



Unplasticized Polyvinyl Chloride Pipes (uPVC)

MBA uPVC pipes are manufactured in accordance to the international standards for different types of usage mainly British and European standards (BS EN 1401, BS EN 1329, DIN 8062, BS 3505/3506, BS 6099). In some cases MBA are manufacturing pipes that are in accordance to the standard of telecommunication companies and contractors.

TECHNICAL DATA OF MODERN BUILDING ACCESSORIES FACTORY uPVC Pipes

PHYSICAL PROPERTIES

Properties at 20_C	Unit	Values	Method of Evaluation
1 Specific Gravity at 23_C		1.43	ASTM D 792
2 Flammability	not support		ASTM D 635
3 Resistance of burning	Sec.	< 30	BS 4607 PART 2.70
4 Softening PT. (VSP 5kgf)	_C	82	BS 2782 - 1976
5 Shore Hardness		81	ASTM D 2240 - 75
6 Thermal Conductivity	W/m-k	0.17	BS 874 - 1973
7 Specific Heat	Cal/g_C	0.25	

MECHANICAL PROPERTIES

Properties at 20_C	Unit	Values	Method of Evaluation
1 Tensile Strength 20_C	Kg/cm ²	481 - 550	ISO R 257
2 Modulus of Elasticity	MN/m	3000	ASTM - 1784
3 Compressive Strength	Kp/cm	668	BS 4607 PART 2:70
4 Flexural Strength	Kp/cm	950	ASTM D 790
5 Elongation at Break	%	> 80	ISO R 527
6 Yield Stress	Kp/cm	> 400	ISO R 527
7 Resistance to Heat	mm	< 2	BS 4607 PART 2:70

CHEMICAL PROPERTIES

Properties at 20_C	Unit	Values	Method of Evaluation
1 Resist to Sulphuric Acid	.g/45cm	-0.13 +3.19	
2 Resist to Methylene Chloride	%	<3	ISO 2508/81
3 Resist. Water Absortion	.mg/cm	<2.0	ISO 2508/81 & DIN 8061

TOXICITY

Properties at 20_C	Unit	Values	Method of Evaluation
1 Pb Toxicity	.mg/L	<0.3	
2 Sn Toxicity	=	<0.02	
3 Zn Toxicity	=	<0.01	

ELECTRICAL PROPERTIES

Properties at 20_C	Unit	Values	Method of Evaluation
1 Volume Resistively	.mg/L	1014	
2 Surface Resistance	.ohm	1012	DIN 53482
3 Power Factor at 10 HERTZ		3	
4 Dielectric strength	V/mil	1400	BS 4607
5 Insulation Resistance	M. ohm	1.1x10 ⁵	BS 4607



Sewerage/Drainage Non-Pressure uPVC Pipes

Due to in demand of supply for the sewerage/drainage non-pressure uPVC pipes in Qatar, we manufacture now this type of pipes in accordance to both British, Dutch & American standards as follows.

1. British Standards:

BS EN 1329 (Formerly BS 5255) Soil & Waste (Above Ground Drainage)			
Nominal Size		Mean Outside Diameter	Wall Thickness
INCH	mm	mm	mm
1 1/4	32	36.15	2.0
1 1/2	40	42.75	2.0
2	50	55.75	2.0
The Standard Length		4.0 Meters	
The Standard Color		Light Gray in Color.	
The Socket Type		Solvent Weld Socket Type	

BS EN 1329 (Formerly BS 4514) Soil & Waste (Above Ground Drainage)			
Nominal Size		Mean Outside Diameter	Wall Thickness
INCH	mm	mm	mm
3	82	82.4	3.2
4	110	110.0	3.2
6	160	160.0	3.2
The Standard Length		3"=> 4.0 Meters, 4 & 6"=>5.8 Meters.	
The Standard Color		Light Gray in Color.	
The Socket Type		Solvent Weld Socket Type	

BS EN 1401-1 (Formerly BS 4660) Sewer & Drainage (Underground)					
Nominal Size (DN/OD)	Nominal Outside Diameter (dn)	Mean Outside Diameter		Wall Thickness SN2 SDR 41	
		dem,min	dem,max	emin	emax
110	110	110.0	110.3	3.2	3.8
160	160	160.0	160.4	4.0	4.6
The Standard Length		4 to 6 Meters.			
The Standard Color		Orange Brown or Dusty Grey			
The Socket Type		Solvent Weld Socket Type			

BS 5481 Gravity Sewerage uPVC Pipes			
Nominal Size		Mean Outside Diameter	Wall Thickness
mm		mm	mm
200		200.0	4.9
250		250.0	6.1
The Standard Length		5.8 & 6.0 Meters.	
The Standard Color		Red (Golden Brown)	
The Socket Type		Solvent Weld & Rubber Ring Seal Socket Type	



2. DIN Standards:

DIN19531 Drain (Above Ground) uPVC Pipe		
Nominal Size	Mean Outside Diameter	Wall Thickness
mm	mm	mm
40	40.0	1.8
50	50.0	1.8
75	75.0	1.8
110	110.0	2.2
125	125.0	2.5
160	160.0	3.2
The Standard Length	4.0, 5.8, & 6.0 Meters	
The Standard Color	Gray and Black in Color.	
The Socket Type	Solvent Weld & Rubber Ring Seal Socket Type	

DIN19534 Sewer (Gravity) uPVC Pipe		
Nominal Size	Mean Outside Diameter	Wall Thickness
mm	mm	mm
110	110.0	3.0
125	125.0	3.0
160	160.0	3.6
200	200.0	4.5
250	250.0	6.1
The Standard Length	5.0, & 6.0 Meters	
The Standard Color	Red (Golden Brown)	
The Socket Type	Solvent Weld & Rubber Ring Seal Socket Type	



MBA Pressure uPVC Pipes

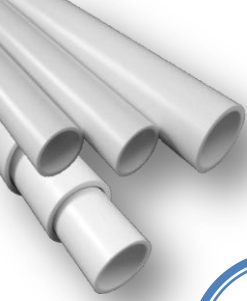
MBA manufactures this pressure pipes for the wide used in the pumped water supply system, irrigation and industrial purposes. These pipes are manufactured in accordance to the following:

1. British Standards:

BS 3505/3506 MBA Pressure uPVC Pipes					
Nominal Size (inch)	Outside Diameter (mm)	Wall Thickness (mm)			
		Class B (6 BAR)	Class C (9 BAR)	Class D (12 BAR)	Class E (15 BAR)
1/2"	21.1				1.7
3/4"	26.6				1.9
1"	33.4				2.2
1 1/4"	42.1			2.2	2.7
1 1/2"	48.1			2.5	3.1
2"	60.2		2.5	3.1	3.9
2 1/2"	75.0		3.0	3.9	4.8
3"	88.7	2.9	3.5	4.6	5.7
4"	114.1	3.4	4.5	6.0	7.3
6"	168.0	4.5	6.6	8.8	10.8
8"	218.8	5.3	7.8	10.3	12.6
The Standard Length	5.0, & 6.0 Meters				
The Standard Color	Dark Gray				
The Socket Type	Solvent Weld Socket Type				
	Rubber ring socket for sizes 4", 6" & 8" Class D & E.				

2. German DIN Standards:

DIN 8062/63 MBA Pressure uPVC Pipes					
Nominal Size (mm)	Outside Diameter (mm)	Wall Thickness (mm)			
		Class 2 (4 BAR)	Class 3 (6 BAR)	Class 4 (10 BAR)	Class 5 (16 BAR)
40	40		1.8	2.9	3.0
50	50		1.8	2.4	3.7
63	63		1.9	3.4	4.7
75	75	1.8	2.2	3.6	5.6
90	90	1.8	2.7	4.3	6.7
110	110	2.2	3.2	5.3	8.2
160	160	3.2	4.7	7.7	11.9
200	200	4.0	5.9	9.6	14.9
225	225	4.5	6.6	10.8	16.7
250	250	4.9	7.3	11.9	18.6
280	280	5.5	8.2	13.4	20.8
315	315	6.2	9.2	15.0	23.4
The Standard Length	5.0, & 6.0 Meters				
The Standard Color	Dark Gray				
The Socket Type	Solvent Weld Socket Type				

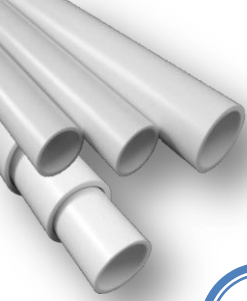


3. ASTM Standards

ASTM D 1785 (Schedule Series) Pressure uPVC Pipes			
Nominal Size (inch)	Outside Diameter (mm)	Wall Thickness (mm)	
		Schedule 40	Schedule 80
1/2"	21.24	2.77	3.73
3/4"	26.57	2.87	3.91
1"	33.27	3.38	4.55
1 1/4"	42.03	3.56	4.85
1 1/2"	48.11	3.68	5.08
2"	60.17	3.91	5.54
2 1/2"	72.84	5.16	7.01
3"	88.70	5.49	7.62
4"	114.07	6.02	8.56
6"	168.00	7.11	10.97
8"	218.70	8.18	12.70
The Standard Length	4.0, 5.8 & 6.0 Meters.		
The Standard Color	For SCH. 40 = White & for SCH 80 = Dark Gray.		
The Socket Type	Solvent Weld		

ASTM D 2241 (SDR - Series) Pressure uPVC Pipes							
Nominal Size (mm)	Outside Diameter (mm)	Wall Thickness (mm)					
		SDR 41	SDR 32.5	SDR 26	SDR 21	SDR 17	SDR 13.5
1/2"	21.24						1.57
3/4"	26.57				1.52	1.57	1.98
1"	33.27			1.52	1.60	1.96	2.46
1 1/4"	42.03		1.52	1.63	2.01	2.49	3.12
1 1/2"	48.11		1.52	1.85	2.29	2.84	3.58
2"	60.17		1.85	2.31	2.87	3.56	4.47
3"	88.70	2.16	2.74	3.43	4.24	5.23	6.58
4"	114.07	2.80	3.51	4.39	5.44	6.73	8.46
6"	168.0	4.11	5.18	6.48	8.03	9.91	12.47
8"	218.70	5.33	6.73	8.43	10.41	12.90	
SDR =	$\frac{\text{Outside Diameter}}{\text{Wall Thickness}}$	The Standard Length		5.8 or 6.0 Meters			
		The Standard Color		White.			
		The Socket Type		Solvent Weld Socket			

ASTM 2279 (PVC) SEWER PIPES		
Normal Size	Outside Diameter (mm)	Wall Thickness (mm)
2"	57.15	1.80
3"	72.55	1.80
4"	107.6	1.90
6"	159.39	2.60
The Standard Length	5.8 Meters	
The Standard Color	Grey	
The Socket Type	Solvent Weld	



uPVC Pipes According to DIN Standards (DIN8062, ISO/DIN 4422)

Nominal	Tolerance	Class 1 (2.5 Bar)		Class 2 (4.0 Bar)		Class 3 (6 Bar)		Class 4 (10 Bar)		Class 5 (16 Bar)	
		Wall mm	Wt Kg/m	Wall mm	Wt Kg/m	Wall mm	Wt Kg/m	Wall mm	Wt Kg/m	Wall mm	Wt Kg/m
180	(+) 0.4	1.8	1.57	3.6	3.02	5.3	4.37	8.6	6.88	13.4	10.4
200	(+) 0.4	1.8	1.74	4	3.7	5.9	5.37	9.6	8.51	14.9	12.8
225	(+) 0.5	1.8	1.96	4.5	4.7	6.6	6.76	10.8	10.8	16.7	16.1
250	(+) 0.5	2	2.4	4.9	5.65	7.3	8.31	11.9	13.2	18.6	19.9
280	(+) 0.5	2.3	3.11	5.5	7.11	8.2	10.4	13.4	16.6	20.8	24.9
315	(+) 0.6	2.5	3.78	6.2	9.02	9.2	13.2	15	20.9	23.4	31.5
355	(+) 0.7	2.9	4.88	7	11.4	10.4	16.7	16.9	26.5	26.3	39.9
400	(+) 0.7	3.2	6.1	7.9	14.5	11.7	21.1	19.1	33.7	29.7	50.8
450	(+) 0.8	3.6	7.65	8.9	18.3	13.2	26.8	21.5	42.7	-	-
500	(+) 0.9	4	9.38	9.8	22.4	14.6	32.9	23.9	52.6	-	-
560	(+) 1.0	4.2	11.8	11	28.1	16.4	41.4	26.7	65.8	-	-
630	(+) 1.1	2	14.6	12.4	35.7	18.4	52.2	30	83.2	-	-



MBA uPVC Electrical Conduit & Cable Ducts

MBA has a variety of electrical conduits and cable ducts which are manufactured in accordance to British Standards, European Standards, Qatar Telecommunication (QTEL), Electricity (Kahrama) and Water Service Company.

BS EN 50086 & BS 6099/2 uPVC Electrical Conduit						
Nominal Size (mm)	Inside Diameter			Wall Thickness (mm)		
	Light	Medium	Heavy	Light	Medium	Heavy
20	17.4	16.9	15.8	1.4	1.6	1.8
25	22.1	21.9	20.6	1.6	1.8	1.9
32	28.6	27.8	26.6	1.7	2.1	2.5
38	34.8	33.6	33.0	1.6	2.3	2.5
50	45.1	44.3	43.2	2.45	2.85	3.2
Standard Length :	All conduits are 2.9 meters in Length					
Standard Color :	All conduits are White or Black in color.					

Electric Conduit Pipes

Modern Building Accessories Factory manufactured combustion-proof PVC cable trunk and conduit are certified by quality inspection organization, fire prevention department and other relevant departments. Combustion-proof of PVC cable trunk and conduit are marked with MBA brand, specifications, temperature of long service time, manufacturer, and fire prevention production license. The certificate of quality bears specification, quantity, and production date and inspector code.

The standard length of pipe is 2.9m; custom-made length is available upon request. MBA insulated conduit pipe and fittings for construction application conform to BS EN 61386-21 and BS EN 500086-2-1 (Formerly BS 6099).

Why conduit pipes?

1. Good Insulation -our product has good insulation property, high anti-current punctures strength, can resist 25kV, therefore no risk once leakage of voltage occurs.
2. Great Impact Resistance – can be buried in concrete, resist compression and impact.
3. Good fire-proofing – our product has high oxygen index, good combustion resistance, self extinguishing.
4. Moisture Proof – resistant to acids, alkalis. No rust occurs like metal pipe.
5. Biotic Resistance – no smell attracting rodent thus it will not suffer from biotic attack.



Characteristic

1. Easy to install and remove – Unique jointing method, very easy to open and assemble.
2. Good Screw fixing – no cracks occurs due to screwing.
3. Attracting Appearance – color in good appearance and it is also recommended for indoor installation.

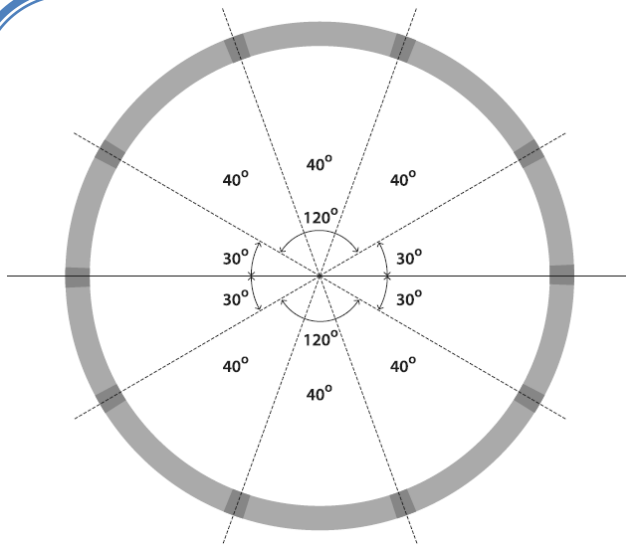


Qatar Telecommunication (QTEL) Standard					
Duct No.	Outside Diameter (mm)	Inside Diameter (mm)	Socket Length (mm)	Duct Length	Wall Thickness
54D	96.5	90.0	100.0	5.9	3.25
56D	56.5	50.0	70.0	3.90	3.25
Standard Color	All ducts & bends are black				
Socket Type	All ducts & bends are solvent weld type				

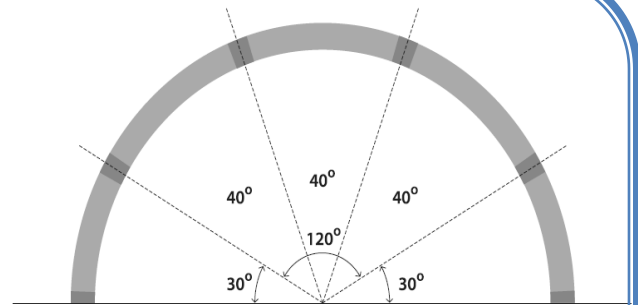
MBA DUCTS (According to QCS)			
Nominal Size (Inch)	Outside Diameter (mm)	Wall Thickness (mm)	Standard Length (meters)
2"	55.75	2.0	4.0
3"	82.4	2.2	4.0
4"	110.0	2.4	5.8
6"	160.0	2.6	5.8
4"	110.0	3.2	5.8
6"	160.0	4.7	5.8
6"	160.0	3.6	5.8
8"	200.0	4.0	5.8
8"	200.0	4.9	5.8
10"	250.0	4.9	5.8
10"	250.0	6.1	5.8
12"	315.0	7.7	5.8
12"	315.0	9.2	5.8
Standard Color	Red, Grey and Black		
Socket Type	All pipes are solvent or rubber socket.		



Perforated Piping Systems



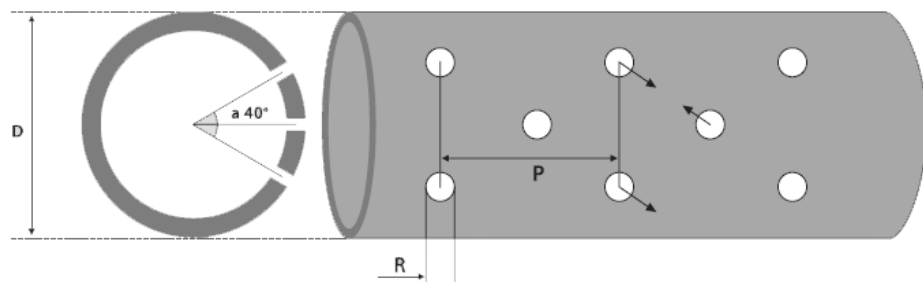
Fully Perforated Pipe



Half Perforated Pipe

Code	Outside Diameter (mm)	Wall Thickness (mm)	Joint Type
MBA-PRF-110	110	3.2	SCI
MBA-PRF-160	160	4.1	SCI
MBA-PRF-200	200	4.9	SCJ or RS
MBA-PRF-250	250	6.1	SCJ or RS
MBA-PRF-315	315	7.7	SCJ or RS

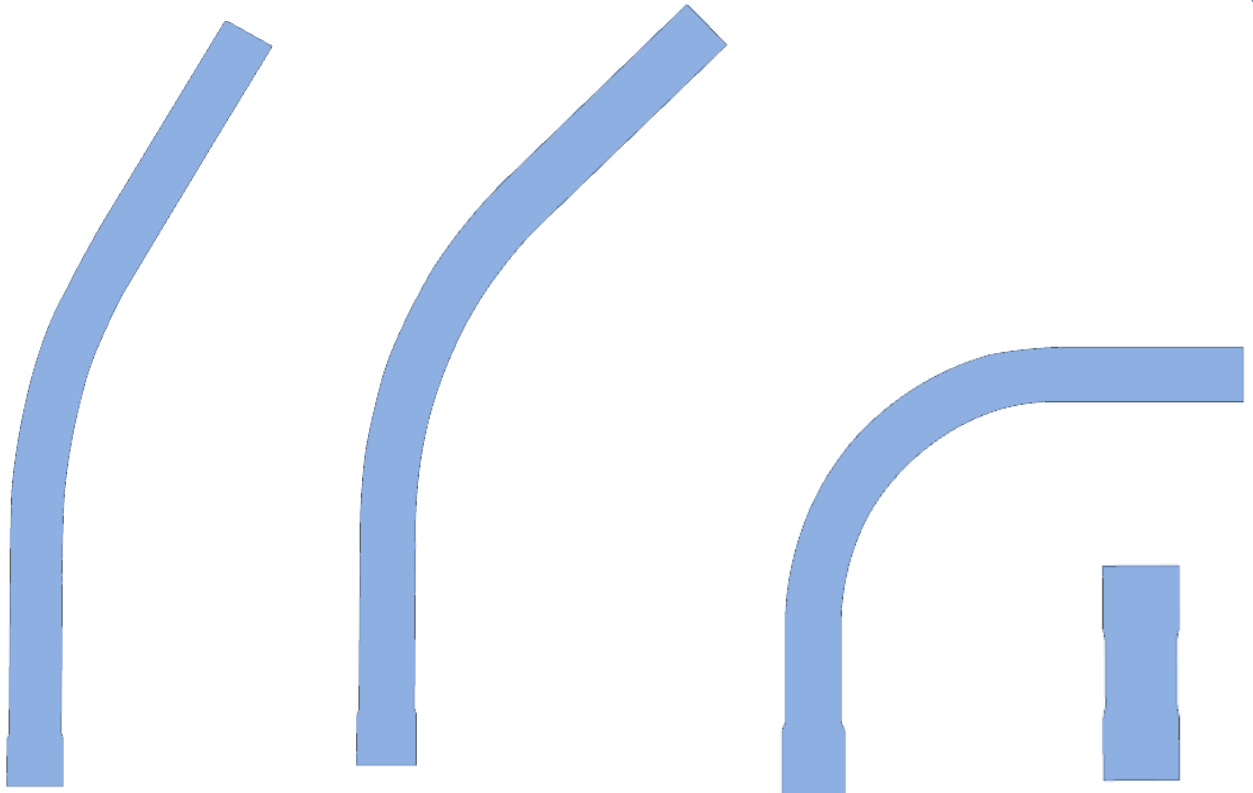
PERFORATED PIPE DATA	
Hole Size (R)	8mm or as required
Hole Spacing (P)	200mm or 250mm along piping axis
Number of Rows	1 to 4 as mentioned in the drawing
Raw Spacing	40° separation between adjacent rows
	120° between outside raw if all four rows are used
Color	Red or grey



Staged Rows



MBA uPVC Bends and Collars



Bend 30°

Bend 45°

Bend 90°

Collar

DIA	Wall Thickness	Bend 30°	Bend 45°	Bend 90°	Collar
110 mm	2.4 mm	✓	✓	✓	✓
160 mm	2.6 mm	✓	✓	✓	✓
160 mm	3.6 mm	✓	✓	✓	✓
56.5 mm	3.25 mm	✓	✓	✓	✓
96.5 mm	3.25 mm	✓	✓	✓	✓