



مصنع التقنية العصرية للبلاستيك
MODERN TECHNOLOGY FACTORY FOR PLASTIC

U P V C P I P E S



M. T. PLAST

The Quality you can trust



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INTRODUCTION

Everybody knows that water is the necessary and vital requirement for the life to go on. But it needs a good distribution system for both the fresh (potable) water and used (drain) water. The best media for transporting the water from one place to another place is the uPVC Pipe which has fast replaced conventional pipes. Modern Technology Factory for Plastic (M.T. Plast) took the advantage of the ever increasing demand for the uPVC pipes and started producing them from the year - 1997.

M.T. Plast is now one of the leading producer of uPVC pipes & fittings and its plant is located in the Second Industrial City of Riyadh, the capital of the Kingdom of Saudi Arabia.

M.T. Plast produces uPVC pipes for all applications such as fresh water lines, drainage & waste water lines, irrigation lines, chemical & industrial fluid lines and duct for electrical and telecommunication sector. They are manufactured according to different standards such as SAS 14-15/1998, German Din-8062, American D-1785, D-2241 and British B.S. 3505-3506.

M.T. Plast produces uPVC pipes from 20mm to 400mm in diameter and from 1/2" to 12" in diameter. It has the most modern machinery for Extrusion and Injection with well equipped Laboratory and good storage system.

M.T. Plast uPVC pipes are popular in local Saudi market and are now gaining popularity in the neighboring countries because of the trusted quality, prompt delivery and commitment to customer satisfaction.

This catalogue contains all the information regarding M.T. Plast uPVC pipes and if you have anything else that you want to know, feel free to contact us. We pay special attention to the clients needs.

مقدمة

لا شك أن الماء هو أحد الضروريات الأكثر أهمية في حياتنا اليومية ولا يمكن للحياة أن تستمر بدونها . إن الاستخدام الأمثل للماء يقتضي توفير نظام توزيع مناسب سواء لمياه الشرب أو مياه الصرف . وقد أثبتت التجارب أن أفضل وسيلة لنقل الماء من مكان إلى آخر هو تلك الأنابيب البلاستيكية (بوبى في سي) التي مالبثت أن حلت محل الأنابيب العادية . ولقد انهل مصنع التقنية العصرية للبلاستيك " التقنية " فرصة الطلب المتزايد على الأنابيب البلاستيكية وبدأ في إنتاجها منذ عام 1997 م .

والآن أصبح مصنع " التقنية " أحد أكبر المصانع المنتجة للأنابيب والتركيبات البلاستيكية ويقع في المدينة الصناعية الثانية بالرياض، عاصمة المملكة العربية السعودية.

يقوم مصنع " التقنية " بإنتاج الأنابيب البوبى في سي البلاستيكية التي تستخدم في جميع الأغراض عبر منتجات متنوعة مثل أنابيب مياه الشرب وأنابيب خطوط الصرف الصحي وأنابيب الري وأنابيب توزيع السوائل الكيميائية والصناعية ومواسير كبلات الكهرباء والهاتف . ويتم تصنيع هذه المنتجات حسب مواصفات مختلفة منها المواصفة السعودية 14-15/1998 والمواصفة الألمانية DIN-8062، والمواصفة الأمريكية D-1785, D-2241 والمواصفة البريطانية B.S. 3505-3506 .

ويقوم المصنع بإنتاج أنابيب بأنقطار مختلفة من 20 مم حتى 400 مم ومن 2 1/1 بوصة حتى 12 بوصة ، ويمتلك المصنع أحدث آلات البثق والحقن بالإضافة إلى مختبر مجهز بتقنيات عالية ونظام تخزين جيد .

تنتشر منتجات مصنع " التقنية " من الأنابيب وقطع التركيب البلاستيكية في السوق المحلي السعودي ، وقد بدأت الآن في الانتشار في أسواق الدول المجاورة نظراً للثقة التي اكتسبتها هذه المنتجات وبفضل سرعة التسليم والالتزام من قبل المصنع تجاه العملاء .

يحتوي هذا الكتالوج على جميع المعلومات المتعلقة بالأنابيب وقطع التركيب البلاستيكية التي ينتجها مصنع " التقنية " . وهي حال رغبتكم في التعرف على المزيد نرجو عدم التردد في الاتصال بنا حيث أننا نولي اهتماماً خاصاً بمتطلبات واحتياجات العملاء .

SALIENT FEATURES of uPVC Pipes

Non-corrosive:

uPVC Pipes are not attacked by acids, alkalies, oils and salts etc., because uPVC material is chemically inert.

Insulator:

uPVC is an excellent electrical insulator and is used extensively as an insulation on electrical wires and cables. Because of this characteristics uPVC Piping is not susceptible to either electrolytic or galvanic corrosion, uPVC Pipes are used as ducts for electrical and communication cables.

Mechanical Strength:

uPVC Pipes will not dent or flatten under pressure because of high tensile and impact strength.

Low Thermal Conductivity:

uPVC has low co-efficient of thermal conductivity and because of this there is no heat loss or gained.

Fire Proof:

uPVC Pipes will not support combustion and in the event of fire, flames are unable to spread along the pipes.

Flow Efficiency:

uPVC Pipes have smooth and glossy surfaces which discourage the formation of scale and deposits.

Light Weight:

uPVC Pipes are of less weight compared to cast iron, asbestos and cement pipes. Due to this reason there is a reduction in manpower and installation cost.

Sanitary:

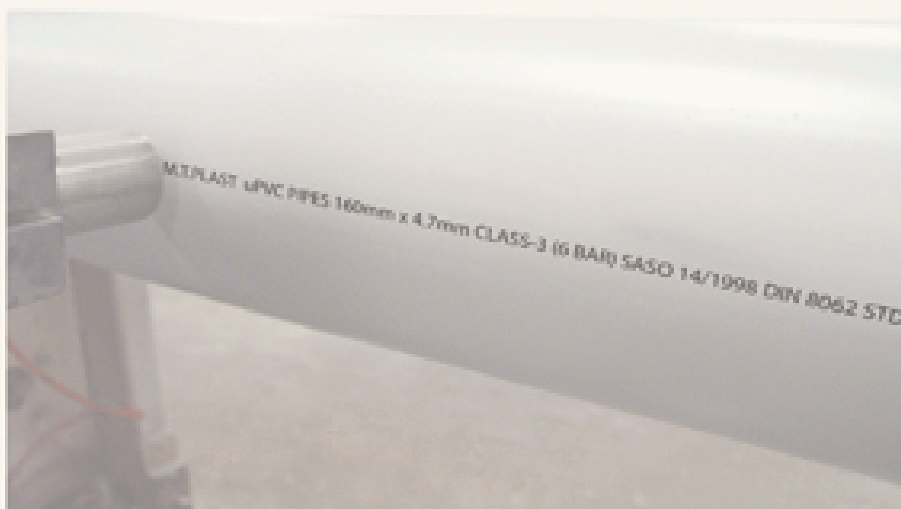
uPVC Pipes are completely non-toxic. uPVC does not effect the taste, smell or color of water or liquid nor react with any liquid to cause a precipitant.

Ease of Installation and Maintenance:

uPVC Pipes are quick and easy to install. No special costs or skills are required. Joints are made leak proof with the help of fittings, solvent cement or rubber rings etc... Repairing can be done very easily with minimum cost.

Cost:

uPVC is one of the least expensive material used in the manufacturing of Pipes and Fittings.



الخصائص الفنية للأنابيب البلاستيكية يو بي في سي

مقاوم التآكل :

لا تتآكل هذه الأنابيب بالأحماض أو القلويات أو الزيوت أو الأملاح وغيرها من المواد نظرا لأن مادة اليو بي في سي خامدة كيميائيا (غير نشطة) .

العزل :

تعتبر مادة اليو بي في سي مناسبة جدا لعزل الكهرباء ويتم استخدامها بصورة مكثفة في صنع العوازل الكهربائية التي تغطي أسلاك الكهرباء . وبسبب هذه العيزة فإن أنابيب اليو بي في سي تقاوم التآكل الإلكتروني أو الجلفاني ، ويتم استخدامها كمواسير لخطات الكهرباء والهاتف .

القوة الميكانيكية :

لا تتعرض أنابيب اليو بي في سي للتشوه أو التمدد عند تعرضها للضغط وذلك بسبب مقاومتها العالية للشد والصدمة .

التقليل التوصيل الحراري :

تتميز أنابيب اليو بي في سي بانخفاض معامل التوصيل الحراري مما يمنع فقد الحرارة أو اكتسابها .

مقاومة الحريق :

لا تساعد أنابيب اليو بي في سي على اشتعال الحرائق ، كما أنه في حال نشوب الحريق لا تسبب الليران في اشتعال هذه الأنابيب .

كفاءة التنظيف :

يفضل الأسطح الخاصة للأنابيب اليو بي في سي يقل احتمال تكون القشور والرواسب .

الوزن الخفيف :

تعتبر أنابيب اليو بي في سي أقل وزنا إذا ما قورنت بالأنابيب الحديد الزهر أو الحديد الصغري (الالستروس) أو الأنابيب الأسمنتية، ولهذا السبب فإن استخدامها يعني تخفيض تكاليف العمالة والتركيب .

الصحة :

ليس للأنابيب اليو بي في سي أي تأثير سفي على الإطلاق ، كما أنها لا تؤثر على طعم أو رائحة أو لون المياه والسوائل التي تمر بها ولا تتفاعل مع تلك السوائل مما يؤكد عدم تكون مواد مرسبة .

سهولة التركيب والصيانة :

تتميز هذه الأنابيب بسهولة وسرعة التركيب، فلا يحتاج الأمر إلى مصروفات إضافية أو مهارات خاصة. جميع الوصلات مقاومة للتسرب بفضل قطع التركيب المتناسبة وحلقات التثبيت المطاطية أو الإسفنجية المحكمة . كما يمكن صيانة هذه الأنابيب بسهولة وبالتحد الأدنى من التكاليف .

التكليف :

تعتبر مادة اليو بي في سي من أقل المواد تكلفة عند استخدامها في تصنيع الأنابيب وقطع التركيب .



Application of M.T. Plast uPVC Pipes

Health Water Supplies:

M.T. Plast uPVC Pipes will not affect the taste, color and odor of drinking water and due to non-toxicity nature pipes will never corrode and are therefore extremely sanitary. Deposits and scales will not build up inside the pipe and the strength is more than asbestos pipes.

Irrigation:

M.T. Plast uPVC Pipes are ideal for agricultural irrigation and sprinkler system. They are suitable for carrying water which contains chemical fertilizers, insect inhibitors and pesticide solutions etc...

Drainage, Waste and Ventilation:

M.T. Plast uPVC Pipes are useful for waste lines of corrosive chemicals, ventilation for office buildings & factories, drainage systems for housing etc...

Industry:

M.T. Plast uPVC Pipes have an important role to play in industrial plants due to resistance to most of the chemicals. Since they are light, non-corrosive and easy to assemble complex piping work can be easily done.

Mining:

M.T. Plast uPVC Pipes are suitable for draining corrosive liquids found in mines. Due to ease of installation they make an ideal vent line for pits.

Electrical & Communication Ducts:

M.T. Plast uPVC Pipes are used as ducts for electrical and communication cables due to good insulation characteristics.



استخدامات منتجات مصنع التقنية من أنابيب اليوبي في سي

مجال توريد المياه الصحية :

تعتبر أنابيب اليوبي في سي آمنة جداً من الناحية الصحية حيث أنها لا تؤثر على طعم أو لون أو رائحة مياه الشرب بسبب انعدام التأثير السمي لها . إضافة إلى ذلك لا تتكون الرواسب والقشور داخل هذه الأنابيب ، كما أنها قوية بشكل يفوق أنابيب العزير الصخري " الاسبتوس " .

مجال الري :

تعتبر مواسير اليوبي في سي التي ينتجها مصنع "التقنية" مثالية للاستخدام لأغراض الري وأنظمة الرش . فهي مناسبة لنقل المياه التي تحتوي على الأسمدة الكيميائية ومواد مكافحة الحشرات ومخادق مبيدات الحشرات وغيرها .

التصريف الصحي والتهوية :

تعتبر هذه الأنابيب مناسبة جداً لنقل مياه الصرف التي تحتوي على المواد الكيميائية التي تسبب التآكل ، وهي مناسبة أيضاً لعمل منافذ التهوية للمكاتب والمصانع وأنظمة التصريف في المنازل .

الصناعة :

تلعب منتجات مصنع "التقنية" من أنابيب اليوبي في سي دوراً هاماً في المنشآت الصناعية نظراً لقوتها على مقاومة معظم المواد الكيميائية .

التعدين :

تعتبر هذه الأنابيب مناسبة لتصريف السوائل الكيميائية المسببة للتآكل والتي توجد عادة في المناجم . ونظراً لسهولة تركيبها فأنها تعمل بصورة رائعة لخط تهوية حفر المناجم .

مواسير كابلات الكهرباء والهاتف :

نظراً لصفات العزل الممتازة التي تتميز بأنابيب اليوبي في سي فإنها تستخدم كمواسير لكابلات الكهرباء والهاتف .



INSTALLATION of uPVC Pipes

A. Method of Solvent welded joints: -

1 - The mating surfaces of the spigot and socket must be wiped with cleaning fluid to remove any adhering mud and grit.

2 - Mark on the spigot the full depth of insertion into the socket. Lightly roughen the penetration length of the spigot and the interior of the socket with emery cloth.

3 - Using a clean rag or absorbent paper and cleaning fluid, thoroughly clean the mating surfaces of both spigot and socket. Ensure that no moisture remains on the areas to be jointed.

4 - Apply solvent cement sparingly in an even layer, to the internal surface of the socket. Apply solvent cement liberally to the mating surface of the spigot. Use a new, inexpensive paint brush of suitable size. Always lay on the solvent cement lengthwise and not with a circular motion.

5 - With the initial pipe length suitably anchored, immediately push the spigot and fully home, without turning the pipe. Wipe off with a rag surplus cement around the outside of the completed joint.

6 - The completed joint should not be disturbed for about five minutes, after which it may be handled with reasonable care. Hydraulic testing to 1 ½ times working pressure may take place 24 hours after completion of joints; working pressure may be applied after 8 hours.

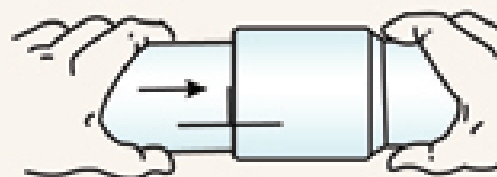
Note: Close the open tin of solvent cement when not in use, do not work near a naked flame and do not mix cleaning fluid with the solvent cement.



4



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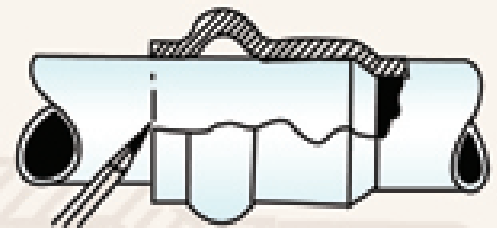
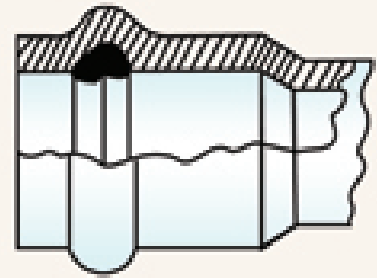
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B. Method of Rubber ring joint : -

- 1 - Ensure that the mating areas of spigot socket are thoroughly clean.
- 2 - Assess the full socket depth by simple measurement and mark spigot accordingly.
- 3 - Apply lubricant to chamfered spigot and to triple sealing section of the rubber gasket.
- 4 - Accurate axial alignment of spigot and socket prior to jointing is important. Hand feed spigot into rubber gasket until resistance from the inner sealing section is felt.
- 5 - Complete the joint by applying leverage to the following socket end using a timber block to prevent damage.

Note: If pipes are cut on site, ensure that the new spigot ends are cut square with a fine toothed saw and are re-chamfered to half pipe thickness with a coarse file before jointing.



Approximate Consumption of Solvent Cement, Cleaner & Lubricant for 100 joints

NOMINAL SIZE	mm	50	63	75	90	110	125	140	160	200	225	250	315
SOLVENT CEMENT	kg	1.7	2.5	3.5	4.5	6.3	7.8	9.6	12.2	17	26	40	50
Cleaner	kg	0.7	1.1	1.5	2.0	2.7	3.5	4.3	5.5	7	10	15	19
Lubricant	kg		0.16	0.20	0.25	0.33	0.40	0.48	0.60	0.94	1.14	1.18	4.50

PRODUCT RANGE of uPVC Pipes

M. T. PLAST is manufacturing uPVC pipes conforming to

1. Saudi Arabian standards SAS 14 & 15 1998 H, German standards DIN-8062
2. American standards ASTM D 1785 & ASTM D-2241
3. British standards BS 3505 / 3506

1. M. T. PLAST uPVC Pipes according to SAS 14-15 / 1998 and DIN 8062 Standards

Nominal O.D. mm	Tolerance on O.D. mm	Class 1 2.5 Bar		Class 2 4 Bar		Class 3 6 Bar		Class 4 10 Bar		Class 5 16 Bar		
		Nominal Thickness mm	Nominal Weight Kg/M	Nominal Thickness mm	Nominal Weight Kg/M	Nominal Thickness mm	Nominal Weight Kg/M	Nominal Thickness mm	Nominal Weight Kg/M	Nominal Thickness mm	Nominal Weight Kg/M	
16	+0.2									1.2	0.09	
20	+0.2									1.5	0.137	
25	+0.2								1.5	0.174	1.9	0.212
32	+0.2								1.8	0.264	2.4	0.342
40	+0.2					1.8	0.344	1.9	0.350	3.0	0.525	
50	+0.2					1.8	0.422	2.4	0.552	3.7	0.809	
63	+0.2					1.9	0.562	3.0	0.854	4.7	1.29	
75	+0.3			1.8	0.642	2.2	0.782	3.6	1.22	5.6	1.82	
90	+0.3			1.8	0.774	2.7	1.13	4.3	1.75	6.7	2.61	
110	+0.3	1.8	0.950	2.2	1.16	3.2	1.64	5.3	2.61	8.2	3.90	
125	+0.3	1.8	1.08	2.5	1.48	3.7	2.13	6.0	3.34	9.3	5.01	
140	+0.4	1.8	1.21	2.8	1.84	4.1	2.65	6.7	4.18	10.4	6.27	
160	+0.4	1.8	1.39	3.2	2.41	4.7	3.44	7.7	5.47	11.9	8.17	
200	+0.4	1.8	1.74	4.0	3.70	5.9	5.37	9.6	8.51	14.9	12.8	
225	+0.5	1.8	1.96	4.5	4.70	6.6	6.76	10.8	10.8	16.7	16.1	
250	+0.5	2.0	2.40	4.9	5.65	7.3	8.31	11.9	13.2	18.6	19.9	
280	+0.6	2.3	3.11	5.5	7.11	8.2	10.40	13.40	16.60	20.8	24.9	
315	+0.6	2.5	3.78	6.2	9.02	9.2	13.2	15.0	20.9	23.4	31.5	
355	+0.7	2.9	4.88	7.0	11.4	10.4	16.7	16.9	26.5	26.3	39.9	
400	+0.7	3.2	6.10	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	4.0	9.38	9.8	22.4	14.6	32.9	23.9	52.6			
560	+1.0	4.2	11.8	11.0	28.1	16.4	41.4	26.7	65.8			
630	+1.1	5.0	14.7	12.4	35.7	18.4	52.2	30.0	83.2			
710	+1.2	5.7	18.9	14.0	45.3	20.7	66.1					
800	+1.3	6.4	23.9	15.7	57.2	23.3	83.9					

1. M.T. PLAST uPVC Pipes according to ASTM D 1785 schedule 40 & 80

Nominal Size In Inch	Schedule 40						Schedule 80			
	Outside Diameter mm		Thickness of wall mm		Weight Kg/M	Pressure Rating Bar	Thickness of Wall mm		Weight Kg/M	Pressure Rating Bar
	Min.	Max.	Min.	Max.			Min.	Max.		
1/2	21.2	21.5	2.8	3.3	0.24	41.4	3.7	4.2	0.31	58.6
3/4	26.6	26.9	2.9	3.4	0.33	33.1	3.9	4.4	0.41	47.6
1	33.4	33.7	3.4	3.9	0.48	31.0	4.6	5.1	0.60	43.4
1 1/4	42.1	42.4	3.6	4.1	0.65	25.5	4.9	5.4	0.84	35.9
1 1/2	48.1	48.4	3.7	4.2	0.77	22.7	5.10	5.7	1.03	32.4
2	60.2	60.5	3.9	4.4	1.04	19.3	5.5	6.2	1.41	27.6
3	88.7	89.1	5.5	6.2	2.14	17.9	7.6	8.5	2.88	25.5
4	114.1	114.5	6.0	6.7	3.05	15.2	8.6	9.6	4.22	22.1
6	168.0	168.5	7.1	8.0	5.37	12.4	11.0	12.3	8.05	19.3
8	218.8	219.4	8.2	9.2	8.11	11.0	12.7	14.2	12.23	17.2

M. T. Plast uPVC Pipes based on ASTM D - 2241

Nominal Size in Inch	Outside Diameter mm		Wall Thickness mm											
			Standard Dimension 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.	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	2.97
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		

PRODUCT RANGE of uPVC Pipes

3. M.T. PLAST uPVC Pipes according to B.S. 3505 & 3506

S i z e	Class - O (non-Pressure)		Class - B (6 Bar)		Class - C (9 Bar)		Class - D (12 Bar)		Class - E (15 Bar)		Class - 6		Class - 7	
	Thickness mm	Weight Kg/M	Thickness mm	Weight Kg/M	Thickness mm	Weight Kg/M	Thickness mm	Weight Kg/M	Thickness mm	Weight Kg/M	Thickness mm	Work Per Bar	Thickness mm	Work Per Bar
1/2"	21.2						1.5	0.142	1.7	0.159	2.8	32	3.7	45
	21.5						1.7	0.192	2.1	0.225	3.3		4.3	
3/4"	26.6						1.6		1.9		2.9	26	3.9	36
	26.9						1.8		2.5		3.4		4.5	
1"	33.4						1.8	0.265	2.2	0.350	3.4	24	4.5	33
	33.7						2.0		2.7		4.0		5.2	
1 1/4"	42.1						2.2	0.434	2.7	0.509	3.6	20	4.8	27
	42.4						2.7		3.2		4.2		5.5	
1-1/2"	48.1	0.384					2.5	0.534	3.1	0.667	3.7	18	5.1	25
	48.4	2.20					3.0		3.7		4.3		5.9	
2"	60.2	0.491			2.5	0.683	3.1	0.850	3.9	1.042			5.5	21
	60.5	2.2			3.0		3.7		4.5				6.3	
2-1/2"	75.0	0.610			3.0	1.016	3.9	1.317	4.8	1.594				
	75.3	2.2			3.5		4.5		5.5					
3"	88.7	0.744	2.9	1.200	3.5	1.417	4.6	1.834	5.7	2.250				
	89.1	2.2	3.3		4.1		5.3		6.6					
4"	114.1	1.217	3.4	1.800	4.5	2.350	6.0	3.050	7.3	3.700				
	114.5	2.8	4.0		5.2		6.9		8.4					
5"	140.0	2.6	3.8		5.5		7.3		9.0					
	140.4	3.1	4.4		6.4		8.4		10.4					
6"	168.0	3.1	4.5		6.6		8.8		10.8					
	168.5	3.7	5.2		7.6		10.2		12.5					
8"	218.8	3.1	5.3		7.8		10.3		12.6					
	219.4	3.7	6.1		9.0		11.9		14.5					

NOTE: uPVC pipes according to B.S. 3505 & 3506 are produced only in solvent joint or plain end.

M.T.Plast uPVC Aboveground Waste Pipes According to B.S. 5255

a)

Nominal Size In Inch	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	0.378
50 (2 ")	55.75	56.05	2.0	2.4	0.519

b)

Nominal Size In Inch	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	2.3	2.8	0.452
50 (2 ")	55.75	56.05	2.4	2.9	0.620

M.T.Plast uPVC Drain, Water, Vent Pipes According to ASTM D-2265

Nominal Size In Inch	Outside Diameter (mm)		Wall Thickness (mm)		Weight Kg/ m
	Min.	Max.	Min.	Max.	
1 1/4	42.03	42.29	3.56	9.06	0.65
1 1/2	48.11	48.41	3.68	4.19	0.77
2	60.17	60.47	3.91	4.42	1.04
3	88.7	89.1	5.49	6.15	2.14
4	114.1	114.5	6.02	6.73	3.05
6	168	168.56	7.11	7.98	5.37
8	218.7	219.46	8.18	9.17	8.11

PRODUCT RANGE of uPVC Pipes

M.T.Plast uPVC Drain, Water, Vent Pipes According to Din 19531

Nominal Size in Inch	Outside Diameter (mm)		Wall Thickness (mm)		Weight Kg/ m
	Min.	Max.	Min.	Max.	
40	40.0	40.2	1.8	2.2	0.381
50	50.0	50.2	1.8	2.2	0.481
75	75.0	75.3	1.8	2.2	0.642
110	110.0	110.3	2.2	2.7	1.160
125	125.0	125.3	2.5	3.0	1.480
160	160.0	160.4	3.2	3.8	2.410

M.T. Plast uPVC Underground Sewer Pipe (Gravity) According to BS 5481

Nominal Size in Inch	Outside Diameter (mm)		Wall Thickness (mm)		Weight Kg/ m
	Min.	Max.	Min.	Max.	
200	200.0	200.6	4.9	5.6	4.50
250	250.0	250.7	6.1	7.0	7.01
315	315.0	315.9	7.7	8.7	11.07
400	400.0	401.0	9.8	11.0	17.83

M.T. Plast uPVC Underground Drainage & Sewer Pipes According to BS 4660

Nominal Size in Inch	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

M.T. Plast uPVC Aboveground Soil Pipes According to BS 4514

Nominal Size in Inch	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 (5")	160.0	160.6	3.3	3.9	2.47

M.T.Plast uPVC Drain, Water, Vent Pipes According to DIN 19534

Nominal Size in mm	Outside Diameter (mm)		Wall Thickness (mm)		Insertion Depth	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

M.T.Plast uPVC Sewer Pipes (Gravity) According to DIN 8061 / DIN 8062

Nominal Size in mm	Outside Diameter (mm)		Wall Thickness (mm)		Weight Kg/ m
	(D)	Tolerance	(S)	Tolerance	
110	110	0.3	3.2	+0.6	1.64
125	125	0.3	3.7	+0.6	2.130
160	160	0.4	4.7	+0.7	3.440
200	200	0.4	5.9	+0.8	5.370
250	250	0.5	7.3	+1.0	8.310
315	315	0.6	9.2	+1.2	13.2
400	400	0.7	11.7	+1.4	21.1
500	500	0.9	14.6	+1.7	32.90

PRODUCT RANGE of uPVC Pipes

M.T.Plast uPVC Drain, Water, Vent Pipes According to NEMA TC-2

Nominal Size in Inch	Average Outside Diameter mm	EPT - PVC		EPC - 40 - PVC		EPC- 80 - PVC	
		Wall Thickness (Minimum) mm	Nominal Weight Kg/m	Wall Thickness (Minimum) mm	Nominal Weight Kg/m	Wall Thickness (Minimum) mm	Nominal Weight Kg/m
1/2	21.34	1.52	0.155	2.77	0.248	3.73	0.309
3/4	26.67	1.52	0.198	2.87	0.329	3.91	0.418
1	33.40	1.52	0.251	3.38	0.483	4.55	0.614
1 1/4	42.16	1.78	0.365	3.56	0.652	4.85	0.850
1 1/2	48.26	2.03	0.470	3.68	0.779	5.08	1.03
2	60.32	2.54	0.719	3.91	1.04	5.54	1.43
2 1/2	73.02	2.79	0.952	5.16	1.65	7.01	2.18
3	88.90	3.18	1.31	5.49	2.16	7.62	2.91
4	114.30	3.81	2.00	6.02	3.07	8.56	4.26
5	141.05	-	-	6.22	4.18	9.52	6.42
6	168.26	-	-	7.11	5.41	10.97	8.13

EPT **Electrical Plastic Tubing** - Designed to be encased in concrete

EPC - 40 **Electrical Plastic Tubing** - Designed to be normal duty in concrete

EPC - 80 **Electrical Plastic Tubing** - Designed for heavy duty application



M.T.Plast uPVC Pipes According to NEMA TC - 6 & ASTM F512

Normal Size Inch	Average Outside Diameter mm	PVC - TYPE EB 20		PVC - TYPE DB 60	
		Wall Thickness (Minimum) mm	Nominal Weight Kg/M	Wall Thickness (Minimum) mm	Nominal Weight Kg/M
2	60.32	1.52	0.465	1.52	0.465
3	88.90	1.55	0.703	2.34	1.00
4	114.30	2.08	1.17	3.07	1.65
5	141.05	2.62	1.71	3.86	2.5
6	168.28	3.18	2.53	4.62	3.57

M.T.Plast uPVC Pipes According to NEMA TC - 8 & ASTM F512

Normal Size Inch	Average Outside Diameter mm	PVC - TYPE EB 135		PVC - TYPE DB 120	
		Wall Thickness (Minimum) mm	Nominal Weight Kg/M	Wall Thickness (Minimum) mm	Nominal Weight Kg/M
1	33.40	-	-	1.52	0.251
1 1/2	48.28	-	-	1.52	0.369
2	60.32	1.52	0.465	1.96	0.576
3	88.90	1.93	0.847	3.00	1.25
4	114.30	2.54	1.39	3.91	2.06
5	141.05	3.20	2.09	4.85	3.12
6	168.28	3.86	3.02	5.77	4.42

Type EB : Designed for encased burial in concrete

Type DB : Designed for direct burial without encasement in concrete

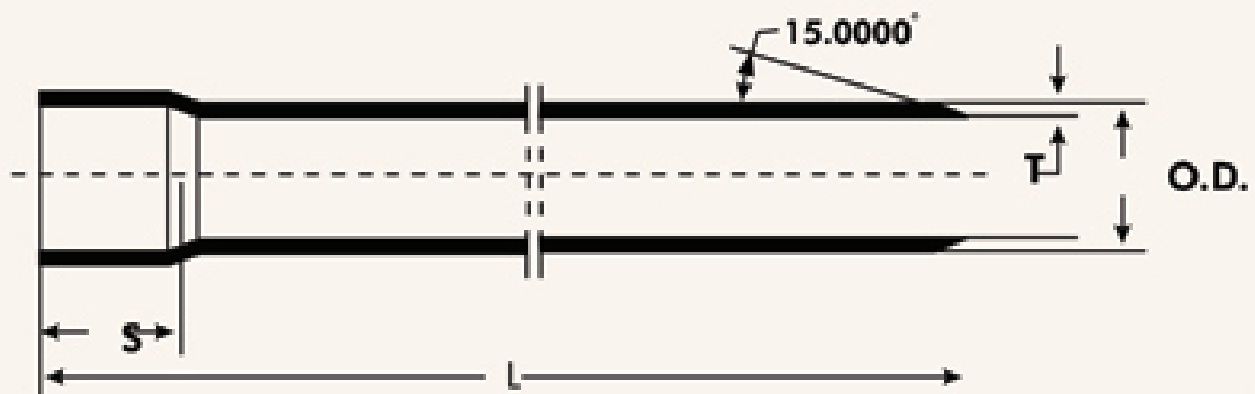
Length of Pipe : Standard 6 meter length other length available on request

Pipe Jointing : Each pipe has an integral solvent weld socket or plain ended

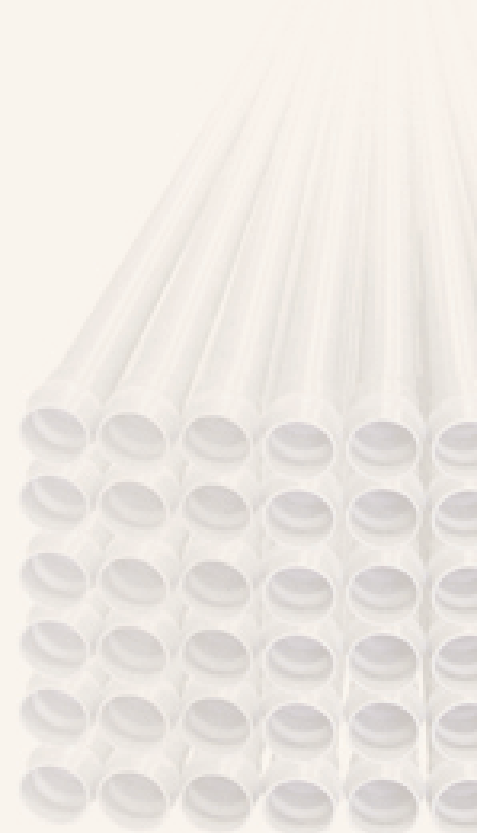
Colour of Pipe : Grey (Other colour on request)

Specification of uPVC Pipes

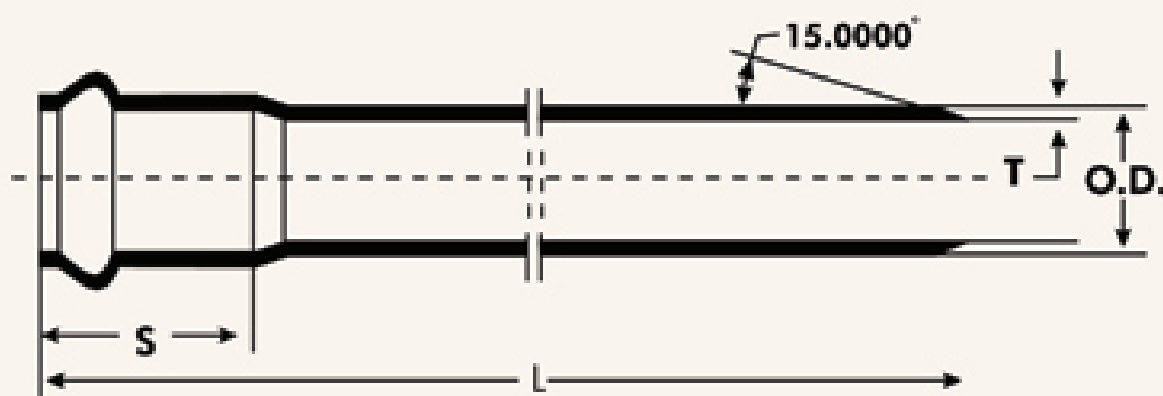
M.T. PLAST uPVC pipes with Solvent Joint



O . D	S	NP 6/20 C Class		NP 10/20 C Class 4		NP 16/20 C Class 5	
		T	KG	T	KG	T	KG
20	33					1.5	0.137
25	33			1.5	0.174	1.9	0.212
32	33			1.8	0.264	2.4	0.342
40	42			1.9	0.350	3.0	0.525
50	54	1.8	0.422	2.4	0.552	3.7	0.809
63	68	1.9	0.562	3.0	0.854	4.7	1.29
75	78	2.2	0.782	3.6	1.22	5.6	1.82
90	88	2.7	1.13	4.3	1.75	6.7	2.61
110	99	3.2	1.64	5.3	2.61	8.2	3.90
125	109	3.7	2.13	6.0	3.34	9.3	5.01
140	152	4.1	2.65	6.7	4.18	10.4	6.27
160	152	4.7	3.44	7.7	5.47	11.9	8.17
200	175	5.9	5.37	9.6	8.51	14.9	12.8
225	195	6.6	6.76	10.8	10.8	16.7	16.1
250	200	7.3	8.31	11.9	13.2	18.6	19.9
280	224	8.2	10.40	13.4	16.60	20.8	24.9
315	250	9.2	13.20	15.0	20.90	23.4	31.5
400	320	11.7	21.10	19.1	33.70	29.7	50.8



M.T. PLAST uPVC pipes with angle joint



O . D	S	NP 6/20 C Class 3		NP 10/20 C Class 4		NP 16/20 C Class 5	
		T	KG	T	KG	T	KG
63	99	1.9	0.562	3.0	0.854	4.7	1.29
75	103	2.2	0.782	3.6	1.22	5.6	1.82
90	108	2.7	1.13	4.3	1.75	6.7	2.61
110	115	3.2	1.64	5.3	2.61	8.2	3.90
125	119	3.7	2.13	6.0	3.34	9.3	5.01
140	124	4.1	2.65	6.7	4.18	10.4	6.27
160	132	4.7	3.44	7.7	5.47	11.9	8.17
200	141	5.9	5.37	9.6	8.51	14.9	12.8
225	152	6.6	6.76	10.8	10.8	16.7	16.1
250	162	7.3	8.31	11.9	13.2	18.6	19.9
280	181	8.2	10.40	13.4	16.60	20.8	24.9
315	204	9.2	13.20	15.0	20.90	23.4	31.5
400	259	11.7	21.10	19.1	33.70	29.7	50.8

TECHNICAL DATA of uPVC Pipes

1. Physical Properties

Material	: Unplasticised Polyvinyl Chloride
Color	: Grey, White, Black or any other color on request.
Specific Gravity	: 1.42 ± 0.02
Standard Length	: Available in the standard length as per customer requirement. Pipes are manufactured with solvent joint socket, rubber joint socket or plain end.
Flammability	: Will not support combustion

2. Mechanical Properties

Tensile Strength	: 492-527 kg/cm ²
Impact Strength(Izod) (Inch Notch Charpy)	: 4.75 - 5.42 joules
Impact Strength (Free Falling)	: No Break
Compressive Strength	: 668 kg/cm ²
Flexural Strength	: 950 kg/cm ²
Modulus of Elasticity	: 3.2×10^4 kg/cm ²
Elongation at Break	: >125%
Water Absorption	: < 4 mg/cm ³

3. Electrical Properties

Volume Resistivity	: 10^{11} ohm/cm
Dielectric Strength	: > 40 kv/mm
Power Factor at 10 ⁶ cycle	: 3.3
Surface Resistance	: 10^{11} ohm

4. Chemical Properties

Resistance to sulfuric acid	: (-0.013)(+0.316) gm/45 cm ²
Methylene Chloride Test	: Passed

5. Thermal Properties

Softening Point(VSP 5 Kg)	: 82 deg. C
Co-efficient of Linear Expansion	: 5×10^{-5} / deg. C
Specific Heat	: 0.25 cal/g deg.C

6. Toxicity

Pb	: < 0.3 mg/L
Sn	: < 0.02 mg/L
Zn	: < 0.01 mg/L



ELEVATED TEMPERATURES of uPVC Pipes

1. In Fig. - 1 - Pressure - Temp. Relationship
Ambient variable.

Internal Temp. 20°C

For ambient temperature of 40°C, a required working pressure of 6 bars, requires a 10 bar rated pipe.

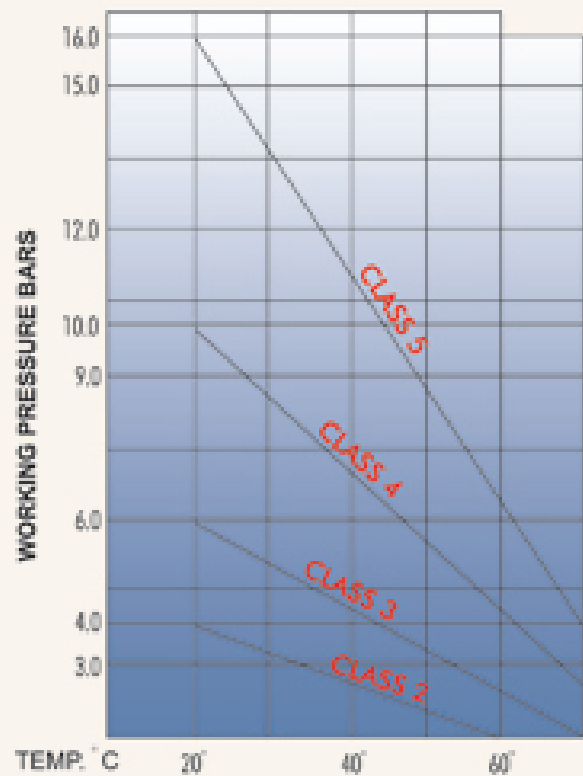


FIG. 1

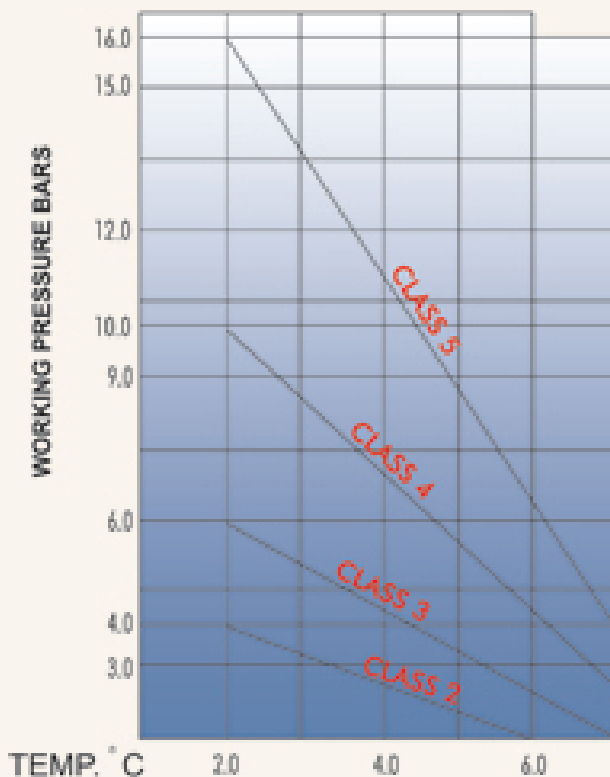


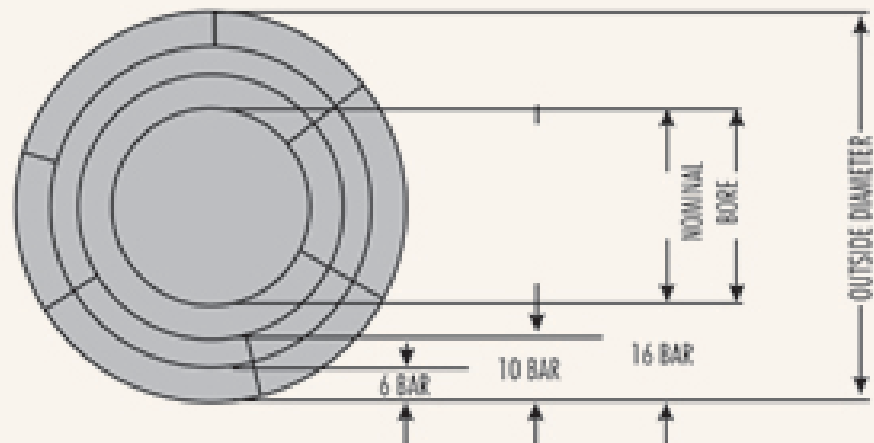
FIG. 2

2. In Fig. - 2 - Pressure - Temp. Relationship
Ambient Temp. 20°C - Internal variable.

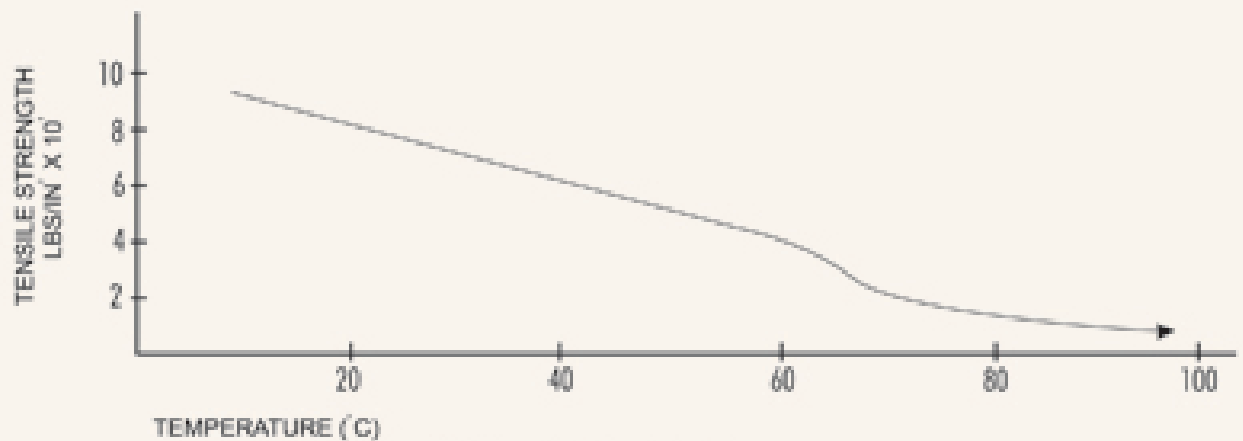
For a required working pressure of 8 bars with liquid temperature of 40°C, a 16 bar rated pipe is required.

RELATION BETWEEN THICKNESS & PRESSURE

RELATION BETWEEN THICKNESS AND PRESSURE

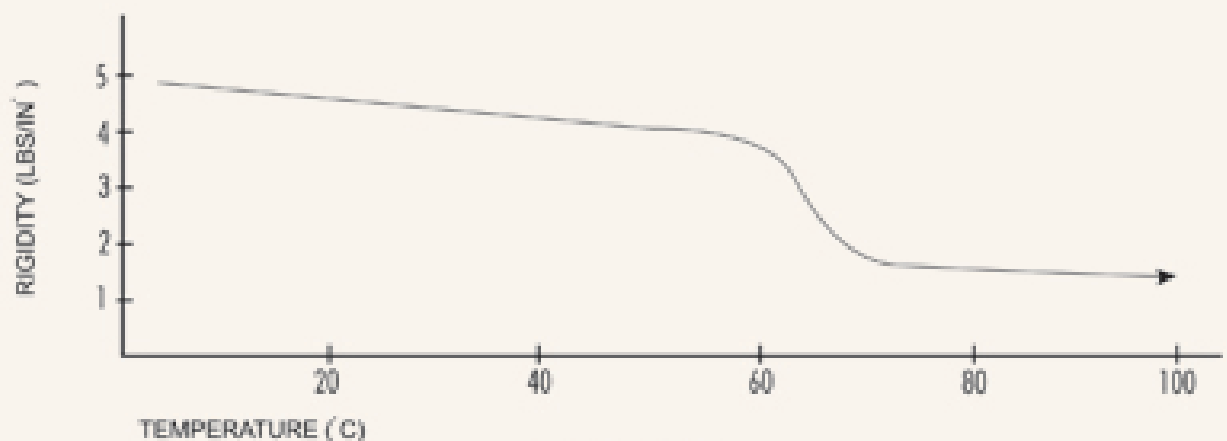


RELATION BETWEEN TENSILE STRENGTH AND TEMPERATURE



NOTE : 1 BAR = 14.5 P.S.I.

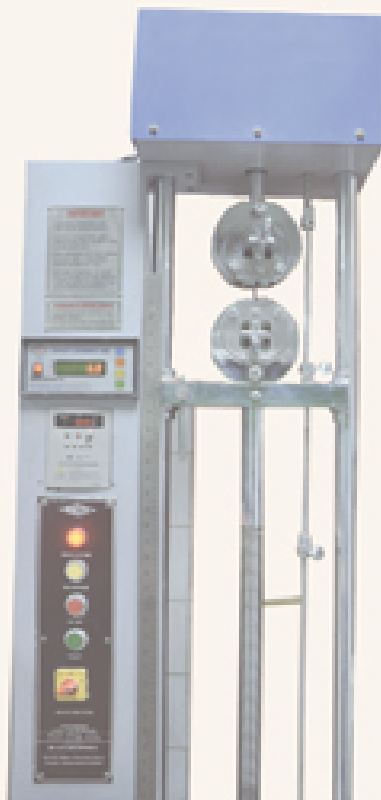
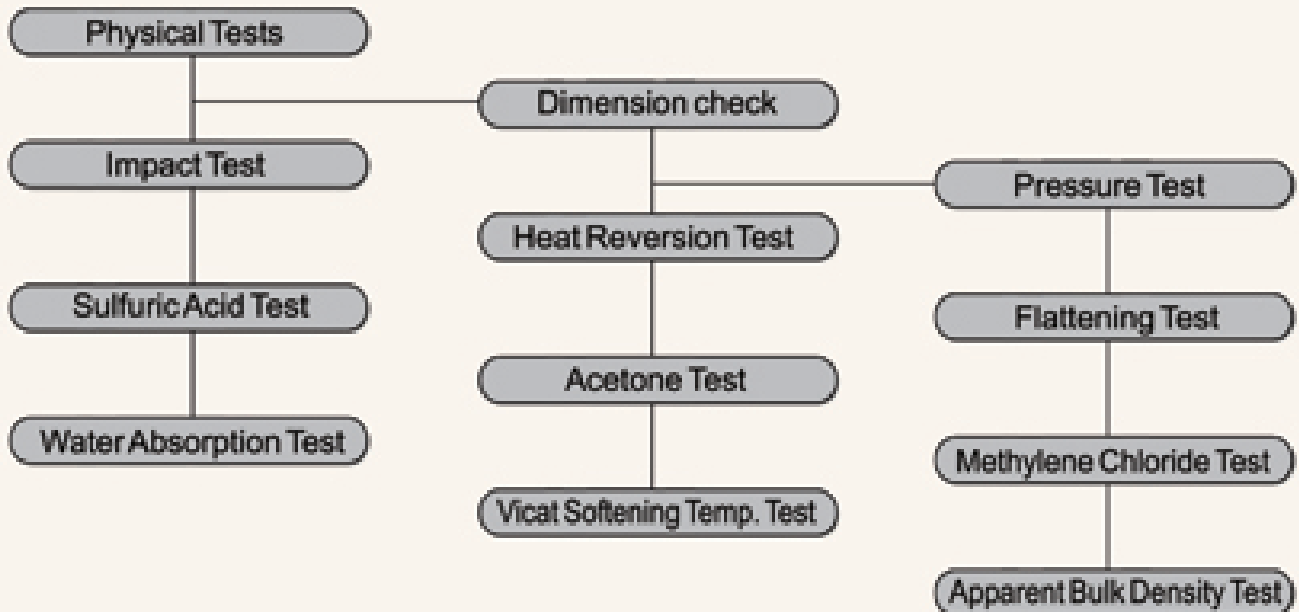
RELATION BETWEEN RIGIDITY AND TEMPERATURE



NOTE : 1 BAR = 14.5 P.S.I.

Quality Assurance of M.T.Plast uPVC Pipes

M.T. Plast uPVC Pipes are tested in the laboratory to maintain the quality level in the permissible standard limits. We perform the below mentioned routine control tests on the uPVC Pipes as per SAS, DIN and ASTM Standards.



PERFORATED & SLOTTED PIPES

1. Perforated Pipes

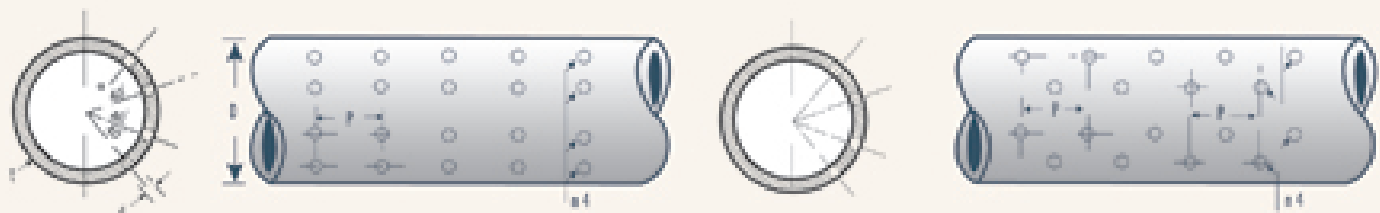
M.T. PLAST produces perforated uPVC pipes for use in sub-soil drainage systems. The figures a & b below give general configuration which may be varied within the following parameters depending on size and class of pipe selected.

PARAMETERS		LIMITS OF VARIATION
Outside diameter,	D	32 mm to 500 mm in standard sizes
Wall thickness	t	In accordance with the class of pipe selected
Longitudinal pitch of holes,	p	30 mm to 200 mm depending on size and class of pipe
Hole diameter	d	3 mm to 10 mm depending on size and class of pipe
Number of rows,	n	1 to 4
Angular pitch of holes,	a	40 degrees for 3 or 4 rows 40, 80 or 120 degrees for 2 rows

Arrangement of rows

Fig. a (Straight rows)

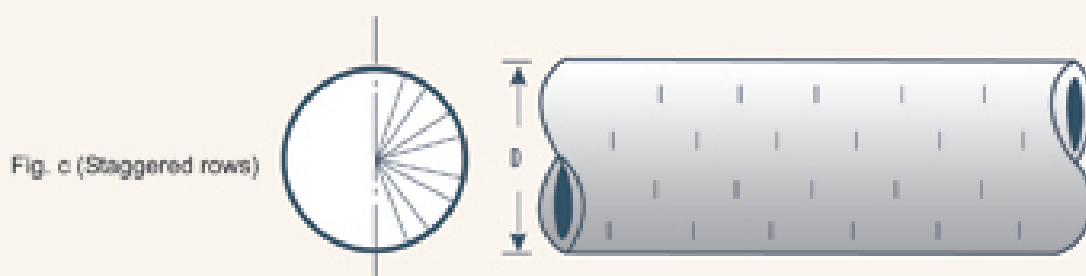
Fig. b (Staggered rows)



For example, a typical 4 rows of 6 mm diameter holes at longitudinal pitch of 70 mm will give an intake area in excess of 1000 Sq. mm per meter length of pipe.

2. Slotted Pipes

M.T. PLAST also produces SLOTTED uPVC pipes for use in lowering the underground water bed as shown in Fig. c below.



MAJOR CLIENTS FOR M.T.PLAST uPVC Pipes

Ministry of Agriculture

- i. Riyadh water treatment and distribution system III stage part2.
- ii. Riyadh water treatment and distribution system city treatment plants disposal of projects.

Ministry of Municipality & Rural Affairs (Riyadh, Dammam)

- i. uPVC pipes for water supply.
- ii. uPVC pipes for sewage projects

Ministry of Education

- i. uPVC pipes & Fittings for schools and colleges projects throughout the kingdom.

Ministry of Commerce

- i. uPVC pipes & Fittings for water for grain silos projects, Riyadh and Al-Qassim.

Ministry of Interior

- i. uPVC pipes & Fittings for security housing projects throughout the Kingdom and frontier posts.
- ii. Ministry new building project- Riyadh.

Royal Commission for Jubail & Yanbu

- i. uPVC pipes for pressure and sewage networks.
- ii. Perforated uPVC pipes for land drainage.

Ministry of Public Works & Housing

- i. uPVC pipes & Fittings for housing projects in Riyadh, Al- Dammam, Alkhobar, Medina.

Saudi Arabian National Guard

- i. uPVC pipes & Fittings for housing projects in Riyadh, Jeddah, Dammam, Al-Hasa

Ministry of Defense & Aviation

- i. uPVC pipes & Fittings for the Royal Saudi Air Force project.
- ii. uPVC pipes and Fittings for the Royal Saudi Naval Forces project.

Water & Sewage Authorities

- i. uPVC pipes & Fittings for many projects throughout the kingdom.

Ministry of Communication

- i. uPVC pipes & Fittings for Riyadh Ring Road project, Makkah road inter section and Riyadh - Dammam expressway project and many other projects all over the Kingdom.

Ministry of Industry

- i. uPVC pipes & Fittings for industrial estates projects, Jeddah, Riyadh, Dammam & Al-Qasim..
- ii. uPVC pipes and Fittings for the 2nd Estate project I phase II.

Ministry of Health

- i. uPVC pipes & Fittings for Hospital projects throughout the Kingdom.

Riyadh Dev. Authority

- i. uPVC slotted pipes for lowering of under ground water table in various areas of Riyadh.

National Water Company (NWC)

- i. uPVC pipes for water supply.
- ii. uPVC pipes for sewage projects.

Aramco


- i. M.T.Plast uPVC Pipes for Class -3 & SCH-40.

Export Projects

- i. uPVC pipes & Fittings exported to GCC countries, Middle East, and Africa.

Jordan

- i. Our products are certified by Royal Science Society.
- ii. SARAYAAQABA PROJECT.
- iii. Araba Potash Company: Aqaba Warehouse Extension.



Visit Our Website www.mt-plast.com