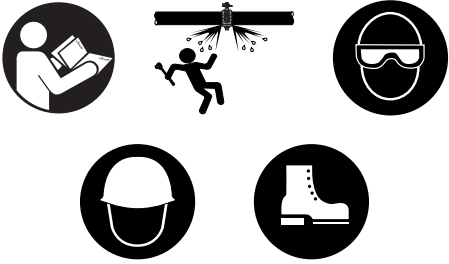
Length of Stainless Steel Flexible Hose  mm inches	Outlet Size mm inches type	Equivalent Length of steel pipe according to EN 10255 DN 25 (33,7 x 3,25)  meters feet	Maximum Number of 90° Bends at 3"/76.2 mm Bend Radius
915 36	15 mm 1/2 Straight 20 mm 3/4 Straight	3.6 11.9	3
1220 48	15 mm 1/2 Straight 20 mm 3/4 Straight	4.3 14.0	3
1525 60	15 mm 1/2 Straight 20 mm 3/4 Straight	4.1 13.6	3
1830 72	15 mm 1/2 Straight 20 mm 3/4 Straight	5.5 18.1	3

Length of Flexible Hose  mm inches	Equivalent Length of 1"/33.7 mm Sch. 40 Pipe	
	Straight Configuration  meters feet	Bend Configuration  meters feet
790 31	0.87 2.9	2.70 8.9
915 36	1.00 3.3	2.80 9.2
1220 48	2.23 7.3	4.66 15.3
1525 60	2.90 9.5	6.5 21.3
1830 72	3.31 10.9	7.16 23.5

CCCF 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

<b>⚠ WARNING</b>	
	<ul style="list-style-type: none"><li>• Read and understand all instructions before attempting to install any Victaulic products.</li><li>• Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.</li><li>• Wear safety glasses, hardhat, and foot protection.</li></ul>
<ul style="list-style-type: none"><li>• 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.</li><li>• The installer shall understand the use of this product and why it was specified for the particular application.</li><li>• The installer shall understand common industry safety standards and potential consequences of improper product installation.</li></ul>	

<b>⚠ WARNING</b>	
<ul style="list-style-type: none"><li>• 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.</li><li>• 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.</li><li>• 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.</li></ul>	
<p><b>Failure to follow these instructions could cause product failure, resulting in serious personal injury and/or property damage.</b></p>	

Victaulic VicFlex Series AH2 and AH2-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.

Victaulic VicFlex Series AH2 and AH2-CC penetrating 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.

## 7.0 REFERENCE MATERIALS – CHARACTERISTICS

### VicFlex Maximum Load Values

#### Series AH2 Hose with 24" Bracket

Model Size	Actual Length ft m	Total Load		Max. Uniform Load	
		lb	N	lb/linear ft	N/linear m
31/790	2.6 0.8	5.2	23	2.6	38
36/915	3 0.9	5.5	25	2.8	40
48/1220	4 1.2	6.3	28	3.1	46
60/1525	5 1.5	7.0	31	3.5	51
72/1830	6 1.8	7.7	34	3.9	57

#### Series AH2 Hose with 48" Bracket

Model Size	Actual Length ft m	Total Load		Max. Uniform Load	
		lb	N	lb/linear ft	N/linear m
31/790	2.6 0.8	6.1	27	1.5	22
36/915	3 0.9	6.4	29	1.6	23
48/1220	4 1.2	7.2	32	1.8	26
60/1525	5 1.5	7.9	35	2.0	29
72/1830	6 1.8	8.7	39	2.2	32

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)

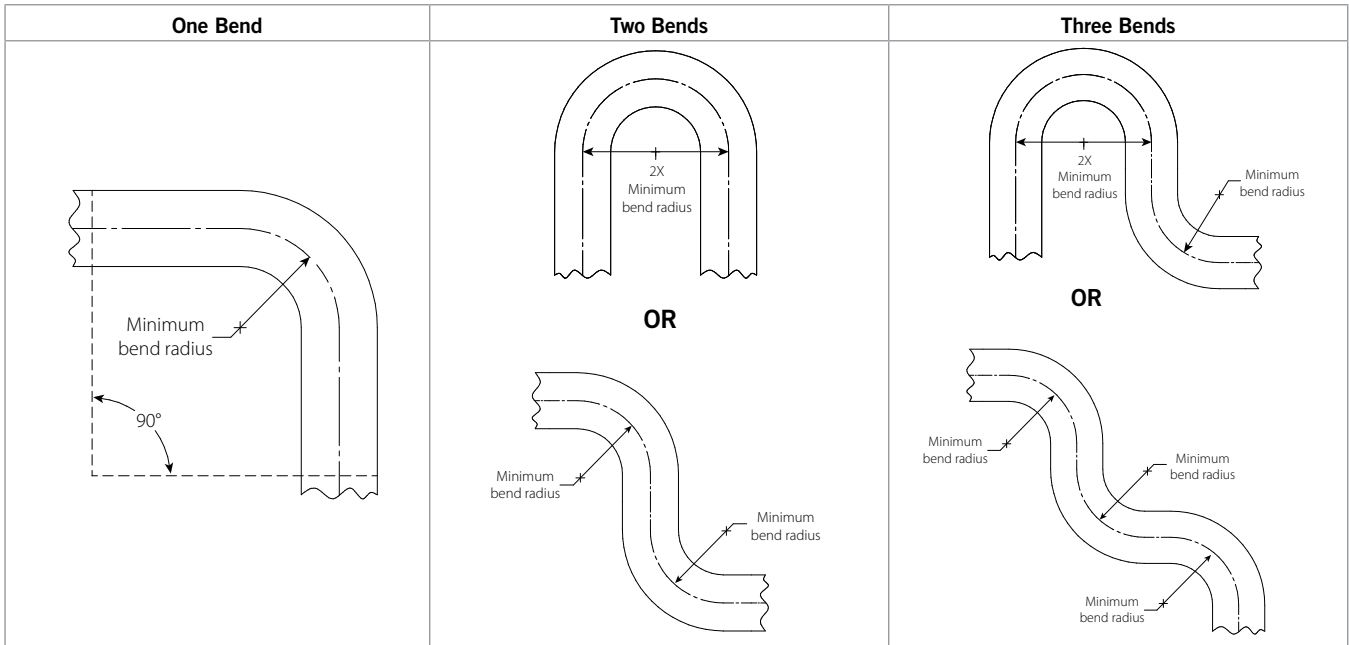
#### ASTM C 635: Suspension System Load-Carrying Capabilities (excerpted)

Suspension System	Actual Length ft/m	Min. Allowable Uniform Load	
		lb/linear ft	N/linear m
Direct Hung	Light	5.0	75.7
	Intermediate	12.0	181.0
	Heavy	16.0	241.7

SUMMARY: All direct-hung suspension system duty classifications per ASTM C 635 are able to withstand the maximum water-filled weight of the VicFlex sprinkler hose and bracket.

7.0 REFERENCE MATERIALS – CHARACTERISTICS (CONTINUED)

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](#)
- [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.

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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, 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](http://www.victaulic.com).

**Warranty**

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

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