



مصنع الخام الوطني للبلاستيك

NATIONAL KHAM PLASTIC FACTORY

P.V.C PIPES



PVC PIPES
أنابيب بي-في-سي
Catalog كتالوج





الهيئة السعودية للمواصفات والمقاييس والجودة
Saudi Standards, Metrology and Quality Org.



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مجلس الغرف السعودية
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Ruo Al Madinah Holding



بلدي
bāladī



أمانة الأحساء
ALAJSA MUNICIPALITY



الشركة السعودية للكهرباء
Saudi Electricity Company



وزارة الشؤون البلدية والقروية



الهيئة الملكية لمدينة الرياض
ROYAL COMMISSION FOR RIYADH CITY



منشآت
monsha'at



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PDC Projects Development Company



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Welcome To National Kham Plastic Factory

National Kham Plastic Factory was established to produce quality plastic products. Our main product is Unplasticized Poly Vinyl Chloride (uPVC) plastic pipes under I.S.O, B.S, A.S.T.M, S.A.S.O, and other International standards in order to become the best alternative to metal pipes.

The UPVC alternative is cheaper, more efficient, easy to transport to site, easy to install and resistant to corrosion and chemicals. Compared to polypropylene and polythelene UPVC pipes are less costly, last longer and better hygienically. In our modern lifestyle UPVC pipes are a better technical solution

uPVC pipes are used in all-important applications such as, high quality conduits for electric wiring systems. soil waste for residential and multi-story buildings (above/ under ground).

National Kham UPVC pipes are produced in sizes and thickness suitable for all working situations. Our products are sold in local markets and neighboring gulf countries. Having a successful management style National Kham Plastic Factory is committed to high quality and environmentally friendly products and therefore should be your choice.



الخام الوطني
NATIONAL KHAM

مصنع الخام الوطني للصناعات البلاستيكية
NATIONAL KHAM PLASTIC FACTORY

About Us:

Being environmentally conscious, National Kham Pipes looks to produce products that care for the future. In order to keep standards high, we obtained certification from ISO9001-2015 - ISO 45001- 2018 and follow all procedures and process needed to fulfill the quality management system.

Our Mission:

National Kham Pipes aims to be the leading producer and supplier of top quality polyvinyl chloride (uPVC) in the Middle East. We focus on the development, manufacturing and distribution of our pipes to clients that are looking for suitable price.

Our Vision:

Our vision is to provide our clients with sustainable uPVC pipes at appropriate price in order for us to build a better tomorrow.



Material Properties of U-PVC Pipes

Material: Unplasticized Poly vinyl Chloride UPVC

Color : Gray

General Properties: All values at 20°C

Specific Gravity: 1.42 + 0.02

Flamability: will not supports combustion.

خواص مواد أنابيب اليوبي في سي

المواد : عديد كلوريد الفينيل القاسي (يو بي في سي)
اللون : رمادي غامق

شروط عامة : جميع القيم مقاسة عند ٢٠ درجة مئوية .

الثقل النوعي : 1.42 ± 0.02

امكانية الاحتراق - قابلية الاشتعال : لا تساعد على
الاشتعال .

لا تؤثر على خواص الماء



مقاومة لعوامل المناخ وتأثيرات التربة

General Advantages U-PVC Pipes

MANUFACTURING STANDARDS

SASO 14/15

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

UL

SASO - ISO - 4435

SASO - ISO - 1452-2

UPVC pipes according to (SASO 14/15, DIN 8061 /8062, DIN 19532, ISO 161)

Class		Class1		Class2		Class3		Class4		Class5	
Nominal Pressure in Bars		2 BAR		4 BAR		6 BAR		10 BAR		16 BAR	
Nom-OD mm	Tolerance on Nom-OD mm	Nom-wt. kg/m	Nom-wt. kg/m	Nom thick of wall mm	Nom-wt. kg/m	Nom thick of wall mm	Nom-wt. kg/m	Nom thick of wall mm	Nom-wt. kg/m	Nom thick of wall mm	Nom-wt. kg/m
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	0.334	1.9	0.35	3	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	0.854	4.7	1.28
75	+0.3			1.8	0.642	2.2	0.782	3.6	1.22	5.6	1.82
90	+0.3			1.9	0.774	2.7	1.13	4.3	1.75	6.7	2.61
110	+0.3	1.8	0.95	2.2	1.16	3.2	1.64	5.3	2.61	8.2	3.9
125	+0.3	1.8	1.08	2.5	1.48	3.7	2.13	6	3.64	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
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	+0.6	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	33.1	
500	+0.9	4.0	9.38	9.8	22.4	14.6	32.9	23.9	52.6	36.8	
630	+1.1	5.0	14.7	12.4	35.7	18.4	52.2	30.0	83.4		
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				

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

Colour : Gray.

Socket Type : Rubber joint (R/I) type supplied from sizes 63 mm up to 500mm.

Solvent Cement (SC/I) type supplied from sizes 20mm up to 500mm.

SASO-ISO 1452-2

Wall thickness and their tolerances

The nominal wall thickness, e_n , is classified with the pipe series S. The nominal wall thickness corresponds to the minimum allowable wall thickness.

The nominal wall thickness shall conform to Table 2, as appropriate to the pipe series.

The tolerance for wall thickness, e , shall conform to Table 3.

Table 2 — Nominal (minimum) wall thicknesses
Pipe series S

Nominal (minimum) wall thickness



S 20 (SDR 41)		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 design coefficient $C \square 2,5$														
Nominal outside diameter, dn	PN 6		PN 8		PN 10		PN 12,5		PN 16		PN 20			
	tmin	Wt. kg/m	tmin	Wt. kg/m	tmin	Wt. kg/m	tmin	Wt. kg/m	tmin	Wt. kg/m	tmin	Wt. kg/m		
20	—	—	—	—	—	—	—	—	—	—	1,5	0.14	1,9	0.17
25	—	—	—	—	—	—	—	—	1,5	0.18	1,9	0.22	2,3	0.26
32	—	—	—	—	1,5	0.23	1,6	0.25	1,9	0.28	2,4	0.35	2,9	0.41
40	—	—	1,5	0.29	1,6	0.31	1,9	0.36	2,4	0.45	3,0	0.54	3,7	0.65
50	—	—	1,6	0.39	2,0	0.48	2,4	0.57	3,0	0.69	3,7	0.83	4,6	1.01
63	—	—	2,0	0.60	2,5	0.75	3,0	0.88	3,8	1.09	4,7	1.32	5,8	1.59
75	—	—	2,3	0.84	2,9	1.02	3,6	1.53	4,5	1.54	5,6	1.87	6,8	2.22
90	—	—	2,8	1.20	3,5	1.48	4,3	1.80	5,4	2.21	6,7	2.68	8,2	3.22

Nominal pressure PN based on design coefficient $C \square 2,0^a$

Nominal outside diameter, dn	PN 6		PN 8		PN 10		PN 12,5		PN 16		PN 20		PN 25	
	tmin	Wt. kg/m	tmin	Wt. kg/m	tmin	Wt. kg/m	tmin	Wt. kg/m	tmin	Wt. kg/m	tmin	Wt. kg/m	tmin	Wt. kg/m
110	2,7	1.43	3,4	1.78	4,2	2.17	5,3	2.69	6,6	3.28	8,1	3.97	10,0	4.77
125	3,1	1.87	3,9	2.29	4,8	2.79	6,0	3.43	7,4	4.18	9,2	5.11	11,4	6.18
140	3,5	2.34	4,3	2.85	5,4	3.52	6,7	4.30	8,3	5.25	10,3	6.39	12,7	7.70
160	4,0	3.03	4,9	3.67	6,2	4.61	7,7	5.63	9,5	6.85	11,8	8.34	14,6	10.10
180	4,4	3.77	5,5	4.65	6,9	5.74	8,6	7.07	10,7	8.66	13,3	10.58	16,4	12.77
200	4,9	4.62	6,2	5.82	7,7	7.11	9,6	8.76	11,9	10.68	14,7	12.97	18,2	15.74
225	5,5	5.85	6,9	7.24	8,6	8.93	10,8	11.06	13,4	13.54	16,6	16.47	—	—
250	6,2	7.32	7,7	8.97	9,6	11.06	11,9	13.53	14,8	16.59	18,4	20.28	—	—
280	6,9	9.06	8,6	11.21	10,7	13.79	13,4	17.07	16,6	20.83	20,6	25.41	—	—
315	7,7	11.38	9,7	14.19	12,1	17.56	15,0	21.45	18,7	26.38	23,2	32.19	—	—
355	8,7	14.46	10,9	17.94	13,6	22.18	16,9	27.22	21,1	33.56	26,1	40.80	—	—
400	9,8	18.32	12,3	22.84	15,3	28.12	19,1	34.70	23,7	42.40	29,4	51.74	—	—
450	11,0	23.10	13,8	28.75	17,2	35.54	21,5	43.87	26,7	53.71	33,1	65.53	—	—
500	12,3	28.74	15,3	35.45	19,1	43.83	23,9	54.11	29,7	66.35	36,8	80.84	—	—
560	13,7	35.27	17,2	41.41	21,4	54.15	26,7	65.80	—	—	—	—	—	—
630	15,4	45.24	19,3	56.24	24,1	69.58	30,0	85.52	—	—	—	—	—	—
710	17,4	57.55	21,8	71.45	27,2	88.42	—	—	—	—	—	—	—	—
800	19,6	71.94	24,5	83.90	30,6	110.40	—	—	—	—	—	—	—	—

To apply a design coefficient of 2,5 (instead of 2,0) for pipes with nominal diameters above 90 mm, the next higher pressure rating, PN, shall be chosen.

NOTE 1 The nominal wall thicknesses conform to ISO 4065^[4].

NOTE 2 The PN 6 values for S 20 and S 16 are calculated with the preferred number 6,3.

SASO - ISO - 1452

Table1_Nominal outside diameters and tolerances

Dimensions in millimeters

Nominal outside diameter d_n	Tolerance for mean outside diameter, d_{em}^a x	Tolerance for out-of-roundness ^b	
		S 20 to S 16 ^c	S 12,5 to S 5 ^c
12	0.2		0.5
16	0.2		0.5
20	0.2		0.5
25	0.2		0.5
32	0.2		0.5
40	0.2	1.4	0.5
50	0.2	1.4	0.6
63	0.3	1.5	0.8
75	0.3	1.6	0.9
90	0.3	1.8	1.1
110	0.4	2.2	1.4
125	0.4	2.5	1.5
140	0.5	2.8	1.7
160	0.5	3.2	2
180	0.6	8.6	2.2
200	0.6	4	2.4
225	0.7	4.5	2.7
250	0.8	5	3
280	0.9	6.8	3.4
315	1	7.6	3.8
355	1.1	8.6	4.3
400	1.2	9.6	4.8
450	1.4	10.8	5.4
500	1.5	12	6

^a The tolerance conforms to grade D of ISO 11922-1⁽³⁾ for $d_n \leq 50$ and to grade C for $d_n > 50$. The tolerance is expressed in the form $^{+x}_0$ mm, where x is the value of the tolerance.

^b The tolerance is expressed as the difference between the largest and the smallest outside diameter in a Cross-section of the pipe (i.e. $d_{e, max} - d_{e, min}$).

^c For $d_n \leq 250$, the tolerance conforms to grade N of ISO 11922-1⁽³⁾.

For $d_n > 250$, the tolerance conforms to grade M of ISO 11922-1⁽³⁾. The requirement for out-of-roundness is only applicable prior to storage.

^d For a d_n of 12 to 1 000, the tolerance conforms to 0,5 grade M of ISO 11922-1⁽³⁾. The requirement for out-of-roundness is only applicable prior to the pipe leaving the manufacturers premises.

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	88.8	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	4.42	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 : Schdule 40 - White, Schdule 80 - Grey

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

UPVC Pressure-rated pipes According to ASTM D 2241

Nominal size Inch.	O.D (mm)		Wall Thickness (mm)											
			Standard Diameter Ratio (SDR)											
	min	max	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	1.6	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	3.12	3.63
1 1/2	48.11	48.41			1.52	2.03	1.85	2.36	2.29	2.8	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	88.7	89.1	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	2.8	3.3	3.51	4.01	4.39	4.9	5.44	6.1	6.73	7.54	8.46	9.47
6	168	168.56	4.11	4.62	5.18	5.79	6.48	7.26	8.03	9	9.91	11.1	12.47	13.97
8	218.7	219.46	5.33	5.97	6.73	7.54	8.43	9.45	10.41	11.66	12.9	14.45		

Note : the maximum pressure rating given is based on water at 73°F / 23°C and of unthreaded pipes

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

Colour : White

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

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	3.1	3.7	3.9	4.5	1.8	2.2			5.5	6.3
2 1/2	75	75.3			3	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	4.5	5.2	6	6.9	7.3	8.4	2.3	2.8				
5	140	140.4	3.8	4.4	5.5	6.4	7.3	8.4	9	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	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 - which is grey.

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

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

UPVC Sewer Pipes (Gravity) According to DIN 19534.

Applications : Sewerage Pipe Underground

Nominal size (mm)	Outside Diameter (mm)		Wall Thickness (mm)		Insertion Depyh (mm)	Weight kg/m
	D	Tolerance	(S)	Tolerance		
110	110	0.3	3	0.5+	115	1.63
125	125	0.3	3	0.5+	120	1.87
160	160	0.4	3.6	0.6+	132	2.65
200	200	0.4	4.5	0.7+	145	4.12
250	250	0.5	6.1	0.9+	160	7
315	315	0.6	7.7	1.0+	180	11.11
400	400	0.7	9.8	1.2+	200	17.8
500	500	0.9	12.2	1.5+	250	27.649

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

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

UPVC Drain Pipes According to DIN 19531.

Applications : Waste & Soil discharge systems inside buildings

Nominal size (mm)	Outside Diameter (mm)		Wall Thickness (mm)		Weight kg/m
	Min	Max	Min	Max	
40	40	40.2	1.8	2.2	0.381
50	50	50.2	1.8	2.2	0.481
75	75	75.3	1.8	2.2	0.642
110	110	110.3	2.2	2.7	1.160
125	125	125.3	2.5	3	1.480
160	160	160.4	3.2	3.8	2.410

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

Colour : Gray.

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

UPVC Underground Sewer Pipe (Gravity) According to BS 5481

Applications : Gravity Sewerage Underground

Nominal size (mm)	Outside Diameter (mm)		Wall Thickness (mm)		Weight kg/m
	Min	Max	Min	Max	
200 (8")	200	200.6	4.9	5.6	4.5
250 (10")	250	250.7	6.1	7	7.01
315 (12")	315	315.9	7.7	8.7	11.07
400 (16")	400	401	9.8	11	17.83

UPVC Underground Drainage & Sewerage Pipes according to BS 4660

Applications : Drainage Under Gardens, Fields, Driveways & Roads

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

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

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 Aboveground

Nominal size (mm)	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	110.4	3.2	3.8	1.64
160 (6")	160	160.6	3.3	3.9	2.47

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

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

Non standard lengths & colours available on request.

SASO-ISO 4435

Table 3 Mean outside diameters

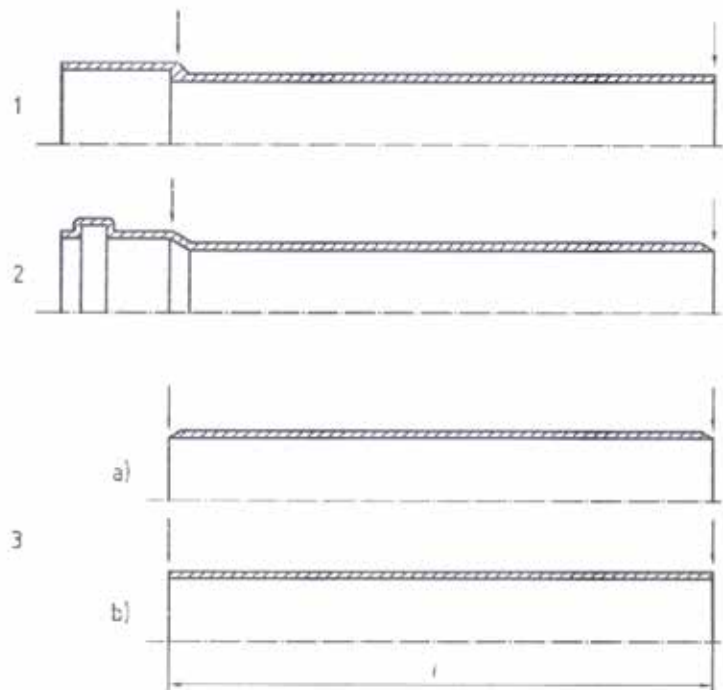
Dimensions in millimeters

Nominal size ^a DN/OD	Nominal outside diameter ^d n	Mean outside diameter ^d em	
		Min	Max
110	110	110	110.3
125	125	125	125.3
160	160	160	160.4
200	200	200	200.5
250	250	250	250.5
315	315	315	315.6
355	355	355	355.7
400	400	400	400.7
450	450	450	450.8
500	500	500	500.9
630	630	630	631.1

non-preferred sizes are indicated in parentheses.

Key

- 1 Single-socket pipe
- 2 ring-seal pipe
- 3 plain-ended pipe
 - a) with chamfer
 - b) without chamfer



SASO - ISO - 4435

Table 4 _ Wall thicknesses

Dimensions in millimeters

Nominal size ^a DN/OD	Nominal out- side diameter ^d _n	SN 2 SDR 51		SN 4 SDR 41		SN 8 SDR 34	
		e Min	^e _m Mix	e Min	^e _m Mix	e Min	^e _m Mix
110	110			3.2	3.8	3.2	3.8
125	125			3.2	3.8	3.7	4.3
160	160	3.2	3.8	4	4.6	4.7	5.4
200	200	3.9	4.5	5.9	5.6	5.9	6.7
250	250	4.9	5.6	6.2	7.1	7.3	8.3
315	315	6.2	7.1	7.7	8.7	9.2	10.4
(355)	355	7	7.9	8.7	9.8	10.4	11.7
400	400	7.9	8.9	9.8	11	11.7	13.1
(450)	450	8.8	9.9	11	12.3	13.2	14.8
500	500	9.8	11	12.3	13.8	14.6	16.3

non-preferred sizes are indicated in parentheses.

Table 1 _ Diameters and lengths of lengths of elastomeric ring seal sockets and spigots

Dimensions in millimeters

Nominal size ^a DN/OD	Nominal outside diameter ^d _n	Cocket			Spigot	
		^d _{sm} Min	A Min	C Max	^L ₁ Min	H ^b
110	110	110.4	32	26	60	6
125	125	125.4	35	26	67	6
160	160	160.5	42	32	81	7
200	200	200.6	50	40	99	9
250	250	250.8	55	70	125	9
315	315	316	62	70	132	12
(355)	355	356.1	66	70	136	13
400	400	401.2	70	80	150	15
(450)	450	451.4	75	80	155	17
500	500	501.5	80	80	160	18

^a Non-preferred sizes are indicated in parentheses.

^b Approximate values when a 15° chamfer is applied

^c Higher values of C are allowed, provided the manufacturer states in his documentation the actual value of $L_{1,min}$ required by the equation $L_{1,min} = A_{min} + C$.

PVC 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)						Wight kg/m		
			EPT		EPC 40		EPC 80				
	Min	Max	Min	Max	Min	Max	Min	Max	EPT	EPC 40	EPC 80
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	3.3	5.16	5.77	7.01	7.85	0.952	1.57	2.2
3	88.7	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	3.05	4.26
5	141.05	141.55			6.22	7.347	9.52	10.67		4.18	6.42
6	168	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-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
4	114.1	2.08	1.17	3.07	1.65
5	141.05	2.62	1.17	3.86	2.5
6	168	3.18	2.53	4.62	3.57

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		DB 100	PVCTYPE DB120	
		Wall Thickness (mm)	Weight kg/m	Min . Wall Thickness (mm)	Wall Th..	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	2.84	3	1.25
4	114.1	2.54	1.39	3.68	3.91	2.05
5	141.05	3.2	2.09	4.55	4.85	3.12
6	168	3.86	3.02	5.41	5.77	4.42

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

Colour : Gray.

Socket Type : Solvent cement (SC/J) type



Handling & Storage

Upvc Pipes should be handled with care to avoid mechanical damages before installation. Due to the extreme temperatures in the Kingdom, the pipes should not be stacked on top of each other because the bottom line may be begin to distort. If socketed pipes must be stacked in layers then the sockets must be place at alternate ends. By doing so, you will avoid lop sided stacks and imperfection. For long term storage, the pipes must be stored on flat level floors or in rack that provide continuous support. In racks, the pipes should not have more seven layers high or maximum 1.75 meters. Note, that the thickest classes must always be at the bottom because they can withstand more weight.

Field storage

If racks are not provided at the field or site, then for temporary storage the pipes should be handled with care and stored on ground level away from loose stones. Pipes stored in the field should not exceed three (3) layers and should be either stored in the shade or be covered. The u-pvc pipes that are under direct sunlight can reach 60-70 Celsius during the summer months.

التحميل و التخزين

مواسير الخام الوطني بى فى سى , يجب نقلها وتحميلها وتنزيلها بكل عناية واهتمام لتجنب حدوث أية أضرار ميكانيكية أثناء ذلك , ويجب تكديسها على شكل طبقات وبحيث تكون المواسير بعكس بعضها وكما هو موضح بالصور ولا يجب تكديسها بكميات كبيرة خاصة عند درجات حرارة مرتفعة حتى لا يؤدي ذلك إلى أية انبعاجات أو تلف في الوصلات. وفي حال تخزينها في مستودعات ولمدة طويلة يجب وضعها على أرضية مستقيمة أو عوارض أو دعائم مستقيمة لا يقل عرضها عن 75 ملم وأن لا تزيد المسافات بين الدعائم عن متر واحد ويجب أيضاً أن لا يزيد ارتفاع الرصة عن 7 أصبقات أو 1.75 متر أيها أقل , وفي حال تكديس أصناف مختلفة يجب أن تكون الأصناف من النوع الواحد في نفس الصنف و الأصناف ذات السماكة الأعلى في الأسفل.

التخزين في الموقع

يجب الاهتمام في تخزين المواسير في مواقع العمل والتنفيذ بحيث يتم وضع المواسير على أرضية مستقيمة خالية من الأحجار ولا يجب أن يزيد تكديسها عن ثلاث طبقات ويجب ان تكون المواسير في جميع الأحوال محمية من أشعة الشمس المباشرة ومن درجات الحرارة العالية خاصة في فصل الصيف .

طريقة الرص العكسية



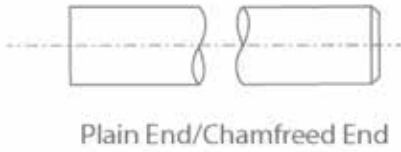
طريقة الرص في شكل طبقات



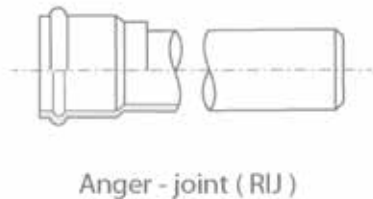
installation

National Kham Pipes are available in nominal standard lengths of six (6) meters. Other length can be supplied in arrangement with customer requirements, National Kham Pipes supply Plain End (P/E), Plain socket (P/S), and Rubber Ring Joints (R/I). Depending on the client, we can supply with chamfered (D/C) on the non socketed end in whichever length required.

Plain socket (P/S) solvent weld joint pipes are supplied with an integral plain socket preformed in our factory. They are joint using the recommended solvent adhesive supplied by National Kham.

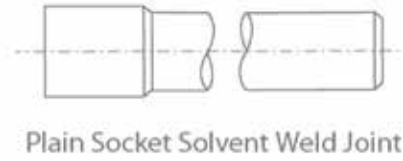


Rubber ring joints (R/I) pipes are supplied with integral grooves socket. At one end, elastomeric seal ring is provided. This is used for the anger joint system that recognized world wide, National Kham are also capable of producing the A-joint system. The A-joint socket uses a reinforcing sleeve and keeps the internal pressure in the pipeline stable.

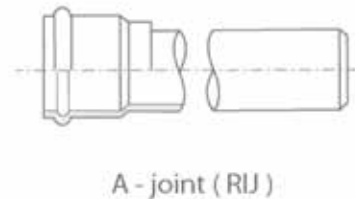


طريق التركيب

أنابيب الخام الوطني متوفرة بأطوال قياسية محددة بطول 6 أمتار. يكمن توفير longhts أخرى من خلال requomt ترتيب Customer الأنابيب المشتركة - يتم تزويد أنابيب الخام الوطني مع نظام مشترك مختلف. أنبوب عادي (P/E) للاستخدام مع وصلات منفصلة، خاتم الختم، المذيب (لاصق) اللحام أو الت زات الخاصة. ويمكن أيضا أن يتم توفير اتباع طرفي النهايات (D/C) عند الطلب ، بأطوا من أشكال ال 5 أمتار يمكن توفير ملحقات أخرى. مقبس عادي (P/S) المذيبات اللحام المذيبات . يتم تزويد الأنابيب بمقابس عادي متكامل موجود في المصنع، يتم اوصلها باستخدام لاصق المذيب المعاد تزويده من قبل الخام الوطني .

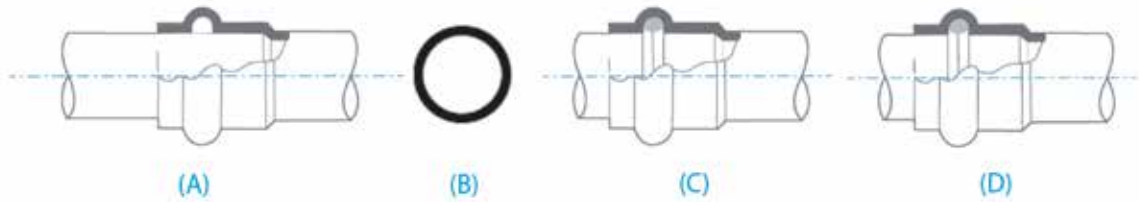


المفاصل حلقة مطاطية (R/I). يتم تزويد المواسير بمقابس محرز متكامل في أحد طرفيه يتضمن حلقة مانعة للتسرب من اللدائن المرنة. يقوم الخام بتصنيع نظام مشترك للغضب في جميع أنحاء العالم ، ويتم صنع مأخذ أنجر المشتركة مع أنابيب سميكة محلية الجدار . تقوم الخام الوطني أيضاً بإنتاج نظام (A) المشترك الذي يستخدم جلبة تقوية لصنع المقبس (A) في الضغط الداخلي في خط الأنابيب.

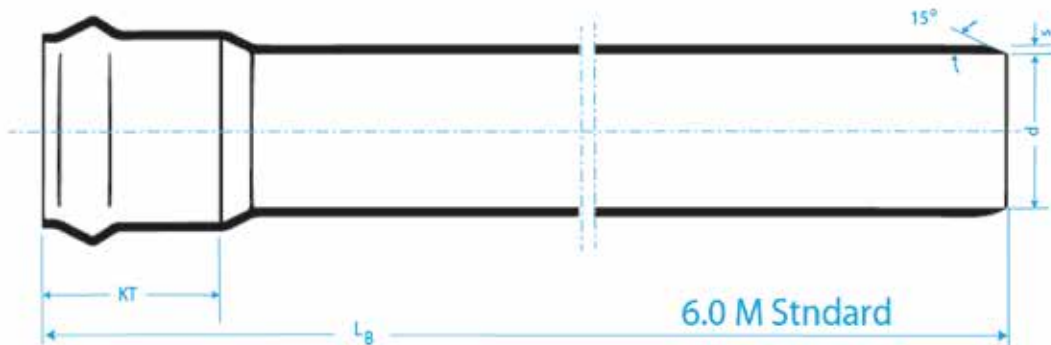


Ensure that the spigot/and socket are free from dust,grit,grease and as dry as possible. Insert the pipe into the socket without the seal ring, and mark the pipe where it will be fully inserted. Once you have marked this spot then the seal can be placed in the groove of the socket. Note, please ensure that the seal is the correct way round. The anger seal ring should be fitted with the tapered section facing the Outside of the socket, Apply jointing lubricant to the changer and end of the spigot of the pipe or fitting only. Push the pipe firmly into the socket up to the insertion mark Previously made. If an expansion gap is required then the pipe must be pulled back the desired amount.

تأكد من أن الذيل والمقبس خاليان من الغبار والحصى والشحم وجفاف قدر الإمكان . أدخل الأنبوبة في المقبس بدون مكان حلقة الختم و وضع علامة على الأنبوب عند إدخاله بالكامل. ضع الختم في فتحة التجويف لضمان أن الختم هو الطريقة الصحيحة. يجب أن تكون مجهزة خاتم ختم الغضب مع قسم مدبب تواجه الجزء الخارجي من المقبس . تطبيق الربط (التزييت) على الشطب ونهاية حنفية الأنبوب أو المناسب فقط. ادفع الأنبوب بقوة في المقبس إلى علامة الإدراج التي تم إجراؤها مسبقاً. إذا كانت فجوة التمدد مطلوبة , يتم سحب الأنبوب بالمقدار المرغوب .



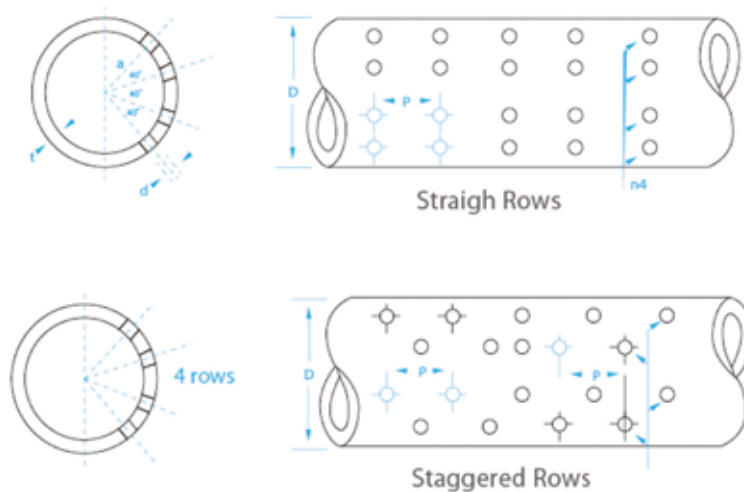
uPVC Pipe with wallthickened socket joint (Rubber Joint)
of unplasticized Poly vinyl chloride (uPVC)



Perforated and Slotted pipes

PERFORATED UPVC pipes

- A** RIG **NATIONAL KHAM** 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.



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

SLOTTED UPVC pipes

- B** RIG **NATIONAL KHAM** slotted pipes are prodiced according to RDA requirements and for use in lowering the under-ground water table .

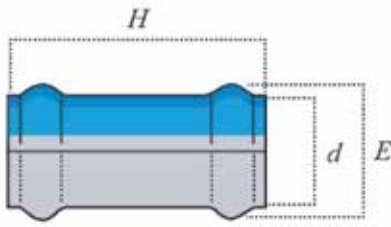


STRAIGHT SLOTS

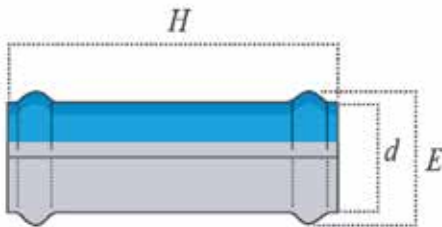
STAGGERED SLOTS

Slot Length	: Deoend to the size
Slot Width	: 1 / 1.1 / 1.5 / 2 mm
Number of Row	: 4, 6 & 8 (but according to the size)
Angular Pitch	: to be recommended by RIG NATIONAL KHAM

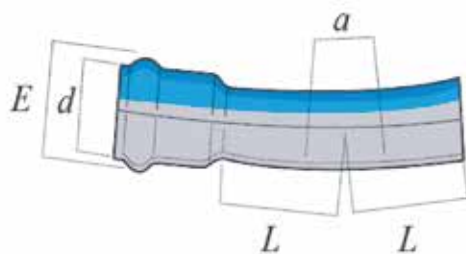
Accessories for Pressure Pipes, Repair Coupling, Long Reduces NKP is manufacturing all kind of long bend and repair coupling fitting which is required in the project during installation. All this fitting is combined with NKP pipe under the Standards DIN 8062/8061 and it is available with single and double rubber joint at the end. Also available for all kind of pressure rating 6-10 and 16 bar.



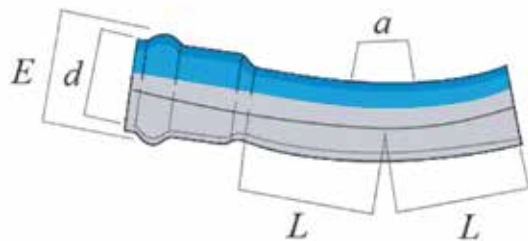
Repair Coupling		
d mm	E mm	H mm
63	86	280
75	102	280
90	120	290
110	144	310
125	161	330
140	178	350
160	202	350
180	224	380
200	248	410



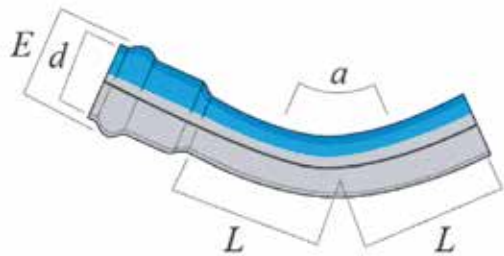
Long Repair Coupling		
d mm	E mm	H mm
63	86	500
75	102	500
90	120	500
110	144	500
125	161	500
140	178	500
160	202	500
180	224	600
200	248	650



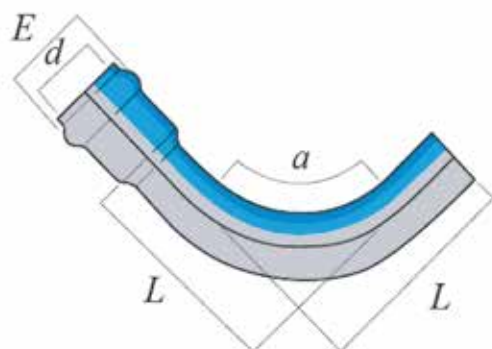
Long Repair Coupling			
d mm	Lmm	angle	E mm
63	235	11°	86
75	260	11°	102
90	292	11°	120
110	384	11°	144
125	413	11°	161
140	430	11°	178
160	464	11°	202
180	535	11°	224
200	530	11°	240



22° 30' Long Bend			
d mm	Lmm	angle	E mm
63	235	22° 1/2	86
75	260	22° 1/2	102
90	292	22° 1/2	120
110	384	22° 1/2	144
125	413	22° 1/2	161
140	430	22° 1/2	178
160	464	22° 1/2	202
180	535	22° 1/2	224
200	530	22° 1/2	240



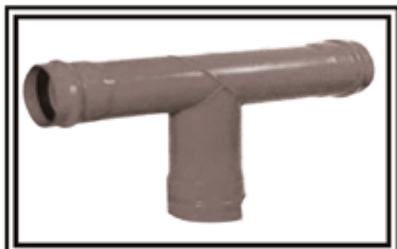
40° Long Bend			
d mm	Lmm	angle	E mm
63	235	45°	86
75	260	45°	102
90	292	45°	120
110	384	45°	144
125	413	45°	161
140	430	45°	178
160	464	45°	202
180	535	45°	224
200	530	45°	240



90° Long Bend			
d mm	Lmm	angle	E mm
63	235	90°	86
75	260	90°	102
90	292	90°	120
110	384	90°	144
125	413	90°	161
140	430	90°	178
160	464	90°	202
180	535	90°	224
200	530	90°	240

FABRICATED FITTINGS

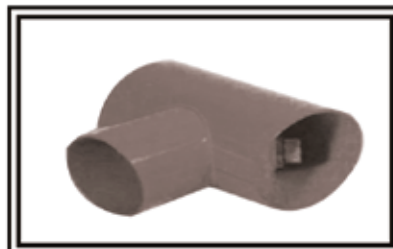
BIG SIZE TEES



BENDS 45 Degree



INTERCEPTORS



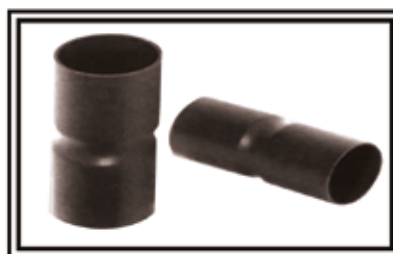
LONG RADIUS BENDS



BELL MOUTH FLANGES



FABRICATED DUCT COUPLERS



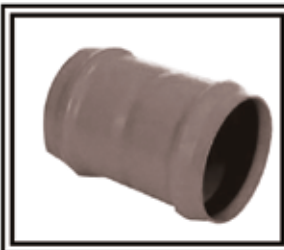
ABRICATED END CAPS AND PLUGS



BENDS 90 Degree



REPAIR COUPLERS AND SOCKETS



FABRICATED REDUCER Y-BRANCHES AND TEES



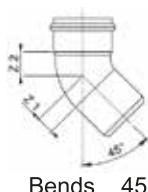
spacer



Description	Size Diameter	Hight Approx. (mm)	Width (mm)	Distance (mm)
Base	63 for 2"	120	113	40
Intermediate	63 for 2"	100	113	30-50
Base	75	120	140	43
Intermediate	75	100	140	30-50
Intermediate	90 for 3"	103	143	47
Base	90 for 3"	103	143	30-50
Intermediate	110/4°	107	145	49
Base	110/4°	150	145	30-50
Intermediate	160/6	160	197	68
Base	160/6	235	197	30-50
Intermediate	200	150	250	75
Base	200	250	250	30-50

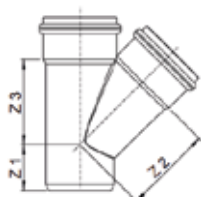
ACCESSERIOS FOR NON PRESSARE PIPES

Bend 45



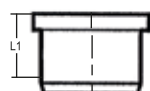
Size (mm)	Dimension z1(mm) z2(mm)		Body Wall Thickness (mm)
110	25	29	3.2
160	38	42	4.7
200	86	74	5.9

Branch 45



Size (mm)	Dimension z1(mm) z2(mm) z3(mm)			Body Wall Thickness(mm)
110x110	25	136	136	3.2
160x110	7	172	163	4.7
160x160	38	198	198	4.7
200x160	61	238	229	5.9
200x200	81	252	252	5.9

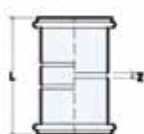
Socket Plug



Size (mm)	Dimension L(mm)	Body Wall Thickness (mm)
110	56	3.2
160	65	4.7
200	114	5.9

Register Coupling

Access Plug and Cap



Size (mm)	Dimension L(mm)	Body Wall Thickness (mm)
40	72	3.2
50	72	3.2
75	80	3.2
110	125	3.2
160	138	4.7

