



YOUR TRUST IS OUR REPUTATION

ARAIB TRADING GROUP COMPANY

ARAIB CPVC PIPES & FITTINGS

44 Years of Experience and Excellence



1.0 ARAIB CPVC PIPES

Araib CPVC Pipes are our finest selection of pipes for hot and cold-water applications. In comparison to many other plastic piping systems, the CPVC pipes can tolerate greater temperatures since they are made with the most recent technology and premium raw materials.

Leading MEP Consultants, architects, builders, plumbers, and quality conscious individuals choose this product because of its high degree of dependability provided by our strict quality assurance methodology across all phases of production. We advise using our CPVC pipes for electric water heaters as well as for water supply and distribution in both residential and commercial applications.

ARAIB CPVC Schedule 80 pipes are manufactured as stipulated in ASTM F-441 showing the manufacturer name, material designation code, pipe size, schedule size with pressure rating in PSI water at 73°F (23°C) and manufacturing date. ARAIB CPVC pipes are grey color, plain ended and offered in standard lengths of 6 meters and with a range of pressure ratings.

1.1 ARAIB CPVC PIPES DIMENSIONAL SPECIFICATION

TABLE 1.1.1: DIMENSION BASED ON ASTM F441 SCH.80

Nominal Pipe Size	Outside Diameter		Wall Thickness		Nominal Weight Kg/m	Maximum Working Pressure @ 73°F	
	Min mm	Max mm	Min mm	Max mm		PSI	MPa
1/2"	21.3	21.54	3.73	4.22	0.337	850	5.86
3/4"	26.7	26.9	3.91	4.4	0.455	690	4.76
1"	33.4	33.7	4.55	5.1	0.670	630	4.34
1 1/4"	42.2	42.4	4.85	5.4	0.927	520	3.59
1 1/2"	48.3	48.4	5.08	5.7	1.125	470	3.24
2"	60.3	60.5	5.54	6.2	1.560	400	2.76
3"	88.9	89.1	7.62	8.5	3.178	370	2.55
4"	114.3	114.5	8.56	9.6	4.650	320	2.21
6"	168.3	168.5	10.97	12.3	8.872	280	1.93

Note: Reducing the working pressure is advised whenever the temperature rise to 23°C or 73°F.

TABLE 1.1.2 : TEMPERATURE CORRECTION FACTOR

OPERATING TEMPERATURE	°C	23-27	32	38	43	46	49	52	54	60	66	71
	°F	70-80	90	100	110	115	120	125	130	140	150	160
% OF WORKING PRESSURE		1.00	0.92	0.85	0.77	0.74	0.70	0.66	0.62	0.55	0.47	0.40

1.2 ARAIB CPVC PIPES MATERIAL PROPERTIES

TABLE 1.2.1: ALL VALUES at 23°C or 73°F

Properties	Test Method as per ASTM	Unit	Values
General Properties			
Specific Gravity	D-792	g/cm ³	1.55
Water Absorption	D-570 / 24hrs	%	0.03
Cell Designation	D-1784		23447
Flame Spread E - 84			< 25
Poission's Ratio @ 73°F			0.38
Friction Co-efficient	Hazen-William	(Factor) C	150
Mechanical Properties			
Tensile Strength	D-638 / type I	PSI	8,000
		MPA	55
Modulus of Elasticity in Tension	D-638/type I	PSI	>360,000
		MPA	>2,500
Comprehensive Strength	D-695	PSI	10,100
		MPA	70
Izod Impact	D-256/notch	ft.-lbs/in. of notch	1.5
		JM	80
Hardness (Rockwell)	D-785	Rockwell	119
	D-2240	Durometer	80 ± 3
Flammability Properties			
Flammability	D-635	Resistance	Self-extinguishing
Rate of Burning		s	<10
Extent Burning		mm	<15
Flammability Rating	UL-94/0.062"	Rating	V-0
Thermal Properties			
Coefficient of Thermal Linear Expansion	D - 696	in / in / °F	3.4x10 ⁻⁵
		cm / (cm °C)	6.3 x 10 ⁻⁵
Thermal Conductivity	D - 177	BTU / hr / ft ² / °F/in	0.95
		Wm / °k / m ²	0.14

2.0 ADVANTAGES OF ARAIB CPVC PIPES

1. ADVANTAGES OF ARAIB CPVC PIPES

ARAIB CPVC pipes can withstand almost all acids, alkalis, alcohols, halogens, and other corrosive liquids. As an electrical non-conductor, it prevents galvanic or electrolytic corrosion, which is the root of costly repairs. Better flow, fewer maintenance costs, and a longer functional life are all ensured by non-corroding qualities.

2. CHEMICAL RESISTANCE

Excellent chemical resistance is provided by ARAIB CPVC pipe against most acids, alcohols, alkalis, salt solutions, and halogens. Additionally, ARAIB pipes do not suffer from atmospheric effects, making them ideal for outdoor installations.

3. NON-ABSORPTION OF ADDITIVES

ARAIB pipes are safe to use in the water supply for drinking for its non-absorption pipe of additives nor any odor and taste coming from the pipe.

4. MECHANICAL ADVANTAGE

Araib Pipes are around 1/5 lighter than steel pipes. Due to its light weight, it lowers the cost of transportation and most importantly the level of convenience is high in the installation process.

5. THERMAL CONDUCTIVITY

Due to the lower thermal conductivity of ARAIB pipes compared to metal, heat is lost less, the fluid is heated more evenly, and condensation is not formed on the pipe wall, preventing "sweating" and acting as an insulator. In some situations, insulation may be entirely removed.

6. HIGH BACTERIAL GROWTH RESISTANCE

Fungi and bacteria, especially those that lead to corrosion in metal piping systems, are not able to thrive on ARAIB pipe systems because of its high resistance capacity.

7. CONVENIENT INSTALLATION, HANDLING, & MAINTENANCE

ARAIB pipes are very convenient and effortless to install due to its lightweight and not costly.

8. LOW THERMAL EXPANSION

ARAIB pipes have a low coefficient of thermal expansion thus it lowers down the amount of pipe in enlarging when not water is flowing, less need for expansion loops.

9. FIRE RESISTANCE

ARAIB pipes are self-extinguishing and non-combustible. Except if an external flame source is applied, pipes won't ignite.

10. EFFECT ON UV EXPOSURE

Araib pipes' UV exposure doesn't make a big impact on its quality for it doesn't shatter the polymer, only have a little discoloration.

TABLE 2.0.1: JOINT CURING TIME GUIDELINES

Relative Humidity 60 % or Less	Test pressure for pipe size 1/2" to 1 1/4"		Test pressure for pipe size 1 1/2" to 3"		Test pressure for pipe size 4" to 6"	
	UP to 180 PSI	Above 180 to 370 PSI	UP to 180PSI	Above 180 to 315 PSI	UP to 180 PSI	Above 180 to 315 PSI
60°F - 100°F	1 HOUR	6 HOURS	2 HOURS	12 HOURS	6 HOURS	24 HOURS
40°F - 60°F	2 HOURS	12 HOURS	4 HOURS	24 HOURS	12 HOURS	48 HOURS
0°F - 40°F	8 HOURS	48 HOURS	16 HOURS	96 HOURS	18 HOURS	8 HOURS

NOTE: ABOVE MENTIONED DATA ARE ESTIMATES AND APPROXIMATE.

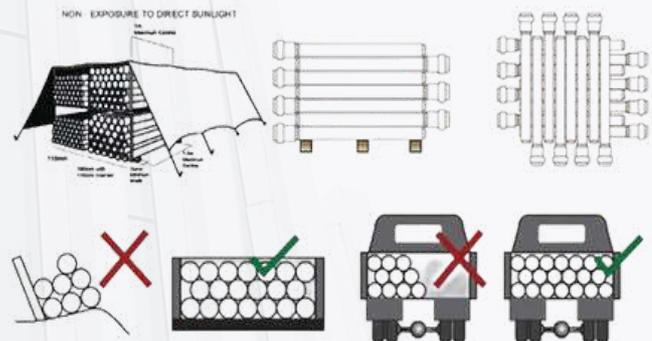
TABLE 2.0.2: AVERAGE OF JOINTS / 1KG OF SOLVENT CEMENT

Pipe Diameter	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"
No. of Joints	300	200	125	90	90	40	30	10

3.0 IMPORTANT GUIDELINES

3.1 HANDLING AND STORAGE

Araib pipes and fittings require a strict extra care in handling as well as on installation due to its lower impact resistance. It is highly advised to burying the pipes and fittings in the ground for not less than 1 meter especially to areas where heavy equipment or other heavy vehicles are regularly crossing except if they are put in a metal conduit casing which can avoid such fatigue on the pipes and fittings.



3.2 TRENCH PREPARATION

Removal of rocks or pebbles, board, empty tin cans, bottles, and other remains must be taken into consideration in trench preparation. Welding pipes and fittings can be done using solvent cements, so twisting pipes, pressure testing, and other pipe movements should be done when the solvent cement is totally dry.

3.3 SUPPORT SPACING

Araib pipes' modulus elasticity are smaller than metal pipes so the advisable support spacing be considered according to its room temperature as well the working temperature. See the recommended maximum support spacing in feet of Araib pipes in TABLE 3.0.1.

3.4 NON-LIQUID TRANSPORT

Araib pipes and fittings are made in an advanced formulation and most effective to liquid transport like water and corrosive chemicals. It's prohibited the use of plastic pipes and fittings to air or compressed gas systems.

3.5 PIPE MOVEMENT

It's highly advised and recommend all kinds of pipe movements must be done when a solvent cement welded be totally dry to prevent the unsuccessful welding for the pipes and fittings.

3.6 TESTING

Testing air or compressed gas are strongly prohibited and not advised. Araib Group isn't responsible to any testing that isn't according to its way of usage.

3.7 WORKING PRESSURE / TEMPERATURE

Refer and verified to TABLE 1.1.2 for working pressure before putting the pipe system into a maximum working pressure.

TABLE 3.0.1: RECOMMENDED MAXIMUM SUPPORT SPACING IN FEET

Pipe Size (in)	Schedule						
	730F (230C)	1000F (380C)	1200F (490C)	1400F (600C)	1600F (710C)	1800F (820C)	2000F (920C)
1/2"	3.1	3.0	2.9	2.8	2.7	2.7	2.5
3/4"	3.5	3.4	3.3	3.2	3.1	3.0	2.8
1"	4.1	3.9	3.8	3.7	3.6	3.5	3.3
1 1/4"	4.6	4.5	4.4	4.2	4.1	4.0	3.7
1 1/2"	5.0	4.8	4.7	4.6	4.4	4.3	4.0
2"	5.6	5.5	5.3	5.2	5.0	4.9	4.5
Pipe Size (in.)	Schedule						
	730F (230C)	1000F (380C)	1200F (490C)	1400F (600C)	1600F (710C)	1800F (820C)	2000F (920C)
2 1/2"	6.5	6.3	6.1	5.9	5.7	5.6	5.2
3"	7.2	7.0	6.8	6.6	6.4	6.2	5.8
4"	8.3	8.1	7.8	7.6	7.4	7.1	6.7
6"	10.4	10.1	9.8	9.5	9.2	9.0	8.4

4.0 ARAIB CPVC PIPES & FITTINGS APPLICATIONS

1. INDUSTRIAL FIELD

For the industrial field, it's very advantageous to use for its high level of resistance to almost all chemicals, non-corrosive, and lightweight that makes very convenient for the installer.



2. DRINKING WATER SUPPLY

Araib pipes are manufactured by the most advanced machineries and formulation according to international standards. It's safe to be used for drinking water supply. Araib pipes doesn't affect its taste, color, and the odor.



3. SOIL, WASTE, AND DRAINAGE SEWER SYSTEM

Araib CPVC pipes and fittings have the capacity to withstand chemical waste, drainage system for both commercial or factory, and homes.



4. IRRIGATION SYSTEM

Araib CPVC pipes and fittings have the capacity to withstand chemical waste, drainage system for both commercial or factory, and homes.



5. PLUMBING

Araib pipes are reliable to be used for hot and cold water supply for factories, commercial buildings, and residential homes.



6. MINING

NEPROPLAST UPVC pipes particularly are well suited for draining corrosive liquids found in mines. They make an ideal vent line for pits because they are easily installed in hard-to-reach places.



5.0 SOLVENT CEMENT WELDING OF ARAIB PIPES & FITTINGS

Direction:

Follow the procedure correctly in welding the pipes and fittings to have a good quality result. Please refer the steps below or ask for assistance to experts.

Wheel Cutter



CLEANER APPLICATION
(Fitting-Pipe-Fitting)



CEMENT APPLICATION
(Pipe-Fitting-Pipe)



ASSEMBLY & CLEANING



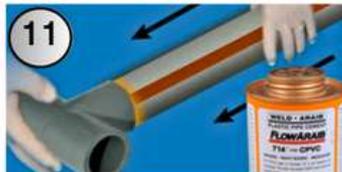
Deburring/Beveling



CLEANER Application



Solvent Cement Application



Dry fit of pipe and fitting



CLEANER Application



Solvent Cement Application



6.0 SOLVENT CEMENT AVERAGE SET AND CURE TIMES

TABLE 6.1: AVERAGE JOINT CURE SCHEDULE FOR CPVC & PVC SOLVENT CEMENTS

Average Joint Cure Schedule for CPVC & PVC Solvent Cements						
Relative Humidity 60% or less	PVC/CPVC Pipes Size Range Diameter: ½" to 1 ¼" Thickness: 20mm to 40mm		PVC/CPVC Pipes Size Range Diameter: ½" to 2" Thickness: 50mm to 63mm		PVC/CPVC Pipes Size Range Diameter: 2½" to 8" Thickness: 75mm to 200mm	
Temp. range during assembly & cure periods	Up to 160psi or 11 BAR	160 to 370psi 11 to 26 BAR	Up to 160psi or 11 BAR	160 to 315psi or 11 to 22 BAR	Up to 160psi or 11 BAR	160 to 315psi or 11 to 22 BAR
16°C-38°C/60°F-100°F	15 minutes	6 hours	30 minutes	12 hours	1.5 hours	24 hours
5°C-16°C/40°F-60°F	20 minutes	12 hours	45 minutes	24 hours	4 hours	48 hours
-18°C-5°C/0°F-40°F	30 minutes	48 hours	1 hour	96 hours	72 hours	8 days

TABLE 6.2: PIPE SIZE EQUIVALENT CHART – INCHES / MILLIMETERS

Pipe Size Equivalent Chart – INCHES / MILLIMETERS										
IN.	½"	¾"	1"	1 ¼"	1 ½"	2"	2 ½"	3"	4"	6"
MM.	20	25	32	40	50	63	75	90	110	160

TABLE 6.3: AVERAGE INITIAL SET SCHEDULE CPVC & PVC SOLVENT CEMENTS

Average Initial Set Schedule CPVC & PVC Solvent Cements			
Temperature Range (°F / °C)	PVC/CPVC Pipes Size Range Diameter: ½" to 1 ¼" Thickness: 20mm to 40mm	PVC/CPVC Pipes Size Range Diameter: ½" to 2" Thickness: 50mm to 63mm	PVC/CPVC Pipes Size Range Diameter: 2½" to 8" Thickness: 75mm to 200mm
16°C-38°C / 60°F-100°F	2 minutes	5 minutes	30 minutes
5°C-16°C / 40°F-60°F	5 minutes	10 minutes	2 hours
-18°C-5°C / 0°F-40°F	10 minutes	15 minutes	12 hours

7.0 CPVC FITTINGS

7.0.1 ASTM SCHEDULE SERIES

ASTM F437 & F439 SCH. 80 CPVC PRESSURE FITTING

ARAIB ASTM F-series Solvent Weld CPVC Molded Fittings are made to meet the needs of domestic, commercial, and industrial plumbing systems as well as other pressure applications. Thanks to the use of superior raw materials and cutting-edge production processes, our ASTM F-series Fittings meet all relevant industry regulations as well as our own strict quality control criteria.

ARAIB A single manufacturer must create the whole system of pipes and fittings. Take a look at following Tables:

Table 7.0.1.1: ASTM F437 & F439 Sch. 80 CPVC Pressure Fitting

ARAIB PIPE / FITTINGS SPECIFICATION	
FITTING STANDARD	ASTM F437 & F439 Sch. 80 CPVC Pressure Fitting
Applications	Hot & Cold water
Diameter Std.	See Next Page
Nominal Sizes	½", ¾", 1", 1¼", 1½", 2"
Color	LIGHT GRAY
Fittings Compound	ASTM D1784 Cell Class 23447
Fittings Joint Std.	ASTM D2672
Installation Std.	ASTM D2774

ARAIB employs CPVC Compound that has received NSF certification in order to produce high-quality goods.



PVC PIPE-BASED EXHAUST SYSTEMS

Araib pipes' modulus elasticity is lower than that of metal pipes, thus both the working temperature and room temperature should be taken into account while determining the ideal support spacing. See TABLE 6 for the recommended maximum support spacing for Araib pipes in feet.

WARNING:

Procedure must be correctly followed in order to avoid fatalities, severe injuries, and property damage.

WARNING:

Flue gas shouldn't be heated above 60 °C at any time. When PVC pipe is subjected to temperatures above 60 °C, it may melt or alter form, causing property damage and leaking of exhaust fumes.

CARBON MONOXIDE'S POTENTIAL FOR POISONING:

Every local, state, and federal plumbing and HVAC installation standard and regulation must be followed during vent pipe construction.

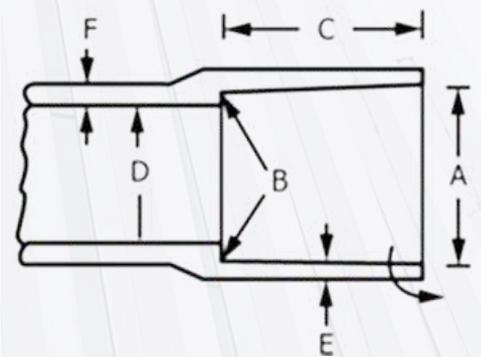
Note: For any equipment that has been placed against any code or rule, ARAIB disclaims any liability.

REMARKS:

1. Only estimating may be done with these measurements.
2. All dimensions are given in inches (millimeters), unless otherwise specified.
3. With a 2:1 safety factor, ASTM Pressure Rating at 23° and 82°C.
4. Determine internal diameter by multiplying the least wall thickness by the nominal outer diameter.

TABLE 7.0.1.2: CPVC SCHEDULE 80 - ASTM F439 SOCKET DIAMETER

CPVC Schedule 80 - ASTM F439 Socket Diameter			Socket Length (Minimum) C
Nominal Size	Entrance A [MM]	Bottom B [MM]	
½	0.848 [21.54]	0.836 [21.23]	0.875 [22.22]
¾	1.058 [26.87]	1.046 [26.57]	1.000 [25.40]
1	1.325 [33.66]	1.310 [33.27]	1.125 [28.58]
1¼	1.670 [42.42]	1.655 [42.04]	1.250 [31.75]
1½	1.912 [48.56]	1.894 [48.11]	1.375 [34.93]
2	2.387 [60.63]	2.369 [60.17]	1.500 [38.10]



7.0.2 ASTM D2466/ D2665 SCH. 40 PVC PRESSURE/ DWV FITTING. REFER TO FOLLOWING TABLES

ASTM D2466/ D2665 Sch. 40 PVC Pressure/ DWV Fitting. Refer to Following Tables

CPVC ELBOW 90° SCH.80

S.NO	PART NO	Size	PACK
1	ARAIB-CPVC-001	½ "	400
2	ARAIB-CPVC-002	¾ "	200
3	ARAIB-CPVC-003	1"	150
4	ARAIB-CPVC-004	1 ¼ "	75
5	ARAIB-CPVC-005	1 ½ "	60
6	ARAIB-CPVC-006	2"	36



CPVC MALE ADAPTOR BRASS IN- SERT SCH.80

S.NO	PART NO	Size	PACK
7	ARAIB-CPVC-007	½ "	400
8	ARAIB-CPVC-008	¾ "	200
9	ARAIB-CPVC-009	1"	120
10	ARAIB-CPVC-010	1 ¼ "	96
11	ARAIB-CPVC-011	1 ½ "	72
12	ARAIB-CPVC-012	2"	36



CPVC TEE 90° BRASS INSERT SCH.80

S.NO	PART NO	Size	PACK
13	ARAIB-CPVC-013	½ " x ½ "	100
14	ARAIB-CPVC-014	¾ " x ½ "	80



CPVC ELBOW 90° BRASSINSERT SCH.80

S.NO	PART NO	Size	PACK
51	ARAIB-CPVC-0 51	½ " x ½ "	120
61	ARAIB-CPVC-0 61	¾ " x ½ "	100



CPVC TEE 90 ° SCH.80

S.NO	PART NO	Size	PACK
17	ARAIB-CPVC-017	½ "	400
18	ARAIB-CPVC-018	¾ "	200
19	ARAIB-CPVC-019	1"	120
20	ARAIB-CPVC-020	1¼ "	96
21	ARAIB-CPVC-021	1½ "	72
22	ARAIB-CPVC-022	2"	36



CPVC COUPLING SCH.80

S.NO	PART NO	Size	PACK
23	ARAIB-CPVC-023	½ "	400
24	ARAIB-CPVC-024	¾ "	200
25	ARAIB-CPVC-025	1"	120
26	ARAIB-CPVC-026	1¼ "	96
27	ARAIB-CPVC-027	1½ "	72
28	ARAIB-CPVC-028	2"	36



CPVC MALE ADAPTORSCH.80

S.NO	PART NO	Size	PACK
29	ARAIB-CPVC-029	½ "	800
30	ARAIB-CPVC-030	¾ "	400
31	ARAIB-CPVC-031	1"	300
32	ARAIB-CPVC-032	1½ "	100
33	ARAIB-CPVC-033	2"	75



CPVC ELBOW 45 ° SCH.80

S.NO	PART NO	Size	PACK
34	ARAIB-CPVC-034	1"	150
35	ARAIB-CPVC-035	1¼ "	100
36	ARAIB-CPVC-036	1½ "	75
37	ARAIB-CPVC-037	2"	40



CPVC UNION SCH.80

S.NO	PART NO	Size	PACK
38	ARAIB-CPVC-038	¾"	100
39	ARAIB-CPVC-0 93	1"	75
40	ARAIB-CPVC-040	1 ¼"	60
41	ARAIB-CPVC-041	1 ½"	48



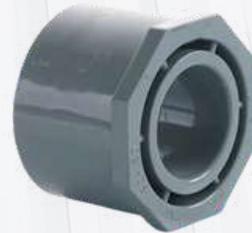
CPVC CRANCK SCH.80

S.NO	PART NO	Size	PACK
42	ARAIB-CPVC-042	½"	300
43	ARAIB-CPVC-043	¾"	200
44	ARAIB-CPVC-044	1"	100



CPVC REDUCING BUSH 90°SCH.80

S.NO	PART NO	Size	PACK
45	ARAIB-CPVC-045	¾" x ½"	600
46	ARAIB-CPVC-046	1" x ¾"	300
47	ARAIB-CPVC-047	1 ¼" x ¾"	400
48	ARAIB-CPVC-048	1 ¼" x 1"	400
49	ARAIB-CPVC-049	2" x 1"	150
50	ARAIB-CPVC-050	2" x 1 ¼"	150



CPVC END CAP SCH.80

S.NO	PART NO	Size	PACK
51	ARAIB-CPVC-051	½"	600
52	ARAIB-CPVC-052	¾"	300
53	ARAIB-CPVC-053	1"	400
54	ARAIB-CPVC-054	1 ¼"	400
55	ARAIB-CPVC-055	1 ½"	150
56	ARAIB-CPVC-056	2"	150



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