



SCAN TO VISIT OUR WEBSITE



# BlazeMaster<sup>®</sup>

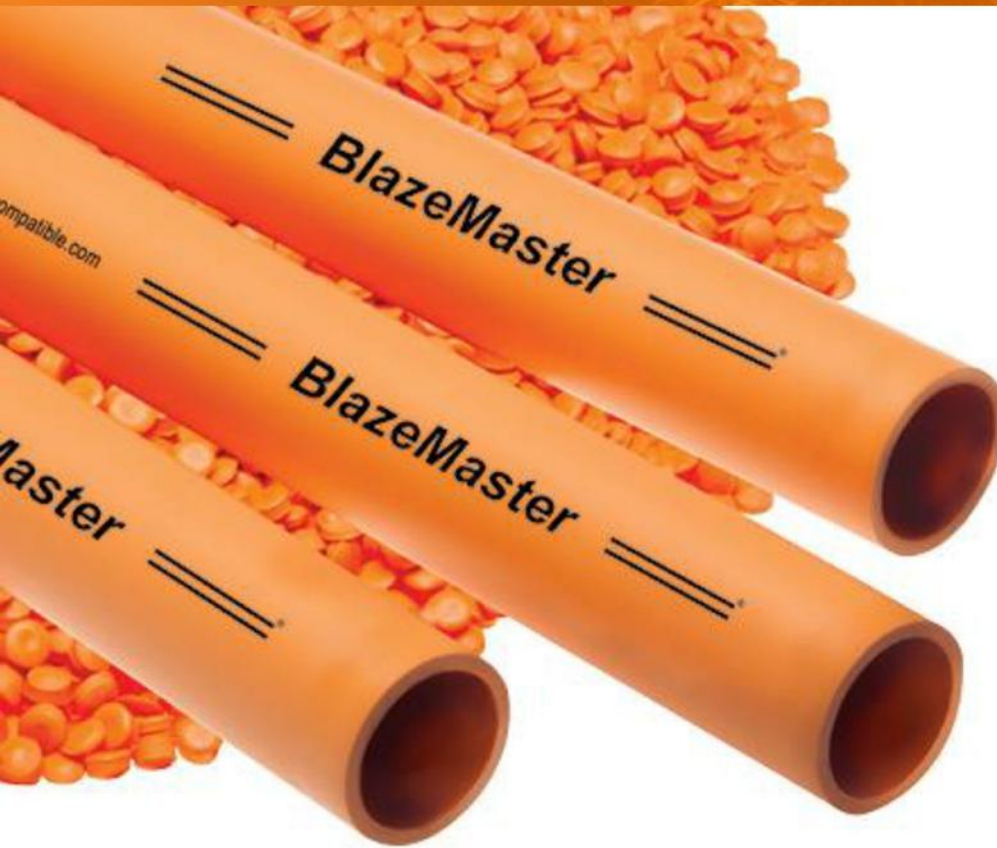
FIRE PROTECTION SYSTEMS



Blazemaster<sup>®</sup> is the registered trademark of The Lubrizol Corp. The Lubrizol Corporation is A Berkshire Hathaway Company. Atlanta Industries, Inc. is a Exclusive Distributor of Blazemaster<sup>®</sup>

**Blazemaster** pipes and fittings are designed specifically for fire sprinkler systems. They are made from a specialty thermoplastic known as chlorinated polyvinyl chloride (CPVC). **Blazemaster** pipe and fittings provide unique advantages in sprinkler installations including superior hydraulics in comparison to traditional metal systems, ease of joining, increased hanger spacing and ease of assembly. Additionally it is based on a technology with a continuous and proven service history of more than 30 years.

## Blazemaster CPVC Fire Sprinkler System Specification



### Pipe

**Blazemaster** CPVC Sprinkler pipe in SDR 13.5 conforms to the requirements of ASTM F442.

### Fittings

**Blazemaster** CPVC Sprinkler fittings conform to the requirement of ASTM F438 (Schedule 40) & ASTM F439 (Schedule 80). Female threaded adapters for sprinkler head connections with brass inserts.

### Solvent Cement

**Blazemaster** CPVC socket connections should be joined with Weld-On Blazemaster Cement which meets ASTM F493. No other cements are recommended for use with Blazemaster products and use of such non-proved welding agents will invalidate the manufacturers warranty.

## Where to use Blazemaster CPVC Fire Sprinkler Piping System

### Applications

- **NFPA 13** Light Hazard occupancies as defined in the Standard for Installation of Sprinkler Systems, such as Churches, Schools, Hotels, Condominiums, Hospital, Offices & High Rises.
- **NFPA 13D** Residential occupancies as defined in the Standard for Sprinkler Systems in One & Two Family Dwellings and Manufactured Homes.
- **NFPA 13R** Residential and Multi-family.
- **NFPA 90** Air plenums, as defined by the Installation of Air Conditioning and Ventilating Systems
- **NFPA 24** Underground water pressure service.



## ADVANTAGES + PROVEN PERFORMANCE



Resistant to corrosion and scaling and foreign contaminant build even in salt air environments.



Greater resistance to seismic activity than copper or steel systems



Reduced installation time



Easily repaired or modified on site



Eliminates need for torches or heat-fusion complicated techniques.



Designed to 50 year Life expectancy



Simple joining method.



Lightweight. Allows greater ease of installation.



Ensure optimal flow rate and excellent hydraulic capabilities (C-Factor of 150) that will not diminish over time. Allows for pipe downsizing & Pump rate reduction.



Little to no maintenance required

## FLAME AND SMOKE RESISTANT



### Flammability

**Blazemaster** is suitable for wet, automatic fire sprinkler systems because of its excellent balance of properties such as lightweight, excellent corrosion resistance, low friction loss, and easy installation. It is unique in that it offers outstanding resistance to fire and low smoke generation.



### Burning Resistance

CPVC will not sustain burning. It must be forced to burn due to its very high Limiting Oxygen Index (LOI) of 60. LOI is the percentage of oxygen needed in an atmosphere to support combustion. Since earth's atmosphere is only 21% oxygen, CPVC will not burn unless a flame is constantly applied and stops burning when the ignition source is removed.



### Smoke Generation

The smoke toxicity of CPVC pipe is low compared with the common building and finish materials present in homes.

FRICION LOSS IN PIPE

## FRICITION LOSS IN PIPE

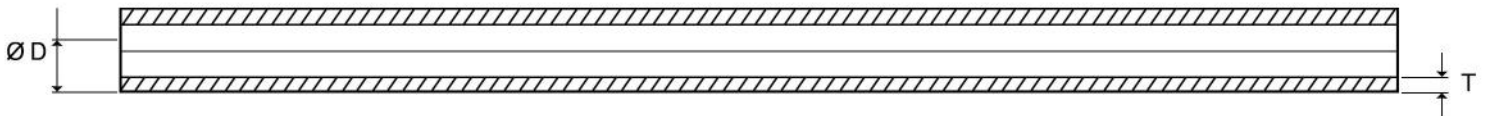


A great advantage that **Blazemaster** pipe enjoys over its metallic competitors is a smooth inner surface which is resistant to scaling and fouling. This means that friction pressure losses in the beginning and do not significantly increase as the systems ages, as can be the case with metal pipes. The values in the following fluid flow tables are based on the Hazen Williams formula and a surface roughness constant of C=150 for **Blazemaster** Pipe, providing a maximum water flow coverage.

Surface roughness constant for other piping material are given below:	Constant (C) Type of Pipe
$f = 0.2083 \left( \frac{100}{C} \right)^{1.85} \frac{g^{1.852}}{d^{4.8655}}$ <p>Where</p> <p>f - friction head in feet of water per 100 feet of pipe  d - inside diameter of pipe in inches  g - flow rate in gallons per minute  c - pipe surface roughness constant</p>	150 CPVC Pipe, new-40 Years 130-140 Steel/Cast Iron Pipe, New 125 Steel Pipe, old 120 Cast Iron, 4-12 years old 110 Galvanized Steel/Cast Iron 13-20 Years 60-80 Cast Iron, Worn/Pitted

## BLAZEMASTER CPVC PIPE RANGE

### Blazemaster Pipe Dimensions (SDR 13.5) - Inches (Millimeters)

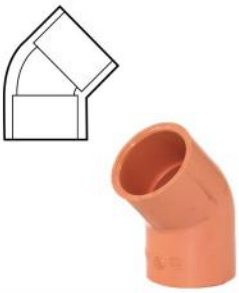


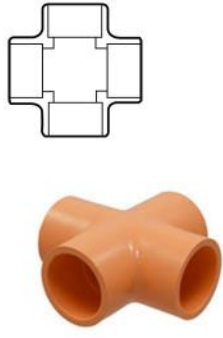
Nominal Size		Outside				Wall Thickness (T)				Allowable Water Pressure Rating at 73°F / 22.7°C
Non-UL	UL	Average		Tolerance		Minimum		Tolerance		
in	in	in	mm	in	mm	in	mm	in	mm	
1/2"		0.840	21.3	±0.004	0.10	0.062	1.57	+0.02	0.51	315 PSI (22.22 kg/cm <sup>2</sup> )
3/4"	3/4"	1.050	26.7	±0.004	0.10	0.078	1.98	+0.02	0.51	
1"	1"	1.315	33.4	±0.005	0.13	0.097	2.46	+0.02	0.51	
1-1/4"	1-1/4"	1.660	42.2	±0.005	0.13	0.123	3.12	+0.02	0.51	
1-1/2"	1-1/2"	1.900	48.2	±0.006	0.15	0.141	3.58	+0.02	0.51	
2"	2"	2.375	60.3	±0.006	0.15	0.176	4.47	+0.021	0.53	
2-1/2"	2-1/2"	2.875	73.0	±0.007	0.18	0.213	5.41	+0.026	0.66	
3"	3"	3.500	88.9	±0.008	0.20	0.259	6.58	+0.031	0.79	
4"		4.500	114.3	±0.009	0.23	0.333	8.46	+0.04	1.02	

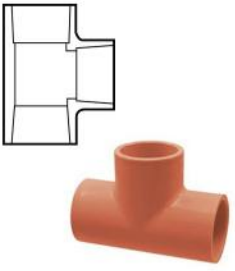
Note: SDR 13.5 (Standard Dimensional Ratio 13.5) means the ratio of outside diameter to wall thickness (ASTM F442)

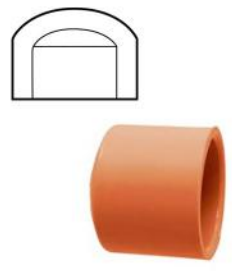
## BLAZEMASTER NON-UL FITTINGS


ELBOW 90°	Size	
	in	mm
	1/2	15
	3/4	20
	1	25
	1-1/4	32
	1-1/2	40
	2	50
	2-1/2	65
	3	80
4	100	


ELBOW 45°	Size	
	in	mm
	1/2	15
	3/4	20
	1	25
	1-1/4	32
	1-1/2	40
	2	50
	2-1/2	65
	3	80
4	100	

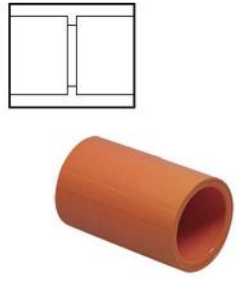
CROSS TEE	Size	
	in	mm
	1/2	15
	3/4	20
	1	25
	1-1/4	32
	1-1/2	40
	2	50
	2-1/2	65
	3	80
	4	100
	1 x 3/4	25 x 20
1-1/2 x 1	15 x 25	
2 x 1	50 x 25	
4 x 2	100 x 50	

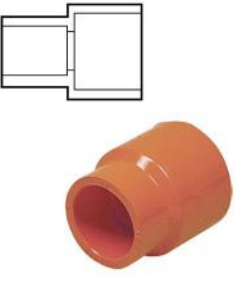
TEE	Size	
	in	mm
	1/2	15
	3/4	20
	1	25
	1-1/4	32
	1-1/2	40
	2	50
	2-1/2	65
	3	80
4	100	


ENDCAP	Size	
	in	mm
	1/2	15
	3/4	20
	1	25
	1-1/4	32
	1-1/2	40
	2	50
	2-1/2	65
	3	80
4	100	

MALE THREADED ADAPTER	Size	
	in	mm
	1/2	15
	3/4	20
	1	25
	1-1/4	32
	1-1/2	40
	2	50
	2-1/2	65
	3	80
4	100	

FLANGE	Size	
	in	mm
	1/2	15
	3/4	20
	1	25
	1-1/4	32
	1-1/2	40
	2	50
	2-1/2	65
	3	80
4	100	

COUPLING	Size	
	in	mm
	1/2	15
	3/4	20
	1	25
	1-1/4	32
	1-1/2	40
	2	50
	2-1/2	65
	3	80
4	100	

REDUCING COUPLING	Size			
	in	mm	in	mm
	3/4 x 1/2	20 x 15	2 x 1/2	50 x 15
	1 x 1/2	25 x 15	2 x 3/4	50 x 20
	1 x 3/4	25 x 20	2 x 1	50 x 25
	1-1/4 x 1/2	32 x 15	2 x 1-1/4	50 x 32
	1-1/4 x 3/4	32 x 20	2 x 1-1/2	50 x 40
	1-1/4 x 1	32 x 25	2-1/2 x 2	65 x 50
	1-1/2 x 1/2	40 x 15	3 x 2	80 x 50
	1-1/2 x 3/4	40 x 20	3 x 2-1/2	80 x 65
	1-1/2 x 1-1/4	40 x 25	4 x 3	100 x 80

BUSHING REDUCER	Size					
	in	mm	in	mm	in	mm
	3/4 x 1/2	20 x 15	1-1/2 x 1	40 x 25	3 x 1-1/2	80 x 40
	1 x 1/2	25 x 15	1-1/2 x 1-1/4	40 x 32	3 x 2	80 x 50
	1 x 3/4	25 x 20	2 x 1/2	50 x 15	3 x 2-1/2	80 x 65
	1-1/4 x 1/2	32 x 15	2 x 3/4	50 x 20	4 x 2	100 x 50
	1-1/4 x 3/4	32 x 20	2 x 1	50 x 25	4 x 2-1/2	100 x 65
	1-1/4 x 1	32 x 25	2 x 1-1/4	50 x 32	4 x 3	100 x 80
	1-1/2 x 1/2	40 x 15	2 x 1-1/2	50 x 40		
	1-1/2 x 3/4	40 x 20	2-1/2 x 2	65 x 50		

REDUCER TEE	Size											
	in		mm		in		mm					
	3/4 x 3/4 x 1/2		20 x 20 x 15		2 x 2 x 1/2		50 x 50 x 15		3 x 3 x 1-1/4		80 x 80 x 32	
	1 x 1 x 1/2		25 x 25 x 15		2 x 2 x 3/4		50 x 50 x 20		3 x 3 x 1-1/2		80 x 80 x 40	
	1 x 1 x 3/4		25 x 25 x 20		2 x 2 x 1		50 x 50 x 25		3 x 3 x 2		80 x 80 x 50	
	1-1/4 x 1-1/4 x 1/2		32 x 32 x 15		2 x 2 x 1-1/4		50 x 50 x 32		3 x 3 x 2-1/2		80 x 80 x 65	
	1-1/4 x 1-1/4 x 3/4		32 x 32 x 20		2 x 2 x 1-1/2		50 x 50 x 40		4 x 4 x 1		100 x 100 x 25	
	1-1/4 x 1-1/4 x 1		32 x 32 x 25		2-1/2 x 2-1/2 x 1		65 x 65 x 25		4 x 4 x 1-1/4		100 x 100 x 40	
	1-1/2 x 1-1/2 x 1/2		40 x 40 x 15		2-1/2 x 2-1/2 x 1-1/4		65 x 65 x 32		4 x 4 x 1-1/2		100 x 100 x 50	
	1-1/2 x 1-1/2 x 3/4		40 x 40 x 20		2-1/2 x 2-1/2 x 1-1/2		65 x 65 x 40		4 x 4 x 2		100 x 100 x 50	
	1-1/2 x 1-1/2 x 1		40 x 40 x 25		2-1/2 x 2-1/2 x 2		65 x 65 x 50		4 x 4 x 2-1/2		100 x 100 x 65	
	1-1/2 x 1-1/2 x 1-1/4		40 x 40 x 32		3 x 3 x 1		80 x 80 x 25		4 x 4 x 3		100 x 100 x 80	

SPRINKLER ELBOW	Size	
	in	mm
	1/2 x 1/2	15 x 15
	3/4 x 1/2	20 x 15
	1 x 1/2	25 x 15
	1 x 3/4	25 x 20
	1	25

FEMALE ADAPTER	Size	
	in	mm
	1/2	15
	3/4	20
	1	25
	1-1/4	32
	1-1/2	40
	2	50
	2-1/2	65

FEMALE SPRINKLER HEAD ADAPTER	Size	
	in	mm
	3/4 x 1/2	20 x 15
	1 x 1/2	25 x 15
	1 x 3/4	25 x 20

Note: Available in BSPT and NPT

Note: Available in BSPT and NPT

Note: Available in BSPT and NPT

SPRINKLER HEAD TEE W/ BRASS	Size	
	in	mm
	1/2 x 1/2	15 x 15
	3/4 x 1/2	20 x 15
	1 x 1/2	25 x 15
	1-1/4 x 1/2	32 x 15
	1-1/2 x 1/2	40 x 15
	2 x 1/2	50 x 15

MALE ADAPTER W/ BRASS	Size	
	in	mm
	1	25
	1-1/4	32
	1-1/2	40
	2	50

FLANGE RUBBER	Size	
	in	mm
	2	50
	2-1/2	65
	3	80

## BLAZEMASTER UL FITTINGS

ELBOW 90°	Size	
	in	mm
	3/4	20
	1	25
	1-1/4	32
	1-1/2	40
	2	50
	2-1/2	65
	3	80

ELBOW 45°	Size	
	in	mm
	3/4	20
	1	25
	1-1/4	32
	1-1/2	40
	2	50
	2-1/2	65
	3	80

CROSS TEE	Size	
	in	mm
	3/4	20
	1	25
	1-1/4	32
	1-1/2	40
	2	50
	2-1/2	65
	3	80

TEE	Size	
	in	mm
	3/4	20
	1	25
	1-1/4	32
	1-1/2	40
	2	50
	2-1/2	65
	3	80

ENDCAP	Size	
	in	mm
	3/4	20
	1	25
	1-1/4	32
	1-1/2	40
	2	50
	2-1/2	65

COUPLING	Size	
	in	mm
	3/4	20
	1	25
	1-1/4	32
	1-1/2	40
	2	50
	2-1/2	65
3	80	

REDUCING TEE	Size				
	in		mm		
	1x1/4	25 x 25	20 x 20	2x2x1	50 x 50 x 25
	1-1/4x1-1/4	32 x 32	32 x 15	2x2x1-1/2	50 x 50 x 40
	1-1/4x1-1/4x3/4	32 x 32	20 x 20	2-1/2x2-1/2x1	65 x 65 x 25
	1-1/4x1-1/4x1	32 x 32	25 x 25	2-1/2x2-1/2x1-1/4	65 x 65 x 32
	1-1/2x1-1/2x1/2	40 x 40	15 x 15	2-1/2x2-1/2x1-1/2	65 x 65 x 40
	1-1/2x1-1/2x3/4	40 x 40	20 x 20	2-1/2x2-1/2x2	65 x 65 x 50
	1-1/2x1-1/2x1	40 x 40	25 x 25	3x3x2	80 x 80 x 50
	1-1/2x1-1/2x1-1/4	40 x 40	32 x 32	3x3x2-1/2	80 x 80 x 65
	2x2x3/4	50 x 50	20 x 20		

SPRINKLER ELBOW	Size	
	in	mm
	3/4 x 1/2	20 x 15
	1 x 1/2	25 x 15

Note: Available in BSPT and NPT

FEMALE ADAPTER	Size	
	in	mm
	1	25
	1-1/4	32
	1-1/2	40
	2	50

Note: Available in BSPT and NPT

SPRINKLER ADAPTER (SOCKET)	Size	
	in	mm
	3/4 x 1/2	20 x 15
	1 x 1/2	25 x 15

Note: Available in BSPT and NPT

FEMALE THREADED TEE ADAPTER (SOCKET)	Size	
	in	mm
	3/4 x 1/2	
	1 x 1/2	
	1-1/4 x 1/2	

Note: Available in BSPT and NPT

MALE ADAPTER W/ BRASS	Size	
	in	mm
	1	25
	1-1/2	40

## ACCESSORIES

PIPE CUTTER	Size
	1/2" - 1-1/2" (15 - 40 MM)
ROTARY PIPE CUTTER	Size
	6 - 63 MM

DEBURRING TOOL	Size
	1/2" - 2"

WELD ON BLAZEMASTER CEMENT	Size
	1 PINT (16 oz.)

## JOINING BLAZEMASTER CPVC FIRE SPRINKLER SYSTEM



### 1.) Cutting

Cut pipe squarely using a ratchet cutter, a wheel-type plastic tubing cutter, a power saw, or a fine toothed saw.



### 2.) Deburring

Use a chamfering tool or other tool to remove burrs and fittings from the inside and outside of the pipe.



### 3.) Jointing Preparation

Using a clean, dry rag, wipe loose dirt and moisture from the fitting socket and pipe end.



### 4.) Application of Cement

Apply solvent cement outside the Spigot of pipe using a brush or dauber.

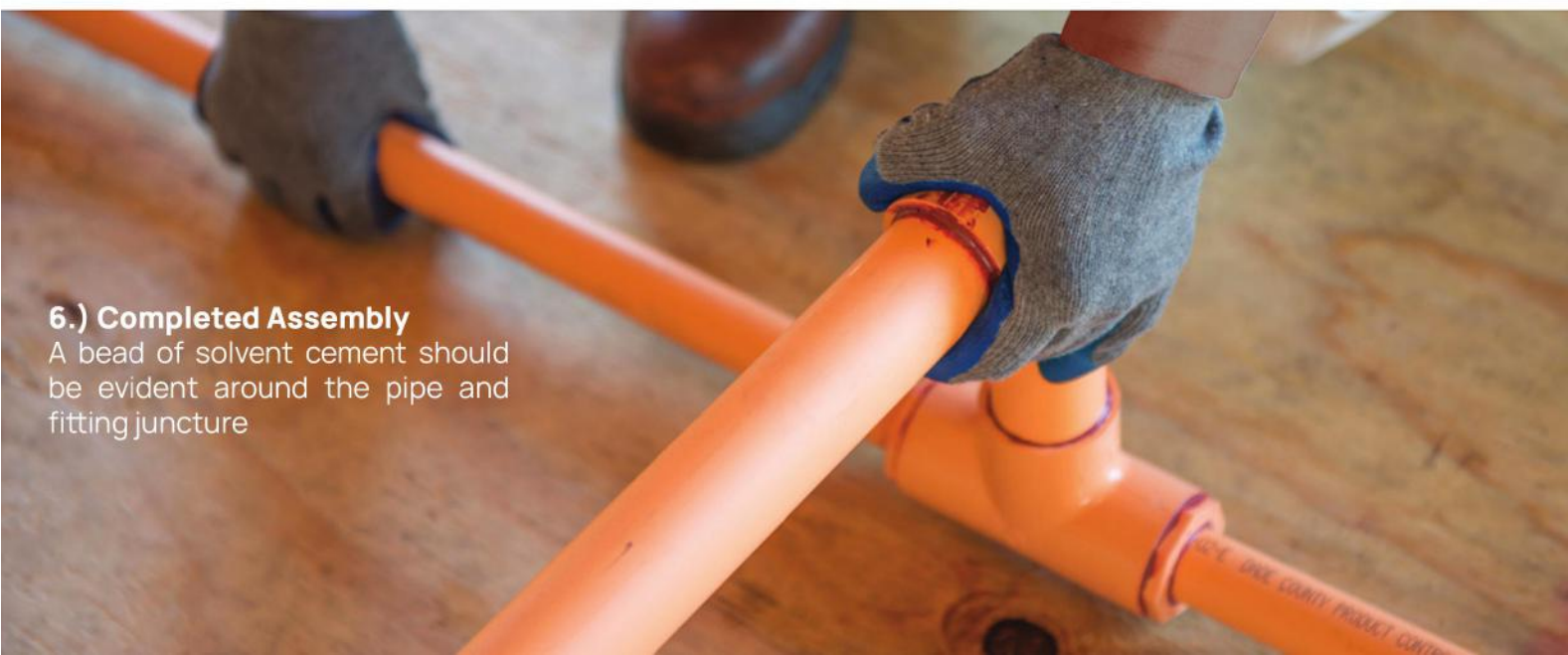


Apply solvent cement inside the fitting socket. Do not puddle the cement in fitting.



### 5.) Assembling

Immediately insert the pipe into the fitting socket while rotating the pipe. 1/4 turn and hold for 30 seconds.



### 6.) Completed Assembly

A bead of solvent cement should be evident around the pipe and fitting juncture

**PROJECTS : LOCAL**

**I. Residential**



**Century Commonwealth**  
Quezon City - 22 Storeys



**The Royalton**  
Pasig City - 64 Storeys



**Viridian**  
San Juan City - 53 Storeys



**Oceanaire**  
Pasay City - 17 Storeys



**D University Place**  
Manila City - 33 Storeys



**iPacific Residences**  
Manila City - 23 Storeys



**The Imperium**  
Pasig City - 62 Storeys



**Solano Hills**  
Paranaque City - 5 Storeys



**Avila Tower**  
Quezon City  
23 Storeys & 41 Storeys



**Crescent Park**  
The Fort, BGC - 28 Storeys



**Blue Sapphire Residence**  
The Fort BGC - 27 Storeys



**The Grand Hamptons II**  
Taguig City - 20 Storeys

**II. Commercial & Hospital**



**Bohol Hennan Resort**  
Panglao, Bohol



**Tambuli Beach Club**  
Mactan Island, Cebu



**Grand Imperial Hotel**  
Iloilo City



**Mandarin Plaza Hotel**  
Cebu City



**Manila Doctor's Hospitals**  
Manila City



**UST General Hospital**  
Manila City

**PROJECTS : ABROAD**

**I. Residential**



**Brickell View West (13 Storeys)**



**Circle On Cavill (69 Storeys)**



**Solimar Condo (12 Storeys)**



**5th and Madison (24 Storeys)**



**1800 Club (42 Storeys)**



**Marina Bay Club (12 Storeys)**

**II. Hotel**



**Classic Residence by Hyatt**



**Shangri-La Hotel, Vancouver**



**Holiday Inn Express, West Buckhead**



**Waterfront Marriott, Seattle**



**Renaissance Hotel**



**Springhill Suites**

**III. Office & School**



**State Capitol Building Boise**



**University of Chicago**



**Slippery Rock University**



**Ketchikan General Hospital**



**Santa Fe Hospital**



**Baptist Memorial Hospital**

**IV Hospital**

## OUR LATEST BUREAU OF FIRE PROTECTION MEMORANDUM

Republic of the Philippines  
 Department of the Interior and Local Government  
 Bureau of Fire Protection  
 NATIONAL HEADQUARTERS  
 Agham Road, Brigy Bagong Pag-asa, Quezon City

**MEMORANDUM**

**TO:** All BFP Regional Directors  
NFTI Director  
Provincial/District Fire Marshals/City/Municipal Fire Marshals

**SUBJECT:** Limitations and Applicability of Chlorinated Polyvinyl Chloride (CPVC) Pipes and Fittings for Sprinkler System

**DATE:** 08 June 2015

1. The introduction of new methods and technologically-advanced equipments/gadgets in the prevention and suppression of fires have helped the agency in fulfilling its mandates effectively and efficiently. Nonetheless, any product, technology, system and/or device intended to be used for the safety measures in buildings, specifically for fire sprinkler system, still have limitations in its applications and must be regulated to ensure that safety will not be compromised and the provisions of the Fire Code will still be strictly followed.

2. Relatively, a memorandum dated 21 March 2012 was issued, to give the field units a clear and categorical guidance on the use of CPVC Pipes and Fittings for Sprinkler System, however, it seems that its provisions and/or contents have been overlooked, if not totally unaware, by the field units. Hence, the following conditions enumerated on the aforesaid memorandum are hereby reiterated and must be considered first by the local BFP offices prior to approval of applications submitted to their office:

- Any product, technology, system and/or device specifically for Fire Sprinkler System can be permitted, provided that it complies with appropriate provisions of National Fire Protection Association (NFPA), Listing Agencies such as but not limited to Underwriter Laboratories (UL), Factory Mutual (FM), Global Loss Prevention Certification Board (LPCB), and other internationally-accepted standards, as well as supplementary and/or complimentary standards cited thereon;
- For CPVC Pipes and Fittings, and its Sealant, NFPA 13 series permits its use, provided that they are installed in accordance with their listing limitations, including installation instructions. On the other hand, the BFP may refer to NFPA 25 on the CPVC Water-based Fire Sprinkler System inspection, testing and maintenance.
- As per NFPA 13 (Standard for the installation of Sprinkler System), light hazard occupancies include occupancies having uses a conditions similar to animal shelters, churches, clubs, educational hospitals (including animal hospitals and veterinary facilities), institutional kennels, libraries (except large stock rooms), museums, nursing or convalescent homes, offices (including data processing), residential, restaurant seating areas, theaters and auditoriums (including stages and prosceniums), and unused attics. All high-rise building/structure applications are allowable subject to NFPA 14 light hazard occupancy limitations.

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d. As per NFPA 1 (Fire Prevention Code), light hazard occupancies may include some buildings or rooms occupied as offices, classrooms, churches, assembly halls, guest room areas of hotels/motels, etc. This classification anticipates that the majorities of content items are either noncombustible or so arranged that a fire is not likely to spread rapidly.

3. Considering the above, it is worthy to note that UL-listed CPVC Pipes and Fittings, and its Sealants for Fire Sprinkler Systems are applicable for light hazard occupancies as defined in NFPA 13. Additional applications, including, but not limited to air plenum, system risers, underground attic and garage installations, shall be referred to the CPVC manufacturer and/or design engineer as prescribed/allowed by NFPA or other internationally-accepted standards and/or listings, together with supplementary and/or complimentary standards.

4. For widest dissemination and compliance

**BY AUTHORITY OF THE CHIEF, BFP:**

IGMEYO U. BONDOC, JR.  
 SSUPT (OSC) BFP  
 Director for Fire Safety and Prevention

## OTHER BRANDS



BUILDING IT WITH

# ATLANTA INDUSTRIES

Unit 35th Atlanta Centre, #31 Annapolis St., Greenhills, San Juan City  
 Tel. nos.: 723.0781 to 88  
 Fax no.: 744.4703 | 584.2997  
 Website: <http://www.atlanta.ph>  
 Email: [marketing@atlanta.ph](mailto:marketing@atlanta.ph)  
 Like us on Facebook [atlantaindustriesinc](https://www.facebook.com/atlantaindustriesinc)