ASTRAL PIPES

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Please get in touch with us between 10 a.m. to 6 p.m.

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REV:00/09/18

ASTRAL PIPES

ASTRAL FIREPRO®

ADVANCED CPVC FIRE SPRINKLER SYSTEM

PIPES THAT FIGHT FIRE.

Innovations & Recognitions

- First to introduce CPVC piping system in India (1999)
- First to launch lead free uPVC piping system in India (2004)
- Corp Excel- National SME Excellence Award (2006)
- First to get NSF Certification for CPVC piping system in India (2007)
- First to launch lead free uPVC column pipes in India (2012)
- Enterprising Entrepreneur of the year 2012-13
- Business Standard Star SME of the year (2013)
- Inc. India Innovative 100 for Smart Innovation under category of "Technology" (2013)
- India's Most Promising Brand Award (2014)
- Value Creator Award during the first ever Fortune India Next 500 (2015)
- India's Most Trusted Brand Award (2015)
- India's Most Trusted Pipe Brand Award (2016)
- ET Inspiring Business Leaders of India Award (2016)
- India's Most Attractive Pipe Brand Award (2016)
- Fortune India 500 Company (2016)
- Consumer Validated Superbrands India (2017)

*As per Brand Trust Report 2016 by TRA

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Astral- The Pro India Pipe Company

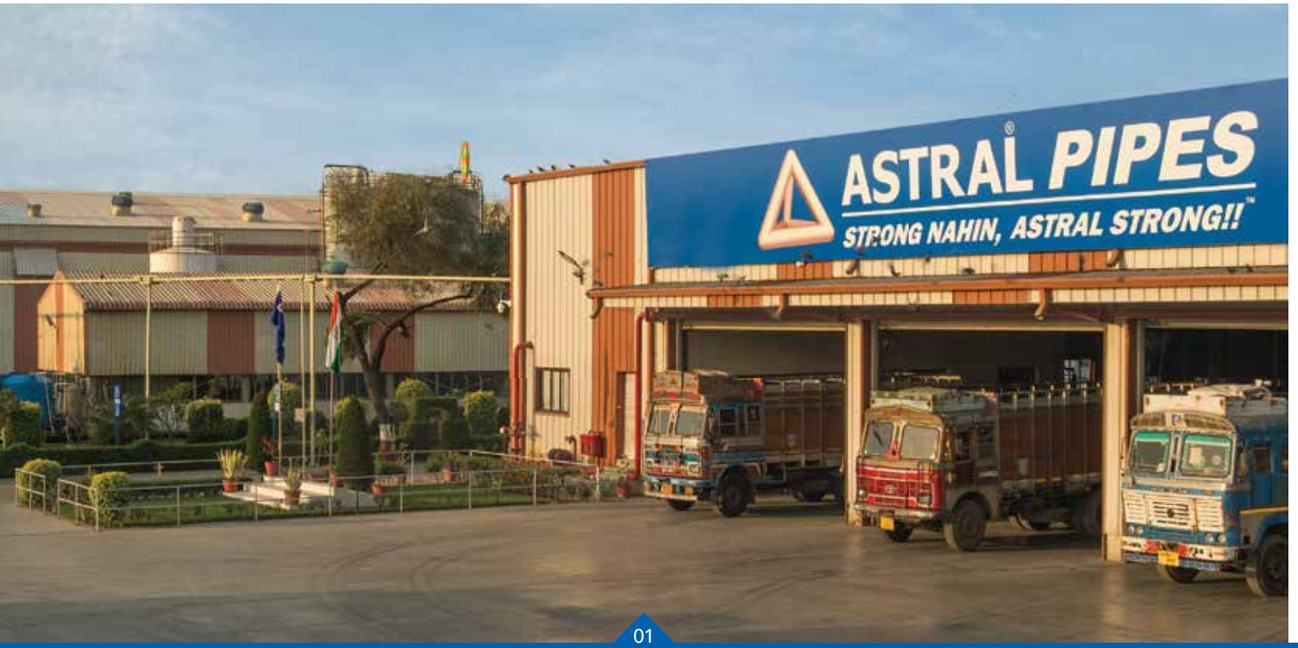
Established in 1996 with the aim to manufacture best-in-globe plastic piping systems, Astral Pipes fulfils emerging piping needs of millions of houses and adds extra mileage to India's developing real estate fraternity with the hallmark of unbeaten quality and innovative piping solutions. Keeping itself ahead of technology curve, Astral has always been a front runner in the piping category by bringing innovation and getting rid of old, primitive and ineffective plumbing methods. Bringing CPVC in India, and pioneering in this technology, have set Astral apart and enabled it to obtain NSF approval for its CPVC pipes and fittings. Astral went beyond category codes by launching many industry firsts, like launching India's first lead-free uPVC pipes for plumbing as well as for stream water, just to name a few.

Astral Pipes offers the widest product range across this category when it comes to product applications. Astral Pipes is equipped with production facilities at Santej and Dholka in Gujarat, Hosur in Tamil Nadu and Ghilot in Rajasthan to manufacture plumbing systems, drainage systems, agriculture systems, fire sprinkler piping systems, industrial piping and electrical conduit pipes with all kinds of necessary fittings.

Astral Pipes has recently acquired Rex Polyxtrusion Pvt. Ltd. which enables to expand its product range in terms of offering corrugated piping for drainage & cables, polyolefin cable channels, sewage treatment plants, plastic sheathing ducts, suction houses, telecommunication PLB ducts and sub-surface drainage systems. This range helps Astral to establish a strong foothold in infrastructure & agriculture sector in the constantly evolving business of piping. Rex has production facilities at Sangli in Maharashtra and Sitarganj in Uttarakhand.

In 2014, Astral forayed into the adhesives category by acquiring UK-based Seal It Services Ltd. and Kanpur based Resinova Chemie Ltd. which manufactures adhesives, sealants and construction chemicals. With five manufacturing facilities now in this business segment, Astral has strengthened its presence in the category and made rapid inroads.

Brand Astral stands for innovation and for setting new trends in the piping industry. Bringing newer piping technologies and continuous innovation in existing as well as new products has been the focal point at Astral. This special emphasis helps the brand set the bar higher and lead amongst others by example. Astral is also known for its compromise-free quality and exceeds consumer's expectations. Right from introducing new piping technologies to innovative brand communications in the category, Astral's brand mission has been to maintain and grow a commanding presence in the minds of customers and to deliver promised values consistently.



Introduction

Astral Fire Pro pipes and fittings are designed specifically for fire sprinkler system. They are made from a specialty thermoplastic known chemically as Chlorinated Polyvinyl Chloride (CPVC).

Astral Fire Pro pipes and fittings provide unique advantages in sprinkler installations including superior hydraulics, ease of joining, increased hanger spacing in comparison to other thermoplastics and ease of assembly.

Astral Fire Pro is the new industry standard in automtatic fire sprinkler piping system. Astral Fire Pro CPVC pipes and fittings are fully approved for use in all light and ordinary hazardous rooms or otherwise light hazardous applications as per NFPA 13, in both new and retrofit construction, such as:

- High-rise buildings (including apartments and hotels)
- Schools and Institutions
- One and Two family dwellings

SYSTEM BENEFITS:

- No precutting and expensive fabrication required
- Easily connected to other sprinkler piping system
- Flexibility in the piping for greater ease of installation
- Resistant to rust, scale and foreign contaminant build up / Inexpensive tools required for installation
- Easily repairing or modification on site
- Designed to a 50 year life expectancy

ASTRAL FIREPRO®
ADVANCED CPVC FIRE SPRINKLER SYSTEM

Features

IGNITION RESISTANCE

Astral Fire Pro CPVC has a flash ignition temperature of 480°C which is the lowest temperature at which sufficient combustible gas is evolved that can be ignited by a small external flame. Many other ordinary combustibles, such as wood, ignite at 260°C or less. Accordingly, Astral Fire Pro system cannot be the ignition source of a fire.

BURNING RESISTANCE

Astral Fire Pro 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, Astral Fire Pro CPVC will not burn unless a flame is constantly applied and stops burning when the ignition source is removed.

LOW FRICTION LOSS

With a Hazen-Williams friction coefficient of C=150, Astral Fire Pro's smooth interior surface offers lower friction loss than metal systems, enables to use smaller pipe diameters and save on material costs.

TEMPERATURE / PRESSURE RATING

Astral Fire Pro pipes and fittings (¾" - 3" (20 - 80 mm)) are rated for continuous service of 175 psi (1207 KPa) at 150°F (65°C). Astral Fire Pro pipes and fittings are suitable for use in areas where ambient temperatures are within the range of 35°F (2°C) to 150° F (66°C).

Excellent Fire Retardant Properties

FLAMMABILITY

Astral Fire Pro CPVC is ideally suited for wet automatic fire sprinkler system due to its outstanding balance of properties such as light weight, excellent corrosion resistance, low friction loss and ease of fabrication. Astral Fire Pro CPVC is unique in that it offers outstanding resistance to fire and low smoke generation qualities. Because of these features, Astral Fire Pro system can be used in plenum spaces as defined by NFPA 90A, the National Standard for the Installation of Air Conditioning and Ventilating Systems.

HEAT OF COMBUSTION

Astral Fire Pro CPVC has a significantly lower heat of combustion at 7,700 BTU's/lb, compared to Douglas fir at 9,040 BTU's/lb, and polypropylene at nearly 20,000 BTU's/lb. Materials with a high heat of combustion perpetuate a combustible mixture which ignites creating more heat and the burning process becomes self-sustaining.

FLAME SPREAD/SMOKE GENERATION

Astral Fire Pro CPVC materials have been evaluated for the Flame Spread and Smoke Generation characteristics.

Typical Physical Properties

Sl No	Parameter	Unit	Typical Value
1	Density	g/cm^3	1.51
2	Tensile Strength	MPa	55
3	Modulus of Elasticity	MPa	2700
4	Compressive Strength, ps	MPa	62
5	Coefficient of Linear Expansion	in./(in. °F)	3.2×10^{-5}
6	Flame Spread	--	0
7	Smoke Development	--	5-20
8	Limiting Oxygen Index	%	60
9	Flash Ignition Temperature	°C	482
10	Flammability	---	Flame Retardant, V0

Astral Fire Pro Pipe Dimensions

Conforming to IS 16088 & As per ASTM F442

Nominal Size		Outside Diameter, in. (mm)				Wall Thickness, in. (mm)			
		Average		Tolerance		Minimum		Tolerance	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
¾″	20	1.050	26.7	±0.004	±0.10	0.078	1.98	±0.020	0.51
1″	25	1.315	33.4	+0.005	+0.10	0.097	2.46	+0.020	0.51
1-¼″	32	1.660	42.2	+0.005	+0.10	0.123	3.12	+0.020	0.51
1-½″	40	1.900	48.2	+0.006	+0.10	0.141	3.58	+0.020	0.51
2″	50	2.375	60.3	+0.006	+0.10	0.176	4.47	+0.021	0.53
2-½″	65	2.875	73.0	+0.007	+0.10	0.213	5.41	+0.026	0.66
3″	80	3.500	88.9	+0.008	+0.20	0.259	6.58	+0.031	0.79

Fittings: Astral Fire Pro CPVC Sprinkler fittings conform to the requirement of ASTM F438 (Schedule 40) & ASTM F439 (Schedule 80). Female threaded adapters for sprinkler head connections will contain brass inserts or other suitable metallic inserts.

Solvent Cement: Astral Fire Pro CPVC socket connections should be joined with IPS weld on solvent cement which meets ASTM F493. No other solvent cements are recommended for use with Astral Fire Pro products and use of such non-proved welding agents will invalidate the manufacturer's warranty.

Astral Fire Pro pipes & fittings are go through the stringent quality test from raw material to production and the final product.

- Raw material test
- Dimensions & visual appearance
- Opecity test
- Reversion test
- Vicat softening temperature test
- Density test
- Fire exposure test
- Flammability test
- Short term & Long term hydraulic pressure test
- Impact test
- Flattening test
- Tensil strength test
- Kinking resistance test

Astral Fire Pro CPVC System for Builders and Developers:

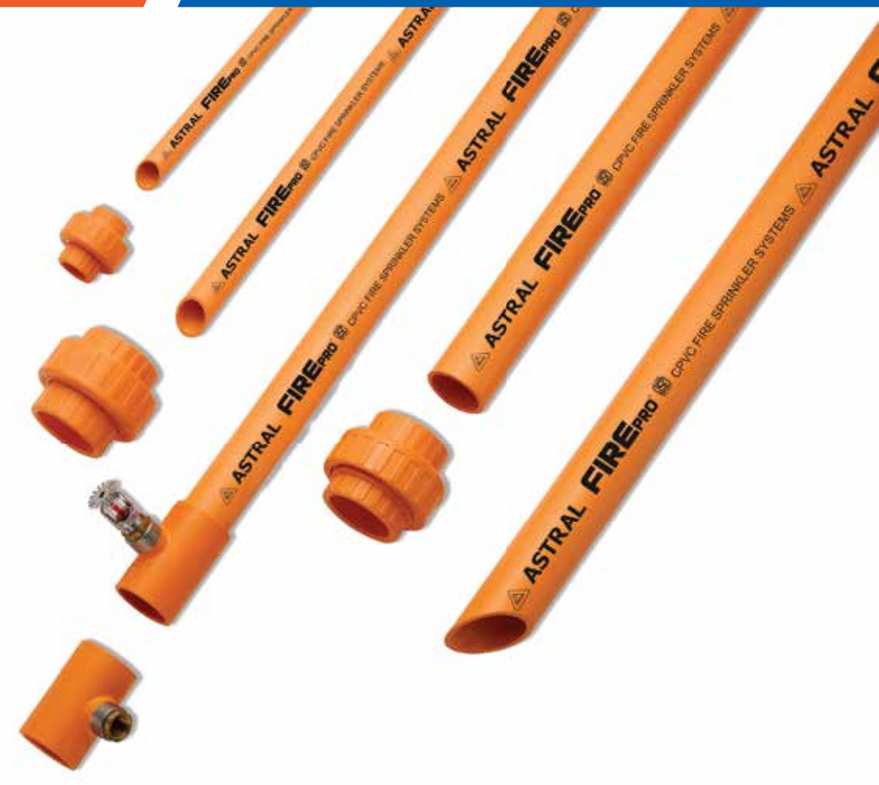
Astral Fire Pro pipes and fittings significantly reduce labour and transportation costs on typical installations because CPVC pipe is easily handled, stored, cut and joined. Prices for Astral Fire Pro CPVC pipes and fittings are more stable than metal system. Plus, heavy equipment needed to install metal and other piping systems which is not required with Astral Fire Pro pipes and fittings; As a result, installation cost of Astral Fire Pro CPVC system is significantly lower than metal and other system.

The inherent immunity to Microbiologically Influenced Corrosion (MIC) of Astral Fire Pro pipes and fittings means this system provides a long-term trouble-free installation. As well as there is significantly less inconvenience for occupants during retrofit construction.

Astral Fire Pro CPVC System for Designers, Architects and Engineers:

Astral Fire Pro pipes and fittings offer greatly enhanced design flexibility. With a Hazen-Williams C factor of 150, its smooth inner surface results in lower friction loss than metal system. This means you can use smaller pipe diameters which lowers your material cost and provides additional design flexibility in retrofit applications.

Astral Fire Pro pipes and fittings have a 50 years life expectancy with a safety factor of two. Properly selected and correctly installed, Astral Fire Pro pipes and fittings provide years of maintenance-free service.



Astral Fire Pro CPVC System for Contractors

Installation of Astral Fire Pro pipes and fittings is fast and easy. No special rigging or heavy equipment is required to move the pipe into a building. Pipe can be cut on-site with simple hand tools. A one-step joining system makes installations fast, keeping labor costs to a minimum. Because no heavy equipment is involved in moving and installing pipes and fittings on-site, there is less conflict with other trades. Work can be done quickly and easily around dry wallers, framers and other mechanical contractors.

Most hangers designed for metal pipe are suitable for Astral Fire Pro CPVC system. Because Astral Fire Pro pipe is rigid and inherently strong, it requires fewer hangers and supports than other thermoplastic pipe, reducing material and labor costs even more.

Specifications and Stadnards :

ASTM F442	Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR)
ASTM F439	Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80
ASTM D1784	Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
IS 16088	Chlorinated Polyvinyl Chloride (CPVC) Pipes For Automatic Sprinkler Fire Extinguishing System - Specification
IS 15225	Chlorinated Polyvinyl Chloride Compounds Used for Pipes and Fittings - Specification

Ultra-modern Fire Sprinkler System With Lower Installation Cost

CPVC FIRE PRO PIPES

CPVC FP SDR 13.5 PIPE (3 mtr. Length)

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
20	¾	M541130302	30
25	1	M541130303	20
32	1¼	M541130304	15
40	1½	M541130305	10
50	2	M541130306	08
65	2½	M541130307	05
80	3	M541130308	03

CPVC FP SDR 13.5 PIPE (5 mtr. Length)

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
20	¾	M541130502	20
25	1	M541130503	15
32	1¼	M541130504	10
40	1½	M541130505	10
50	2	M541130506	06
65	2½	M541130507	05
80	3	M541130508	03

CPVC FIRE PRO FITTINGS

COUPLER

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
20	¾	M542801002	300
25	1	M542801003	175
32	1¼	M542801004	100
40	1½	M542801005	80
50	2	M542801006	50
65	2½	M542801007	33
80	3	M542801008	15

ELBOW 90°

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
20	¾	M542800502	200
25	1	M542800503	125
32	1¼	M542800504	60
40	1½	M542800505	50
50	2	M542800506	25
65	2½	M542800507	18
80	3	M542800508	12

REDUCER

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
25x20	1x¾	M542801116	200
32x20	1¼x¾	M542801118	140
32x25	1¼x1	M542801119	125
40x20	1½x¾	M542801121	100
40x25	1½x1	M542801122	100
40x32	1½x1¼	M542801123	80
50x20	2x¾	M542801125	70
50x25	2x1	M542801126	75
50x32	2x1¼	M542801127	75
50x40	2x1½	M542801128	75
65x20	2½x¾	A542801130	As Req
65x25	2½x1	A542801131	As Req
65x32	2½x1¼	M542801132	48
65x40	2½x1½	M542801133	40
65x50	2½x2	M542801134	40
80x20	3x¾	A542801136	As Req
80x25	3x1	A542801137	As Req
80x32	3x1¼	A542801138	As Req
80x40	3x1½	M542801139	27
80x50	3x2	M542801140	30
80x65	3x2½	M542801141	30

ELBOW 45°

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
20	¾	M542802302	200
25	1	M542802303	150
32	1¼	M542802304	80
40	1½	M542802305	60
50	2	M542802306	35
65	2½	M542802307	20
80	3	M542802308	12

TEE

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
20	¾	M542800102	125
25	1	M542800103	80
32	1¼	M542800104	45
40	1½	M542800105	30
50	2	M542800106	18
65	2½	M542800107	12
80	3	M542800108	07

CPVC FIRE PRO FITTINGS

CROSS TEE

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
20	¾	M542802402	50
25	1	M542802403	50
32	1¼	M542802404	30
40	1½	M542802405	25
50	2	M542802406	15
65	2½	M542802407	09
80	3	M542802408	06

FEMALE ADAPTOR BRASS THREAD

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
20	¾	M542801702	100
25	1	M542801703	75
32	1¼	M542801704	40
40	1½	M542801705	30
50	2	M542801706	20
65	2½	M542801707	09
80	3	M542801708	07

MALE ADAPTOR BRASS THREAD

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
20	¾	M542801402	100
25	1	M542801403	60
32	1¼	M542801404	50
40	1½	M542801405	40
50	2	M542801406	20
65	2½	M542801407	09
80	3	M542801408	08

UNION

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
20	¾	M542802602	120
25	1	M542802603	80
32	1¼	M542802604	50
40	1½	M542802605	40
50	2	M542802606	30

END CAP

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
20	¾	M542804102	550
25	1	M542804103	300
32	1¼	M542804104	200
40	1½	M542804105	120
50	2	M542804106	70
65	2½	M542804107	40
80	3	M542804108	25

REDUCING TEE

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
25x20	1x¾	M542800216	100
32x20	1¼x¾	M542800218	50
32x25	1¼x1	M542800219	50
40x20	1½x¾	M542800221	40
40x25	1½x1	M542800222	40
40x32	1½x1¼	M542800223	30
50x20	2x¾	M542800225	25
50x25	2x1	M542800226	20
50x32	2x1¼	M542800227	20
50x40	2x1½	M542800228	20
65x20	2½x¾	A542800230	As Req
65x25	2½x1	M542800231	15
65x32	2½x1¼	M542800232	15
65x40	2½x1½	A542800233	15
65x50	2½x2	M542800234	12
80x20	3x¾	A542800236	As Req
80x25	3x1	M542800237	10
80x32	3x1¼	A542800238	As Req
80x40	3x1½	M542800239	10
80x50	3x2	M542800240	09
80x65	3x2½	M542800241	09
25x20x20	1x¾x¾	A542800295	As Req
32x25x20	1¼x1x¾	A542800296	As Req
32x25x25	1¼x1x1	A542800219	As Req
40x32x25	1½x1¼x1	A5428002108	As Req

REDUCER BUSH

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
25x20	1x¾	M542801916	400
32x20	1¼x¾	M542801918	275
32x25	1¼x1	M542801919	250
40x20	1½x¾	M542801921	175
40x25	1½x1	M542801922	175
50x32	1½x1¼	M542801923	150
50x20	2x¾	M542801925	100
50x25	2x1	M542801926	100
50x32	2x1¼	M542801927	100
50x40	2x1½	M542801928	100
65x32	2½x1¼	M542801932	55
65x40	2½x1½	M542801933	55
65x50	2½x2	M542801934	70
80x40	3x1½	M542801939	35
80x50	3x2	M542801940	52
80x65	3x2½	M542801941	52

ASTRAL PIPES

ASTRAL FIREPRO® ADVANCED CPVC FIRE SPRINKLER SYSTEM

CPVC FIRE PRO FITTINGS

SPRINKLER HD ELBOW 90°

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
20x15	¾x½	M542800714	75
25x15	1x½	M542800715	50

SPRINKLER HD BUSH (SPIGOT)

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
25x15	1x½	M542802015	250

SPRINKLER HD TEE

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
20x20x15	¾x¾x½	M5428003100	75
25x20x15	1x¾x½	M5428003101	50
25x25x15	1x1x½	M542800315	50
25x15x25	1x½x1	M542800399	40

VANSTONE FLANGE

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
20	¾	M542803402	80
25	1	M542803403	60
32	1¼	M542803404	50
40	1½	M542803405	35
50	2	M542803406	30
65	2½	M542803407	18
80	3	M542803408	12

SPRINKLER HD ADAPTOR

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
20x15	¾x½	M542801214	150
25x15	1x½	M542801215	100
25x20	1x¾	M542801216	100

ONE PIECE FLANGE

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
80	3	M542803208	12

SPRINKLER HD ADAPTOR (SPIGOT)

SIZE		PART NO.	STD. PKG.
(mm)	(inch)		NOS.
20x15	¾x½	M542809914	150
25x15	1x½	M542809915	125

ADHESIVE SOLUTUION

SIZE	PART NO.	STD. PKG.
(ml.)		Rate Per Tin.
237 ml. Tin	MIPSB237	-
473 ml. Tin	MIPSB473	-
946 ml. Tin	MIPSB946	-

Expansion and Contraction

FIRE PRO CPVC Fire sprinkler products, like all piping materials, expand and contract with changes in temperature. If the coefficient of linear expansion is 3.4 x 10^{-5} inch / inch-°F, a 25° F (4° C) change in temperature will cause an expansion of 1 inch (25 mm) for a 100-foot (30 m) straight length. For most operating and installation conditions, expansion and contraction can be accommodated at change of direction.

Thermal Expansion based on Fire Pro CPVC compound.

Temp Change ΔT °C	Length of Run in Meter													
	1	2	4	6	8	10	12	14	16	18	20	30	40	50
	Thermal Expansion ΔL (cm)													
10	0.06	0.12	0.24	0.37	0.49	0.61	0.73	0.86	0.98	1.10	1.22	1.84	2.45	3.06
15	0.09	0.18	0.37	0.55	0.73	0.92	1.10	1.29	1.47	1.65	1.84	2.75	3.67	4.59
20	0.12	0.24	0.49	0.73	0.98	1.22	1.47	1.71	1.96	2.20	2.45	3.67	4.90	6.12
25	0.15	0.31	0.61	0.92	1.22	1.53	1.84	2.14	2.45	2.75	3.06	4.59	6.12	7.65
30	0.18	0.37	0.73	1.10	1.47	1.84	2.20	2.57	2.94	3.30	3.67	5.51	7.34	9.18
35	0.21	0.43	0.86	1.29	1.71	2.14	2.57	3.00	3.43	3.86	4.28	6.43	8.57	10.71
40	0.24	0.49	0.98	1.47	1.96	2.45	2.94	3.43	3.92	4.41	4.90	7.34	9.79	12.24
45	0.28	0.55	1.10	1.65	2.20	2.75	3.30	3.86	4.41	4.96	5.51	8.26	11.02	13.77
50	0.31	0.61	1.22	1.84	2.45	3.06	3.67	4.28	4.90	5.51	6.12	9.18	12.24	15.30

Support Spacing

Since CPVC fire sprinkler pipe is rigid, it requires fewer supports than flexible, plastic systems. Astral Polytechnik Ltd. recommends use of hangers that are designed and listed for supporting the CPVC Fire Sprinkler pipe. However, some hangers designed for steel pipe may be used if their suitability is clearly established.

Note : These hangers must have a minimum ½ inch (13 mm), load-bearing surface and they must be selected to accommodate the specific pipe size. In addition, they can not contain rough or sharp edges that contact the pipe and they must not bind the pipe from axial movement. Vertical runs must be supported so that the weight of the run is not on a fitting or a joint.

Standard Support Spacing

Nominal Size Inches / (mm)	Max. Support Spacing Feet / (Metres)
¾ (20.0)	5½ (1.67)
1 (25.0)	6 (1.83)
1¼ (32.0)	6½ (1.98)
1½ (40.0)	7 (2.13)
2 (50.0)	8 (2.43)
2½ (65.0)	9 (2.74)
3 (80.0)	10 (3.05)

Installation Procedure

CUT PIPE

- Cut pipe square. As joints are sealed at the base of the fitting socket. An angled cut may result in joint failure.
- Acceptable tools include mitre saw, mechanical cut off saw or wheel cutter. Wheel type cutters must employ a blade designed for plastics.

REMOVE BURR & BEVEL

- Remove all burrs from inside and outside of pipe with a knife-edge, file or deburring tool Chamfer (bevel) the end of the pipe 10°-15°

CLEAN

- Remove surface dirt, grease or moisture with a clean dry cloth.

DRY FIT

- With light pressure, pipe should go one third to one half of the way into the fitting socket. Pipes and Fittings that are too tight or too loose should not be used.

APPLICATOR

- Use an applicator that is one half the pipe diameters.
- Too large an applicator will force excessive cement in to the inside of small diameter fittings.
- Too small applicator will not apply sufficient cement to large diameter systems.

CEMENT

- Apply a full even layer of cement to the outside of a pipe and medium layer of cement to the inside of a fitting.

JOIN PIPE & FITTING

- Assemble pipe and fitting socket till it contacts socket bottom. Give pipe a quarter turn. Hold pipe and fitting together until the pipe dose not back out.
- Remove excessive cement from the exterior. A properly made joint will show a continue bead of cement around the perimeter.
- Observe all safety precautions.
- Systems should be installed in a good and workmanlike manner consistent with normal industry standards and in conformance with all local plumbing, fire and building code requirements. Failure to follow proper installation practices, procedures or techniques can result in system failure, property damage or personal injury.
- Pipes and fittings should be used for their intended purpose as defined by local plumbing and building codes and the applicable ASTM standards.
- Follow manufacturer's instructions for all related products.

Set and Cure Time

Inadequate curing of solvent cement joints may cause pipe failure or leakage.

Solvent cement set and cure times are a function of pipe size, temperature, relative humidity, and tightness of fit.

Cure times should be increased when moisture is present such as during cut-ins to live sprinkler lines. The assembly must be allowed to set, without any stress on the joint, for 1 to 5 minutes, depending on pipe size and temperature. Following the initial set period, the assembly can be handled carefully, avoiding significant stresses to the joint.

Refer to Tables 1, 2, and 3 for MINIMUM cure times prior to pressure testing.

Table 1: Ambient Temperature Cure Times for Test Pressures of 225 psi / 15.8 kg/cm² (maximum

Nominal Pipe Size (Metric)	60°F to 120°F (16°C to 49°C)	40°F to 59°F (4.4°C to 16°C)	0°F to 39°F (-17.8°C to 4.4°C)
¾" (20mm)	1 hour	4 hours	48 hours
1" (25mm)	1 ½ hours	4 hours	48 hours
1 ¼" & 1 ½" (32 & 40 mm)	3 hours	32 hours	10 days
2" (50mm)	8 hours	48 hours	Note 1
2 ½" & 3" (65 & 80 mm)	24 hours	96 hours	Note 1

Table 2: Ambient Temperature Cure Times for Test Pressures of 200 psi / 14.1 kg/cm² (maximum)

Nominal Pipe Size (Metric)	60°F to 120°F (16°C to 49°C)	40°F to 59°F (4.4°C to 16°C)	0°F to 39°F (-17.8°C to 4.4°C)
¾" (20 mm)	45 minutes	1 ½ hours	48 hours
1" (25 mm)	45 minutes	1 ½ hours	48 hours
1 ¼" & 1 ½" (32 & 40 mm)	1 ½ hours	16 hours	10 days
2" (50 mm)	8 hours	36 hours	Note 1
2 ½" & 3" (65 & 80 mm)	8 hours	72 hours	Note 1

Note 1: Solvent cement can be applied at temperatures below 40°F (4.4°C) in all sizes. However, for the 2 inch size & larger, the temperature must be raised to 40°F (4.4°C) or above and allowed to cure per the recommended times before the system is filled and pressurized.

Table 3: Ambient Temperature Cure Times for Test Pressures of 100 psi / 7.0 kg/cm² (maximum)

Nominal Pipe Size (Metric)	60°F to 120°F (16°C to 49°C)	40°F to 59°F (4.4°C to 16°C)	0°F to 39°F (-17.8°C to 4.4°C)
¾" (20 mm)	15 minutes	15 minutes	30 minutes
1" (25 mm)	15 minutes	30 minutes	30 minutes
1 ¼" (32 mm)	15 minutes	30 minutes	2 hours

Notice : 1-½ inch (40 mm) and larger must be tested ONLY in accordance with Table 1 or Table 2.