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عويلى أساس صناعة المواسير
Owilli Industrial Investment Group

— Technical Catalog —



OWILI

ABOUT US

OWILI industrial investment group

“ **OWILI** factories for plastic industries were established in 2010, due to the tremendous development in the pipe and fittings industry to cover the needs of the domestic and the international markets. Our main products include UPVC and PPR (pipes & fittings) in all types, colors, and different standards (ASTM, DIN, BS, or EGYPTIAN) depending on the client's needs. Our head office, and our factories are located in Obour city.

A team of quality control specialists in laboratory affairs carry out continuous monitoring processes on the plastic pipes and all the other related parts of the links and the succession.

We also have a developed quality control system that uses a series of developed devices that allow us to ensure that the production process is up to the international standards and special requirements contracted with our customers.

There is a series of experiments conducted on our factory's production process that include chemical, physical and mechanical properties. Adding to that, there are full range of specialists in the field of plastic pipe installation whom are fully prepared to provide our customers with technical advice.

Now **OWILI** industrial investment group is considered as one of the largest companies that produces and processes pipes and its accessories in Egypt as well as the Arab world and Africa. As our products are accredited in different regions, such as: Egypt, Africa, the Arab world and Europe. ”

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POLYPROPYLENE
PP-R MATERIAL

■ PPR-C PIPES & FITTINGS

■ PN 10 PIPES



Size / OD	R(inch)	Weight	Thickness(mm)	PN
32	1	0.261	2.9	10
40	1 ¼	0.412	3.7	10
50	1 ½	0.638	4.6	10
63	2	1.010	5.8	10
75	2 ½	1.410	6.8	10
90	3	2.030	8.2	10
110	4	3.010	10	10

■ PN 16 PIPES

Size / OD	R(inch)	Weight	Thickness(mm)	PN
20	½	0.148	2.8	16
25	¾	0.230	3.5	16
32	1	0.370	4.4	16
40	1 ¼	0.575	5.5	16
50	1 ½	0.896	6.9	16
63	2	1.410	8.6	16
75	2 ½	2.010	10.3	16
90	3	2.870	12.3	16
110	4	4.300	15.1	16



■ PN 20 PIPES



Size / OD	R(inch)	Weight	Thickness(mm)	PN
20	½	0.172	3.4	20
25	¾	0.258	4.2	20
32	1	0.434	5.4	20
40	1 ¼	0.671	6.7	20
50	1 ½	1.040	8.3	20
63	2	1.650	10.5	20
75	2 ½	3.340	12.5	20
90	3	3.360	15	20
110	4	5.010	18.3	20



■ PPR-C PIPES & FITTINGS

■ PN 25 PIPES



Size / OD	R(inch)	Weight	Thickness(mm)	PN
20	1/2	4.1	0.189	25
25	3/4	5.1	0.307	25
32	1	6.4	0.498	25
40	1 1/4	8.1	0.775	25
50	1 1/2	10.1	1.210	25
63	2	12.6	1.910	25
75	2 1/2	15.1	2.700	25
90	3	18.1	3.880	25
110	4	22.1	5.780	25

■ FIBER GLASS PIPES

Size / OD	R(inch)	Weight	Thickness(mm)	PN
20	1/2	0.172	3.4	20
25	3/4	0.258	4.2	20
32	1	0.434	5.4	20
40	1 1/4	0.671	6.7	20
50	1 1/2	1.040	8.3	20
63	2	1.650	10.5	20
75	2 1/2	3.340	12.5	20
90	3	3.360	15	20
110	4	5.010	18.3	20



■ PIPES U.V PN 20



Size / OD	R(inch)	Weight	Thickness(mm)	PN
20	1/2	0.172	3.4	20
25	3/4	0.258	4.2	20
32	1	0.434	5.4	20
40	1 1/4	0.671	6.7	20
50	1 1/2	1.040	8.3	20
63	2	1.650	10.5	20
75	2 1/2	3.340	12.5	20
90	3	3.360	15	20
110	4	5.010	18.3	20

■ PPR-C PIPES & FITTINGS

■ ELBOW 90° PN 25



Size (mm)	R(inch)	DN	PN
20	1/2	16	25
25	3/4	20	25
32	1	25	25
40	1 1/4	32	25
50	1 1/2	40	25
63	2	50	25
75	2 1/2	65	25
90	3	80	25
110	4	100	25

■ TEE PN 25

Size (mm)	R(inch)	DN	PN
20	1/2	16	25
25	3/4	20	25
32	1	25	25
40	1 1/4	32	25
50	1 1/2	40	25
63	2	50	25
75	2 1/2	65	25
90	3	80	25
110	4	100	25



■ TEE REDUCER PN 25



Size (mm)	R(inch)	PN
25-25/20	3/4 | 1/2	25
32-32/20	1 | 1/2	25
32-32/25	1 | 3/4	25
50-50/25	1 1/2 | 3/4	25
50-50/32	1 1/2 | 1	25
63-63/25	2 | 3/4	25
63-63/32	2 | 1	25
63-63/50	2 | 1 1/2	25

■ PPR-C PIPES & FITTINGS

■ CROSS OVER PN 25



Size (mm)	R(inch)	DN	PN
20	1/2	16	25
25	3/4	20	25
32	1	25	25

■ SHORT CROSS OVER PN 25

Size (mm)	R(inch)	DN	PN
20	1/2	16	25
25	3/4	20	25
32	1	25	25



■ SOCKET PN 25



Size (mm)	R(inch)	DN	PN
20	1/2	16	25
25	3/4	20	25
32	1	25	25
40	1 1/4	32	25
50	1 1/2	40	25
63	2	50	25
75	2 1/2	65	25
90	3	80	25
110	4	100	25



■ PPR-C PIPES & FITTINGS

■ SOCKET REDUCER PN 25



Size (mm)	R(inch)	PN
25-25/20	$\frac{3}{4}$ | $\frac{1}{2}$	25
32-32/20	1 | $\frac{1}{2}$	25
32-32/25	1 | $\frac{3}{4}$	25
50-50/20	$1\frac{1}{2}$ | $\frac{1}{2}$	25
50-50/25	$1\frac{1}{2}$ | $\frac{3}{4}$	25
63-63/25	2 | $\frac{3}{4}$	25
63-63/32	2 | 1	25
63-63/50	2 | $1\frac{1}{2}$	25

■ END BLUG PN 25

Size (mm)	R(inch)	DN	PN
20	$\frac{1}{2}$	16	25
25	$\frac{3}{4}$	20	25
32	1	25	25
40	$1\frac{1}{4}$	32	25
50	$1\frac{1}{2}$	40	25
63	2	50	25
75	$2\frac{1}{2}$	65	25
90	3	80	25
110	4	100	25



■ ELBOW 90° FEMALE THREADED



Size (mm/")	PN
20 | $\frac{1}{2}$	25
25 | $\frac{1}{2}$	25
25 | $\frac{3}{4}$	25
32 | $\frac{3}{4}$	25
32 | 1	25



■ PPR-C PIPES & FITTINGS

■ ELBOW 90° MALE THREADED PN 25



Size (mm/")	PN
20 | 1/2	25
25 | 1/2	25
25 | 3/4	25
32 | 3/4	25
32 | 1	25

■ FEMALE THREADED SOCKET PN 25

Size (mm/")	PN
20 | 1/2	25
25 | 1/2	25
20 | 3/4	25
25 | 3/4	25
25 | 1	25
32 | 3/4	25
32 | 1	25
50 | 1 1/2	25
63 | 2	25



■ MALE THREADED SOCKET PN 25



Size (mm/")	PN
20 | 1/2	25
25 | 1/2	25
20 | 3/4	25
25 | 3/4	25
25 | 1	25
32 | 3/4	25
32 | 1	25
50 | 1 1/2	25
63 | 2	25

■ TEE FEMALE THREADED PN 25

Size (mm/")	PN
20 | 1/2	25
25 | 1/2	25
20 | 3/4	25
25 | 3/4	25
32 | 3/4	25
32 | 1	25



■ PPR-C PIPES & FITTINGS

■ BATTERY PN 25



Size (mm/")	PN
25 | 1/2	24

■ VALVE PN 25

Size (mm)	R(inch)	PN
20	1/2	16
25	3/4	20
32	1	25



■ VALVE PN 25



Size (mm/")	Packing
25	12

■ BALL VALVE PN 25

Size (mm)	R(inch)	DN	PN
20	1/2	16	25
25	3/4	20	25
32	1	25	25
40	1 1/4	32	25
50	1 1/2	40	25
63	2	50	25
75	2 1/2	65	25
90	3	80	25
110	4	100	25



■ PPR-C PIPES & FITTINGS

■ INSERT MALE FEMALE



Size (mm/")	Packing
20 | ½	100
25 | ½	80
25 | ¾	80
32 | 1	40
50 | 1½	24
63 | 2	14

■ PPR UNION

Size (mm)
25
32



■ MOVING BATTERY

Size (mm)
25



■ ELBOW 90° M/F

Size (mm)
20 / 25



The dimensions the PP-R pipes table according to specifications of the standard German Din 8077 / 78

■ NOMINAL PRESSURE (PN)

Nominal diameter	10 Bar	16 Bar	20 Bar	25 Bar
	Thickness			
20 mm	1.9 mm	2.8 mm	3.4 mm	4.1 mm
25 mm	2.3 mm	3.5 mm	4.2 mm	5.1 mm
32 mm	2.9 mm	4.4 mm	5.4 mm	6.5 mm
40 mm	3.7 mm	5.5 mm	6.7 mm	8.1 mm
50 mm	4.6 mm	6.9 mm	8.3 mm	10.1 mm
63 mm	5.8 mm	8.6 mm	10.5 mm	12.7 mm
75 mm	6.8 mm	10.3 mm	12.5 mm	15.1 mm
90 mm	8.2 mm	12.3 mm	15.0 mm	18.1 mm
110 mm	10.0 mm	15.1 mm	18.3 mm	22.1 mm
125 mm	11.4 mm	17.1 mm	20.8 mm	25.1 mm
140 mm	12.7 mm	19.2 mm	23.3 mm	28.1 mm
160 mm	14.6 mm	21.8 mm	26.6 mm	32.1 mm

■ PPR-C PIPES & FITTINGS

■ METHOD OF INSTALLATION

Cut the pipe straight cutter According to the following schedule is determined the depth of welding by pipe diameter it is heated fitting and pipe at one time a machine welding pulls the pipe and fitting to one of the machine put the pipe on the fitting to be welding put the pipe terminal on the adapter to be welding.



“ Do not push fitting and pipe during the overlapping strongly so as not to narrow down or dam pipe ”

Outer Diameter	Welding Depth	Hrating Time		Welding Time	Cooling Time
		Close Place (sec.)	Opened Place (sec.)		
mm.	mm.			sec.	min.
20	14	5	8	4	2
25	16	7	11	4	2
32	18	8	12	6	4
40	20	12	18	6	4
50	23	18	27	6	4
63	27	24	36	8	6
75	30	30	45	8	8
90	33	40	60	8	8
110	37	50	75	10	8

■ PPR-C PIPES & FITTINGS

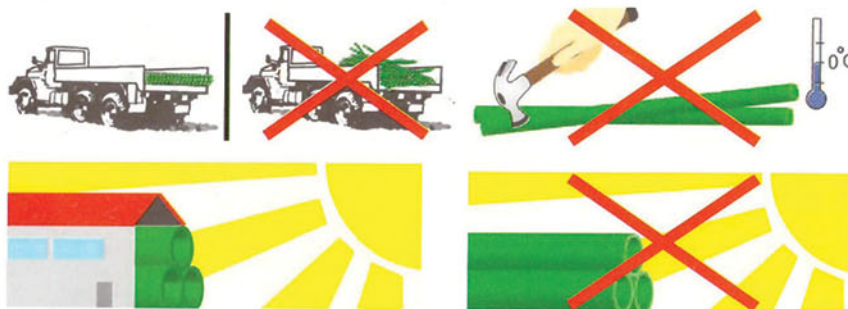
■ HANDLING & STORAGE

Prevent PPR-C pipes and fittings from impacts and mechanical shocks. During transportation, the packs of pipes should be stored flat on a firm leveled ground.

Protect them from any sharp metal angles and edges of the transport platform. Loading on and off of polypropylene pipes should be held at ambient temperatures (at least -10°C). If special support handles are used, pipes can be transported at temperature below -20°C .

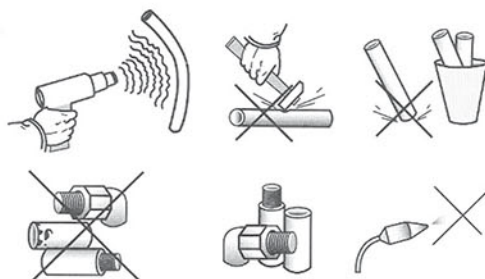
The delivered pipes and fittings should be kept in place for about 2 hours at a temperature above zero, polypropylene pipes and fittings are to be stored inside, sheltered from ultraviolet radiation with a minimum temperature of 5°C . They should be kept in their boxes until the ready for use. Do not store them with solvents, oil, paints and like substances.

Pipes should be stored on shelves or other firm surfaces. The height of the bundle of pipes should not exceed 1 meter and at least 1 meter away from any heating body.



■ CAUTION!

- Protect PPR-C pipes and fittings from strikes and mechanical shocks. Damaged pipes cannot be used.
- For bending the pipe use hot air only. Maximum bending temperature is 140°C . Never heat it with an open flame!
- Before welding PPR-C pipes and fittings, be certain that they are not damaged, cracked or dirty.



■ PPR-C PIPES & FITTINGS

■ SURVEY ARTICLE USES POLYPROPYLENE

- The main cold and hot water networks under pressure.
- Cooling networks and central heating.
- Connect hot and cold water to homes.
- Irrigation networks.
- Water treatment stations Used in many industrial purposes (transfer of chemicals and preservatives transfer...etc.

■ ADVANTAGES

- Easy to installation.
- Rust resistance.
- Abrasion resistance.
- Non-toxic and do not affect drinking water quality.
- It does not affect the flow of water as a result of the existence of an internal smooth surface.
- No for the growth of algae and fungi.
- It resists heat loss of material transported.
- Resist chemicals.



■ PPR-C PIPES & FITTINGS

■ INSTALLATION PRINCIPLES PP-R PIPES

The linear expansion, described on the preceding pages, can be taken from the following table

Linear Expansion ΔL in (mm) for PP-R Pipes $\alpha = 0.150$ mm/mk

■ DIFFERENCE IN TEMPERATURE $\Delta T = T_e - T_m$

Pipe Length	10 K	20 K	30 K	40 K	50 K	60 K	70 K	80 K
	Linear Expansion ΔL (mm)							
5 m	8	15	23	30	38	45	53	60
10 m	15	30	45	60	75	90	105	120
15 m	23	45	68	90	113	135	158	180
20 m	30	60	90	120	150	180	210	240
25 m	38	75	113	150	188	225	263	300
30 m	45	90	135	180	225	270	316	360
35 m	53	105	158	210	263	315	368	420
40 m	60	120	180	240	300	360	420	480
45 m	68	135	203	270	338	405	473	540
50 m	75	150	225	300	375	450	525	600

■ INSTALLATION PRINCIPLES PP-R FIBERGLASS PIPES

Due to integration and positive bond of the different materials the composite pipe offers much higher stability

The linear expansion reduces its value to 1/5 of the PP- Pipes

Linear Expansion ΔL in (mm) for PP-R Pipes - Faster $\alpha = 0.035$ mm/mk

■ DIFFERENCE IN TEMPERATURE $\Delta T = T_e - T_m$

Pipe Length	10 K	20 K	30 K	40 K	50 K	60 K	70 K	80 K
	Linear Expansion ΔL (mm)							
10 m	4	7	11	14	18	21	25	28
20 m	7	14	21	28	35	42	49	56
30 m	11	21	32	42	53	63	74	84
40 m	14	28	42	56	70	84	98	112
50 m	18	35	53	70	88	105	123	140
60 m	21	42	63	84	105	126	147	168
70 m	25	49	74	98	123	147	172	196
80 m	28	56	84	112	140	168	196	224
90 m	32	63	95	126	158	189	221	252
100 m	35	70	105	140	175	210	245	280

■ PPR-C PIPES & FITTINGS

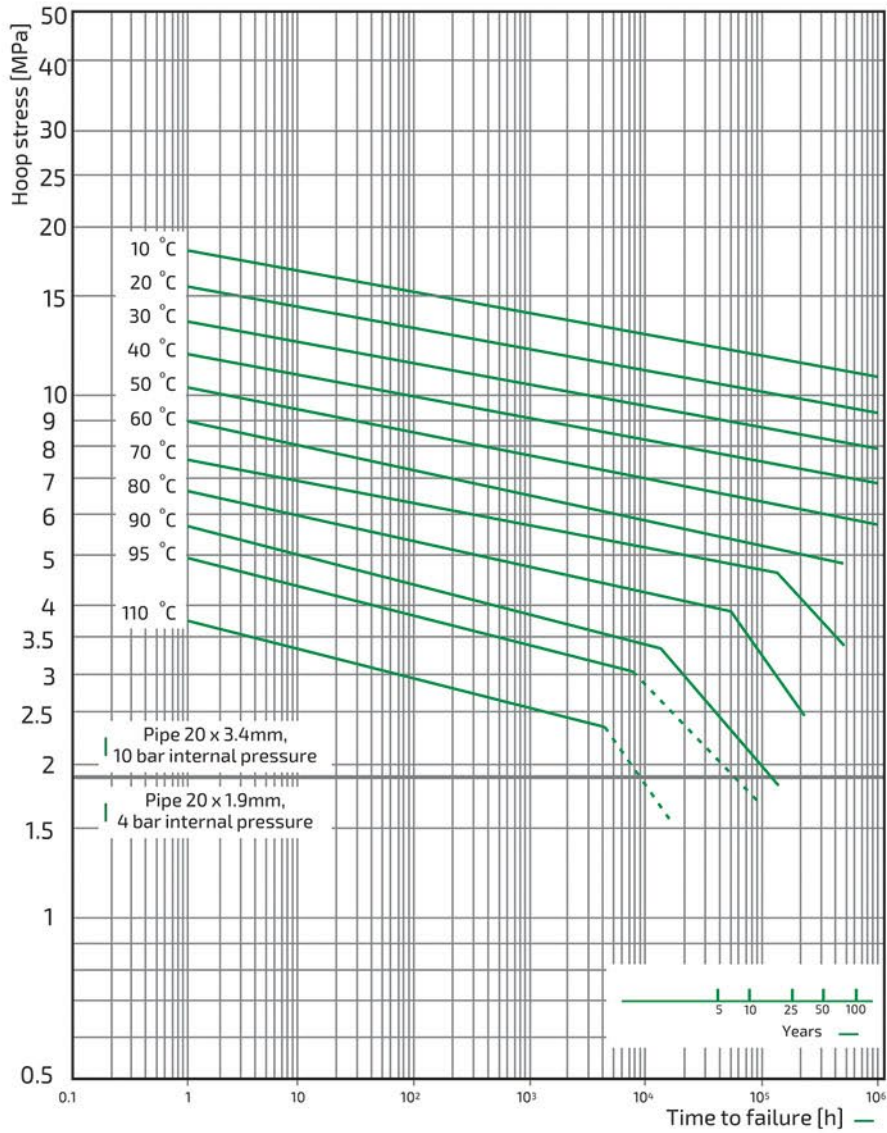
■ POLYPROPYLENE PHYSICAL PROPERTIES

Typical Value	Test Method	Main Value	Unit
PHYSICAL PROPERTIES			
Density 23°C	ISO 11 83	0.895	g/cm ³
Vicat softening Temperature (0.98 n)	ISO 306	130	°C
RHEOLOGY			
Melt mass flow rate MFR (230°C/2.16 KG)	ISO 1133	0.3	g/10 min
MECHANICAL PROPERTIES			
Tensile modulus (1 mm/min)	ISO 527 - 1.2	900	MPa
Tensile stress yield (50 mm/min)	ISO 527 - 1.2	27	MPa
Tensile strain yield (50 mm/min)	ISO 527 - 1.2	13	%
Charpy impact strength At 23°C	ISO 179/1eu	N.B	KJ/M ²
Charpy impact strength At - 20°C	ISO 179/1eu	30	KJ/M ²
Charpy impact strength Notched at 23°C	ISO 179/1eu	38	KJ/M ²
Charpy impact strength Notched at 20°C	ISO 179/1eu	2	KJ/M ²
THERMAL PROPERTIES			
Heat deflection (temperature 0.45 mpa "HTD/b")	ISO 75 - 1.2	88	°C
Mean coefficient of linear (Thermal Expansion 0:110°C)	Din 53752	1.5 X 10 ⁻⁴	K ⁻¹
Thermal conductivity	Din 52612 - 1	0.23	K ⁻¹ m ⁻¹
ELECTRICAL PROPERTIES			
Surface resistance	Din 53482	> 10 ¹³	Ohm. cm



■ BEHAVIOR PP-R PIPE

According to DIN 8078, the service life of PP-R pipe depends on the time the internal hoop stress is subjected to a specific temperature. Hoop stress is given as follows:



$$\delta = \frac{PX(d-s)}{20Xs}$$

Where

- δ = Hoop Stress (N/mm² or Mpa)
- P = Internal Pressure (Bar)
- d = Outer Diameters of Pipe (mm)
- S = Wall Thickness of Pipe (mm)

■ PERMISSIBLE OPERATING PRESSURE

■ PROJECTED SERVICE LIFE

The following table provides more detailed information with regards to the permissible pressure at various temperatures.

These values are derived from the Hoop Stress Chart and formula. Under normal working pressures and conditions, the average service life of suitable PP-R pipes are at least 50 years.

■ EXAMPLE

A PN 10, cold water pipe, transporting water at a temperature of 30°C can last for more than 50 years under normal conditions with an operating pressure of 11.1 Bars or 161 P.S.I.

A PN 20, cold water pipe, transporting water at a temperature of 70°C can last for more than 50 years under normal conditions with an operating pressure of 8.5 Bars or 123 P.S.I.

SDR "Standard Dimension Ratio" = Diameter/Wall Thickness Ratio [d/e]
s=Pipes series Index from ISO 4065)

Temperature	Service life, yrs	For water installations, according to DIN 8077 safety - factor of 1.5		
		Nominal pressure in bars		
		PN 10 cold water	PN 20 hot & cold water	PN 25 hot & cold water
		Permissible working pressure at various temperature		
20°C	1	15.1	30.7	37.7
	5	14	28	35
	10	13.5	27.1	33.8
	25	13.2	26.4	33
	50	12.9	25.9	32.3
30°C	1	12.8	25.6	32
	5	12	24	30
	10	11.7	23.5	22.3
	25	11.3	22.7	28.3
	50	11.1	22.1	27.7
40°C	1	11.1	22.1	27.7
	5	10.4	22.8	26
	10	10.1	22.3	25.3
	25	9.7	19.5	24.3
	50	9.2	18.4	25
50°C	1	9.5	18.9	23.7
	5	8.9	17.9	22.3
	10	8.9	17.3	21.7
	25	8	16	20
	50	7.3	14.7	18.3
60°C	1	8.3	16.5	20.7
	5	7.6	15.2	19
	10	7.2	15.4	18
	25	6.1	12.3	15.3
	50	5.5	10.9	13.7
70°C	1	6.7	13.3	16.7
	5	6	12	15
	10	5.3	10.7	13.3
	25	4.5	9.1	11.3
	30	4.4	8.8	11
80°C	50	4.3	8.5	10.7
	1	8.7	12.3	13.7
	5	4.3	10.7	10.8
	10	3.9	9.3	9.8
	25	3.7	7.5	9.2
90°C	1	3.8	7.6	8.4
	5	2.9	5.7	6.3



■ HYGIENE & HEALTH CONCERNS

PP-R Pipes are manufactured with health concerns in mind. The connection of pipes does not require any additives such as cement solvent, fluxes or solder. To ensure the safety of people who come in contact with or consume the potable water, the following are strictly adhered to:

DIN 1988 Part 2 drinking water supply systems materials components appliances design and installation.

■ SOUND INSULATION

Compared to metallic pipes, PP-R pipes do not need further insulation to decrease the decibel level when water flows at relatively high speeds. The reason is simple. Metals transmit noises quicker and louder than plastics. Hence, whistling noises that result from the water hammer effect are non-existent.

■ ADVANTAGES OF USING PP-R PIPES & FITTINGS

In comparison to either one of the conventional piping systems (metal or plastic), the PP-R pipe has the following advantages that make it the system of the new millennium:

- It is not detrimental to human health.
- It is resistant to rust and corrosion.
- Rupture-free
- It has high resistance to acids and chlorides.
- High-pressure tolerance and rating.
- Speed and ease of fusion technology.
- Extensive reduction in money, time and labor.
- No scaling.
- Noise-free at high flow rates.
- Light-weight.

■ CHEMICAL TABLES

Hostile Environment	Concentration	Chemical Resistance		
		20 °C	60 °C	100 °C
natrium benzoate	35%	Rs	Rs	--
benzol	TP	R	NR	NR
sodium bicarbonate	AS	Rs	Rs	Rs
potassium bisulphate	AS	Rs	Rs	--
potassium bisulphite	HD	Rs	--	--
potassium dichromate	AS	Rs	Rs	--
butanediol	TP	Rs	Rs	--
butantriol (1, 2, 4)	TP	Rs	Rs	--
butylene, liquid	TP	CR	--	--
butylene glycol	TP	Rs	--	--
butylene glycol	10%	Rs	CR	butyl
alcohol	TP	Rs	CR	CR
butylene phenol	AS	Rs	--	--
butylene phenol	TP	HC	--	--
butine (2) diol (1, 4)	TP	Rs	--	--
liquid paraffin	TP	Rs	CR	--
fixing agent vat	V	Rs	Rs	--
wines	V	Rs	Rs	--
vinyl acetate	TP	Rs	YC	--
tartaric acid	10%	Rs	Rs	--
wine vinegar	V	Rs	Rs	Rs
distilled water	V	Rs	Rs	Rs
air	TP	Rs	Rs	Rs
wax	V	Rs	CR	--
hexane	TP	Rs	CR	--
hexane triol (1,2,6)	TP	Rs	Rs	--
heptane	TP	Rs	CR	HC
hydrazine hydrate	TP	Rs	--	--
natrium hydrate	60%	Rs	Rs	Rs
potassium hydrogen carbonate	AS	Rs	Rs	--
barium hydroxide	AS	Rs	Rs	Rs
potassium hydroxide	50%	Rs	Rs	Rs
aniline hydrochloride	AS	Rs	Rs	--
hydrochloride	AS	Rs	Rs	Rs
hydrochloride	TP	Rs	CR	--
calcium hypochloride	HD	Rs	--	--
sodium hypochloride	20%	NR	NR	NR
sodium hypochlorite	10%	Rs	--	--
sodium hypochlorite	20%	CR	CR	NR
hydroxiacetic acid	30%	Rs	CR	--
glycerin	TP	Rs	Rs	Rs
glucose	20%	Rs	Rs	Rs
town gas	V	Rs	--	--
diaminethanol	TP	Rs	--	--
tar oil	H	Rs	NR	NR
dextrin	HD	Rs	Rs	--
dihexyl fatalat	TR	Rs	CR	--
diglycolic acid	AP	Rs	Rs	--
diesel oil	V	Rs	CR	--
di-iso-octyl fatalat	TP	Rs	CR	--
di-iso-propyl ether	TP	CR	NR	--
dimethyl amine	100%	Rs	--	--



■ CHEMICAL TABLES

Hostile Environment	Concentration	Chemical Resistance		
		20 °C	60 °C	100 °C
dimethylformamide	TP	Rs	Rs	--
di-n-butyl ether	TP	CR	--	--
di-n-onyl fatalat	TP	Rs	CR	--
dioane	TP	CR	CR	--
sulfur dioxide	all	Rs	Rs	--
sulfur dioxide, gas	TP	Rs	Rs	--
sulfur dioxide, fluid	all	Rs	Rs	--
carbon dioxide, gas	all	Rs	Rs	--
carbon dioxide, fluid	all	Rs	Rs	--
dioctyl fatalat	TP	Rs	CR	--
dichloroben zene	TP	CR	--	--
dichloracetic acid	TP	CR	--	--
dichloracetic acid	50%	Rs	Rs	--
dichlorethylene (1, 1-1, 2)	TP	YC	--	--
diethyl amine	TP	Rs	--	--
diethyl ether	TP	Rs	CR	--
leaven	all	Rs	--	--
gelatin	HD	Rs	Rs	Rs
fatty acids > C4	TP	Rs	CR	--
potassium iodide	AS	Rs	Rs	--
carbolineum	V	Rs	--	--
ammonium carbonate	GL	Rs	Rs	--
potassium carbonate	GL	Rs	Rs	--
calcium carbonate	GL	Rs	Rs	Rs
sodium carbonate	50%	Rs	Rs	CR
carbonimonoxide	all	Rs	Rs	--
carbonsulphide	TP	HC	HC	HC
caustic soda	60%	Rs	Rs	Rs
alum	TP	Rs	Rs	--
oxygen	TP	Rs	--	--
fatty acid	20%	Rs	--	--
acid acetanhydride	40%	Rs	Rs	--
coconut oil	TP	Rs	--	--
coconut fat spirit	TP	Rs	YC	--
cognac	V	Rs	Rs	--
starch solution	all	Rs	Rs	--
starch syrup	all	Rs	Rs	--
cresol	90%	Rs	Rs	--
cresol	>90%	Rs	--	--
silicotfluorine acid	32%	Rs	Rs	--
fluorosilicic acid	32%	Rs	Rs	--
silicic acid	all	Rs	Rs	--
xylol, xylene	TP	CR	NR	NR
corn oil	TP	Rs	CR	--
citric acid	LD	Rs	Rs	Rs
molasses	V	Rs	Rs	Rs

■ STANDARDS PIPES & FITTINGS

DIN 8077 polypropylene pipes and dimensions

DIN 8078 polypropylene pipes, general quality requirements and testing

DIN 16962 pipe joints and elements for polypropylene pressure pipes

DIN 1988 part 2 drinking water supply systems, material components, appliance design and installation

BS 6700 design installation, testing and maintenance of service supplying water for domestic use within buildings and their cartilages

DVS 2207 welding of thermoplastic

DVS 2208 welding machines and devices for thermoplastic

ES 3703 part 1 2002 polypropylene pipe dimensions and testing

■ What are din standards

Deutsches institute fur normung (DIN) is a German institute for standardization. It is a technical and scientific association recognized by the German government as the national standards body representing German interests at international and European levels.

DIN provides a forum where representatives from the manufacturing industries, consumer organizations, commerce, trades, and service industries, science and technical inspectorates as well as the government can gather to discuss and define their specific standardization requirements and to record their results as German standards.

■ What does PN stand for, and what does it mean to be PN-10, PN-16 or PN-20?

PN stands for nominal pressure. It is a numerical designation used for referencing purposes related to mechanical characteristics of the components of a piping system.

A PN-25 pipe means that the pipe can withstand pressure up to 25 bars.

■ Why are fittings categorized under PN-25 types?

Fittings can withstand any temperature above 95°C and pressure up to 25 kg/cm².

Hence, they are categorized under PN-25.



■ How are pipes categorized as PN-10, PN-12, PN-16, PN-20 & PN-25?

It is done by matching them with the SDR (Standard Dimension Ratio) conventional pipes.

APPR-C pipe with a wall thickness of OD / SDR is matched as the equivalent of a PPR-C pipe for a SDR pipe.

PN - 10 is regarded as the equivalent of a SDR 11 because the PN 10 pipe of 20 mm OD has an approximate thickness of $20/11=1.8$.

PN-10 160 mm has an approximate thickness of $160/11= 14.55$ likewise, SDR 9 is matched with PN-12 SDR 7.4 with PN-16, SDR 6 with PN-20 and SDR 5 as PN-25

■ How are the PP-R pipes & fittings joined together?

The process of jointing the PP-R pipes and fittings is very simple and result in inseparable water joints.

It is carried out by using a simple welding machine that melts the internal surface of the fittings are produced from the same material, the connection is homogeneous.

■ Can the pipe's alignment be adjusted after the welding process?

Any alignment up to 5 degrees relative to the axis of the pipe can be adjusted immediately after jointing.

■ How are the sizes of the pipes and fittings measured?

A pipe's size is obtained by measuring its outer diameter (OD) in millimeters (mm) As for the PP-R fittings, they are obtained by measuring inner diameter (ID) also in millimeters (mm).

And the metal threaded fittings are measured in inches (").

■ How can stressing of the pipe be avoided?

Possible linear thermal expansion and contraction needs to be taken care of during designing and installing. stressing of the pipes can be avoided by providing flexible length and proper supporting.

■ Why is the joining of pipes without using sockets not recommended?

This is because such joining results in blockage or reduction in the inner diameter at the joining point. Hence, it is recommended to avoid it as it can affect the functioning of the entire system.

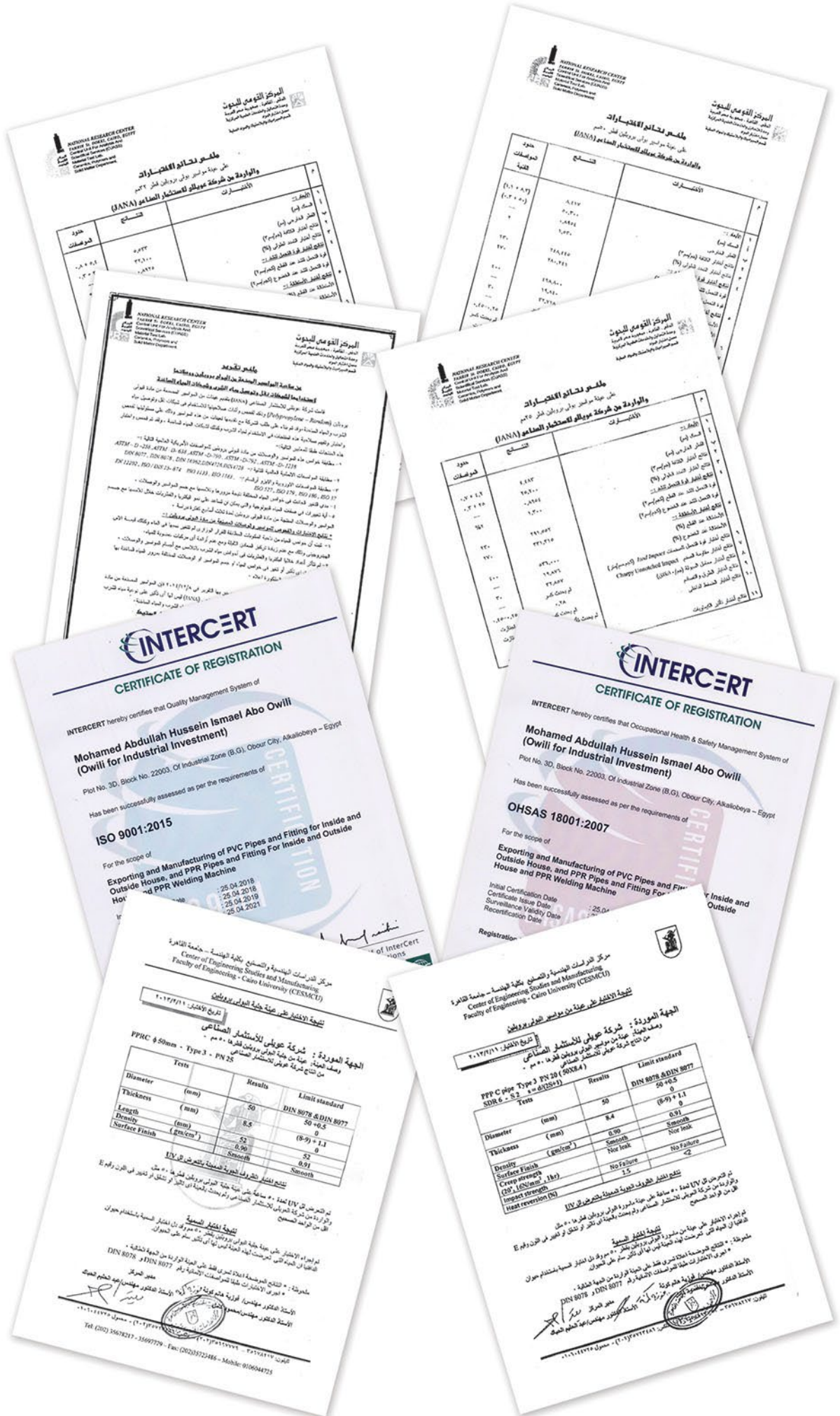
■ Is joining the pipes & fittings using the glue recommended?

It is not recommended because glue cannot stop the pipes from leaking. It resembles a termite attack and requires frequent maintenance, thus affecting the pipe's hygiene and shelf-life.

■ Which method of pressure testing is recommended?

Before any pipes are filled or cemented in concealed application, they are to be hydrostatically tested for any pressure loss or leakage. Start by closing all ends of the pipe with end caps and pipe plugs. Then proceed with loading water and pressure in the closed pipes up to 25 Bar pressure in PN-16, PN-20 and PN-25 pipes, and up to 15 bar pressure for PN-10 and PN-12 at room temperature.

The pressure should be maintained for at least 8 hours to check for any drop in pressure and repeated to dismiss the minute chance of any leakage. in the event of any considerable pressure drop, the particular area of leakage has to be identified and redone.



The logo for JANA, featuring the word "JANA" in a bold, white, sans-serif font with a registered trademark symbol (®) to its upper right. Above the "A" is a white semi-circular arc. To the right of "JANA" is the text "oiG" in a smaller, white, lowercase, sans-serif font with a trademark symbol (™) to its upper right.

JANA®
oiG™

OWILI industrial
investment group



U-PVC
SYSTEMS

■ JANA PRINCIPLES

- **JANA FOCUSES ITS ENTIRE POTENTIAL TO OFFER TECHNICAL SOLUTIONS FOR MARKETS. DUE TO OUR FOCUS ON THE BELOW SIX PRINCIPLES, OUR PRODUCTS BECOME COMPETING AND RELIABLE.**

- **RESEARCH & DEVELOPMENT**

Nowadays, the competition in the pipes industry requires from leading companies and plants to immediately react and fulfill the continuously changing needs of clients and global markets. therefore, JANA pays a close attention to research, development and design, supported by a specialized team who work on providing products based on customized and tangible solutions to meet the needs of clients and markets.

- **TECHNOLOGY**

We apply modern technology in production and quality control processes and utilize the latest production lines and laboratory equipment, starting from product design to delivery to clients; that's to ensure higher quality levels, avoid downtime and problems.

- **QUALITY**

Our production processes are continuously supported by applying certified quality systems compliant to Standards: ISO 9001 and BS OHSAS 18001. The products, including all types of plastic pipes and fittings, are subject to continuous review and are 100% tested. As a result, JANA products received approvals and certifications from all relevant domestic and global organizations.

- **Service**

Customer service is JANA primary objective and the ultimate goal for all departments through maintaining a continuous communication and relationship with our clients, both domestically and globally. We at sales department, have a trained technical team to meet all client requirements of products and applications.

- **ENVIRONMENTAL POLICY**

JANA shows great respect and pays much attention to the environment, reflected in its production processes, oaring a healthy and safe environment for all people. Our plants have been prepared to receive (Environmental Management System Certification), showing our respect for environment throughout production processes.

- **OCCUPATIONAL HEALTH AND SAFETY (OHS)**

JANA pays great care to health and safety of all its staff and visitors, as the human capital is a source of proud for us. As a result, it sought to obtain (Occupational Health and safety Management Certification) in compliance with standard OHSAS 18001:2007

U-PVC FITTINGS SYSTEM

ELBOW SWEEP



Item No.	1	2	3	4	5	6
Dimension (mm)	25	32	48	60	75	110

ELBOW SWEEP WITH DOOR

Item No.	1	2	3
Dimension (mm)	60	75	110



ELBOW 90°



Item No.	1	2	3	4	5	6	7
Dimension (mm)	25	32	48	60	90	110	160

ELBOW 90° WITH DOOR

Item No.	1	2	3	4	5
Dimension (mm)	60	75	90	110	160



U-PVC FITTINGS SYSTEM

ELBOW 45°



Item No.	1	2	3	4	5	6	7
Dimension (mm)	25	32	48	60	75	110	160

TEE

Item No.	1	2	3	4	5	6	7	8
Dimension (mm)	25	32	48	60	75	90	110	160



TEE WITH DOOR



Item No.	1	2	3	4	5	6
Dimension (mm)	48	60	75	90	110	160

TEE REDUCER

Item No.	1	2	3	4
Dimension (mm)	75/60	110/60	110/75	160/110



U-PVC FITTINGS SYSTEM

TEE REDUCER WITH DOOR



Item No.	1	2	3	4
Dimension (mm)	75/60	110/60	110/75	160/110

Y-SHAPE TEE

Item No.	1	2	3	4	5	6
Dimension (mm)	32	48	60	75	110	160



Y-SHAPE REDUCER



Item No.	1	2	3
Dimension (mm)	110/60	110/75	110/160

SOCKET

Item No.	1	2	3	4	5	6	7
Dimension (mm)	25	32	48	60	75	110	160



■ U-PVC FITTINGS SYSTEM

■ REDUCER BUSHING



Item No.	1	2	3	4	5
Dimension (mm)	60/48	75/60	110/60	110/75	160/110

■ CROSS TEE

Item No.	1
Dimension (mm)	110



■ CROSS TEE 45°



Item No.	1
Dimension (mm)	110

■ P-TRAP

Item No.	1	2
Dimension (mm)	75	110



U-PVC FITTINGS SYSTEM

DRAINAGE SOCKET

Item No.	1	2
Dimension (mm)	110/75/50	110/50/50



CLEANING SOCKET



Item No.	1	2	3	4
Dimension (mm)	60	75	110	160

GULLY-TREP 10 CM

Item No.	1	2	3	4
Dimension (mm)	60/48	75/48	60/60	75/60



GULLY-TREP 7 CM



Item No.	1	2
Dimension (mm)	60/48	60/60

■ U-PVC FITTINGS SYSTEM

■ GULLY-TREP WITH ELBOW 10 CM

Item No.	1
Dimension (mm)	60/75



■ GILLY TREP



Item No.	1	2	3
Dimension (mm)	75/48	60/60	60/48

■ FLOOR TRAP LEVEL

Item No.	1
Dimension (mm)	200/110



■ REDUCER



Item No.	1
Dimension (mm)	110/75



■ U-PVC FITTINGS SYSTEM

■ VENT



Item No.	1	2	3
Dimension (mm)	60	75	110

■ GULLY TRAP ELONGATED

Item No.	1
Dimension (mm)	110



■ ELBOW 90 FEMALE THREADED



Item No.	1
Dimension (mm)	48

■ ADAPTOR FEMALE THREADED

Item No.	1
Dimension (mm)	48



■ U-PVC PIPES SYSTEM

■ UPVC PIPES



Item No.	1	2	3	4	5	6
Dimension (mm)	32	48	60	75	110	160

■ UPVC PIPES MULTILAYER

Item No.	1	2	3
Dimension (mm)	75	110	160



■ TAP SADDLE



Item No.	1
Dimension (mm)	110/25

HOW TO CONNECT

Make Sure The Absence Of any growths
Balmasorh It's Completely Flat Surface



Cutting Pipe



Painting brushing overlap in place to reach
Higher quality in welding using glue US



Cleaning the Surface of the Pipe



Clean The X-Tra adhesive



Installation of the pipe with the fitting



■ JANA UPVC PIPES' FEATURES

Jana Pipes have the following features:

- 1 Complete electrical insulation.
- 2 Easily maintained and easily installed.
- 3 Anti-corrosion, anti-rust and light weight.
- 4 Strong and high resistance to acids and alkaline.
- 5 have no effect on the color, taste or odor of the passing-through fluids.
- 6 High resistance to fire, as Poly Vinyl Chloride Resin is inflammable.
- 7 No harmful impacts on health & high resistance to rodents and alkaline.
- 8 High-quality fluids flow due to the smooth inner surface and low coefficient of friction. It also resists the sediments on the inner surface that Facilitates the flow of fluids.
- 9 UPVC pipes are best suited to the hard soils due to its high resistance to cement and saline soils.
- 10 One of the most important features of Red Sea UPVC pipes is that all manufacturing Processes are automatically controlled, leading to stable dimensions and sizes along the pipes. Moreover, the shape and dimensions of pipes sockets are made according to high technical specifications; that's ensure avoiding problems during installation.

Jana UPVC Pipes' Features

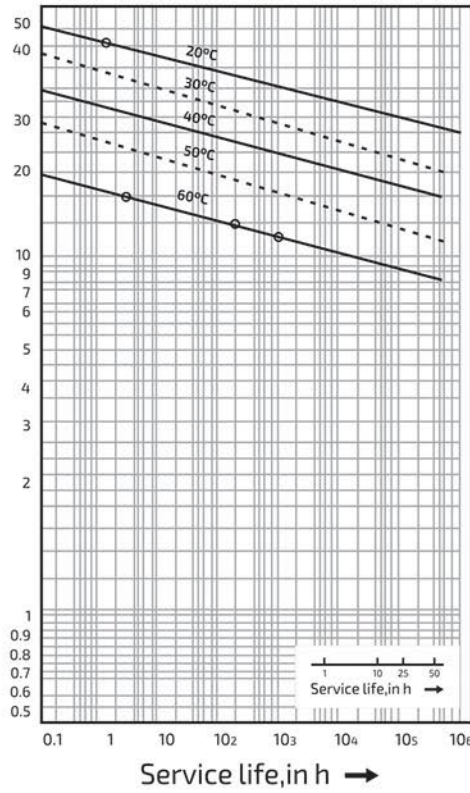


■ PHYSICAL & MECHANICAL PROPERTIES OF UPVC. PIPES

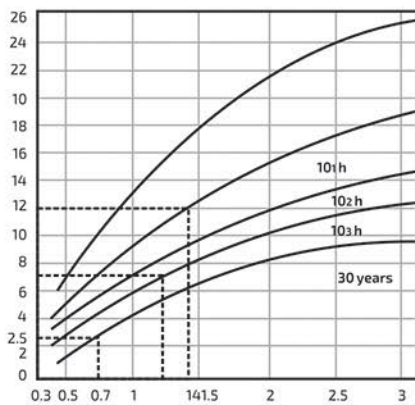
Items	Test Method	Unit	Characteristic Value
Specific Gravity	ASTM D 792	-	1.43
Hardness	ASTM D 786	Rockwell R	120
Water Absorption	ASTM D 670	Mg/cm ² (Psi)	0.04-0.06 (6.7 8.6*100)
Tensile Strength at 15°C	ASTM D 638-60T	Mg/cm ² (Psi)	600 550 (7200 7800)
Bending Strength	ASTM D 790-69T	Mg/cm ² (Psi)	860 (12000)
Compressive Strength	ASTM D 696	Mg/cm ² (Psi)	660 (9400)
Shearing Strength	ASTM D 732	ASTM D 732	400 (6700)
Elongation at Ultimate Tensile Strength	ASTM D 638	%	100 170
Modulus of Elasticity	ASTM D 747	Mg/cm ² (Psi)	2.88*10(4.1*10)
Poisson at 20°C (70°F)	-	-	0.38
Impact Strength (Charpy)	ASTM D 266-56	Kg/cm ² (lb-feet /inch-notched)	5.0(0.91)
Coefficient of Linear Expansion	ASTM D 696	°C ⁻¹	7*10
Specific Heat	-	Cal/g.°C (BTU/lb.°F)	0.2 0.5(0.2 0.5)
Thermal Conductivity	-	Kcal/m.h.c (BTU/Ft.hr.f)	0.11 0.14 (0.074 0.094)
Flame Resistance	ASTM D 636-56T	-	Self-extinguishing
Volume Resistance	ASTM D 267-54T	-cm (-mil)	More than 10 More than 205*10
Dielectric Constant 20°C Kc	ASTM D 150-54T	-	3.2
Dielectric Strength		KV/mm (KV/mil)	More than 14 (More than 1.0)
Dielectric Power Factor 20°C 1 Kc		-	0.02
Softening Temperature	ASTM D 648-56	c(f)	76.3 (170)

PIPES

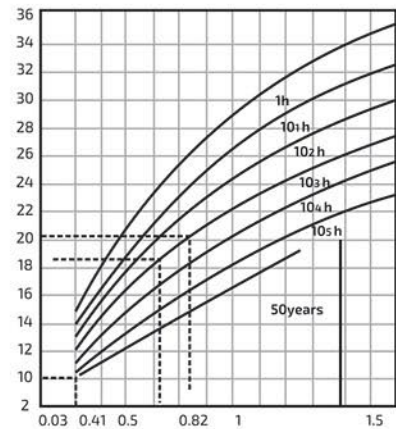
Behavior of U-PVC pipes under long-term pressure



FITTING



Stress - Strain Diagram for U-PVC at 20°C



Stress - Strain Diagram for U-PVC at 60°C

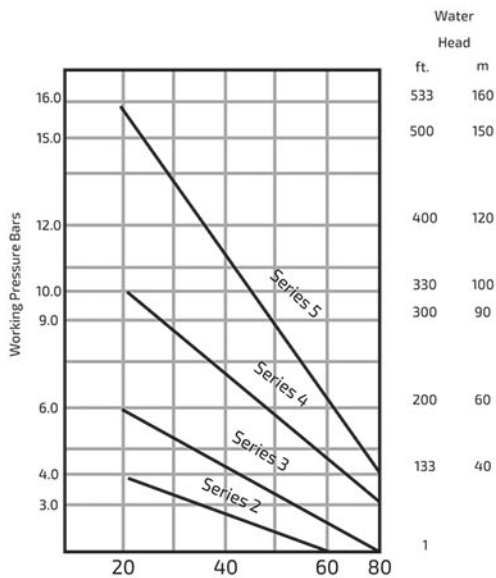


2.0.0 TECHNICAL & CHEMICAL PROPERTIES

When U-PVC pressure pipe operates at temperature other than the temperature at which the pipe is rated (20° - OR 23°C) pressure rating should be established on thermal design factors

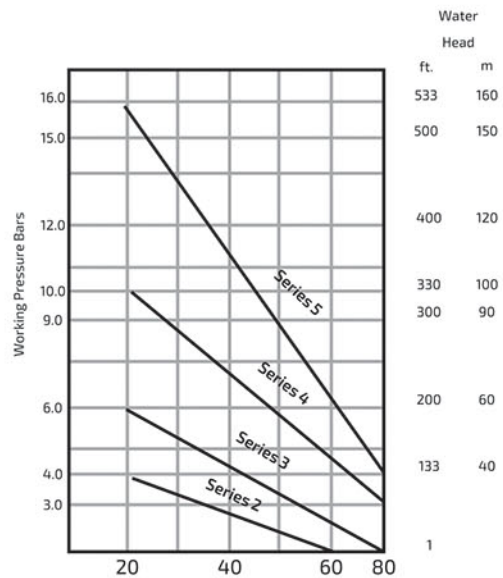
EXAMPLES GIVEN BELOW ARE FOR GUIDANCE ONLY

PRESSURE TEMP. RELATIONSHIP
Ambient variable internal temp. 20°



AMBIENT TEMPERATURE OF 40°C
required working pressure of 6.5 bars
use a 10 bar rated pipe

PRESSURE TEMP. RELATIONSHIP
internal variable Ambient temp. 20°



Required Working pressure of 7.0 bars
use with a liquid temperature of 40°C
therefore a 10 bar rated pipe to be used

2.0.0 TECHNICAL & CHEMICAL PROPERTIES

U-PVC			U-PVC			U-PVC		
Chemicals	23°C	60°C	Chemicals	23°C	60°C	Chemicals	23°C	60°C
A.cetaldehyde	NR	NR	Antimony trichloride	R	R	Caprylic acid	#	#
Acetamide	#	#	Aqua regia	*	NR	Carbon dioxide wet	R	R
Acetic acid 10%	R	R	Aromatic hydrocarbons	NR	NR	Carbon dioxide dry	R	R
Acetic acid 20%	R	R	Arsenic acid	R	R	Carbon disulfide	NR	NR
Acetic acid 50%	R	*	Aryl sulphilic acid	R	R	Carbon monoxide	R	R
Acetic acid 80%	R	*	B Barium carbonate	R	R	Carbon tetrachloride	NR	NR
Acetic acid glacial	*	NR	Barium chloride	R	R	Carbonic acid	R	R
Acetic anhydride	NR	NR	Barium hydroxide	R	R	Caster oil	R	R
Acetone	NR	NR	Barium nitrate	R	#	Caustic potash	R	R
Acetophenone	NR	NR	Barium sulphate	R	R	Cello solve	R	NR
Acetyl Chloride	#	#	Barium sulphide	R	R	Cello solve acetate	R	#
Acetylene	*	*	Butyl phenol	R	NR	Cello solve acetate	R	#
Acetyl Nitrile	NR	NR	Butyl stearate	R	#	Chloracetic acid	R	NR
Acrylic acid Ethyl ester	NR	NR	Butyne diol	R	NR	Chlorine gas wet	NR	NR
Acrylonitrile	NR	NR	Butyric acid	R	NR	Chlorine (liq)	NR	NR
Adipic 105 acid	R	R	Butane	R	R	Chlorine water (sat)	R	R
Allyl alcohol	*	*	Beer	R	R	Chloracetic acid	R	NR
Amyl alcohol	NR	NR	Beer sugar liquors	R	R	Chloroacetyl chloride	R	#
Alcohol Benzyl	NR	NR	Benzaldehyde	NR	NR	Chlorobenzene	NR	NR
Alcohol 1ry Butyl	R	R	Benzalkonium chloride	NR	NR	t-hiorobenzyl chloride	NR	NR
Alcohol 2ry Butyl	R	NR	Benzene	NR	NR	Chloroform	NR	NR
Alcohol. diacetone	#	#	Benzene benzol	NR	NR	Chloropicrin	NR	NR
Alcohol Ethyl	R	R	Benzene sulphonic acid	NR	NR	Chlorosulphonic acid	R	NR
Alcohol Hexyl	R	R	Benzoic acid	R	R	Chromic acid 10%	R	R
Alcohol Isopropyl	R	R	Bismuth carbonate	R	R	Chromic acid 30%	R	*
Alcohol Methyl	R	R	Black liquor	R	R	Chromic acid 40%	R	*
Alcohol Propargyl	R	R	Bleach household	R	R	Chromic acid 50%	NR	NR
Alcohol Propyl	R	R	Bleach 12.5% active Cl2	R	R	Chromium nitrate	#	#
Allyl chloride	NR	NR	Bleach 5.5% active Cl2	R	R	Citric acid	R	R
Alum	R	R	Borax	R	R	Citric acid 10%	#	#
Alum Ammonium	R	R	Boric acid	R	R	Coconut oil	R	R
Alum. Chrome	R	R	Brine acid (sat)	#	#	Coke oven gas	NR	NR
Alum. Potassium	R	R	Brine acid	R	#	Copper carbonate	R	R
Aluminum Chloride	R	R	Bromic acid	R	R	Copper chloride	R	R
Aluminum Floride	R	NR	Bromine (Uq)	NR	NR	Copper cyanide	R	R
Aluminum Hydroxide	R	R	Bromine (yap 25%)	R	R	Copper fluoride	R	R
Aluminum Nitrite	R	R	Bromine Water	R	R	Copper nitrate	R	R
Aluminum Oxychloride	R	R	Bromobenzene	NR	NR	Copper sulphate	R	R
Aluminum Sulfate	R	R	Bromotoluene	NR	NR	Corn oil	*	*
Ammonia gas	R	R	Butadiene	R	R	Corn syrup	*	*
Ammonia (Aq. 10%)	R	NR	Butyiacetate	NR	NR	Cotton seed oil	R	R
Ammonia Liq	NR	NR	Butyl alcohol	R	R	Cresol	NR	NR
Ammonium Acetate	R	R	Butyl Cello solve	R	#	Oresylic acid 50%	R	R
Ammonium Benzoate	#	#	Butyl phthalate	NR	NR	Croton aldehyde	NR	NR
Ammonium Bifloride	R	R	Butylene	NR	NR	Crude oil	R	*
Ammonium Bisulphide	R	R	C Cadmium acetate	#	#	Cupric fluoride	R	R
Ammonium Carbonate	R	R	Chloral hydrate	R	R	Cupric sulphate	R	R
Ammonium Chloride	R	R	Chloramines	R	#	Cuprous chloride	R	R
Ammonium Citrate	#	#	Chloric acid 20%	R	R	Cyclohexane	NR	NR
Ammonium Dichromate	R	#	Chlorinated solvents	NR	NR	Cyclohexanol	NR	NR
Ammonium Fluoride 10%	R	R	Chlorine Gas Dry	NR	NR	Cyclohexanone	NR	NR
Ammonium Fluoride 25%	R	*	Cadmium chloride	#	#	D Desocyephedrine hydrochloride	R	R
Ammonium Hydroxide	R	*	Cadmium cyanide	R	R	Detergents	R	R
Ammonium Metaphosphate	R	R	Cadmium sulphate	#	#	Detergents solution (heavy duty)	R	R
A.mmorlium Nitrate	R	R	Caffeine citrate	#	#	Dextrin	R	R
Ammonium Persulphate	R	R	Calcium acetate	R	R	Dextrose	R	R
Ammonium Phosphate	R	R	Calcium bisulphide	R	R	Diazo salts	R	R
Ammonium Sulphamate	#	#	Calcium bisulphate	R	R	Dibutoxy ethyl phthalate	NR	NR
Ammonium Sulphate	R	R	Calcium carbonate	R	R	Dibutyl phthalate	NR	NR
Ammonium Sulphide	R	#	Calcium chlorate	R	R	Dibutyl sebacate	R	NR
Ammonium Thiocyanate	R	R	Calcium chloride	R	R	Dichlorobenzene	NR	NR
Ammonium Tartrate	#	#	Calcium hydroxide	R	R	Dichloroethylene	NR	NR
Amyl Acetate	NR	NR	Calcium hypochlorite	R	R	Diesel fuels	*	NR
Amyl Chloride	NR	NR	Calcium nitrate	R	R	Diethylamine	NR	NR
Aniline	NR	NR	Calcium Oxide	R	R	Diethyl cellosolve	#	#
Aniline Chlorohydrate	NR	NR	Calcium sulphate	R	R	Diethyl ether	R	#
Aniline Hydrochloride	NR	NR	Camphor crystals	R	#	Diglycolic acid	R	R
Antraquinone	R	R	Cane sugar liquors	R	R	Dimethylamine	R	R
Antraquinone Sulfonic acid	R	R	Carbitol	R	#	Dimethyl formamide	NR	NR



2.0.0 TECHNICAL & CHEMICAL PROPERTIES

U-PVC			U-PVC			U-PVC		
Chemicals	"UPVC	"UPVC	Chemicals	"UPVC	"UPVC	Chemicals	"UPVC	"UPVC
Dimethyl hydrazine	NR	NR	Hydrobromic acid 50%			Mercurous nitrate	R	R
Diethyl phthalate	NR	NR	Hydrobromic acid 18%			Mercury	R	R
Dioxane	NR	NR	Hydrobromic acid conc 20%	R	*	Methane	R	R
Dioxane 1,4	NR	NR	Hydrocyanic acid	R	R	Methanol	*	NR
Disodium phosphate	R	R	Hydrofluoric acid 10%	R	R	Methylene chlorobromide	NR	NR
Dis. Water	R	R	Hydrofluoric acid dil.	R	NR	Methoxyethyl oleate	R	#
Divinyl benzene	NR	NR	Hydrofluoric acid 30%	R	NR	Methyl amine	NR	NR
Epsom salt	R	#	Hydrofluoric acid 40%	R	NR	Methyl bromide	NR	NR
Esters	NR	NR	Hydrofluoric acid 50%	R	NR	Methyl Cello solve	NR	NR
Ethanol	#	#	Hydrofluosillic acid	R	R	Methyl chloride	NR	NR
Ethers	NR	NR	Hydrogen	R	R	Methyl chloroform	NR	NR
Ethyl acetate	NR	NR	Hydrogen cyanide	R	NR	Methyl ethyl ketone	NR	NR
Ethyl acetoacetate	NR	NR	Hydrogen fluoride. anhyd	NR	NR	Methyl isobutyl ketone	NR	NR
Ethyl acrylate	NR	NR	hydrogen peroxide 30%	R	#	Methyl methacrylate	R	#
Ethyl chloride	NR	NR	hydrogen peroxide 50%	R	R	Methyl sulphate	R	*
Ethyl chloroacetate	NR	NR	hydrogen peroxide 90%			Methyl sulphonic acid	R	
Ethyl ether	NR	NR	hydrogen phosphide	R	R	Methylene bromide	NR	NR
Ethylene bromide	NR	NR	hydrogen sulphide. dry	R	R	Methylene chloride	NR	NR
Ethylene chloride	NR	NR	hydrogen sulphide (aq. Sol. n)	R	R	Methylene iodine	NR	NR
Ethylene chlorohydrin	NR	NR	Hydroquinone	R	R	Methyl isobutyl carbinol	#	#
Ethylene diamine	#	#	Hydroxyl amine sulphate	R	R	Milk	R	R
Ethylene dichloride	NR	NR	Hypochlorous acid	R	R	Mineral oil	R	R
Ethylene glycol			Hydrazine	NR	NR	Molasses	R	R
Ethylene oxide	NR	NR	Iodine	NR	NR	Monoethanol amine	NR	NR
Fatty acid	R	R	Iodine solution 10%	NR	NR	Motor oil	R	R
Ferric acetate	R	NR	Isopropanol	„r: „r:		Naphtha	R	R
Ferric chloride	R	R	Isopropyl ether	NR	NR	Naphthalene	NR	NR
Ferric hydroxide	R	R	Isodane	#	#	Natural gas	R	R
Ferric nitrate	R	R	Jet fuel. J P4	*	NR	Nickel acetate	R	#
Ferric sulphate	R	R	Jet fuel. J P5-	*	NR	Nickel chloride	R	R
Ferrous chloride	R	R	Kerosene	R	*	Nickel nitrate	R	R
Ferrous hydroxide	R	R	Ketones	NR	NR	Nickel sulphate	R	R
Ferrous nitrate	R	#	Kraft liquor	R	R	Nicotine	R	R
Ferrous sulphate	R	R	Lactic acid 25%	R	R	Nicotinic acid	R	R
Fish soluble	R	R	Lactic acid 80%	R	R	Nitric acid 10%	R	
Fluorine gas. Wet	NR	NR	Lard oil	R	R	Nitric acid 20%	R	
Fluobric acid	R	R	Lauric acid	R	R	Nitric acid 30%	R	
Fluosilicic acid	R	R	Lauryl chloride	R	R	Nitric acid 40%	R	
Formaldehyde 35%	R	R	Lead acetate	R	R	Nitric acid 50%	R	*
Formaldehyde 37%	R	R	Lead chloride	R	R	Nitric acid 70%	R	NR
Formaldehyde 50%	R	R	Lead nitrate	R	R	Nitric acid 100%	NR	R
Formic acid	R	NR	Lead sulphate	R	R	Nitlobenzene	NR	NR
Formic acid (anhydrous)	#	#	Lemon oil	#	#	Nitroglycerine	NR	NR
Freon F11-	R	R	Ligroin	#	#	Nitrous acid 10%	R	NR
Freon F12-	R	R	Lime sulphur	R	R	Nitrous oxide	R	
Freon F21-	NR	NR	Liolic acid	R	R	Nitro glycol	NR	NR
Freon F22-	NR	NR	Unoleic oil	R	RO	-1 octanol	#	#
Freon F113-	R	R	Linseed oil	R	R	Oils Vegetable	*	
Freon F114-	R	R	Unseed oil blue	#	#	Oils Sour crude	#	#
Fructose	R	R	Liqueurs	R	R	Oleic acid	R	R
Fruit Juices. Pulp	R	R	Lithium bromide	R	R	Oleum	NR	NR
Furtural	NR	NR	Lithium sulphate	R	R	Olive oil	#	#
Gallic acid	R	R	Lubricating oil.ASTM1#	R	R	Oxalic acid	R	R
Gas. Natural		R	Lubricating oil.ASTM2#	R	R	Oxalic acid 20%	#	#
Gasoline. Leaded	*	NR	Lubricating oil.ASTM3#	R	R	Oxalic acid 50%	R	R
Gasoline. Unleaded	*	NR	Machine oil	R	R	Oxygen gas	R	R
Gasoline. Sour	*	NR	Magnesium carbonate	R	R	Ozone	#	#
Gelatin	R	R	Magnesium chloride	R	RP	Palmitic acid	#	#
Gin	#	#	Magnesium citrate	R	R	Palmitic acid 10%	R	R
Glucose	R		Magnesium hydroxide	R	R	Palmitic acid 70%	R	NR
Glycerin	R	R	Magnesium nitrate	R	R	Paraffin	R	R
Glycerin. Glycerol	R	R	Magnesium sulphate	R	R	Peanut oil	#	#
Glycolic acid	R	R	Manganese sulphate	R	R	Per acetic acid 40%	R	NR
Glycols	R	R	Maleic acid	R	R	Perchlone acid 10%	R	
Grape sugar	R	R	Maleic acid 50%	#	#	Perchlone acid 70%	R	NR
Green liquor. Paper	R	R	Maleic acid	R	R	Per phosphate	R	#
Heptane		R	Mercuric chloride	R	R	Petroleum oils. Sour	R	-
Hexane			Mercuric cyanide	R	R	Petroleum oils. Refined	R	R
Hydrobromic acid 20%	R	R	Mercuric sulphate	R	R	Phenol		Nii

2.0.0 TECHNICAL & CHEMICAL PROPERTIES

U-PVC			U-PVC			U-PVC		
Chemicals	°23C 60°C	°23C 60°C	Chemicals	°23C 60°C	°23C 60°C	Chemicals	°23C 60°C	°23C 60°C
Phenyl hydrazine	NR	NR	Silicic acid	R	R	Sulphur trioxide gas	R	R
Phenyl hydrazine hydrochloride	*	NR	Silicone oil	R	R	Sulphur acid 10%	R	R
Phosgene liq.	NR	NR	Silver cyanide	R	NR	Sulphur acid 20%	R	R
Phosgene gas	R	*	Silver nitrate	R	R	Sulphur acid 30%	R	R
Phosphonic acid 10%	R	R	Silver sulphate	R	R	Sulphur acid 50%	R	R
Phosphonic acid 25%	R	R	Soaps	R	R	Sulphur acid 60%	R	R
Phosphonic acid 50%	R	R	Sodium acetate	R	R	Sulphur acid 70%	R	R
Phosphonic acid 70%	R	R	Sodium arsenate	#	#	Sulphur acid 80%	R	*
Phosphonic acid 85%	R	R	Sodium alum	R	R	Sulphur acid 90%	R	*
Phosphorus yellow	R	*	Sodium benzoate	R	R	Sulphur acid 93.5%	*	NR
Phosphorus red	R	R	Sodium bicarbonate	R	R	Sulphur acid 94%	*	NR
Phosphorus pentoxide	R	*	Sodium bisulphate	R	R	Sulphur acid 95%	NR	NR
Phosphorus trichloride	NR	NR	Sodium bisulphate	R	R	Sulphur acid 96%	NR	NR
Photographic solution	R	R	Sodium bisulphite	R	R	Sulphur acid 98%	NR	NR
Picric acid	NR	NR	Sodium borate	R	#	Sulphur acid 100%	R	NR
Plating solution brass	R	*	Sodium bromide	R	R	Sulphurous acid	R	NR
Plating solution cadmium	R	*	Sodium carbonate	R	R	T Tall oil	R	NR
Plating solution chrome	R	*	Sodium chlorate	R	R	Tannic acid	R	NR
Plating solution copper	R	*	Sodium chloride	R	#	Tannic acid 30%	R	R
Plating solution gold	R	*	Sodium chlorite	R	R	Tannic liquors	NR	NR
Plating solution lead	R	*	Sodium cyanide	R	*	Tar	R	#
Plating solution nickel	R	*	Sodium dichromate	R	R	Tartaric acid	R	R
Plating solution rhodiwn	R	*	Sodium ferricyanide	NR	NR	Tetraethyl lead	*	*
Plating solution silver	R	*	Sodium ferrocyanide	NR	NR	Tetrahydrofuran	*	NR
Plating solution tin	R	*	Sodium fluoride	NR	NR	Tetrahydrofuran	NR	NR
Plating solution zinc	R	*	Sodium formate	NR	NR	Tetra sod. Pyrophosphate	NR	NR
Polyethylene glycol	R	*	Sodium hydroxide 10%	R	R	Thionyl chloride	R	#
Potash	R	R	Sodium hydroxide 15%	R	*	Tread cutting oils	R	R
Potassium alum	R	R	Sodium hydroxide 25%	R	*	Transformer oil DTE/30	#	#
Potassium aluminum sulphate	R	#	Sodium hydroxide 30%	R	*	Tributyl phosphate	NR	NR
Potassium amyl xanthate	R	NR	Sodium hydroxide 50%	R	*	Tributyl citrate	R	#
Potassium bicarbonate	R	R	Sodium hydroxide 70%	R	*	Trichloroacetic acid	R	R
Potassium bicarbonate	R	R	Sodium hypochlorite 15%	R	*	Trichloroethane	NR	NR
Potassium borate	R	R	Sodium hypochlorite	R	#	Trichloropentylene	NR	NR
Potassium bromate	R	R	Sodium iodide	#	#	Trithanoamine	R	R
Potassium bromide	R	R	Sodium metaphosphate	R	#	Trithylamine	R	R
Potassium carbonate	R	R	Sodium nitrate	R	R	Trithylpropane	R	R
Potassium chlorate (Aq.)	R	R	Sodium nitrite	R	R	Trisodium phosphate	R	R
Potassium chloride	R	R	Sodium palmitate sol.n 5%	#	#	Turpentine	R	R
Potassium chromate	R	R	Sodium perborate	R	R	Urea	NR	NR
Potassium chlorate	R	R	Sodium perchlorate	R	R	Urine	*	*
Potassium cyanate	R	R	Sodium peroxide	R	R	Vaseline	R	R
Potassium cyanide	R	R	Sodium phosphate. alk	R	#	Vegetables oils vinegar	#	#
Potassium cichromate	R	R	Sodium phosphate. Acidic	R	#	Vinegar. White vinyl	NR	NR
Potassium ethyl xanthate	R	NR	Sodium phosphate neutrl	R	#	Acetate	R	R
Potassium ferricyanide	R	R	Sodium silicate	#	#	Water	R	R
Potassium ferr oyanide	R	R	Sodium sulphate	R	R	Water. acid mine	R	R
Potassium fluoride	R	R	Sodium sulphide	R	R	Water. Demineralized	R	R
Potassium hydroxide	R	R	Sodium sulphite	R	R	Water. Disilled or flesh	R	R
Potassium iodide	R	R	Sodium thiosulphate	R	R	Water. Potable	R	R
Potassium nitrate	R	R	Sour crude oil	R	R	Water. Salt Water. Sea	R	R
Potassium perbmate	R	R	Stannic chloride	R	R	Water. Sewage	R	R
Potassium perchlorate sat	R	R	Stannous chloride	*	*	Whiskey-	R	R
Potassium permanganate 25%	#	#	Stannous sulphate	R	R	White liquor wines	R	R
Potassium persulphate sat	R	R	Starch	R	R	X Xylene (Xylo) Z Zinc	NR	NR
Potassium phosphate	#	#	Steam acid	NR	NR	Acetate	R	R
Potassium sulphate	R	R	Stoddards solvent	*	*	Zinc chlolide	R	R
Propane	R	R	Strontium chloride	RR	R	Zinc nitrate	R	R
Propylene dichloride	NR	NR	Succinic acid	NR	NR	Zinc sulphate	R	R
Propylene glycol	*	*	Sulphated detergent	#	#			
Propylene oxide	NR	NR	Sulphate liquors	#	#			
Pyridine	NR	NR	Sulfite liquor	R	R			
Pyrogallia acid	R	R	Sulphur	R	R			
Salicylic acid	R	R	Sulphur chloride	#	#			
Salic ylaldehyde	NR	NR	Sulphur dioxide. Dry	R	R			
Sea water	R	R	Sulphur dioxide. Wet	R	R			
			Sulphur trioxide	R	R			



■ 3.0.0 RESIN & COMPOUNDS MATERIALS DATA SHEETS

GENERAL PROPERTIES	U-PVC VALUE	UNITS
Density	1.38	g/cm ³
Water absorption	<4	Mg/cm ²
Flammability	Self extinguishing	

MECHANICAL PROPERTIES

Ultimate tensile strength	492	kg/cm ²
Compressive strength	668	kg/cm ²
Flexural strength (rock well)	950	kg/cm ²
Modulus of elasticity	2.7 x 10 ⁴	kg/cm ²
Impact strength (charpy)	No break >%10	-
Shore hardness (rock well)	115	R

THERMAL PROPERTIES

	Pipes	Fittings
Softening point v.s.t. 5kg	>79° >76°	°C
Max. operating temperature	60	°C
Coefficient of thermal expansion	3.0 x 10 ⁻⁵	In/In/°F
Specific heat	0.25	Cal/g. °C
Thermal conductivity	0.13	Kcal/m.h. °C

ELECTRICAL PROPERTIES

Volume resistivity	>10 ¹⁴	Ohm. cm
Surface resistance	>40	Kv/mm
Power factor (at 106cycle)	3.3	

■ NOTES

U-PVC are non-conductor of electricity and are not subjected to galvanic or electric attack.
All the above-mentioned values at 20°C.

■ PIPES

On trucks the 6 or long pipes must be fully supported on the loading area. Avoid loading at the same time with sharp objects.

Pipes should not be thrown or dragged along the ground.

Pipes should be given adequate support at all times.

Pipes should not be stacked in large piles, especially in warm temperature conditions as the lower layers may distort, resulting in difficulties in jointing and pipes alignment. Any pipe with ends prepared for jointing (sockets and spigot joints, a joints, etc.) should be stacked in layers with sockets placed at alternate ends of the stacks and with the sockets protruding to avoid unstable stacks and the possibility of imparting a permanent set to the pipes.

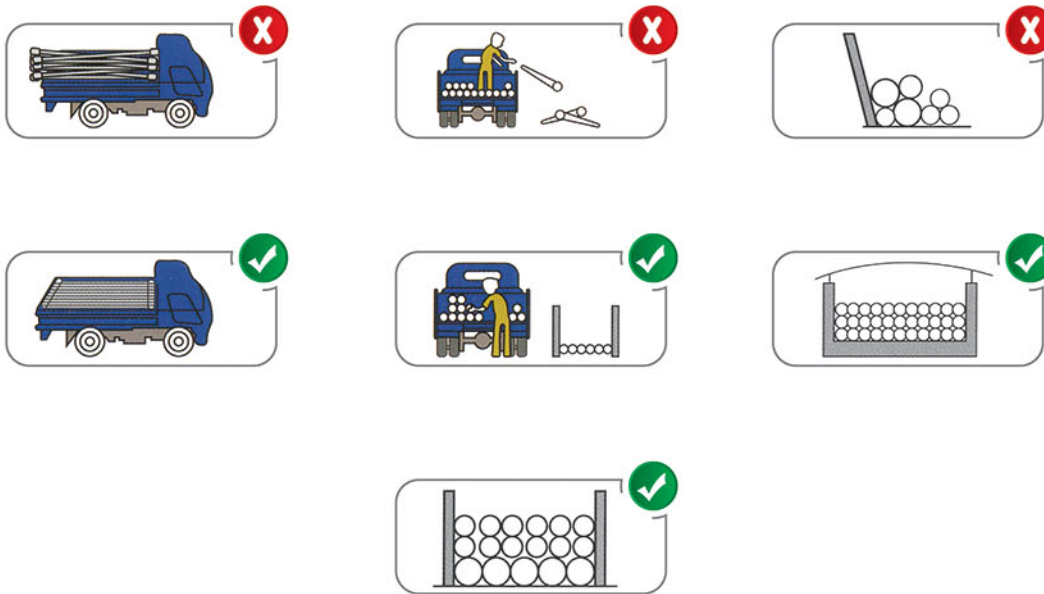
For long-term storage, pipe rack should provide continuous support, but if this is not possible timber of at least 3 inch (75mm) bearing width at spacing not greater than 3 feet (915mm) centers for pipe sizes 160mm and above, should be placed beneath the pipes and at 6 ft. (1.8m) centers at the side, if the stacks are rectangular. These spacing apply to pipe size 160mm and above.

Closer supports will be required for sizes below 160mm in such pipe racks. Pipes may be stored not more than seven layers, or 6 feet (1.8m) high, whichever is the lesser.

But if different classes of pipe are kept in the same racks, than the thickness classes of largest diameter must always be placed at the bottom.

When loading pipes on to vehicles, care must be taken to avoid their coming into contact with any sharp corners such as cope irons, loose nail-heads, etc.

■ 4.0.0 TRANSPORT & STORAGE



As pipes may be damaged by being rubbed against these during transit. Whilst in transit. Pipes shall be well secured over their entire length and not allowed to project unsecured over the tailboard of the lorry pipes may be off-loaded from lorries by rolling them gently down timbers, care being taken to ensure that pipes do not fall one upon another, nor on to any hard or uneven surfaces.

■ FITTINGS STORAGE

Fittings should be stored in the factory original packaging, and if the fittings are removed from their packaging store them in geometric way.

Never ever mix the mm fittings with the ASTM fittings to avoid miss use. Fittings should be stored in a place away from flames and fire, as U-PVC materials are flammable materials.

Its recommended to store the fittings in a closed secured place to avoid any lose, as the fittings are easy to stolen.

■ 6.1.0 JANA U-PVC PRESSURE PIPES

■ ACCORDING TO GERMANY STANDARD DIN 8061 - 8062

Nominal Outside Diameter DN	Socket Depth (mm)	Class I 2 bar		Class II 4 bar		Class III 6 bar		Class IV 10 bar		Class V 16 bar	
		No.thick of wall (mm)	No.wt kg/m	No.thick of wall (mm)	No.wt kg/m	No.thick of wall (mm)	No.wt kg/m	No.thick of wall (mm)	No.wt kg/m	No.thick of wall (mm)	No.wt kg/m
10	...	...	...	...	...	...	...	...	...	1.0	0.045
12	...	...	...	...	...	...	...	...	...	1.0	0.055
16	...	...	...	...	...	...	...	...	...	1.2	0.090
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	75	...	...	...	...	1.8	0.422	2.4	0.552	3.7	0.809
63	100	...	...	...	...	1.9	0.562	3.0	0.854	4.7	1.289
75	110	...	...	1.8	0.642	2.2	0.782	3.6	1.22	5.6	1.82
90	110	...	...	1.8	0.774	2.7	1.13	4.3	1.75	6.7	2.61
110	115	1.8	0.95	2.2	1.16	3.2	1.64	5.3	2.61	8.2	3.90
125	120	1.8	1.08	2.5	1.48	3.7	2.13	6.0	3.34	9.3	5.01
140	125	1.8	1.21	2.8	1.84	4.1	2.65	6.7	4.18	10.4	6.27
160	132	1.8	1.39	3.2	2.41	4.7	3.44	7.7	5.47	11.9	8.17
180	145	1.8	1.57	3.6	3.02	5.3	4.37	8.7	6.88	13.4	10.4
200	145	1.8	1.74	4.0	3.70	5.9	5.37	9.6	8.51	14.9	12.8
225	152	1.8	1.96	4.5	4.70	6.6	6.76	10.8	10.8	16.7	16.1
250	160	2.0	2.40	4.9	5.65	7.3	8.31	11.9	13.2	18.6	19.9
280	170	2.3	3.11	5.5	7.11	8.2	10.4	13.4	16.6	20.8	24.9
315	180	2.5	3.78	6.2	9.02	9.2	13.2	15.0	20.9	23.4	31.5
355	180	2.9	4.87	7.0	11.4	10.4	16.7	16.9	26.5	26.3	39.9
400	200	3.2	6.10	7.9	14.5	11.7	21.1	19.1	33.7	29.7	50.8
450	200	3.6	7.65	8.9	18.3	13.2	26.8	21.5	42.7	...	...
500	250	4.0	9.37	9.8	22.4	14.6	32.9	23.9	52.6	...	...
560	260	4.5	11.80	11.0	28.1	16.4	41.4	27.7	65.8	...	...
630	300	5.0	14.70	12.4	35.7	18.4	52.2	30.0	83.2	...	...
710	320	5.7	18.90	14.0	45.3	20.7	66.1	...	...	...	...
800	360	6.4	23.90	15.7	57.2	23.3	83.9	...	...	...	...

■ NOTES

- The color D-gray or as the client request
- Each pipe comes with one rubber sealing ring
- The standard length is 6 meter long with the socket or as the client request



6.1.0 JANA U-PVC PRESSURE PIPES

ACCORDING TO DIN 19534

Nominal Size (mm)	Outside Diameter		Wall Thickness		Insertion mm	Weight Kg/m
	(D)	Tolerance	(D)	Tolerance		
110	*110	0.3	3.0	0.5	115	1.630
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
300	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
630	630	1.1	15.4	1.8	300	43.944

ACCORDING TO EGYPTIAN STANDARD ES 848

Nominal outside diameter DN	6 bar S16.7 SDR 34.4 PN 6		8 bar S12.5 SDR 26 PN 8		10 bar S10 SDR 17 PN 10		12.5 bar S8 SDR 17 PN 12.5		16 bar S6.3 SDR 13.6 PN 16		25 bar S4 SDR 9 PN 25	
	No.thick of wall mm	No.wt kg/m	No.thick of wall mm	No.wt kg/m	No.thick of wall mm	No.wt kg/m	No.thick of wall mm	No.wt kg/m	No.thick of wall mm	No.wt kg/m	No.thick of wall mm	No.wt kg/m
20	-	-	-	-	-	-	-	-	1.5	0.137	2.3	0.196
25	-	-	-	-	-	-	1.5	0.170	1.9	0.212	2.8	0.294
32	-	-	-	-	1.6	0.264	1.9	0.277	2.4	0.342	3.6	0.294
40	-	-	1.6	0.291	1.9	0.350	2.4	0.437	3.0	0.525	4.5	0.750
50	-	-	2.0	0.422	2.4	0.552	3.0	0.683	3.7	0.809	5.6	1.16
63	1.9	0.562	2.5	0.717	3.0	0.854	3.8	1.09	4.7	1.29	7.1	2.04
75	2.2	0.782	2.9	0.990	3.6	1.22	4.5	1.54	5.6	1.82	8.4	2.60
90	2.7	1.13	3.5	1.43	4.3	1.75	5.4	2.21	6.7	2.61	10.1	4.14

■ 6.1.0 JANA U-PVC PRESSURE PIPES

■ U ACCORDING TO EGYPTIAN STANDARD ES 848

Nominal outside diameter DN	8 bar S 16 - SDR 33 PN 8		12.5 bar S 10 - SDR 21 PN 12.5		20 bar S 10 - SDR 21 PN 12.5		25 bar S 10 - SDR 21 PN 12.5	
	No.thick of wall mm	No.wt kg/m	No.thick of wall mm	No.wt kg/m	No.thick of wall mm	No.wt kg/m	No.thick of wall mm	No.wt kg/m
110	3.4	1.70	5.3	2.61	8.1	3.90	10.0	5.00
125	3.9	2.21	6.0	3.34	9.2	5.01	11.4	6.48
140	4.3	2.74	6.7	4.18	10.3	6.27	12.7	8.09
160	4.9	3.57	7.7	5.47	11.8	8.17	14.6	10.63
180	5.5	4.51	8.6	6.88	13.3	10.4	16.4	13.40
200	6.2	5.64	9.6	8.51	14.7	12.8	18.2	16.57
225	6.9	7.06	10.8	10.8	16.6	16.1	-	-
250	7.7	8.76	11.9	13.2	18.4	19.9	-	-
280	8.6	10.96	13.4	16.6	20.6	24.9	-	-
315	9.7	13.91	15.0	20.9	23.2	31.5	-	-
355	10.9	17.62	16.9	26.5	26.1	39.9	-	-
400	12.3	22.40	19.1	33.7	29.4	50.8	-	-
450	13.8	28.27	21.5	42.7	33.1	67.82	-	-
500	15.3	34.83	23.9	52.6	36.8	83.77	-	-
560	17.2	43.85	26.7	65.8	-	-	-	-
630	19.3	55.36	30.0	83.2	-	-	-	-
710	21.3	68.1	-	-	-	-	-	-
800	24.5	88.22	-	-	-	-	-	-

6.1.0 JANA U-PVC PRESSURE PIPES

ACCORDING TO BS 3505

Nomianl Size (inch) % it	Outside Diameter (mm)		Class 'O' W.T (mm)		Class 'C' W.T (mm)		Class 'D' W.T (mm)		Class 'E' W.T (mm)	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
1/2	21.2	21.5	-	-	-	-	-	-	1.7	2.1
3/4	26.6	26.9	-	-	-	-	-	-	1.9	2.5
1	33.4	33.7	-	-	-	-	-	-	2.2	2.7
1 1/4	42.1	42.4	-	-	-	-	2.2	2.7	2.7	3.2
1 1/2	48.1	48.4	1.8	2.2	-	-	2.5	3	3.1	3.7
2	60.2	60.5	1.8	2.2	2.5	3	3.1	3.7	3.9	4.5
2 1/2	75	75.3	1.8	2.2	3	3.5	3.9	4.5	4.8	5.5
3	88.7	89.1	1.8	2.2	3.5	4.1	4.6	5.3	5.7	6.6
4	114.1	114.5	2.3	2.8	4.5	5.2	6	6.9	7.3	8.4
6	168	168.5	3.1	3.7	6.6	7.6	8.8	10.2	10.8	12.5
8	218.8	219.4	3.1	3.7	7.8	9	-	-	-	-

NOTE

Stock are available with plain ends and solvent socket.

Manufactured to	BS 3505, 3506, 1969
Standard length	4, 5.8 & 6 Meters
Color	Dark gray
Socket type	Solvent weld or plain-end

Jana threaded pipes for supply and irrigation water B.S3505

Nomianl Size (inch)	Outside Diameter (mm)	Wall Thickness (mm)	Weight / Meter
1/2	21.2	2.6	0.226
3/4	26.6	3.0	0.320
1	33.4	3.5	0.470
1 1/4	42.1	3.75	0.630
1 1/2	48.0	4.3	0.815
2	60.0	5.3	1.250

■ 6.1.0 JANA U-PVC PRESSURE PIPES

■ U-PVC SOIL & WASTE PIPE - ACCORDING TO BS 4514

Nominal Size (mm)	Outside Diameter (mm)		Wall Thickness	
	MIN	MAX	MIN	MAX
(3") 82	82.4	82.8	3.2	3.8
(4") 110	110	110.4	3.2	3.8
(6") 160	160	160.6	4.1	4.8

■ U-PVC SOIL & WASTE PIPE - ACCORDING TO BS 5255

Nominal Size (mm)	Outside Diameter (mm)		Wall Thickness	
	MIN	MAX	MIN	MAX
1 ¼"	36.1	36.3	1.9	2.2
1 - ½	42.75	43.05	1.9	2.3
2"	55.75	56.05	2	2.4

■ NOTE

- Stock are available with plain ends and solvent socket.

Manufactured to	BS 4515 - Soil Pipe, BS 522 - Soil & Waste Pipe
Standard length	4, 5.8 & 6 Meters
Color	Light gray
Socket type	Solvent weld



■ 6.1.0 JANA U-PVC PRESSURE PIPES

■ U-PVC UNDERGROUND DRAINAGE & SEWER PIPE ACCORDING TO BS 4660

Nominal Size (mm)	Outside Diameter (mm)		Wall Thickness	
	MIN	MAX	MIN	MAX
82 (3")	82.4	82.8	3.2	3.8
110 (4")	110	110.4	3.2	3.8
160 (6")	160	160.6	4.1	4.8

■ U-PVC GRAVITY SEWER PIPE ACCORDING TO BS 5481

Nominal Size (mm)	Outside Diameter (mm)		Wall Thickness	
	MIN	MAX	MIN	MAX
200	200	200.6	4.9	5.6
250	250	250.7	6.1	7
300	300	300.8	7.3	8.4
350	350	350.9	8.5	9.8

■ NOTE

■ Stock are available with plain ends and solvent socket.

Standard length	5.8 & 6 Meters
Color	Golden brown
Socket type	Solvent weld or plain-end

■ 6.1.0 JANA U-PVC PRESSURE PIPES

■ ACCORDING TO EGYPTIAN STANDARD 1717

Nomianl outside diameter DN	SN2 SDR51		SN4 SDR41		SN8 SDR34	
	No.thick of wall (mm)	No.wt kg/m	No.thick of wall (mm)	No.wt kg/m	No.thick of wall (mm)	No.wt kg/m
110	-	-	3.2	1.64	3.2	1.64
25	-	-	3.2	1.82	3.7	2.13
160	3.2	2.41	4.0	2.91	4.7	3.44
200	3.9	3.70	4.9	4.46	5.9	5.37
250	4.9	5.65	6.2	7.06	7.3	8.31
315	6.2	9.02	7.7	11.11	9.2	13.2
355	7.0	11.40	8.7	14.06	10.4	16.7
400	7.9	14.50	9.8	17.80	11.7	21.1
450	8.8	18.30	11.0	22.53	13.2	26.8
500	9.8	22.40	12.3	28.00	14.6	32.9
630	12.3	35.70	15.4	43.944	18.4	52.2
710	13.9	45.30	17.4	55.56	-	-
800	15.7	57.20	19.6	70.57	-	-

■ ACCORDING TO ARENTO TELEPHONE DUCT SPECIFICATION T.C161A

Nomianl Size (mm)	Nomianl Size (mm)	Outside Diameter	Outside Diameter	Wall Thickness	Socket Depth (mm)
	(s)	Tolerance	(s)	Tolerance	
50	50	0.2	1.6	0.4	80
110	110	0.3	3.2	0.6	170



6.4.2 U-PVC PIPES ASTM SYSTEM

UPVC DRAINAGE ASTM SYSTEM ACCORDING TO ASTM D-2241 (SDR) SERIES

Nominal diameter (inches)	Outside Diameter (mm)		SDR 64 (4.3 bar) (63 psi) thickness (mm)	SDR 41 (6.9 bar) (100 psi) working pressure (psi)	SDR 32.5 (11 bar) (160 psi) working pressure (psi)	SDR 21 (13.8 bar) (200 psi) thickness (mm)	SDR 17 (17.2 bar) (250 psi) working pressure (psi)	SDR 13.5 (27.7 bar) (315 psi) working pressure (psi)	SDR 13.5 (27.7 bar) (315 psi) working pressure (psi)
	MIN	MIX							
1/2	21.24	21.44	-	-	-	-	-	-	1.57
3/4	26.57	26.77	-	-	-	-	1.52	1.57	1.98
1	33.27	33.53	-	-	-	1.52	1.60	1.96	2.46
1 1/4	42.03	42.29	-	-	1.52	1.63	2.01	2.49	3.12
1 1/2	48.11	48.41	-	-	1.52	1.85	2.29	2.84	3.58
2	60.17	60.47	-	-	1.85	2.31	2.87	3.56	4.47
2 1/2	72.84	73.20	-	-	2.24	2.79	3.48	4.29	5.41
3	88.70	89.1	-	2.16	2.74	3.43	4.24	5.23	6.58
4	114.07	114.53	1.78	2.79	3.51	4.39	5.44	6.73	8.46
6	168	168.56	2.64	4.11	5.18	6.48	8.03	9.91	12.47
8	218.70	219.46	3.43	5.33	6.73	8.43	10.41	12.90	-

■ 6.4.2 U-PVC PIPES ASTM SYSTEM

■ ACCORDING TO ASTM D-1785 (SCH40 & SCH80) (ASTM D2665)

Nominal diameter (inches)	Outside Diameter (mm)		SCH 40			SCH 80			ASTM D2665 Drain, wast, vent	
	MIN	MIX	thickness (mm)	working pressure (bar)	working pressure (psi)	thickness (mm)	working pressure (bar)	working pressure (psi)	MIN	MIX
1/2	21.24	21.44	2.77	41.4	600	3.73	58.6	850	-	-
3/4	26.57	26.77	2.87	33.1	480	3.91	47.6	690	-	-
1	33.27	33.53	3.38	31	450	4.55	43.4	630	-	-
1 1/4	42.03	42.29	3.56	25.5	370	4.85	35.9	520	3.56	4.07
1 1/2	48.11	48.41	3.68	22.8	330	5.08	32.4	470	3.68	4.19
2	60.17	60.47	3.91	19.3	280	5.54	27.6	400	3.91	4.42
2 1/2	72.84	73.20	5.16	20.7	300	7.01	29	420	-	-
3	88.70	89.1	5.49	17.9	260	7.62	25.5	370	5.49	6.15
4	114.07	114.53	6.02	15.2	220	8.56	22.1	320	6.02	6.73
6	168	168.56	7.11	12.4	180	10.97	19.3	280	7.11	7.97
8	218.70	219.46	8.18	11	160	12.7	17.2	250	8.18	9.17

■ ACCESSORIES

■ MAGIC HOSE



Size

1½

2

■ STEEL CLAMPS

Size

1½

¾

1

1½

2

2½

3

4

6



■ RAIN DRAIN



■ JANA & HELI ADHASIVE



■ FLOOR DRAINS



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2. انابيب	10000	1/1/2015
3. انابيب	10000	1/1/2015
4. انابيب	10000	1/1/2015
5. انابيب	10000	1/1/2015
6. انابيب	10000	1/1/2015
7. انابيب	10000	1/1/2015
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4. انابيب	10000	1/1/2015
5. انابيب	10000	1/1/2015
6. انابيب	10000	1/1/2015
7. انابيب	10000	1/1/2015
8. انابيب	10000	1/1/2015
9. انابيب	10000	1/1/2015
10. انابيب	10000	1/1/2015
11. انابيب	10000	1/1/2015
12. انابيب	10000	1/1/2015

INTERCERT
 CERTIFICATE OF REGISTRATION

INTERCERT hereby certifies that Quality Management System of
Mohamed Abdullah Hussein Ismael Abo Owili
 (Owili for Industrial Investment)

Plot No. 3D, Block No. 20202, Of Industrial Zone (B.O), Oboor City, Akhalabeya - Egypt

Has been successfully assessed as per the requirements of
ISO 9001:2015

For the scope of
Exporting and Manufacturing of PVC Pipes and Fitting for Inside and Outside House, and PPR Pipes and Fitting for Inside and Outside House and PPR Welding Machine

Initial Certification Date: 25.04.2018
 Certificate Issue Date: 25.04.2018
 Surveillance Validity Date: 25.04.2019
 Recertification Date: 25.04.2021

Number: IC-QM-1804028

Issued on behalf of InterCent
 Head - Certifications

INTERCERT
 CERTIFICATE OF REGISTRATION

INTERCERT hereby certifies that Occupational Health & Safety Management System of
Mohamed Abdullah Hussein Ismael Abo Owili
 (Owili for Industrial Investment)

Plot No. 3D, Block No. 20202, Of Industrial Zone (B.O), Oboor City, Akhalabeya - Egypt

Has been successfully assessed as per the requirements of
OHSAS 18001:2007

For the scope of
Exporting and Manufacturing of PVC Pipes and Fitting for Inside and Outside House, and PPR Pipes and Fitting for Inside and Outside House and PPR Welding Machine

Initial Certification Date: 25.04.2018
 Certificate Issue Date: 25.04.2018
 Surveillance Validity Date: 25.04.2019
 Recertification Date: 25.04.2021

Registration Number: IC-QH-1804030

مركز التكنولوجيا البلاستيك
 Plastic Technology Center

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