



الشركة المتخصصة للصناعات البلاستيكية
Specialized Co. For Plastic Industries
الصغير و مرار

uPVC PIPES
sandmplastic.com



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About us

Founded in 1976, Specialized Co. for plastic industries was established under the name of Soghayyir & Marrar (S&M), with its headquarters and principal manufacturing site located in the heart of Jordan, Amman.

The company has been the pioneer in:

- UPVC Pipes & fittings manufacturing.
- HDPE Pipes & fittings production.
- CPVC Pipes & fittings Production.
- Corrugated HDPE Pipes & fittings.
- Solvent Cements and Pipe joining materials.
- Plastic Manholes and SMC Manhole Covers.
- Infrastructure supplies and accessories.



Our Expertise

Years of experience have contributed towards our ranking as a major influence in the plastics industry.

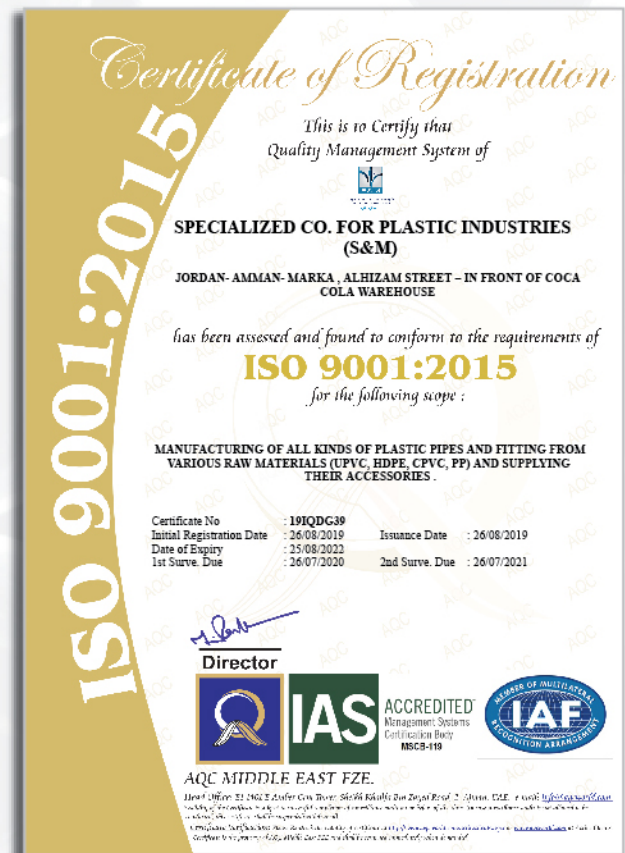
At the Specialized company we provide products, solutions, services and the necessary technical back-up to our clients.

We are a well formed team of specialized engineers and professionals who have the expertise in every critical area of plastic production and development.



Our Commitment

Every time we open our doors we continue a commitment that has been growing since 1976; a happier customer and a satisfied client. We believe that we are not number one but you are.



GENERAL ADVANTAGES OF UPVC PIPES

The principal reason for the great economy of S&M pipes is not so much their cost per meter as delivered to site but rather the dramatic reduction in installation costs which can be achieved by intelligent exploitation of their light weight, availability in longer lengths, ease of joining and their immunity from corrosion. These characteristics are of even greater importance to engineers now that the need to carry out water supply and sewerage schemes, industrial plant installations, etc at minimum cost and maximum reliability.



NON-CORROSION

S&M uPVC pipes resist corrosion caused by acid, alkalis, oils, salts, moisture and the media inside and outside the pipe. It is particularly reliable for resistance to any severe climatic and soil conditions.



SANITARY

S&M uPVC pipes are entirely non-toxic. It will not affect the taste, smell or colour of water or liquid and will not react with any liquid to cause a precipitant.



LOW FLOW LOSS

S&M uPVC pipes have a mirror-smooth surface which minimize resistance and impede the build-up of deposits and corrosive scales.



MECHANICAL STRENGTH

S&M uPVC pipes have great tensile strength yet they are flexible enough to withstand displacement in the pipe line. They will not dent or fatten under pressure.



LIGHT WEIGHT

S&M uPVC pipes are incredibly light. Their specific weight is one fifth of steel pipe. This cuts down transportation costs and facilitates the installation of pipes and reduces its cost.



EASE OF INSTALLATION

S&M uPVC pipes are quick and easy to install, with a complete range of fittings, using solvent cement or rubber joints. Joints are leakproof. uPVC pipes can be cut easily for installation.



FIRE RESISTANCE

S&M uPVC pipes will not support combustion. In the event of fire, flames are unable to travel along the pipe. It is self extinguishing.



EASE OF MAINTAINANCE

S&M uPVC can be quickly repaired with a minimum of complication or cost.



INSULATOR

S&M uPVC pipes are ideal for electric conduits. Because uPVC in itself is an integral insulator, it eliminates the possibility of electrolytic corrosion which so often destroys underground piping.



APPLICATIONS OF S&M UPVC PIPES



Water supplies

Non-toxic uPVC pipes will not affect the taste, color, or smell of drinking water. They will never corrode and are therefore extremely sanitary. Deposits and scales will not build up inside as in the case for conventional steel pipes. Their strength is greater than asbestos pipes.



Irrigation Systems

S&M uPVC pipes are ideal for agricultural irrigation and sprinkler systems. Non-corrosive S&M uPVC pipes are perfect for carrying water which contains chemical fertilizers and insects inhibitors. In thick wall and large diameter S&M uPVC pipes liquids can be transported under high pressure which is convenient for the management of large farms.



Industry

Resistant to most chemicals, S&M uPVC pipes have an important role to play in industrial plants. Light, non-corrosive and easy to assemble they allow more complex piping work that with steel or cast-iron pipes.



Solid, Waste & Drainage System

Waste line for corrosive gases, ventilation for office buildings and factories; drainage systems for private homes and elevated highways - these are a few of the many possibilities for S&M uPVC pipes. A full line of uPVC fittings is available to assure easy installation.



Mining

S&M 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.



Electrical & Telecommunications Cables

S&M uPVC pipes form an integral insulator, hence there is an ever-increasing demand for them as electrical conduit. To facilitate work, a full line of fittings is available and fabricated from the same material as the pipes.



S&M uPVC pipes for Casing and Screen

Engineering difficulties and the probability of adverse chemical reactions make it impractical to overcome corrosion and encrustation through the use of protective coating, chemical treatment or cathodic protection. Thus S&M non-corrosion PVC for water well casing and screens rapidly received approval by the appropriate ministry consultants and engineers.

MANUFACTURING STANDARDS

DIN	8062, 19531, 19532, 19534
ASTM	1785, D-2241, F-512
BS	3505, 3506, 5481, 4660, 4514, 5255, 2665, 6099
EN	1452
NEMA	TC-2, TC-6, TC-8V
JS	159, 2016, 181, 966
SASO	14

Range of Production

Pipes from S&M are manufactured according to DIN Standards from 20mm, up to 800mm outside diameter in various pressure classes.

uPVC pipes are available with solvent weld Socket joints for diameters less than 50 mm. Sizes of outside diameter 50mm and larger are available with both mechanical rubber ring joints or solvent weld Socket joints.

Pipes manufactured in accordance with ASTM are ranging from 1/2 inch up to 8 inches in various pressure (SCH 40, SCH 80) with white and gray colour.

ASTM Pipes are available with plain spigot and Solvent Cement joints only.

S&M pipes are produced in 1,2,3 & 6 meters standard length (other lengths are available on request), standard colours are grey, white and yellow (other colours are available on request).

Types of Joint

S&M Pipes are manufactured in standard length of 6 meters and incorporate various joint systems.



Plain End

Plain ended pipes are to be used with double coupling either solvent cement joint (SCJ) or rubber joint (RS) or fittings available in both types of joint.



Solvent Cement Joint

Solvent cement joint pipes are manufactured with integral socket.



Rubber Ring Types of Joint

(Anger Joint) /3S Anger /Lip seal Joint is formed on wall thickened portion.



S&M UPVC PIPES

UPVC pipes according to (SASO 14, DIN 8062, DIN 19532)

in Bars Nominal Pressure	Class 2		Class 3		Class 4		Class 5	
	4 BAR		6 BAR		10 BAR		16 BAR	
Nom-OD mm	Nom thick of wall mm	Nom-wt. kg/m	Nom- thick of wall mm	Nom-wt. kg/m	Nom- thick wall mm	Nom-wt. kg/m	Nom- thick of wall mm	Nom-wt. kg/m
20							1.5	0.137
25					1.5	0.174	1.9	0.212
32					1.8	0.264	2.4	0.342
40			1.8	0.334	1.9	0.350	3.0	0.525
50			1.8	0.422	2.4	0.552	3.7	0.809
63			1.9	0.562	3.0	0.854	4.7	1.29
75	1.8	0.642	2.2	0.782	3.6	1.22	5.6	1.82
90	1.8	0.774	2.7	1.13	4.3	1.75	6.7	2.61
110	2.2	1.16	3.2	1.64	5.3	2.61	8.2	3.90
125	2.5	1.48	3.7	2.13	6.0	3.64	9.3	5.01
140	2.8	1.84	4.1	2.65	6.7	4.18	10.4	6.27
160	3.2	2.41	4.7	3.44	7.7	5.47	11.9	8.17
180	3.6	3.02	5.3	4.37	8.6	6.88	13.4	10.4
200	4.0	3.70	5.9	5.37	9.6	8.51	14.9	12.8
225	4.5	4.70	6.6	6.76	10.8	10.8	16.7	16.1
250	4.9	5.65	7.3	8.31	11.9	13.2	18.6	19.9
280	5.5	7.11	8.2	10.4	13.4	16.6	20.8	24.9
315	6.2	9.02	9.2	13.2	15.0	20.9	23.4	31.5
355	7.0	11.4	10.4	16.7	16.9	26.5	26.3	39.9
400	7.9	14.5	11.7	21.1	19.1	33.7	29.7	50.8
450	8.9	18.3	13.2	26.8	21.5	42.7	33.1	
500	9.8	22.4	14.6	32.9	23.9	52.6	36.8	
560	11.0	28.1	16.4	41.4	26.7	65.8		
630	12.4	35.7	18.4	52.2	30.0	83.2		
710	14.0	45.3	20.7	66.1				
800	15.7	57.2	23.3	83.9				

Length : 1,2,3 & 6 meters (Other lengths are available on request.)
 Colour : Grey, white & yellow (Other clours are available on request.)
 Socket Type : Rubber joint (R/J) type supplied from sizes 50mm up to 800mm.
 Solvent Cement (SC/J) type supplied from sizes 20mm up to 800mm.

S&M UPVC PIPES

UPVC Pipes According to ASTM D - 1785, Schedule 40 & Schedule 80

Nominal Size Inch.	O.D. (mm)		Schedule 40				Schedule 80			
	min	max	Wall Thickness (mm)		Nominal Weight (kg/m)	PSI	Wall Thickness (mm)		Nominal Weight (kg/m)	PSI
			min	max			min	max		
1/2	21.24	21.44	2.77	3.28	0.24	600	3.73	4.24	0.3	850
3/4	26.57	26.77	2.87	3.38	0.33	480	3.91	4.42	0.43	690
1	33.27	33.53	3.38	3.89	0.48	450	4.55	5.08	0.61	630
1 1/4	42.03	42.29	3.56	4.07	0.65	370	4.85	5.44	0.87	520
1 1/2	48.11	48.41	3.68	4.19	0.77	330	5.08	5.69	1.03	470
2	60.17	60.47	3.91	4.42	1.04	280	5.54	6.2	1.43	400
2 1/2	72.84	73.2	5.16	5.77	1.57	300	7.01	7.85	2.2	420
3	88.7	89.1	5.49	6.15	2.14	260	7.62	8.53	2.91	370
4	114.1	114.5	6.02	6.73	3.05	220	8.56	9.58	4.26	320
5	141.05	141.55	6.22	7.347	4.18	190	9.52	10.67	6.42	290
6	168	168.56	7.11	7.98	5.37	180	10.97	12.29	8.13	280
8	218.7	219.46	8.18	9.17	8.11	160	12.7	14.22	12.4	250

Length : 6 meters (Other lengths are available on request.)

Colour : Schedule 40 - White, Schedule 80 - Grey

Socket Type : Plain, solvent cement (SC/I)

UPVC Pressure-rated Pipes According to ASTM D 2241

Nominal Size Inch.	O.D. (mm)		Wall Thickness (mm)												
	min	max	Standard Diameter Ratio (SDR)												
			41 W.P.: 6.9 Bar		32.5 W.P.: 8.6 Bar		26 W.P.: 11 Bar		21 W.P.: 13.8 Bar		17 W.P.: 17.2 Bar		13.5 W.P.: 21.7 Bar		
			min	max	min	max	min	max	min	max	min	max	min	max	
1/2	21.24	21.44												1.57	2.08
3/4	26.57	26.77							1.52	2.03	1.57	2.08	1.98	2.49	
1	33.27	33.53						1.52	2.03	1.60	2.11	1.96	2.46	2.46	2.97
1 1/4	42.03	42.29			1.52	2.03	1.63	2.13	2.01	2.52	2.49	3.00	3.12	3.63	
1 1/2	48.11	48.41			1.52	2.03	1.85	2.36	2.29	2.80	2.84	3.35	3.58	4.09	
2	60.17	60.47			1.85	2.36	2.31	2.82	2.87	3.38	3.56	4.06	4.47	4.98	
3	88.70	89.10	2.16	2.67	2.74	3.25	3.43	3.94	4.24	4.75	5.23	5.87	6.58	7.37	
4	114.07	114.53	2.80	3.30	3.51	4.01	4.39	4.90	5.44	6.10	6.73	7.54	8.46	9.47	
6	168.00	168.56	4.11	4.62	5.18	5.79	6.48	7.26	8.03	9.00	9.91	11.10	12.47	13.97	
8	218.70	219.46	5.33	5.97	6.73	7.54	8.43	9.45	10.41	11.66	12.90	14.45			

Note: The maximum pressure rating given above is based on water at 73 °F/23 °C and for unthreaded pipes.

Length : 6 meters (Other lengths are available on request.)

Colour : Grey.

Socket Type : Plain, solvent cement (SC/I).



S&M UPVC PIPES

UPVC Pipes According to BS 3505 / 3506

Applications: Water supply, irrigation systems, industrial use.

Nominal Size Inch.	O.D. (mm)		Wall Thickness (mm)													
	min	max	Class B		Class C		Class D		Class E		Class O		Class 6		Class 7	
			min	max	min	max	min	max	min	max	min	max	min	max	min	max
3/8	17.0	17.3							1.5	1.9			2.3	2.8	3.2	3.8
1/2	21.2	21.5							1.7	2.1			2.8	3.3	3.7	4.3
3/4	26.6	26.9							1.9	2.5			2.9	3.4	3.9	4.5
1	33.4	33.7							2.2	2.7			3.4	4.0	4.5	5.2
1 1/4	42.1	42.4					2.2	2.7	2.7	3.2			3.6	4.2	4.8	5.5
1 1/2	48.1	48.4					2.5	3.0	3.1	3.7	1.8	2.2	3.7	4.3	5.1	5.9
2	60.2	60.5			2.5	3.0	3.1	3.7	3.9	4.5	1.8	2.2			5.5	6.3
2 1/2	75.0	75.3			3.0	3.5	3.9	4.5	4.8	5.5	1.8	2.2				
3	88.7	89.1	2.9	3.4	3.5	4.1	4.6	5.3	5.7	6.6	1.8	2.2				
4	114.1	114.5	3.4	4.0	4.5	5.2	6.0	6.9	7.3	8.4	2.3	2.8				
5	140.0	140.4	3.8	4.4	5.5	6.4	7.3	8.4	9.0	10.4	2.6	3.1				
6	168.0	168.5	4.5	5.2	6.6	7.6	8.8	10.2	10.8	12.5	3.1	3.7				
8	218.8	219.4	5.3	6.1	7.8	9.0	10.3	11.9	12.6	14.5	3.1	3.7				

Note: Classes B,C,D and E are to BS 3505/3506. Classes O, 6 and 7 are to BS 3506 / 1969. Classes 6 and 7 equivalent to ASTM D-1785, SCH 40 and SCH 80 respectively.

Length : 6 meters (Other lengths are available on request.)

Colour: Dark Grey except class O which is grey.

Socket Type : Plain, solvent cement (SC/J)

Pressure ratings for working pressure at 20 °C

Class

B 6.0 bar

C 9.0 bar

D 12.0 bar

E 15.0 bar

For higher working temperatures, the pressure rating should be reduced.

S&M UPVC PIPES

UPVC Pressure Pipes according to EN 1452

Dimensions in millimeters

Nominal Outside diameter	Nominal (minimum) Wall Thickness							
	Pipe Series S							
	S 20 (SDR 41)	(S 16,7) (SDR 34,4)	S 16 (SDR 33)	S 12,5 (SDR 26)	S 10 (SDR 21)	S 8 (SDR 17)	S 6,3 (SDR 13,6)	S 5 (SDR 11)
	Nominal pressure PN based on service (design) coefficient C=2,5							
	PN 6	PN 6	PN 8	PN 10	PN 12,5	PN 16	PN 20	
20	-	-	-	-	-	-	1,5	1,9
25	-	-	-	-	-	1,5	1,9	2,3
32	-	-	1,5	1,6	1,9	2,4	2,9	
40	-	1,5	1,6	1,9	2,4	3,0	3,7	
50	1,5	1,6	2,0	2,4	3,0	3,7	4,6	
63	1,9	2,0	2,5	3,0	3,8	4,7	5,8	
75	2,2	2,3	2,9	3,6	4,5	5,6	6,8	
90	2,7	2,8	3,5	4,3	5,4	6,7	8,2	
	Nominal pressure PN based on service (design) coefficient C=2,0							
	PN 6	PN 7,5	PN 8	PN 10	PN 12,5	PN 16	PN 20	PN 25
110	2,7	3,2	3,4	4,2	5,3	6,6	8,1	10,0
125	3,1	3,7	3,9	4,8	6,0	7,4	9,2	11,4
140	3,5	4,1	4,3	5,4	6,7	8,3	10,3	12,7
160	4,0	4,7	4,9	6,2	7,7	9,5	11,8	14,6
180	4,4	5,3	5,5	6,9	8,6	10,7	13,3	16,4
200	4,9	5,9	6,2	7,7	9,6	11,9	14,7	18,2
225	5,5	6,6	6,9	8,6	10,8	13,4	16,6	-
250	6,2	7,3	7,7	9,6	11,9	14,8	18,4	-
280	6,9	8,2	8,6	10,7	13,4	16,6	20,6	-
315	7,7	9,2	9,7	12,1	15,0	18,7	23,2	-
355	8,7	10,4	10,9	13,6	16,9	21,1	26,1	-
400	9,8	11,7	12,3	15,3	19,1	23,7	29,4	-
450	11,0	13,2	13,8	17,2	21,5	26,7	33,1	-
500	12,3	14,6	15,3	19,1	23,9	29,7	36,8	-
560	13,7	16,4	17,2	21,4	26,7	-	-	-
630	15,4	18,4	19,3	24,1	30,0	-	-	-
710	17,4	20,7	21,8	27,2	-	-	-	-
800	19,6	23,3	24,5	30,6	-	-	-	-

Note: To apply an overall service (design) coefficient of 2.5 (instead of 2.0) for pipes with nominal diameter above 90mm, the next higher pressure rating, PN, shall be chosen.

Length : 6 meters (Other lengths are available on request).

Colour : Grey.

Socket Type : Rubber joint (R/J) type supplied from sizes 50mm up to 800mm.

Solvent Cement (SC/J) type supplied from sizes 20mm up to 800mm.



S&M UPVC PIPES

UPVC Underground Sewer Pipe (Gravity) According to BS 5481

Applications: Gravity Sewerage Underground.

Nominal Size	Outside Diameter (mm)		Wall Thickness (mm)		Weight kg/m
	Min	Max	Min	Max	
200 (8")	200.0	200.6	4.9	5.6	4.50
250 (10")	250.0	250.7	6.1	7.0	7.01
315 (12")	315.0	315.9	7.7	8.7	11.07
400 (16")	400.0	401.0	9.8	11.0	17.83

UPVC Underground Drainage & Sewerage Pipes according to BS 4660

Applications: Drainage Under Gardens, Fields, Driveways & Roads.

Nominal Size	Outside Diameter (mm)		Wall Thickness (mm)		Weight kg/m
	Min	Max	Min	Max	
110 (4")	110.0	110.4	3.2	3.8	1.64
160 (6")	160.0	160.6	4.1	4.8	3.04

Length : : 5.8 & 6 meters (Other lengths are available on request).

Colour: Grey.

Socket Type : Solvent cement (SC/J) type, Rubber Joint (R/J) type

UPVC Aboveground Soil & Ventilating Pipes according to BS 4514

Applications: Soil & Ventilating Pipes Above ground.

Nominal Size	Outside Diameter (mm)		Wall Thickness (mm)		Weight kg/m
	Min	Max	Min	Max	
82 (3")	82.4	82.8	3.2	3.8	1.21
110 (4")	110.0	110.4	3.2	3.8	1.64
160 (6")	160.0	160.6	3.3	3.9	2.47

Length : : 5.8 & 6 meters (Other lengths are available on request).

Colour: Grey.

S&M UPVC PIPES

UPVC Aboveground Waste Pipes according to BS 5255

Applications : Waste Above ground.

Nominal Size	Outside Diameter mm		Wall Thickness (mm)		Weight kg/m
	Min	Max	Min	Max	
32 (1 1/4")	36.15	36.45	1.8	2.2	0.301
40 (1 1/2")	42.75	43.05	1.9	2.3	0.376
50 (2")	55.75	56.05	2.0	2.4	0.519

Nominal Size	(Outside Diameter (mm		(Wall Thickness (mm		Weight kg/m
	Min	Max	Min	Max	
("4/11) 32	36.15	36.45	1.8	2.2	0.301
("2/11) 40	42.75	43.05	2.3	2.8	0.452
("2) 50	55.75	56.05	2.4	2.9	0.620

Note: Table (b) for waste pipes - Cold water

Length : 4, 5.8 & 6 meters (Other lengths are available on request).
Colour : Grey.

UPVC Drain, Waste, Vent Pipes According to ASTM D 2665.

Applications : Drain, Waste, Vent (DWV)

Nominal Size (inch)	Outside Diameter (mm)		Wall Thickness (mm)		Weight kg/m
	Min	Max	Min	Max	
1 1/4	42.03	42.29	3.56	4.07	0.65
1 1/2	48.11	48.41	3.68	4.19	0.77
2	60.18	60.48	3.91	4.42	1.04
3	88.7	89.1	5.49	6.15	2.14
4	114.07	114.53	6.02	6.73	3.05
6	168.0	168.56	7.11	7.97	5.37
8	218.7	219.46	8.18	9.17	8.11

Length : 5.8 & 6 meters (Other lengths are available on request).
Colour : White & Grey.
Socket Type : Plain, Solvent cement (SC/I)
Non standard lengths & colours available on request.



S&M UPVC PIPES

UPVC Sewer Pipes (Gravity) According to DIN 19534.

Applications : Sewerage Pipe Underground.

Nominal Size (mm)	Outside Diameter (mm)		Wall Thickness (mm)		Insertion Depth (mm)	Weight kg/m
	(D)	Tolerance	(S)	Tolerance		
110	110	0.3	3.0	0.5 +	115	1.63
125	125	0.3	3.0	0.5 +	120	1.870
160	160	0.4	3.6	0.6 +	132	2.650
200	200	0.4	4.5	0.7 +	145	4.120
250	250	0.5	6.1	0.9 +	160	7.00
315	315	0.6	7.7	1.0 +	180	11.110
400	400	0.7	9.8	1.2 +	200	17.800
500	500	0.9	12.2	1.5 +	250	27.649
600	630	1.1	15.4	1.8 +	300	43.944

Length : 6 meters (Other lengths are available on request.)

Colour : Grey.

Socket Type : Solvent cement (SC/J) type, Rubber Joint (R/J) type.

UPVC Electrical Conduits according to BS 6099

Applications : Electrical installations.

Nominal Size (mm)	Minimum Inside Diameter (mm)			Maximum Wall Thickness mm			Weight kg/m		
	Light	Medium	Heavy	Light	Medium	Heavy	Light	Medium	Heavy
16	13.7	13.0	12.2	1.15	1.5	1.9	0.080	0.100	0.125
20	17.4	16.9	15.8	1.3	1.55	2.1	0.120	0.140	0.180
25	22.1	21.9	20.6	1.45	1.8	2.2	0.165	0.200	0.240
32	28.6	27.8	26.6	1.7	2.1	2.7	0.245	0.296	0.370
40	35.8	35.4	34.4	2.1	2.3	2.8	0.352	0.406	0.485
50	45.1	44.3	43.2	2.45	2.85	3.4	0.540	0.622	0.707
63	57.0	-	-	3.0	-	-	0.830	-	-

Length : 3 meters (Other lengths are available on request.)

Colour : Black/White/Grey.

Socket Type : Plain, Solvent cement (SC/J) type

S&M UPVC PIPES

UPVC Electrical Conduits & Tubing according to NEMA TC-2

Applications : EPT Electrical plastic tubing for encasement in concrete, EPC 40 Electrical plastic conduit for directburial underground, EPC 80 Electrical plastic conduit for heavy duty.

Nominal Size inch	Outside diameter (mm)		Wall Thickness (mm)						Weight kg/m		
			EPT		EPC 40		EPC 80		EPT	EPC 40	EPC 80
	min	max	min	max	min	max	min	max			
1/2	21.24	21.44	1.52	2.03	2.77	3.28	3.73	4.24	0.155	0.24	0.3
3/4	26.57	26.77	1.52	2.03	2.87	3.38	3.91	4.24	0.197	0.33	0.43
1	33.27	33.53	1.52	2.03	3.38	3.89	4.55	5.08	0.25	0.48	0.61
1 1/4	42.03	42.29	1.78	2.29	3.56	4.07	4.85	5.44	0.365	0.65	0.87
1 1/2	48.11	48.41	2.03	2.54	3.68	4.19	5.08	5.69	0.47	0.77	1.03
2	60.17	60.47	2.54	3.05	3.91	4.42	5.54	6.2	0.717	1.04	1.43
2 1/2	72.84	73.2	2.79	3.30	5.16	5.77	7.01	7.85	0.952	1.57	2.2
3	88.70	89.1	3.18	3.68	5.49	6.15	7.62	8.53	1.31	2.14	2.91
4	114.1	114.5	3.81	4.32	6.02	6.73	8.56	9.58	2.0	3.05	4.26
5	141.05	141.55	-	-	6.22	7.347	9.52	10.67	-	4.18	6.42
6	168.0	168.56	-	-	7.11	7.98	10.97	12.29	-	5.37	8.13
8	218.7	219.46	-	-	8.18	9.17	12.7	14.22	-	8.11	12.4

PVC Electrical Conduits & Tubing according to NEMA TC-8 & ASTM F 512

Applications: Type EB for encased burial in concrete, Type DB for direct burial without concrete.

Nominal Size (inch)	Outside Diameter (mm)	PVC type EB 35		PVC type DB 120	
		Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m
1	33.27	-	-	1.52	0.251
1 1/2	48.11	-	-	1.52	0.369
2	60.17	1.52	0.465	1.96	0.576
3	88.7	1.93	0.847	3.00	1.250
4	114.1	2.54	1.390	3.91	2.050
5	141.05	3.2	2.09	4.85	3.12
6	168.0	3.86	3.020	5.77	4.420

UPVC Electrical Conduits & Tubing according to NEMA TC-6 & ASTM F 512

Applications: Type EB for encased burial in concrete, Type DB for direct burial without concrete.

Nominal Size (inch)	Outside Diameter (mm)	PVC type EB 20		PVC type DB 60	
		Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m
2	60.17	1.52	0.465	1.52	0.465
3	88.7	1.55	0.703	2.34	1.000
4	114.1	2.08	1.170	3.07	1.650
5	141.05	2.62	1.170	3.86	2.50
6	168.0	3.18	2.530	4.62	3.570

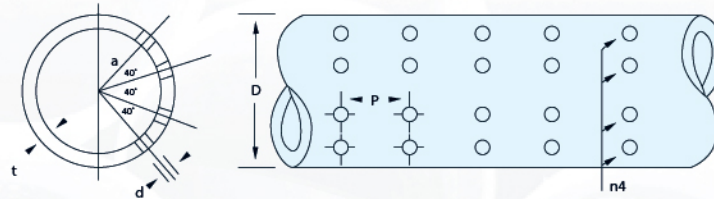


S&M UPVC FABRICATED PRODUCTS

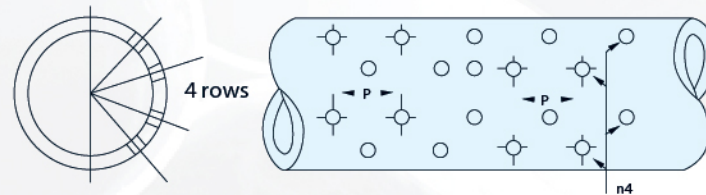
Perforated UPVC Pipes

S&M Perforated uPVC pipes are manufactured upon request depending on the size and class of the pipes, below figures given a general configuration which may vary for each clients requirements.

(Straight rows)



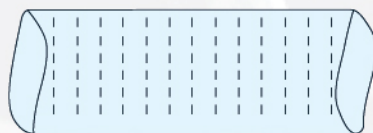
(Staggered rows)



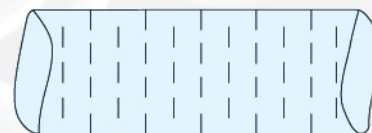
Range of sizes	: 75mm to 500mm
Longitude Pitch of wholes (LP)	: 30mm to 200mm
Hole Diameter	: 05mm to 13mm
Number of rows	: 1 to 6
Angular Pitch of holes	: 40 degree for 3 to 4 rows. : 40, 80 or 120 degree for 2 rows.

Slotted UPVC Pipes

S&M slotted pipes are produced according to RDA requirements and for use in lowering the underground water table.



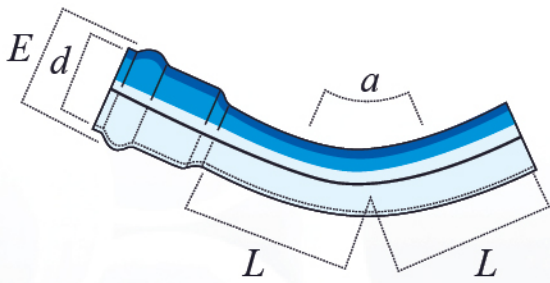
STRAIGHT SLOTS



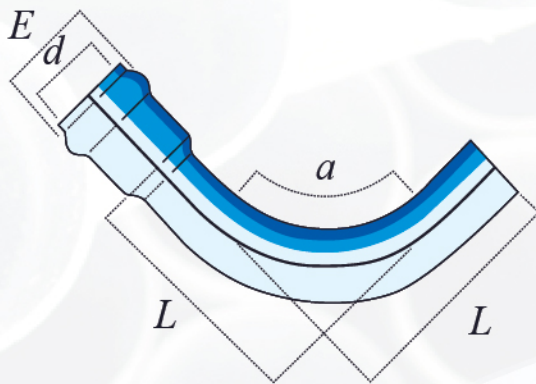
STAGGERED SLOTS

Slot strength	: Depend on the size.
Slot width	: 1/1.1/1.5/2mm
Number of row	: 4,6 & 8 (but according to the size).
Angular pitch	: To be recommended by S&M

S&M UPVC FABRICATED PRODUCTS



45° Long Bend			
d mm	L mm	angle	E mm
63	235	45°	86
75	260	45°	102
90	292	45°	120
110	384	45°	144
125	413	45°	161
140	430	45°	178
160	464	45°	202
180	810	45°	224
200	805	45°	240



90° Long Bend			
d mm	L mm	angle	E mm
63	377	90°	86
75	401	90°	102
90	462	90°	120
110	504	90°	144
125	533	90°	161
140	595	90°	178
160	614	90°	202
180	1010	90°	224
200	1155	90°	240

Storage recommendations

The following procedure is recommended to prevent pipes from damages

- The area of storage should be cleaned and free from any rocks or stones that may cause damage of pipes.
- Pipes may be placed on wide pieces of wood not less than 10cm width and spaced at intervals of 120cm or less.
- Be sure that pipes Socket ends and chamfer ends are alternately placed.
- Maximum storage height not more than 240cm from the ground.
- Pipes should be protected from direct sun light by storing it in a shaded area or use opaque tarpaulin and always keep space between tarpaulin and pipes to prevent heat accumulation.
- Pipe internal, external surfaces as well as fittings and other accessories should be kept free from dirt.
- Rubber gaskets should be protected from excessive heat, direct sunlight and oil.
- Solvent cement when used should be stored in tight sealed containers away from excessive heat.

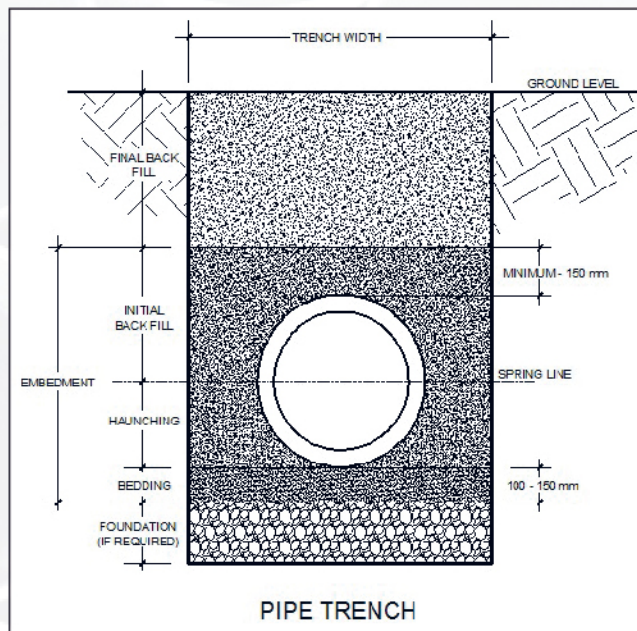


S&M UPVC TRENCH CONSTRUCTION

Trench construction

General

- Excavate trenches to insure that sides will be stable under all working conditions
- Excavated material should be stockpiled in a manner that will not endanger the work.
- Minimum Trench Width
- The following table shows the relation between Nominal Pipe Size and Minimum Trench Width



Nominal Pipe Size (mm)	Minimum Trench Width (mm)
< 90	300
90 - 630	Pipe OD. Plus 300
630 - 1600	Pipe OD. Plus 600

Preparation of Trench Bottom

- The trench bottom should be constructed to provide a firm, stable, and uniform support for the full length of the pipe.
- When an unstable sub-grade condition is encountered which will provide inadequate pipe support, additional trench depth should be excavated and refilled with suitable foundation material as specified by the engineer.
- The ground water level in the trench should be kept below the pipe.

Bedding

- Bedding is required primarily to bring the trench bottom up to grade.
- Bedding materials should be placed to provide uniform and adequate longitudinal support under the pipe.
- A compacted depth of 4 to 6 inches (100 to 150 mm) is generally sufficient bedding thickness.
- Bedding material should be free of ridges, hollows and lumps.
- The trench bottom should be smooth and free of rock.
- Bedding should consist of free flowing material such as gravel, sand, salty sand or clayey sand that is free of stones or hard particles larger than 1 ½ inch.



S&M UPVC

Haunching

- The most important factor affecting pipe performance and deflection is the haunching material and its density.
- Material should be placed and consolidated under the pipe haunch to provide adequate side support to the pipe while avoiding both vertical and lateral displacement of the pipe from proper alignment.
- Where coarse materials with voids have been used for bedding, the same coarse material should also be used for haunching and consideration should be given to native soil migration.
- Haunching is placed up to the pipe spring line.

Initial Backfill

- Initial backfill is that portion of the pipe embedment beginning at the spring line of extending some distance over the pipe and the top of the pipe.
- Since little or no additional side support is gained above the spring line, native soils may be used without special compaction efforts.
- The sole purpose of somewhat careful placement of these native trench materials is to protect the pipe from the dropping of large rocks or other impact loads that may occur during final backfill.
- Minimum cover is recommended to be 6 inch (150mm).

Final Backfill

The material used in the final backfilling operation need not be as carefully selected as was the bedding, haunching, and initial backfill. In the final backfill material, exclude boulders, frozen clumps of dirt, and rubble which could damage the pipe.

Embedment Materials

Embedment material including bedding, hunching and initial backfill material, class I and class II material usually used as embedment material.

The following Table shows the maximum particle size for class I and class II materials

Nominal Pipe Size (mm)	Maximum Particle size (inch)
≤ 110	1/2
160 - 225	3/4
250 - 355	1
≥ 400	1 1/2



S&M UPVC SOLVENT CEMENT uPVC FITTINGS



O.D (mm)
50
75
110
160



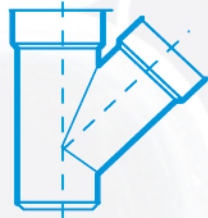
87° Elbow



O.D (mm)
50
75
110
160



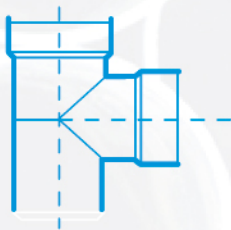
45° Elbow



O.D (mm)
50
75
110
160



45° Y Branch



O.D (mm)
50
75
110
160



Tee Branch



O.D (mm)
110
160



87° Door Elbow

S&M UPVC SOLVENT CEMENT uPVC FITTINGS



O.D (mm)

110x110
125x110



Siphon



O.D (mm)

50x50x50
75x50x50
110x50x50
110x75x50
160x110



Floor Trap
with removable separator



O.D (mm)

50
75



Mini Floor Trap



O.D (mm)

75x50
110x50
110x75
160x110



Reducer



O.D (mm)

110
160

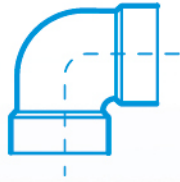


Branch with access cup



S&M UPVC

Solvent Cement (Double Muffe) uPVC FITTINGS



O.D (mm)

110

87° Elbow



O.D (mm)

110

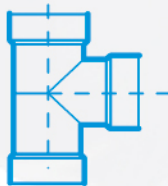
45° Elbow



O.D (mm)

110

45° Y Branch



O.D (mm)

110

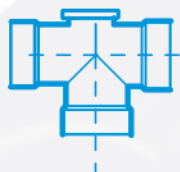
Tee Branch



O.D (mm)

110

87° Door Elbow



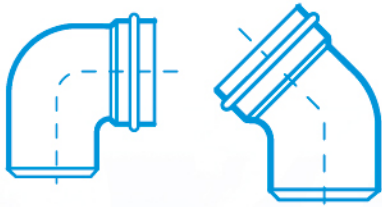
O.D (mm)

110

**Tee Branch
with access cup**



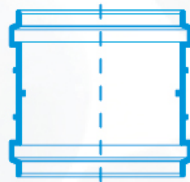
S&M UPVC RUBBER RING uPVC FITTINGS



O.D (mm)

110

87° and 45° Elbow



O.D (mm)

110

Coupler



O.D (mm)

110

45° Y Branch



O.D (mm)

110

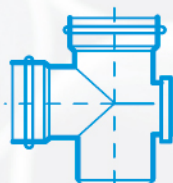
Tee Branch



O.D (mm)

110

87° Door Elbow



O.D (mm)

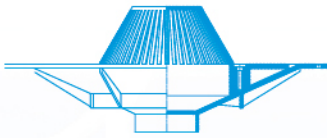
110

**Tee Branch
with access cup**





S&M UPVC SOLVENT CEMENT uPVC FITTINGS



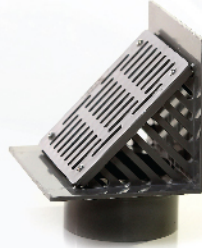
O.D (mm)
110



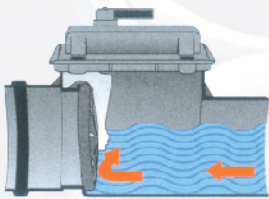
Rainwater Outlet



O.D (mm)
110



Mashroom Air Vent



O.D (mm)
110
160



Backflow Preventer

O.D (mm)
50
75
110
160



Interceptor



O.D (mm)
110



Double Y Branch

O.D (mm)
50
75
110
160



Coupler



O.D (mm)
50
75
110
160



Access Plug

OUR RANGE OF RUBBER RING FITTINGS & PN16 FITTINGS



In terms of our well-developed, affordable range of Rubber Ring fittings by Funke they combine high quality with easy handling and a long service life that secure transitions between one pipe and the next. Funke's complete system offer a comprehensive range of transition fittings that can be used to overcome a huge variety of different challenges professionally, efficiently and with a long lasting effect.

- Size range from 110mm to 500mm.
- Used for wastewater, rainwater and drainage.
- Long service life
- Rubber Ring gasket.
- Highly resistant to chemicals.



With regard to our PN16 fittings and valves we are proud of being the suppliers for ERA in Jordan since 2010. ERA is one of the leading manufacturers of plastic valves and fittings in the world. ERA products strictly follows the ISO9001 quality system, ISO14001 environment system, DIN 8063, BS4346, DIN ISO1452 and BSI Kitemark certification. With high-class raw material, strict quality control in both the workshop and laboratory with various professional testing equipment, ERA ensures that every single product meets the highest standards.

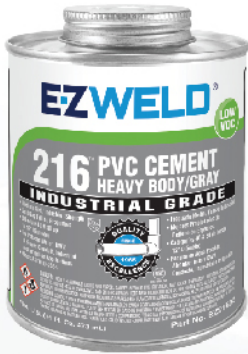
- ERA size range from 16mm to 315mm.
- PN16 Pressure.
- Highly resistant to chemicals.
- Solvent cement welding with our 216 E-Z Weld Cement.
- Suitable for swimming pools & high pressure pumped systems.
- Long service life



Since 1954 Formatura Iniezione Polimeri (FIP) has been producing valves and fittings up to the highest standards. And at the moment FIP is a leading Italian manufacturer that distributes to more than 110 countries in the world. FIP products are dedicated to industrial applications, water distribution and irrigation.



S&M UPVC SOLVENT CEMENT



E-Z Weld 216 (GREY)

E-Z Weld Heavy Body Gray is a heavy bodied, slow set PVC Solvent Cement. This cement is part of our Industrial Grade line of products. This cement is formulated for use on PVC pipes and fittings. It is viscous (thick) and, carries very good gap filling properties. This cement is ideal for joining large diameter PVC / uPVC pipes & fittings where the gap between pipes and fittings is large. It may also be used on small diameter pipes and fittings. This cement requires a longer cure time. When joining large diameter pipe & fittings the use of primers is highly recommended.

Meets ASTM D2564



E-Z Weld 204 (CLEAR)

E-Z Weld Heavy Duty Clear is a medium bodied medium set PVC Solvent Cement. It is formulated to provide good gap filling properties. This product was formulated to provide cost effective cement for joining PVC pipes & fittings for up to 6" diameter, interference fit.

Meets ASTM D2564



E-Z Weld 214 (CLEANER)

E-Z Weld Pipe Cleaner is a special blend of solvents formulated to clean PVC, CPVC, ABS and Styrene Pipes & Fittings, all schedules and all diameters, prior to applying cement. This Pipe Cleaner will effectively remove oils, dirt, grease and other foreign matter. It is very important that the surface of pipes and fittings is clean for a strong leak proof joint.



ISO 9000



ASTM D-2564



NSF

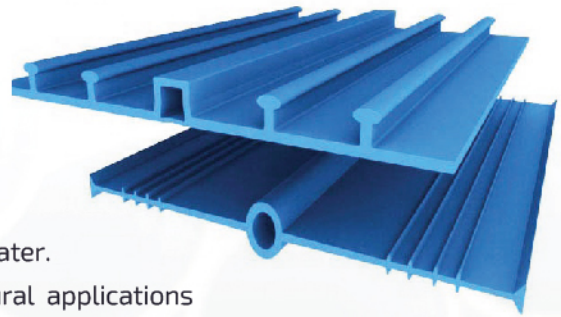


IAPMO (UPC)

S&M WATER STOPS

DIFFERENT SHAPES & DIMENSIONS

Water stops are manufactured from PVC virgin raw material. Its complete to ASTM D638 & BS 2782

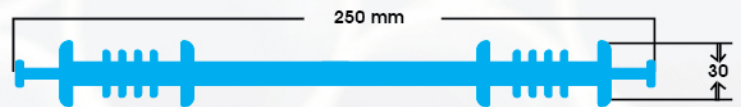
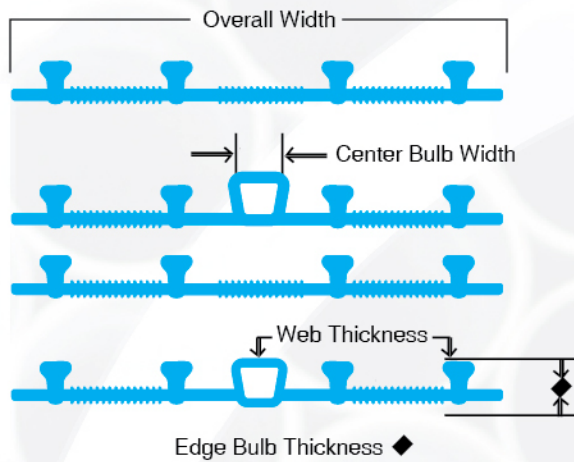


ADVANTAGES:

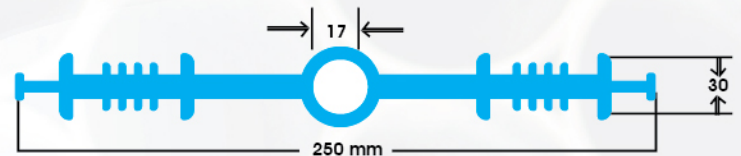
- Resistant to many chemicals and safe to be used in portable water.
- Many shapes and sizes to comfort the needs of various structural applications and thickness.
- High elongation and tensile strength.
- Easy joint by Hot welding.

USES:

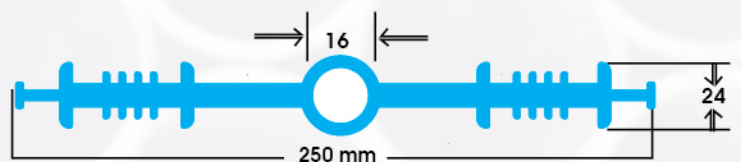
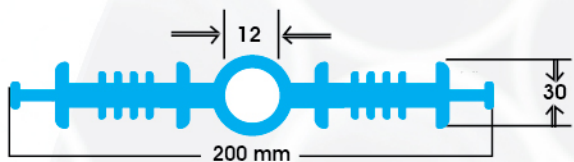
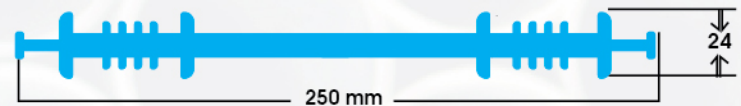
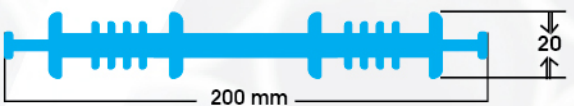
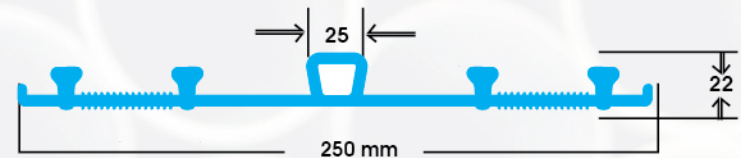
- Portable water tanks and Reservoirs.
- Tunnels, Dams and Bridges.
- Swimming pools and Retaining Walls.
- Seaport facilities.



Center fix for construction joints (AD233)



Center fix for expansion & construction joints (AD234)





S&M WARNING TAPES

- Safe: Alerts excavation crews of imminent danger such as buried electricity cables, gas & water lines.
- Economical: Saves you the expense of repairing damage as well as saves time of line identification.
- Durable: Polyethylene can handle all soils condition and it is non-corrosive.
- Indelible: Permanent ink-bonding resists chemical attacks and weather corrosion. Furthermore, the bright colorations ensure maximum visibility.
- Flexible: stretches up to 3 times its normal size before breaking

Colour range:

- Red (Electricity lines - خطوط كهرباء)
- Yellow (telecommunications lines - خطوط اتصالات)
- Blue (Water lines - خطوط مياه)
- Green (waste water lines - خطوط صرف صحي)
- Red and white (traffic warning - شريط مروري)

Types range:

- With aluminum: Makes pipe lines detectable from above the ground, Thus knowing the exact location and nature of the line.
- Without aluminum: Gives visual warning and identification of the pipeline nature.



S&M SLEEVES & SHEETS

POLYETHYLENE SHEET

(VAPOR RETARDERS)

Manufactured from 100% prime first grade quality resins.

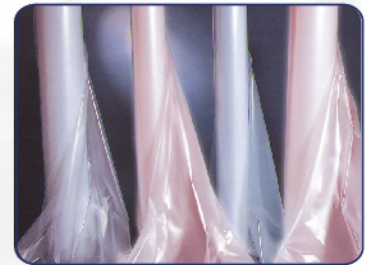
- THICKNESS: 50 - 500 micron.
- LENGTH: 50 - 100 m2.
- WIDTH: Up to 5 m.

POLYETHYLENE SLEEVES

To protect the ductile pipes from the surrounding aggressive soil.

* It conform with AWWA-C-105

POLYETHYLENE SHEET for constuction under concrete slape



S&M UPVC CABLE DUCT ACCESSORIES

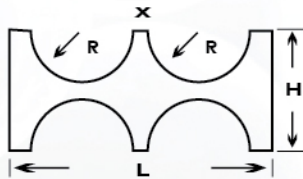
BASE SPACER

- 110 mm

INTERMEDIATE SPACER

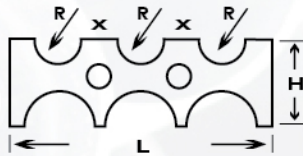


FOUR WAY SPACER



Size	L	H	R	X
110	330	160	55.25	50
160	440	220	80	60

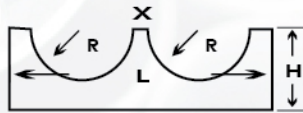
THREE WAY SPACER



Size	L	H	R	X
75	480	125	37.5	85
110	480	125	55.25	50

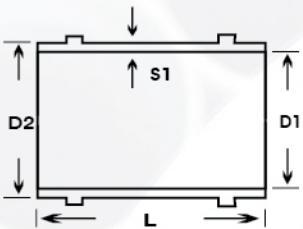


TWO WAY SPACER



Size	L	H	R	X
50	160	50	25	20

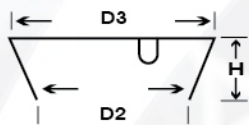
COUPLERS WITHOUT SLEEVE



D1	S1	D2	L
110	4.5	119	126.5
75	3.5	82	110



MANHOLE PLUG



Size	D2	D3	H
110	90	111	50
75	70	78	50

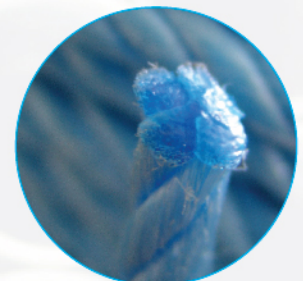
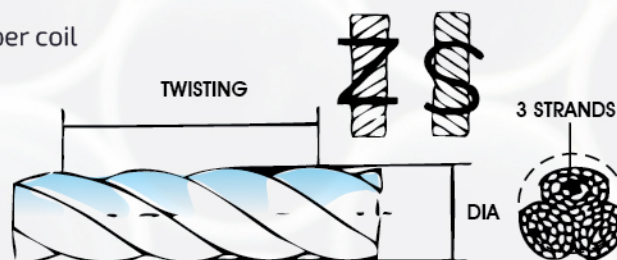


ROPES : POLYETHYLEN TWINE ROPE

- Normal length is 250 meters per coil
- 60 mm dia 3 strands

DIRECTION OF TWISTING

DIA & TWISTING



*COLORS ARE PER YOUR REQUEST



S&M OPTICAL FIBER CABLE SYSTEM

Optical Fiber Cable System Accessories

S&M telecommunication conduits provide necessary security and protection for telecommunication and electrical cables against harsh and high-pressured environments.

S&M Sub-Duct and Mini duct are used in Telecommunication for security and convenience when hauling in small diameter fiber optic cables.

Two Way Sub-Ducts of small diameter may be installed in HDPE or PVC duct or single Sub-Duct may be installed over existing cables in ducts to protect the fiber optic cables during hauling in.

Our pipes come in black, Orange, Yellow, Red, Blue and green color with the availability to have any other color if needed and requested.



Product features and attributes:

- High tensile strength to endure heavy external loads and longer pulling distances.
- Long-term strength for increased life and performance
- Lower installation cost
- Resistance to corrosive chemicals and aggressive soils
- Moisture proof and watertight when fusion welded
- No biological growth
- Low sliding friction to aid in the pulling and jetting of micro guard and micro cables
- Color coding for easy identification
- UV-Formulated material for outside storage

HDPE Pipe:

ISO, ASTM, EN, DIN and Jordanian Telecommunication standards

Raw Materials:

S&M Polyethylene pipes are manufactured using two kinds of basic polymers:
HDPE - (PE 100) High density polyethylene (density = 0,950 g/cm³)

The above materials contain choice polymer and high-quality Carbon-Black to get long life under every working and weather conditions.

We supply different types of conduits to suit any customer need:

Smooth Wall Conduit

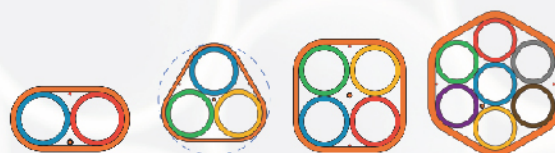


Grooved Wall Conduit



*COLORS ARE PER YOUR REQUEST

Bundled Conduit



Corrugated pipe



Chemical Resistance of UPVC compound according to ISO/TR 7473

Reactives	Concentration	Temperature 20 °C	Temperature 60 °C
Acetaldehyde	40%	NS	-
Acetaldehyde	100%	NS	-
Acetic Acid	Glacial	NS	NS
Acetic Acid	25%	S	L
Acetic Acid	60%	S	L
Acetic Anhydride	100%	NS	NS
Acetone	100%	NS	NS
Adipic Acid	Sat. sol.	S	L
Allyl Alcohol	96%	L	NS
Aluminum Chloride	Sat. sol.	S	S
Aluminum Potassium Sulphate	Sat. sol.	S	S
Aluminum Sulphate	Sat. sol.	S	S
Ammonia, Dry gas	100%	S	S
Ammonia, Liquid	100%	L	NS
Ammonia, Aqueous	Dil. sol.	S	L
Ammonium Chloride	Sat. sol.	S	S
Ammonium Fluoride	20%	S	L
Ammonium Nitrate	Sat. sol.	S	S
Ammonium Sulphate	Sat. sol.	S	S
Amyl Acetate (1-Pentanol Acetate)	100%	NS	NS
Amyl Alcohol (1-Pentanol)	100%	S	L
Aniline	100%	NS	NS
Aniline	Sat. sol.	NS	NS
Aniline Hydrochloride	Sat. sol.	NS	NS
Antimony (III) Chloride	90%	S	S
Anthraquinone Sulphonic Acid	Sol.	S	L
Arsenic Acid	Dil. sol.	S	-
Arsenic Acid	Sat. sol.	S	L
Benzaldehyde	0.1%	NS	NS
Benzene	100%	NS	NS
Benzoic Acid	Sat. sol.	L	NS
Borax	Sat. sol.	S	L
Boric Acid	Dil. sol.	S	L
Bromic Acid	10%	S	-
Bromine, Liquid	100%	NS	NS
Butadiene	100%	S	S
Butane, Gas	100%	S	-
Butanols	Up to 100%	S	L
Butyl Acetate	100%	NS	NS
Butyl Phenol	100%	NS	NS
Butyric Acid	20%	S	L
Butyric Acid	98%	NS	NS
Calcium Chloride	Sat. sol.	S	S
Calcium Nitrate	50%	S	S
Carbon Dioxide (Aqueous Solution)	Sat. sol.	L	L
Carbon Dioxide, Dry Gas	100%	S	S
Carbon Dioxide, Wet Gas	-	S	S
Carbon Disulphide	100%	NS	NS
Carbon Tetrachloride	100%	NS	NS
Chlorine, Dry Gas	100%	L	NS
Chlorine, Aqueous	Sat. sol.	L	NS
Chloroacetic Acid	Sol.	S	L
Chlorosulphonic Acid	100%	L	NS
Chromic Acid	From 1% to 50%	S	L
Citric Acid	Sat. sol.	S	S
Copper (II) Chloride	Sat. sol.	S	S
Copper (II) Fluoride	2%	S	S
Copper (III) Sulphate	Sat. sol.	S	S
Cresols	Sat. sol.	-	NS
Cresylic Acid (Methyl Benzoic Acid)	Sat. sol.	-	NS
Crotonaldehyde	100%	NS	NS
Cyclohexanol	100%	NS	NS
Cyclohexanone	100%	NS	NS
Developers (Photographic)	Work. sol.	S	S
Dextrin	Sat. sol.	S	L
Dichloroethane	100%	NS	NS
Dichloroemethane	100%	NS	NS
Diethyl ether	100%	NS	-
Diglycolic Acid	18%	S	L
Dimethylamine	30%	S	-
Ethanediol (Ethylene-glycol)	Work. sol.	S	S

NS - No Resistance

S - Excellent Resistance L - Limited Resistance



Continue Chemical Resistance of UPVC compound according to ISO/TR 7473

Reactives	Concentration	Temperature 20 °C	Temperature 60 °C
Ethanol	95%	S	L
Ethyl Acetate	100%	NS	NS
Ethyl Acrylate	100%	NS	NS
Fluosilicic Acid	32%	S	S
Formaldehyde	Dil. sol.	S	L
Formaldehyde	40%	S	S
Formic Acid	From 1% to 50%	S	L
Furfuryl Alcohol	100%	NS	NS
Gasoline (Aliphatic Hydrocarbons)	-	S	S
Glucose	Sat. sol.	S	L
Glycerol	100%	S	S
Glycolic Acid	30%	S	S
Hexadecanol	100%	S	S
Hydrobromic Acid	10%	S	L
Hydrobromic Acid	50%	S	L
Hydrobromic Acid	20%	S	L
Hydrobromic Acid	Greater than 30%	S	S
Hydrobromic Acid	40%	L	NS
Hydrobromic Acid	60%	L	NS
Hydrobromic Acid, Gas	100%	L	NS
Hydrogen	100%	S	S
Hydrogen Peroxide	30%	S	S
Hydrogen Sulphide, Gas	100%	S	S
Iron (III) Chloride	Sat. sol.	S	S
Lactic Acid	10%	S	L
Lactic Acid	From 10% to 90%	L	NS
Lead Acetate	Dil. sol.	S	S
Lead Acetate	Sat. sol.	S	S
Lead Tetraethyl	100%	S	-
Magnesium Chloride	Sat. sol.	S	S
Magnesium Sulphate	Sat. sol.	S	S
Maleic Acid	Sat. sol.	S	L
Methanol	100%	S	L
Methyl Methacrylate	100%	NS	NS
Milk	-	S	S
Molasses	Work. sol.	S	L
Nickel Sulphate	Sat. sol.	S	S
Nicotinic Acid	Work. sol.	S	S
Nitric Acid	Up to 45%	S	L
Nitric Acid	From 50 to 98	NS	NS
Oils and Fats	-	S	S
Oleic Acid	100%	S	S
Oleum	10% to So3	NS	NS
Orthophosphoric Acid, Aqueous	30%	S	L
Orthophosphoric Acid, Aqueous	Greater than 30%	S	S
Oxalic Acid	Dil. sol.	S	L
Oxalic Acid	Sat. sol.	S	S
Oxygen	100%	S	S
Ozone	100%	S	S
Perchloric Acid	10%	S	L
Perchloric Acid	70%	L	NS
Petrol (Aliphatic Hydrocarbons/Benzene)	80/20	NS	NS
Phenol	90%	NS	NS
Phenylhydrazine	100%	NS	NS
Phenylhydrazine Hydrochloride	97%	NS	NS
Phosphine	100%	S	S
Phosphorus (III) Chloride	100%	NS	-
Picric Acid	Sat. sol.	S	S
Potassium Bromide	Sat. sol.	S	S
Potassium Chloride	Sat. sol.	S	S
Potassium Chromate	40%	S	S
Potassium Cyanide	Sol.	S	S
Potassium Dichromate	40%	S	S
Potassium Hexacyanoferrate (II)	Sat. sol.	S	S
Potassium Hexacyanoferrate (III)	Sat. sol.	S	S
Potassium Hydroxide	Sol.	S	S
Potassium Nitrate	Sat. sol.	S	S
Potassium Permanganate	20%	S	S
Potassium Persulphate	Sat. sol.	S	L
Propane, Liquified Gas	100%	S	-
Pyridine	Up to 100%	NS	-

S - Excellent Resistance L - Limited Resistance

NS - No Resistance



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