SERIES AQB BRAIDED FLEXIBLE HOSE ASSEMBLIES



VicFlex™ sprinkler fittings provide sprinkler installation on suspended ceiling grids, wood or metal stud/joist or hat furring channel hard-lid ceilings utilizing a flexible, stainless steel hose and steel bracket assembly. Refer to the Installation Manual for all applicable ASTM ceiling material and installation standards.

The system requires no welding for assembly.

Series AQB Components

Hoses: Braided flexible stainless steel hose lengths: 31, 36, 48, 60, 72"/790, 914, 1220, 1525, 1830mm. Note: length includes branch-line nipple and 5.5"/140mm straight reducer.

. Hose Style:

Series AH2 1" Nominal ID Braided Hose

Series AH4 1" Nominal ID Braided Hose

See chart below for applications

· Brackets:

Style AB1 for suspended ceilings, allows installation before ceiling tiles in place

Style AB2 for hard-lid ceilings, allows for vertical sprinkler adjustment

Style AB4 for hard-lid ceilings with hat furring channel grid systems, allows for vertical sprinkler adjustment

Style AB7 for suspended ceilings

Style AB8 for hard-lid ceilings (regionally available)

Style AB9 for hard-lid ceilings with hat furring channel grid systems

Style AB10 for Armstrong® TechZone™ ceilings

- Sprinkler Reducers: ½" and ¾"/15 and 20 mm sprinkler connections and 5.5"/140mm, 9"/230mm, 13"/330mm straight lengths and short, long 90° elbows. Note: The short 90° elbow is typically used with concealed sprinklers while the long 90° elbow is typically used in the installation of recessed pendent sprinklers.
- Branch Connections: 1"/25mm or 3/4"/20mm NPT/BSPT branch line nipples for attaching to rigid pipe.





Regulatory Approvals and Listings/Bracket Features							
	Style AB1 Bracket	Style AB2 Bracket	Style AB4 Bracket	Style AB7 Bracket	Style AB8 Bracket	Style AB9 Bracket	Style AB10 Bracket
FM Approved (24" – 48" widths) with Series AH2 or Series AH4 Braided Hose (Straight Reducers and 90° Elbows)	•	•	•	•		•	
VdS Approved (24" – 48" / 700mm – 1400mm widths) with Series AH2 or Series AH4 Braided Hose	•	•	•	•	•	•	
cULus Listed with Series AH2 Braided Hose (Straight 5.5" Reducers)	•						•
FM Approved in 4" and 6" widths for Armstrong® TechZone™ ceiling technical panels							•
Allows complete lateral alignment of sprinkler	•	•	•	•	•	•	•
Features the patented 1-Bee ^{2®} open gate center bracket	•			•	•	•	•
Features patent-pending center bracket (adjustable from below)		•	•				
Provides reference mark features for center of tile sprinkler positioning	•	•	•	•	•	•	•
Allows for standard ceiling tile installation after the VicFlex fitting assembly is installed in the ceiling grid	•						
Features tamper resistant installation	•	•	•	•	•	•	•

JOB/OWNER	CONTRACTOR	ENGINEER
System No	Submitted By	Spec Sect Para
Location	Date	Approved
		Date

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TECHNICAL SPECIFICATIONS

Maximum Working Temperature: 225°F/107.2°C

Maximum Working Pressure:

- 200 psi/1375 kPa (FM Approval)
- 175 psi/1206 kPa (Series AH2 braided hose cULus Listed)
- 1600 kPa/232 psi (VdS Approval Series AH2 or Series AH4)

Connections:

To branch line (inlet) via $1"/25.4\,\mathrm{mm}$ NPT/BSPT male thread OR

To branch line (inlet) via %"/20mm BSPT male thread (VdS only) To sprinkler head (outlet) via %" or %"/15mm or 20mm NPT/BSPT female thread

Minimum Bend Radius of Flexible Hose:

- 7"/178 mm (FM Approval Series AH2 or Series AH4)
- 2"/51 mm (cULus Listed Series AH2)
- 3"/76.2 mm (VdS Approved Series AH2 or Series AH4)

Maximum Number of Bends per Flexible Drop: See friction loss charts below

Maximum K-Factor of Sprinkler to be Connected to Reducer:

- K8.0/11,5 (S.I.) (1/2"/15mm reducer) (cULus / FM)
- K14.0/20,2 (S.I.) (¾"/20mm reducer) (cULus / FM)
- \bullet K8.0/11,5 (S.I.) (3/4"/20mm reducer) (VdS)

MATERIAL SPECIFICATIONS

Braided Flexible Hose:

Series AH2

Flexible Hose: Type 304L Stainless Steel

Collar/Weld Fitting: Type 304L Stainless Steel

Gasket Seal: Victaulic Grade EHP EPDM

Isolation Ring: Nylon 66

Nut and Nipple: Zinc-Plated Grade 1020 Steel

Reducers (1/2 or 3/4"): Zinc-Plated Grade 1020 Steel

• Series AH4

Flexible Hose: Type 304L Stainless Steel

Collar/Weld Fitting: Type 304L Stainless Steel

Gasket Seal: EPDM per ASTM D2000

Isolation Ring: N/A

Nut and Nipple: Zinc-Plated Grade 1020 Steel

Reducers (1/2 or 3/4"): Zinc-Plated Grade 1020 Steel

Bracket:

• Style AB1/AB2/AB4/AB7/AB8/AB9/AB10

Bracket Square Bar: Zinc-Plated Grade 1010 Steel

End and Center Brackets: Zinc-Plated Steel per ASTM A109

Staked Center Bracket Wing Nut: Zinc-Plated Grade 1008 Steel

End Bracket Screw: Zinc-Plated per ISO 898 Class 10.9 Steel

Tamper-Resistant Screw: Zinc-Plated Grade 1016 Steel



FRICTION LOSS DATA - SERIES AH2 BRAIDED HOSE FOR USE WITH STYLE AB1 AND AB10 VICFLEX BRACKETS AND STRAIGHT 5.5" REDUCERS

			Series A	H2 Hose
Length of Stainless Steel Flexible Hose	Sprinkler K-Factor	Outlet Size	Equivalent Length of 1*/33.7mm Sch. 40 Pipe (C=120)	Maximum Number of 90° Bends at 2'/51mm Bend Radius
inches		inches/type	feet/meters	
31	5.6/8,1	1/2"/Straight	16/4.9	4
31	14.0/20,2	¾"/Straight	17/5.2	4
36	5.6/8,1	1/2"/Straight	21/6.4	5
30	14.0/20,2	¾"/Straight	23/7.0	5
48	5.6/8,1	½"/Straight	22/6.7	6
48	14.0/20,2	¾"/Straight	27/8.2	6
60	5.6/8,1	1/2"/Straight	31/9.4	6
60	14.0/20,2	¾"/Straight	31/9.4	6
72	5.6/8,1	½"/Straight	42/12.8	7
/2	14.0/20,2	3/4"/Straight	41/12.5	7

SERIES AH2 BRAIDED HOSE EQUIVALENT LENGTH DESIGN GUIDE

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

Length of Stainless Steel Flexible Hose inches	Outlet Size inches	0 Bends	1 Bend	2 Bends	3 Bends	4 Bends	5 Bends	6 Bends	7 Bends	8 Bends	9 Bends	10 Bends
31	1/2"	5.0	8.5	11.0	13.0	16.0	N/A	N/A	N/A	N/A	N/A	N/A
	3/4"	6.5	10.0	12.5	14.0	17.0	N/A	N/A	N/A	N/A	N/A	N/A
36	1/2"	10.5	13.5	16.0	18.0	19.0	21.0	N/A	N/A	N/A	N/A	N/A
30	3/4"	12.0	14.0	17.0	19.5	20.0	23.0	N/A	N/A	N/A	N/A	N/A
48	1/2"	11.5	15.5	17.0	19.5	20.0	21.0	22.0	28.0	N/A	N/A	N/A
1	3/4"	13.0	17.0	19.0	21.5	24.5	26.0	27.0	30.0	N/A	N/A	N/A
60	1/2"	15.5	21.5	24.0	27.0	28.5	30.0	31.0	37.0	42.0	46.0	N/A
30	3/4"	16.0	23.0	24.0	28.0	29.5	30.5	31.0	38.0	42.0	46.0	N/A
72	1/2"	28.5	30.0	32.0	36.5	37.5	40.5	41.0	42.0	46.0	49.0	52.0
/2	3/4"	24.0	32.0	32.5	35.0	35.5	40.0	40.5	41.0	46.0	50.0	53.0

Note: Values for use with 5.5" straight reducers.



FRICTION LOSS DATA - SERIES AH2 AND SERIES AH4 BRAIDED HOSE

			Series AH2 Braided Hos AB2, AB4, AB10	e for use with Style AB1, VicFlex Brackets.	Series AH4 Hose for us and AB9 Vic	se with Style AB1, AB7, Flex Brackets.	
Length of Stainless Steel Flexible Hose	Sprinkler K-Factor	Outlet Size	Equivalent Length of 1"/33.7mm Sch. 40 Pipe	Maximum Number of 90° Bends at 7"/178mm Bend Radius	Equivalent Length of 1"/33.7mm Sch. 40 Pipe	Maximum Number of 90° Bends at 7"/178mm Bend Radius	
inches		inches/type	feet/meters		feet/meters		
		½"/Straight	23.5/7.1		20.6/6.3		
31	5.6/8.1	½"/90° Elbow	23/7.0	1	21.7/6.6	1	
		½"/Straight	27.8/8.5		29.7/9.0		
36	5.6 /8.1	½"/90° Elbow	27.7/8.4	2	29.8/9.0	2	
		½"/Straight	38.2/11.6		27.5/8.3		
48	5.6/8.1	½"/90° Elbow	37.4/11.4	3	29.2/8.9	3	
		½"/Straight	42.4/12.9		35.7/10.9		
60	5.6/8.1	½"/90° Elbow	43/13.1	4	37.2/11.3	4	
		½"/Straight	46.6/14.2		45.9/14.0		
72	5.6/8.1	½"/90° Elbow	48.5/14.7	4	47.5/14.5	4	
		³¼"/Straight	20.7/6.3		13.3/4.0		
31	8.0/11.5	3/4"/90° Elbow	20.5/6.2	1	14.6/4.4	1	
		¾"/Straight	25.0/7.6		21.7/6.6		
36	8.0/11.5	3/4"/90° Elbow	24.6/7.5	2	22.4/6.8	2	
		¾"/Straight	35.5/10.8		21.2/6.4	3	
48	8.0/11.5	3/4"/90° Elbow	34.7/10.6	- 3	22.2/6.7		
		¾"/Straight	39.6/12.1		27.9/8.5	4	
60	8.0/11.5	34"/90° Elbow	40.1/12.2	4	28.9/8.8		
		¾"/Straight	43.5/13.2	4	38.8/11.8		
72	8.0/11.5	34"/90° Elbow	45.2/13.7		39.4/12.0	4	
		¾"/Straight	17.8/5.4	_	16.4/5.0		
31	11.2/16.1	34"/90° Elbow	18/5.5	1	19.9/6.1	1	
		¾"/Straight	22.2/6.7	_	21.7/6.6		
36	11.2/16.1	34"/90° Elbow	22.1/6.7	2	24.2/7.4	2	
10	11 2/16 1	¾"/Straight	32.9/10.0	2	28.5/8.7	2	
48	11.2/16.1	34"/90° Elbow	32.1/9.8	3	29.9/9.1	3	
	11 2/16 1	¾"/Straight	36.8/11.2	4	34.7/10.5	4	
60	11.2/16.1	3/4"/90° Elbow	37.1/11.3	4	30.3/9.2	4	
70	11.2/16.1	¾"/Straight	40.5/12.3	4	38.6/11.6	4	
72	11.2/16.1	3/4"/90° Elbow	41.9/12.7	4	38.6/11.7	4	
24	14.0/20.2	¾"/Straight	14.9/4.5	1	16.3/5.0	1	
31	14.0/20.2	34"/90° Elbow	15.5/4.72		19.9/6.1		
26	14.0/20.2	¾"/Straight	19.4/5.9		21.8/6.7		
36	14.0/ 20.2	34"/90° Elbow	19.6/5.9	2	24.2/7.4	2	
48	14.0/20.2	¾"/Straight	30.3/9.2	3	28.3/8.6	3	
40	14.0/ 20.2	34"/90° Elbow	29.5/8.9	3	29.9/9.1	3	
60	14.0/20.2	¾"/Straight	33.9/10.3	4	34.9/10.6	4	
00	17.0/ 20.2	34"/90° Elbow	34.1/10.4	7	30.3/9.2	7	
72	14.0/20.2	¾"/Straight	37.5/11.4	4	41.5/12.6	4	
12	14.0/ 20.2	3/4"/90° Elbow	38.6/11.7	7	38.6/11.7	7	

FM NOTES:

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

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FRICTION LOSS DATA - SERIES AH2 BRAIDED HOSE FOR USE WITH STYLE AB1, AB2, AB4, AB7 AND AB9 VICFLEX BRACKETS

Length of Stainless Steel Flexible Hose	Outlet Size	Equivalent Length of steel pipe according to DIN 2448 DN25 (33,7 x 2,6) and relating to a flow velocity of 5 m/s	Maximum Number of 90° Bends at 3'/76.2mm Bend Radius	Equivalent Length of steel pipe according to DIN 2448 DN25 (33,7 x 2,6) and relating to a flow velocity of 5 m/s	Maximum Number of 90° Bends at 3'/76.2mm Bend Radius	
		Series Al- 25mm/1" B		Series Al 20mm/¾"		
mm/inches	mm/type	meters/feet		meters/feet		
	15/Straight					
	15/90° Elbow					
790/31	20/Straight	5.2/17.1	3	4.7/15.6	3	
	20/90° Elbow					
	15/Straight					
015/26	15/90° Elbow	6.1/19.9	3	5.5/17.9	3	
915/36	20/Straight 6.1/19.9	6.1/19.9	3	5.5/17.9		
	20/90° Elbow					
	15/Straight					
1220/48	15/90° Elbow	8.1/26.5	3	7.3/24.0	3	
1220/40	20/Straight	8.17 20.3	5	7.3/24.0	3	
	20/90° Elbow					
	15/Straight					
1525/60	15/90° Elbow	10.1/33.2	4	9.1/29.9	4	
1323/00	20/Straight	10.1/ 55.2	т		7	
	20/90° Elbow					
	15/Straight					
1830/72	15/90° Elbow	12.0/39.8	4	11.0/36.0	4	
1030/72	20/Straight				·	
	20/90° Elbow					

T-Bar Style Ceiling Systems for AB1, AB2, and AB7:

- 1. Odenwald, Systems S2, S3, and S15
- 2. Richter, Systems 4.1-4.5, 11.1-11.6, 13.3-13.4, and 16.5
- 3. Dipling
- 4. Armstrong
- 5. Rigips
- 6. Knauf
- 7. AMF
- 8. Chicago Metallic
- 9. Durlum
- 10. Geipel
- 11. Gema-Armstrong
- 12. Lindner
- 13. Suckow & Fischer
- 14. USG Donn

Plasterboard Style Ceiling Systems for AB8:

1. Knauf

2. Rigips

Hat Furring Channel Ceiling System for AB4 and AB9::

no specific approval

VdS

FRICTION LOSS DATA - SERIES AH4 BRAIDED HOSE FOR USE WITH STYLE AB1, AB2, AB4, AB7, AB8 AND AB9 VICFLEX BRACKETS

Length of Stainless Steel Flexible Hose	Outlet Size	Equivalent Length of steel pipe according to DIN 2448 DN25 (33,7 x 2,6) and relating to a flow velocity of 5 m/s	Maximum Number of 90° Bends at 3'/76.2mm Bend Radius	Equivalent Length of steel pipe according to DIN 2448 DN25 (33,7 x 2,6) and relating to a flow velocity of 5 m/s	Maximum Number of 90° Bends at 3'/76.2mm Bend Radius	
		Series Al- 25mm/1" E			H4 Hose Branchline	
mm//inches	mm/type	meters/feet		meters/feet		
	15/Straight					
700/24	15/90° Elbow	5.5/10.1	2	47/15 6	2	
790/31	20/Straight	5.5/18.1	3	4.7/15.6	3	
	20/90° Elbow					
	15/Straight					
915/36	15/90° Elbow	6.4/20.9	3	5.5/17.9	3	
915/50	20/Straight	0.4/20.9	3	3.3/ 17.9		
	20/90° Elbow					
	15/Straight					
1220/48	15/90° Elbow	8.5/28.0	3	7.3/24.0	3	
1220/40	20/Straight	0.5/28.0	3	7.5/24.0	3	
	20/90° Elbow					
	15/Straight					
1525/60	15/90° Elbow	10.6/34.9	4	9.1/29.9	4	
1323/00	20/Straight	10.0/ 54.9	7		, T	
	20/90° Elbow					
	15/Straight					
1830/72	15/90° Elbow	12.8/42.0	4	11.0/36.0	4	
1030/72	20/Straight	12.0/42.0	7	11.0/30.0	7	
	20/90° Elbow					

T-Bar Style Ceiling Systems for AB1, AB2, and AB7:

- 1. Odenwald, Systems S2, S3, and S15
- 2. Richter, Systems 4.1-4.5, 11.1-11.6, 13.3-13.4, and 16.5
- 3. Dipling
- 4. Armstrong
- 5. Rigips
- 6. Knauf
- 7. AMF
- 8. Chicago Metallic
- 9. Durlum
- 10. Geipel
- 11. Gema-Armstrong
- 12. Lindner
- 13. Suckow & Fischer
- 14. USG Donn

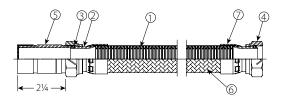
Plasterboard Style Ceiling Systems for AB8:

1. Knauf 2. Rigips Hat Furring Channel Ceiling System for AB4 and AB9: :

no specific approval

PRODUCT DETAILS - Series AH2 Braided Hose Series AH4 Braided Hose

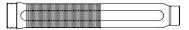
Item	Description
1	Flexible Hose
2	Isolation Ring (series AH2 only)
3	Gasket
4	Nut
5	Branch Line Nipple
6	Braid
7	Collar/Weld Fitting



Series AQB Flexible Hose - Braided (1"/25mm nominal diameter)



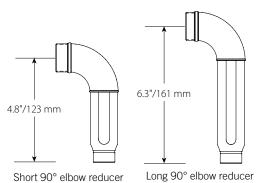
5.5"/140 mm straight reducer



9.0"/229 mm straight reducer



13.0"/330 mm straight 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.

VICFLEX BRACKETS STYLE AB1

- Suspended ceilings
- Hard-Lid Ceilings (FM Only)

Item	Description
1	24"/610mm or 48"/1219mm Square Bar*
2	Patented 1-Bee ^{2®} Center bracket
3	End Bracket (adjustable)

^{*}Both sizes FM/VdS approved, cULus listed



• Hard-Lid ceilings

Item	Description
1	24"/610mm or 48"/1219mm Square Bar*
2	Patent-Pending Center bracket
3	End Bracket (adjustable)

^{*}Both sizes FM/VdS approved.

Note: 5/32 or 4mm hex key required for assembly

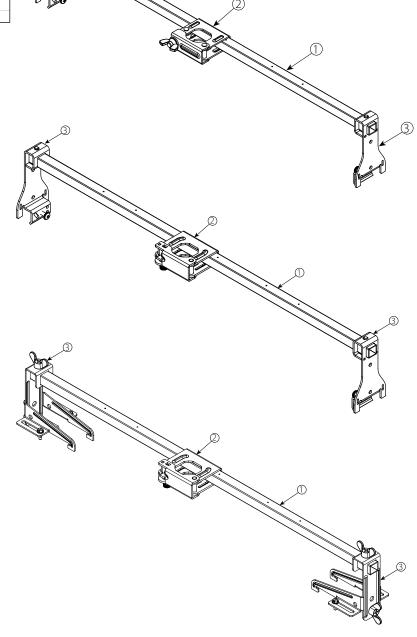
STYLE AB4

Hard-Lid Ceilings with Hat furring channel grid system

Item	Description
1	24"/610mm or 48"/1219mm Square Bar*
2	Patent-Pending Center bracket
3	Adjustable End Bracket for Hat Furring Channel

^{*}Both sizes FM/VdS approved.

Note: 5/32 or 4mm hex key required for assembly



VICFLEX BRACKETS

STYLE AB7

• Suspended ceilings

Hard-Lid Ceilings (FM Only)

Item	Description
1	24"/610mm or 48"/1219mm Square Bar*
2	Patented 1-Bee ^{2®} Center bracket
3	End Bracket (optional adjustable version – regional availability)
4	Sheet Metal Screw

^{*} Both sizes FM/VdS Approved.

STYLE AB8

· Hard-Lid ceilings

Item	Description
1	700mm or 1400mm Square Bar*
2	Patented 1-Bee ^{2®} Center bracket
3	End Bracket (adjustable)

^{*} Both sizes VdS Approved.

STYLE AB9

 Hard-Lid ceilings with Hat furring channel grid system

Item	Description
1	24"/610mm or 48"/1219mm Square Bar
2	Patented 1-Bee ^{2®} Center bracket
3	Adjustable End Bracket for Hat Furring Channel

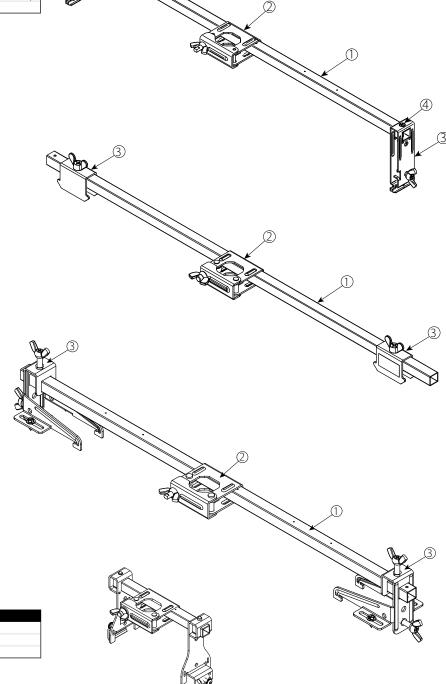
^{*} Both sizes FM/VdS Approved.

STYLE AB10

- Suspended ceilings
- Armstrong® TechZone™

Item	Description
1	4"/100mm, 6"/152mm Square Bar*
2	Patented 1-Bee ^{2®} Center bracket
3	End Bracket (adjustable)

^{*} Both sizes FM approved, cULus listed



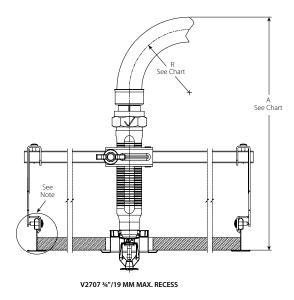
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SERIES AQB Braided Hose Assembly

Suspended Ceiling Grid with Recessed Sprinkler

- Clearances above ceiling tile at various center-line bend radii

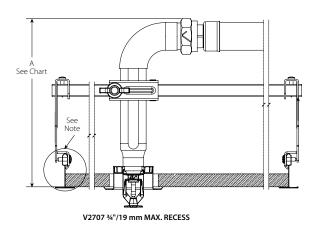
Hose Clearance Chart						
Dimension			Inche	s/mm		
Minimum Bend Radius "R"	2/50	3/80	4/100	5/125	6/150	7/175
Minimum "A"	10.75/273	11.75/298.5	12.75/324	13.75/349	14.75/375	15.75/400



Suspended Ceiling Grid with 90°Elbow (Long)

Hose Clearance Chart					
Dime	Inches/mm				
А	Min.	8 200			

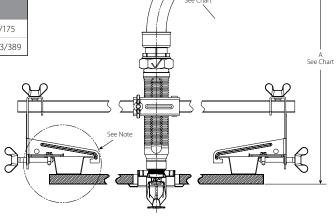
Note: Typical layout figures shown. Variations of ceiling grids and sprinkler heads are permitted but may result in clearance differences from the figures above.



SERIES AQB Braided Hose Assembly

Suspended Ceiling Grid with Hat Furring Channel

Hose Clearance Chart						
- ·						
Dimension	Inches/mm					
Minimum Bend Radius "R"	2/50	3/80	4/100	5/125	6/150	7/175
Minimum "A"	10.3/262	11.3/287	12.3/313	13.3/338	14.3/363.5	15.3/389

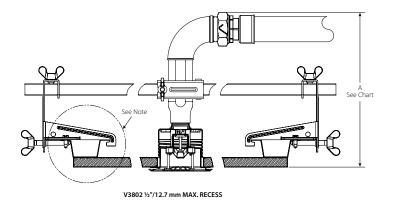


V2708 1/2"/12.7 mm MAX. RECESS

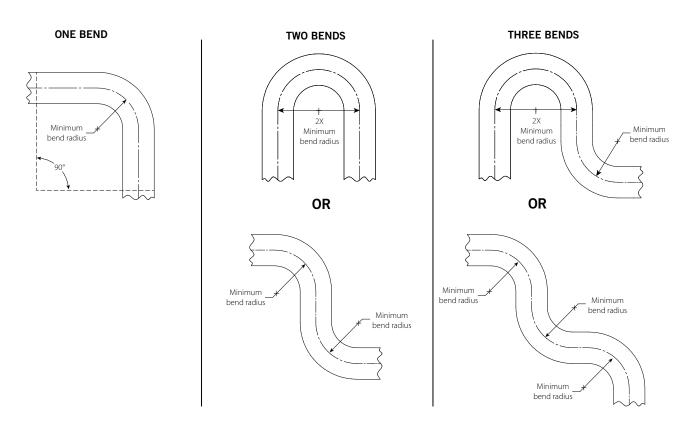
Suspended Ceiling Grid with 90°Elbow (Short)

Hose Clearance Chart					
Dime	Inches/mm				
А	Min.	8 200			

NOTE: Typical layout figures shown. Variations of ceiling grids and sprinkler heads are permitted but may result in clearance differences from the figures above.



FLEXIBLE HOSE IN-PLANE BEND CHARACTERISTICS



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

MODEL NUMBER CORRELATION

Series AH4 Hose Assembly Designation	Outlet Size	Series AQB Hose Assembly Designation	Series AFB Hose Assembly Designation
AH4-31	1/2	AQB31HLD	AFB31HLD
AП4-31	3/4	AQB31TLD	AFB31TLD
AH4-36	1/2	AQB36HLD	AFB36HLD
AH4-30	3/4	AQB36TLD	AFB36TLD
AH4-48	1/2	AQB48HLD	AFB48HLD
AП4-40	3/4	AQB48TLD	AFB48TLD
AH4-60	1/2	AQB60HLD	AFB60HLD
AH4-00	3/4	AQB60TLD	AFB60TLD
AH4-72	1/2	AQB72HLD	AFB72HLD
An4-/2	3/4	AQB72TLD	AFB72TLD

WARRANTY

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

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.