



Viking Blazemaster® CPVC Pipe & Fittings for ASD Installation Note

Overview

Aspirating smoke detection (ASD) systems are dependent on a network of specialty piping that continuously carries air samples from protected zones to highly sensitive detectors. Viking manufactures, fabricates, and distributes ASD piping and fittings to strict specifications. To ensure the integrity and reliability of an ASD system using Viking Blazemaster® CPVC pipe, the following guidelines, prohibitions, and procedures should be followed:

Viking CPVC Pipe & Fitting Installation Guidelines:

- Installation should be made only by a qualified installer or contractor in accordance with all applicable codes and requirements.
- Read and strictly follow the ASD manufacturer's installation instructions.
- Keep pipe and fittings in original packaging until needed.
- Cover pipe and fittings with an opaque tarp if stored outdoors.
- Store pipe and fittings away from steam lines and heat sources.
- Pipes should not be dropped, have objects dropped on them, nor subjected to external loads. Pipe must not be dragged across the ground or over obstacles. Impacts such as dropping from sizable heights and/or rough handling should be avoided, particularly in cold weather. The product shall be inspected for any scratches, fractures or gouges that may have occurred from improper handling or storage. These sections must be cut out at least 2 inches (50 mm) beyond any visible crack and discarded.
- Keep jointing surfaces dry in wet weather.
- Only use Viking One-Step solvent cement. The integrity of air sampling systems may be affected if Viking Blazemaster CPVC solvent cement is not used. See guidelines in next section.
- Use a drop cloth to protect interior finishes.
- Ensure installers have been properly trained per the ASD Manufacturer's pipe & fittings guidelines.

Viking CPVC pipe and fittings are fully compatible with the respective manufacturer's ASD system design software.

It's important that each ASD manufacturers' system design specifications are followed, including, but not limited to, sampling hole diameter, capillary tube attachment, hole spacing, pipe length, and support bracket placement.

Pipe and Fittings Installation Prohibitions:

- Do not use petroleum or unapproved solvent-based sealants, lubricants, or fire stop materials.
- Do not use edible oils as a gasket lubricant.
- Do not contaminate the CPVC system with cutting oils or compressor oils.
- Do not use solvent cement that exceeds its shelf life or has become discolored or jellied.
- Do not thread or groove CPVC pipe.
- Do not use solvent cement near sources of heat, open flame, or when smoking.
- Do not test pipe network until recommended cement cure times are met.
- Do not use ratchet cutters below 50°F.
- Do not use CPVC pipe that has been stored outdoors, unprotected and is faded in color.
- Do not allow threaded rod to come in contact with pipe.
- Do not install Viking CPVC pipe products in cold environments without allowing for expansion.
- Do not allow puddling of cement in on pipe.
- Do not use dull or broken cutting tool blades when cutting pipe.

Viking CPVC Pipe & Fittings for ASD

Solvent Cement Caution

- Prior to using CPVC solvent cements, review and follow all precautions found on the container labels, material safety data sheet, and Standard Practice for Safe Handling ASTM F 402. Failure to follow precautions may result in injury.
- Follow proper handling procedures. Protective gloves are recommended for use when solvent cementing. If hands come into contact with cement, use a waterless abrasive soap.

Cementing & Joining Procedure:

1. Use tools specifically designed for use with CPVC pipe.
2. Pipe and fittings should be assembled only when temperatures are 50°F (10°C) or greater using well-maintained, sharp, good quality ratchet cutters capable of consistently cutting the pipe squarely.
3. Pipes must be cut square. This ensures maximizing bonding area. Do not fracture or split the pipe, especially if a ratchet type cutter is used, particularly at colder temperatures.
4. Remove all burrs and filings, and place a slight bevel (approximately 10° to 15°) on the pipe end. A file or chamfering tool is suitable for this purpose. A proper bevel will ease entry of the pipe into the fitting socket and prevent solvent cement from being wiped from the joining surfaces during assembly.
5. Wipe loose dirt and moisture from the fitting socket and pipe end by using clean dry rag. Check the "dry fit" of the components being joined to ensure compatibility. The pipe should enter the fitting socket ¼ to ¾ of the way. If the pipe bottoms with little interference fit use extra solvent cement when making the joint.
6. Use ½" (DN12) Viking applicators (brush or dauber) for cementing pipes.
7. Never dilute solvent cement.
8. Vigorously apply a heavy, even coat of cement to the outside of the pipe end.
9. Prevent excessive solvent cement from running into the pipe.
10. Do not put cement inside a fitting as it may build up when the pipe is inserted. This build-up will affect the precise airflow characteristics inside the pipe and may cause unpredictable behavior.
11. If there was little interference during the dry fit apply a second coat of cement to the pipe end. It is important to work quickly so that the cement is still liquid (to allow surfaces to slide) when pipe and fitting are assembled.



12. After applying cement, immediately insert the pipe into the fitting socket, while rotating the pipe one-quarter (¼) turn until the pipe bottoms out at the fitting stop. Properly align the fitting for the installation at this time. Pipe must bottom to the stop. Hold the assembly for 30 seconds to ensure initial bonding. A bead of solvent cement should be evident around the pipe and fitting juncture. If this bead is not continuous around the socket shoulder, it may indicate that insufficient cement was applied. If insufficient cement is applied, the fitting must be cut out and discarded.
13. Wipe off excessive cement with a rag (excessive cement can cause over-softening resulting in damage). The assembly must be allowed to set without any stress on the joint for 1 to 5 minutes.
14. The assemblies must be allowed to cure properly prior to use. Cure times are a function of pipe size, temperature, humidity, and tightness of fit. Refer to following cure times in Table 1.
15. Always replace lids on cement cans when not in use.

Table 1. Curing Times for Viking CPVS Pipe

Nominal Pipe Size (Metric)	60°F to 120°F (16°C to 49°C)	≥ 40°F (≥ 4.4°C)	≥ 0°F (≥ -17.8°C)
¾" (DN20)	1 hour	4 hours	48 hours

NOTE: For estimation purposes, approximately 270 joints can be made per quart of Viking BlazeMaster CPVC cement.

Pipe Deflection

Viking CPVC ASD piping is inherently ductile allowing it to be deflected, within permissible limits, around or away from objects during installation, which can reduce installation time. This ductility allows for greater freedom of design and lower installed cost. The maximum installed deflections for Viking CPVC ASD piping are as follows:

Figure 1. Pipe Deflection Dimensions (One end restrained)

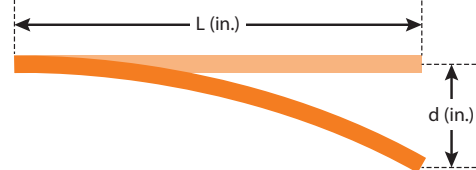


Table 2. Max Installed Deflections (One end restrained)

Permissible ¾" (inch) Bending Deflections SDR 13.5 (73°F) in inches	
Pipe Length in Feet	
L	d (")
2'	1.3
5'	7.8
7'	15.4
10'	31.3
12'	45.1
15'	70.5
17'	90.6
20'	125.4
25'	195.9
30'	282.1
35'	383.9

Viking CPVC Pipe & Fittings for ASD

Figure 2. Pipe Deflection Dimensions (Both ends restrained)

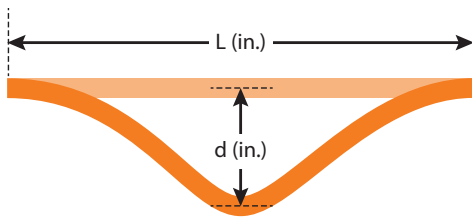


Table 3. Max Installed Deflections (Both ends restrained)

Permissible 3/4" (inch) Bending Deflections SDR 13.5 (73°F) in inches														
Pipe Length in Feet														
L	2'	5'	7'	10'	12'	15'	17'	20'	25'	30'	35'	40'	45'	50'
d (")	0.3	2.0	3.8	7.8	11.3	17.6	22.6	31.1	49.0	70.5	96.0	125.4	158.7	195.9

Viking CPVC Physical Properties

The pipe is produced in standard dimensional ratio (SDR) 13.5 dimensions. The pipe is produced to the specifications of ASTM F442. Fittings are produced to ASTM F437, F438, or F439 specifications depending on the system size and configuration. Viking CPVA ASD pipe is UL listed and meets requirements under UL 1887 (*Fire Test of Plastic Sprinkler Pipe for Visible Flame and Smoke Characteristics*).

Table 4. Viking CPVC Physical Characteristics

Physical Property	Viking CPVC	ASTM
Cell Classification	23477	D 1784
Specific Gravity	1.53	D 792
Tensile Strength	> 8,400 psi	D 638
Modulus of Elasticity	4.23 x 10 ⁵	D 638
Compressive Strength	9600 psi	D 695
Izod Impact	3.0	D 256A
Coefficient of Linear Exp.	3.4 x 10 ⁻⁵	D 696
Temperature Range	25°–150° F	—
Electrical Conductivity	No	—

Viking Integrated Safety
 5150 Beltway Dr. SE
 Caledonia, MI 49316 USA
 Phone: (877) 384-5464
 E-mail: VIS@VikingCorp.com
 Web: Safety.SupplyNet.com

*Blazemaster® is a registered trademark of Lubrizol Advanced Materials, Inc.

Approvals



Viking Design Support & Consulting

VIS offers expert design, engineering, and consulting services to ensure your fire protection needs are met quickly & efficiently. Each solution can be custom tailored for your installation, from design to commissioning to deployment and maintenance. Contact us about your project at:

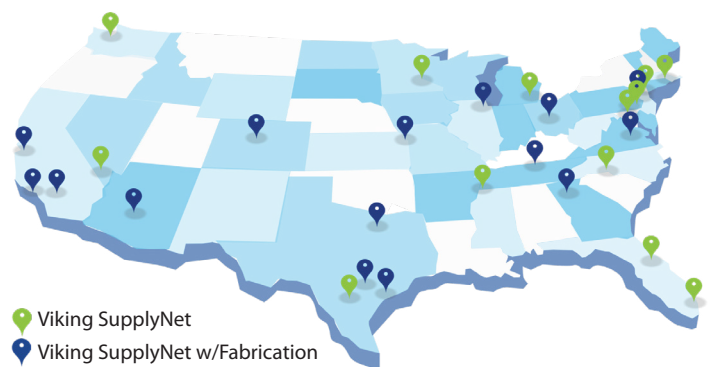
DesignCenter@SupplyNet.com

Viking CPVC Pipe & Fittings can be used with all leading ASD brands including VESDA®, Securiton™, Wagner®, ProSeries™, and Siemens®

Buying VIS Solutions

All VIS solutions are sold through Viking SupplyNet. Established in 1988, Viking SupplyNet distributes the largest selection of integrated detection, alarm, and suppression systems to customers in 70+ countries. Viking SupplyNet's state-of-the-art inventory system links all locations worldwide to ensure that every solution is available for timely delivery.

Find your nearest USA Viking SupplyNet location:



SupplyNet.com/locations

