أبـــو غـــالي
abou ghaly
للصناعات البلاستيكية

منذ عام ١٩٩٧
Since 1997
Aboughaly For Plastic Industries

PROUDLY MADE IN EGYPT
SEAL OF QUALITY
G-0221-C-02-17

INTEGRATED PLUMBING SYSTEM
U.P.V.C PIPES & FITTINGS

aboughaly
For Plastic Industries

GPF أبـــو غـــالي abou ghaly

aboughaly ®/ U.P.V.C Pipes and fittings / Technical Catalogue / Made in Egypt

كلمة رئيس مجلس الإدارة

إنه لمن دواعى سروري أن أتقدم الى أسرة شركة أبو غالى للصناعات البلاستيكية وعملائها الكرام بكل الحب والترحيب حامدًا الله تعالى أن وفقنا الى مانحن عليه أملا فى مزيد من النجاح والتقدم والأزدهار وموقنا اننا أسرة شركة أبو غالى لسنا وحدنا اصحاب النجاح بل يشاركنا فيه كل من تعامل معنا أو سمع عنا ولهم جميعا منا كل الحب والعرفان والتقدير

رئيس مجلس الادارة
محمد السيد غالي

JUMPO ‹GPF›
FOR NON-PRESSUREPIPE
SYSTEM (METRIC&INCH)
Technical Catalogue

Contents

INTRODUCTION

ABOU GHALY have been relentless in its commitment to quality and service. Through the years, ABOU GHALY have broadened and enhanced its product line to serve better to the customers.
ABOU GHALY is very proud to introduce pressure pipe and conventional drainage system for soil waste and rain water under the brand name ‹**JUMPO**› ‹**GPF**› for non-pressure plumbing applications is manufactured from high quality PVC polymer.
ABOU GHALY UPVC pipes and fittings are light weight, easy to install and are made for life time trouble freeservice.
They are available in full range from ½ " to 8 ".The entire range is manufactured as per internationally accepted quality standards and specifications.
‹**JUMPO**› ‹**GPF**› fittings are available in grooved pasting type in full range starting from½ " to 6 " and are fully compatible with ‹**JUMPO**› ‹**GPF**› Pipes.

PROPERTIES AND BENEFITS

STRONGER, RESILIENT & LIGHT WEIGHT
ABOU GHALY system is highly resilient and tough with good mechanical strength and high impact resistance.At the same time this system is very light in weight which gives highest benefit to the end user in terms of transportation, installation and long service life.

CORROSION RESISTANCE

The inert nature of UPVC system provides complete corrosion resistance and renders wrapping, coating and lining unnecessary. it also ensures that UPVC pipes have long operational life compared to conventional cast iron systems.

NON-CONDUCTIVE

UPVC is a non conductive of electricity, and is therefore not subject to galvanic or electrolytic action.

FLAMMABILITY

UPVC does not support combustion and is inherently difficult to ignite.It also stops burning once the source of heat is removed.

CHEMICAL RESISTANCE

ABOU GHALY UPVC system is inert to most of the acids, alkalis, effluents, salts, minerals and aggressive soils.The system remains unaffected by transportation of such type of media and gives longer life with trouble free service.

UV STABILIZED

ABOU GHALY systems is UV stabilized which gives protection to the system while being operational in direct sunlight.

HIGH FLOW RATES

Extremely smooth bores, precision joints and lack of internal projections ensure unrivaled hydraulic capacity over the total life of the system. Flatter gradients can be possible using ABOU GHALY ‹**JUMPO**› ‹**GPF**› UPVC systems over conventional systems.

VERSATILE AND ELEGANT

The physical properties of PVC allow designers a high degree of freedom while designing. Superior finished pipes and fittings add a touch of beauty to the buildings and keeping far from looking unsightly.

QUICK & EASY INSTALLATIONS

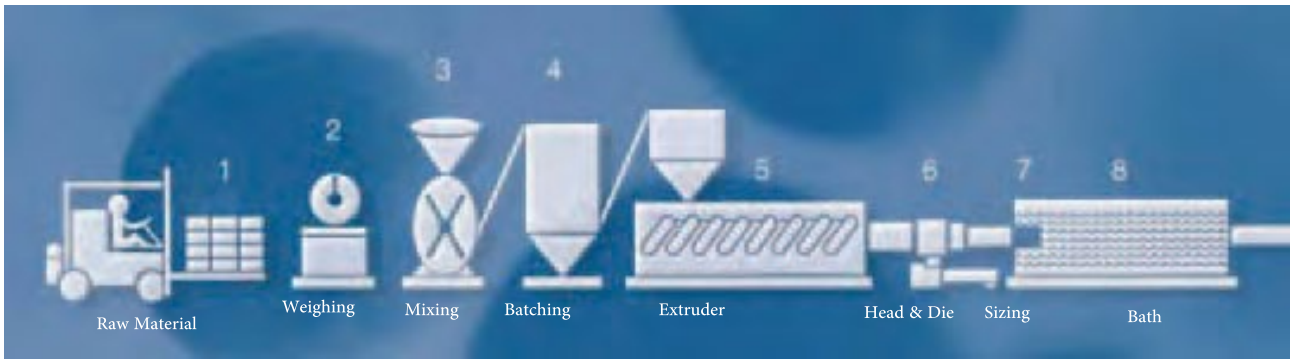
ABOU GHALY ‹**JUMPO**› ‹**GPF**› pipes and fittings can be joined together with rubber ring Or solvent weld system.
These techniques are very simple and ensure 100% leak proof system at a reduced installation time with lower maintenance.
Leakages due to broken and cracked elements in the system and joint opening within traditional systems like Cast iron & asbestos are eliminated by precision joint and sealed access points provided by the UPVC sewer pipe and fitting system.

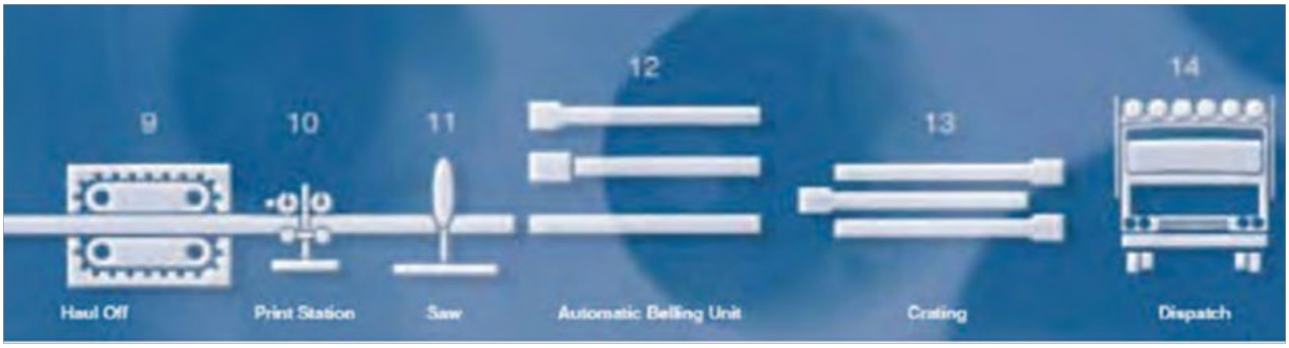
PRODUCT SPECIFICATION

Pipes and fittings of ABOU GHALY'JUMPO' system is produced in the following sizes: ½ " to 8 ".

MANUFACTURE

Basically, PVC products are formed from raw PVC powder by a process of heat and pressure.
The two major processes used in manufacture are extrusion for pipe and injection moulding for fittings.
Modern PVC processing involves highly developed scientific methods requiring precise control over process variables.
The polymer material is a free-flowing powder, which requires the addition of stabilizers and processing aids.
Formulation and blending are critical stages of the process and tight specifications are maintained for incoming raw materials, batching and mixing.
Feed to the extrusion or mounding machines may be direct, in the form of "dry blend", or pre-processed into a granular "compound".





Extrusion

(Figure 1.1)

Polymer and additives are accurately weighed and processed through the high-speed mixing to blend the raw materials into a uniformly distributed dry blend mixture. A mixing temperature of around 120°C is achieved by frictional heat.

At various stages of the mixing process, the additives melt and progressively coat the PVC polymer granules.

After reaching the required temperature, the blend is automatically discharged into a cooling chamber which rapidly reduces the temperature to around 50°C, thereby allowing the blend to be conveyed to intermediate storage where even temperature and density consistency are achieved.

The heart of the process, the extruder has a temperature-controlled, zoned barrel in which rotate precision “screws”.

Modern extruder screws are complex devices, carefully designed with varying flights to control the compression and shear, developed in the material, during all stages of the process.

The twin counter-rotating screw configuration used by all major manufacturers offers improved processing.

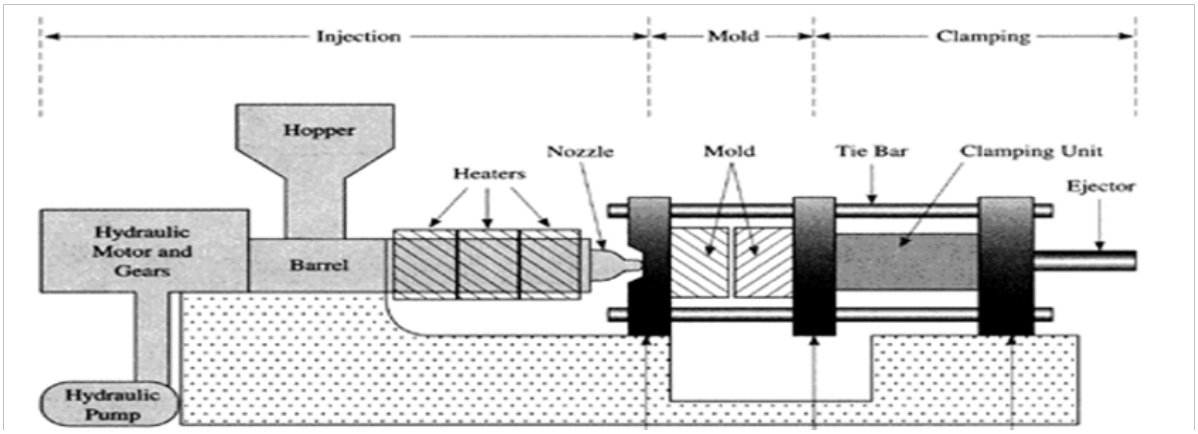
The PVC dry blend is metered into the barrel and screws, which then convert the dry blend into the required “melt” state, by heat, pressure and shear. During its passage along the screws, the PVC passes through a number of zones that compress, homogenies and vent the melt stream.

The final zone increases the pressure to extrude the melt through the head and die set-which is shaped according to the size of the pipe required and flow characteristics of the melt stream. Once the pipe leaves the extrusion die, it is sized by passing through a precision sizing sleeve with external vacuum.

This is sufficient to harden the exterior layer of PVC and hold the pipe diameter during final cooling in a controlled water cooling chambers.

The pipe is pulled through the sizing and cooling operations by the puller or haul-off at a constant speed. Speed control is very important when this equipment is used because the speed at which the pipe is pulled will affect the wall thickness of the finished product. In the case of rubber ring
jointed pipe the haul-off is slowed down at appropriate intervals to thicken the pipe in the area of the socket.

An in-line printer marks the pipes at regular intervals, with identification according to size,



class, type, date, Standard number, and extruder number.
An automatic cut-off saw cuts the pipe to the required length.
A belling machine forms a socket on the end of each length of pipe.
There are two general forms of socket. For rubber-ring jointed pipe, a collapsible mandrel is used, whereas a plain mandrel is used for solvent jointed sockets. Rubber ring pipe requires a chamfer on the spigot, which is executed either at the saw station or belling unit.
The finished product is stored in holding areas for inspection and final laboratory testing and quality acceptance.
All production is tested and inspected in accordance with the appropriate Standards and/ or to specifications of the purchaser.
After inspection and acceptance, the pipe is stored to await final dispatch.

Injection Molding

PVC fittings are manufactured by high-pressure injection molding. In contrast to continuous extrusion, molding is a repetitive cyclic process, where a “shot” of material is delivered to a mold in each cycle.
PVC material, either in dry blend powder form or granular compound form, is gravity fed from a hopper situated above the injection unit, into the barrel housing a reciprocating screw.
The barrel is charged with the required amount of plasticby the screw rotating and conveying the material to the front of the barrel. The position of the screw is set to a predetermined “shot size”. During this action, pressure and heat “plasticize” the material, which now in its melted state, awaits injection into the mold.
All this takes place during the cooling cycle of the previous shot.
After a preset time, the mold will open and the finished molded fitting will be ejected from the mold.
The mold then closes and the melted plastic in the front of the barrel is injected under high pressure by the screw now acting as a plunger. The plastic enters the mold to form the next fitting.
After injection, recharge commences while the molded fitting goes through its coolingcycle.

QUALITY ASSURANCE

ABOU GHALY is committed to the philosophy of Total Quality Management. All ABOU GHALY manufacturing sites are certified to ISO 9001, OHSAS 18001 “Quality Management systems- Model for quality assurance in production, installation and servicing.” ABOU GHALY was the first PVC pipe manufacturer in EGYPT to
be awarded the prestigious Standards Mark product certification. Since that time, Standards Mark certification has been achieved by ABOU GHALY for products to various Egyptian and American Standards
From the raw materials entering the factory to the delivery of the finished product, the ABOU GHALY emphasis on quality and customer service ensures performance that exceeds the requirements of industry and standards.

All raw materials for ABOU GHALY products must meet detailed specifications and suppliers are required to conform to strict quality assurance standards.
Production processes are enumerated, closely specified and continuously monitored and recorded. Inspectionand control are exercised by properly trained personnel using calibrated equipment.

MATERIAL PROPERTIES

MATERIAL

Unplasticized Polyvinyl Chloride (UPVC)

General Properties	UPVC 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	950	Kg/cm^2
Modulus of Elasticity	$2.7x10^4$	Kg/cm^2
Impact Strength (Charpy)	No Break> 10%	
Shore Hardness (Rockwell)	115	R
Thermal Properties		
Softening Point v.s.t. 5 Kg	Pipes ≥79° Fittings ≥ 76°	°c
Max. Operating temperature	60	°c
Coefficient of Thermal Expansion	3.0×10^{-5}	In/In/°F
Specific Heat	0.25	Cal/g . °c
Thermal Conductivity	0.13	Kcal/m.h. °c
Electrical Properties		
Volume Resistively	$>10^{14}$	Ohm.cm
Surface Resistance	$>10^{12}$	Ohm
Dielectric Strength	>40	Kv/mm
Power Factor (at 10^6 cycle)	3.3	

Note: All the above-mentioned values at 20°C.

Product Testing

Products are examined and tested to ensure compliance with the relevant Egyptian and American Standard. Pipe production is fully traceable and test results are recorded for all extrusion and molded products

The tests specified inEgyptian and American Standards can be divided into two main categories, type tests and quality control tests. Type tests are tests that are carried out to verify the acceptability of a formulation, process or product design.

They are repeated whenever any of these factors changes. Dimensional checks and quality control tests are routinely conducted at regular intervals during production.

- Effect on water - This is a series of type tests carried out in order to demonstrate that the pipe or fitting does not have a detrimental effect on the quality of drinking water.

It assesses the effect of the pipeor fittings on the taste, odor and appearance of water as well as the health aspects due to growth of microorganisms and leaching of toxic substances

- Vinyl chloride monomer test- This requirement is to ensure that the residual VCM in PVC material does not exceed safe limits
- Light transmission tests

- This test is conducted to ensure that PVC pipes have sufficient opacity to prevent growth of algae in the water conveyed. It is a type test for a given formulation and pipe wall thickness

- Joint pressure and infiltration tests

- Elastomeric ring joints are subjected to both an internal hydrostatic pres- sure test and an external pressure or internal vacuum test in order to ensure a satisfactory joint design.

Chemical Resistance of PVC

Important Information

The listed data are based on results of immersion tests on specimens, in the absence of any applied stress. In certain circumstances, where the preliminary classification indicates high or limited resistance, it may be necessary to conduct further tests to assess the behavior of pipes and fittings under internal pressure or other stresses.

Variations in the analysis of the chemical compounds as well as in the operating conditions (pressure and temperature) can significantly modify the actual chemical resistance of the materials in comparison with this chart indicated value.

It should be stressed that these ratings are intended only as a guide to be used for initial information on the materialto be selected. They may not cover the particular application under consideration and the effects of altered temperatures or concentrations may need to be evaluated by testing under specific conditions. No guarantee can be given in respect of the listed data. ABOU GHALY reserves the right to makeany modification whatsoever, based upon further research and experiences.

Sources for Chemical Resistances of PVC

Source 1

ISO/TR 10358 Technical Report: Plastic Pipes and Fittings-Combined Chemical-resistance Classification Table, First Edition, International Organization for Standardization, 1993.

Source 2

Chemical Resistance, Volume 1- Thermoplastics, Second Edition, Plastics Design Library, 1994.

Abbreviations:

S Satisfactory Resistance
L LimitedResistance
U Unsatisfactory Resistance
dil.sol. dilute aqueous solution at a concentration equal to or less than 10%
sol. Aqueous solutionataconcentration greater then10% but not saturated
sat.sol. saturated aqueous solution prepared at 20°C
tg-g technicalgrade,gas
tg-l technicalgrade,liquid
tg-s technicalgrade,solid
work.sol. working solutionofthe concentrationusually used in the industry concerned
susp. Suspension of solid in a saturated solution at 20°C

Chemical	Formula	Conc. (%)	Temp. (°C)	uPVC
ACETALDEHYDE	CH_3CHO	100	25	3
			60	3
			100	
- AQUEOUS SOLUTION		40	25	3
			60	3
			100	
ACETIC ACID	CH_3COOH	≤25	25	1
			60	2
			100	
		30	25	1
			60	2
			100	
		60	25	1
			60	2
			100	
		80	25	1
			60	2
			100	
- GLACIAL		100	25	2
			60	3
			100	
ACETIC ANHYDRIDE	$(CH_3CO)_2O$	100	25	3
			60	3
			100	
ACETONE	CH_3COCH_3	10	25	3
			60	3
			100	
		100	25	3
			60	3
			100	
ACETOPHENONE	$CH_3COC_6H_5$	nd	25	
			60	
			100	
ACRYLONITRILE	CH_2CHCN	technically pure	25	
			60	3
			100	
ADIPIC ACID	$(CH_2CH_2CO_2H)_2$	sat.	25	1
- AQUEOUS SOLUTION			60	2
			100	
ALLYL ALCOHOL	CH_2CHCH_2OH	96	25	2
			60	3
			100	
ALUM	$Al_2(SO_4)_3.K_2SO.nH_2O$	dil	25	1
- AQUEOUS SOLUTION			60	2
			100	
	$Al_2(SO_4)_3.K_2SO_4.nH_2O$	sat	25	
			60	2
			100	
ALUMINIUM	$AlCl_3$	all	25	1
- CHLORIDE			60	1
			100	
- FLUORIDE	AlF_3	100	25	1
			60	1
			100	
- HYDROXIDE	$Al(OH_4)_3$	all	25	1
			60	1
			100	
- NITRATE	$Al(NO_2)_3$	nd	25	1
			60	1
			100	
- SULPHATE	$Al(SO_4)_3$	deb	25	1
			60	1
			100	
		sat	25	1
			60	1
			100	

Chemical	Formula	Conc. (%)	Temp. (°C)	uPVC
AMMONIA	NH_3	deb	25	1
- AQUEOUS SOLUTION			60	2
			100	
		sat	25	1
			60	2
			100	
- DRY GAS		100	25	1
			60	1
			100	
- LIQUID		100	25	2
			60	3
			100	
AMMONIUM	CH_3COONH_4	sat	25	
- ACETATE			60	2
			100	
- CARBONATE	$(NH_4)_2CO_3$	all	25	1
			60	2
			100	
- CHLORIDE	NH_4Cl	sat	25	1
			60	1
			100	
- FLUORIDE	NH_4F	25	25	1
			60	2
			100	
- HYDROXIDE	NH_4OH	28	25	
			60	2
			100	
- NITRATE	NH_4NO_3	sat	25	1
			60	1
			100	
- PHOSPHATE DIBASIC	$NH_4(HPO_4)_2$	all	25	1
			60	1
			100	
- PHOSPHATE META	$(NH_4)_4P_4O_{12}$	all	25	1
			60	1
			100	
- PHOSPHATE TRI	$(NH_4)_2HPO_4$	all	25	1
			60	1
			100	
- PERSULPHATE	$(NH_4)_2S_2O_8$	all	25	1
			60	1
			100	
- SULPHIDE	$(NH_4)_2S$	deb	25	1
			60	2
			100	
		sat	25	1
			60	1
			100	
- SULPHYDRATE	NH_4OHSO_4	dil	25	1
			60	2
			100	
		sat	25	1
			60	1
			100	
AMYLACETATE	$CH_3CO_2CH_2(CH_2)_3CH_3$	100	25	3
			60	3
			100	
AMYLALCOHOL	$CH_3(CH_2)_3CH_2OH$	nd	25	1
			60	2
			100	
ANILINE	$C_6H_5NH_2$	all	25	3
			60	3
			100	
- CHLORHYDRATE	$C_6H_5NH_2HCl$	nd	25	2
			60	3
			100	

Chemical	Formula	Conc. (%)	Temp. (°C)	uPVC
ANTIMONY	$SbCl_3$	100	25	1
- TRICHLORIDE			60	1
			100	
ANTHRAQUINONE		suspension	25	1
SULPHONIC ACID			60	2
			100	
AQUA REGIA	$HC+HNO_3$	100	25	2
			60	2
			100	
ARSENIC ACID	H_3AsO_4	deb	25	1
			60	2
			100	
		80	25	1
			60	2
			100	
BARIUM		all	25	1
- CARBONATE	$BaCO_3$		60	1
			100	
- CHLORIDE	$BaCl_2$	10	25	1
			60	1
			100	
- HYDROXIDE	$Ba(OH)_2$	all	25	1
			60	1
			100	
- SULPHATE	$BaSO_4$	nb	25	1
			60	1
			100	
- SULPHIDE	BaS	sat	25	1
			60	1
			100	
BEER		comm	25	1
			60	1
			100	
BENZALDEHYDE	C_6H_5CHO	nd	25	3
			60	3
			100	
BENZENE	C_6H_6	100	25	3
			60	3
			100	
- LIGROIN		20/80	25	3
			60	3
			100	
- MONOCHLORINE	C_6H_5Cl	technically pure	25	3
			60	
			100	
BENZOIC ACID	C_6H_5COOH	sat	25	1
			60	2
			100	
BENZYL ALCOHOL	$C_6H_5CH_2OH$	100	25	
			60	
			100	
BLEACHING LYE	NaOCl+NaCl	12.50%	25	1
		Cl	60	2
			100	
BORIC ACID	H_3BO_3	deb	25	1
			60	2
			100	
		sat	25	1
			60	2
			100	
BRINE		comm	25	1
			60	1
			100	
BROMIC ACID	$HBrO_3$	10	25	1
			60	1
			100	1

Chemical	Formula	Conc. (%)	Temp. (°C)	uPVC
BROMINE	Br_2	100	25	3
- LIQUID			60	3
			100	
- VAPOURS		low	25	2
			60	
			100	
BUTADIENE	C_4H_6	100	25	1
			60	1
			100	
BUTANEDIOL	$CH_3CH_2CHOHCH_2OH$	10	25	1
AQUEOUS			60	3
			100	
		concentrated	25	2
			60	3
			100	
BUTANE	C_4H10	10	25	1
GAS			60	
			100	
BUTYL	$CH_3CO_2CH_2CH_2CH_2CH_3$	100	25	3
- ACETATE			60	3
			100	
- ALCOHOL	C_4H_9OH		25	1
			60	2
			100	
- PHENOL	$C_4H_9C_6H_4OH$	100	25	2
			60	2
			100	
BUTYLENE GLYCOL	$C_4H_6(OH)_2$	100	25	
			60	2
			100	
BUTYRIC ACID	$C_2H_5CH_2COOH$	20	25	1
			60	2
			100	
		concentrated	25	3
			60	3
			100	
CALCIUM	$Ca(HSO_3)_2$	nd	25	1
- BISULPHITE			60	1
			100	
- CARBONATE	$CaCO_3$	all	25	1
			60	1
			100	
- CHLORATE	CaHCl	nd	25	1
			60	1
			100	
- CHLORIDE	$CaCl_2$	all	25	1
			60	2
			100	
- HYDROXIDE	$Ca(OH)_2$	all	25	1
			60	1
			100	
- HYPOCHLORITE	$Ca(OCl)_2$	sat	25	
			60	2
			100	
- NITRATE	$Ca(NO_3)_2$	50	25	1
			60	1
			100	
- SULPHATE	$CaSO_4$	nd	25	1
			60	1
			100	
- SULPHIDE	CaS	sat	25	1
			60	1
			100	
CAMPHOR OIL		nd	25	1
			60	
			100	

Chemical	Formula	Conc. (%)	Temp. (°C)	uPVC
CARBON	CO_2		25	1
- DIOXIDE			60	2
AQUEOUS SOLUTION			100	
- GAS		100	25	1
			60	1
			100	
- DISULPHIDE	CS_2	100	25	2
			60	3
			100	
- MONOXIDE	CO	100	25	1
			60	1
			100	
- TETRACHLORIDE	CCl_4	100	25	2
			60	3
			100	
CARBONIC ACID	H_2CO_3	sat	25	1
- AQUEOUS SOLUTION			60	1
			100	
- DRY		100	25	1
			60	1
			100	
- WET		all	25	1
			60	2
			100	
CARBON OIL		comm	25	1
			60	1
			100	
CHLORAMINE		dil	25	1
			60	
			100	
CHLORIC ACID	$HClO_3$	20	25	1
			60	2
			100	
CHLORINE	Cl_2	sat	25	2
			60	3
			100	
- DRY GAS		10	25	1
			60	2
			100	
		100	25	2
			60	3
			100	
- WET GAS		5g/m^3	25	1
			60	3
			100	
		10g/m^3	25	2
			60	2
			100	
		66g/m^3	25	2
			60	2
			100	
- LIQUID		100	25	3
			60	
			100	
CHLOROACETIC ACID	$ClCH_2COH$	85	25	1
			60	2
			100	
		100	25	1
			60	2
			100	
CHLOROBENZENE	C_6H_5Cl	all	25	3
			60	3
			100	
CHLOROFORM	$CHCl_3$	all	25	3
			60	3
			100	3

Chemical	Formula	Conc. (%)	Temp. (°C)	uPVC
CHLOROSULPHONIC	$ClHSO_3$	100	25	2
ACID			60	3
			100	
CHROME ALUM	$KCr(SO_4)_2$	nd	25	1
			60	2
			100	
CHROMIC ACID	CrO_3+H_2O	10	25	1
			60	2
			100	
		30	25	1
			60	2
			100	
		50	25	1
			60	2
			100	
CHROMIC SOLUTION	$CrO_3+H_2O+H_2SO_4$	50/35/15	25	1
			60	2
			100	
CITRIC ACID	$C_3H_4(OH)(CO_2H)_3$	50	25	1
AQ. SOL. min			60	1
			100	
COPPER	$CuCl_2$	sat	25	1
- CHLORIDE			60	1
			100	
- CYANIDE	$CuCN_2$	all	25	3
			60	3
			100	
- FLUORIDE	CuF_2	all	25	1
			60	1
			100	
- NITRATE	$Cu(NO_3)_2$	nd	25	1
			60	2
			100	
- SULPHATE	$CuSO_4$	dil	25	1
			60	1
			100	
		sat	25	1
			60	1
			100	
COTTONSEED OIL		comm	25	1
			60	1
			100	
CRESOL	$CH_3C_6H_4OH$	£90	25	2
			60	3
			100	
		>90	25	3
			60	3
			100	
CRESYLIC ACID	$CH_3C_6H_4COOH$	50	25	2
			60	3
			100	
CYCLOHEXANE	C_6H_{12}	all	25	3
			60	3
			100	
CYCLOHEXANONE	$C_6H_{10}O$	all	25	3
			60	3
			100	
DECAHYDRONAFTALENE	$C_{10}H_{18}$	nd	25	1
			60	1
			100	
DEMINERALIZED WATER		100	25	1
			60	1
			100	
DEXTRINE	$C_6H_{12}OCH_2O$	nd	25	1
			60	2
			100	

Chemical	Formula	Conc. (%)	Temp. (°C)	uPVC
DIBUTYLPHTALATE	$C_6H_4(CO_2C_4H_9)_2$	100	25	3
			60	3
			100	
DICHLOROACETIC	$Cl_2CHCOOH$	100	25	1
ACID			60	2
			100	
DICHLOROETHANE	CH_2ClCH_2Cl	100	25	3
			60	3
			100	
DICHLOROETHYLENE	$ClCH_2Cl$	100	25	3
			60	3
			100	
DIETHYL ETHER	$C_2H_5OC_2H_5$	100	25	3
			60	3
			100	
DIGLYCOLIC ACID	$(CH_2)_2O(CO_2H)_2$	18	25	1
			60	2
			100	
DIMETHYLAMINE	$(CH_3)_2NH$	100	25	2
			60	3
			100	
DIOCTYLPHTHALATE		all	25	3
			60	3
			100	
DISTILLED WATER		100	25	1
			60	1
			100	
DRINKING WATER		100	25	1
			60	1
			100	
ETHERS		all	25	3
			60	3
			100	
ETHYL	$CH_3CO_2C_2H_5$	100	25	3
- ACETATE			60	3
			100	
- ALCOHOL	CH_3CH_2OH	nd	25	1
			60	2
			100	
- CHLORIDE	CH_3CH_2Cl	all	25	3
			60	3
			100	
- ETHER	$CH_3CH_2OCH_2CH_3$	all	25	3
			60	3
			100	
ETHYLENE	$ClCH_2CH_2OH$	100	25	3
- CHLOROHYDRIN			60	3
			100	
- GLYCOL	$HOCH_2CH_2OH$	comm	25	1
			60	2
			100	
FATTY	ACIDS	nd	25	1
			60	1
			100	
FERRIC	$FeCl_3$	10	25	1
- CHLORIDE			60	2
			100	
		sat	25	1
			60	1
			100	
- NITRATE	$Fe(NO_3)_3$	nd	25	1
			60	1
			100	
- SULPHATE	$Fe(SO_4)_3$	nd	25	1
			60	1
			100	

Class 1: High Resistance Class 2: Limited Resistance Class 3: No Resistance.

Expansion and Contraction

All materials expand and contract with changes in temperature and PVC has a relatively high rate of change.

The coefficient of thermal expansion is 7 x 10-5/°C.

A handy rule is 7 mm change in length for every 10 metres for every 10°C change in temperature

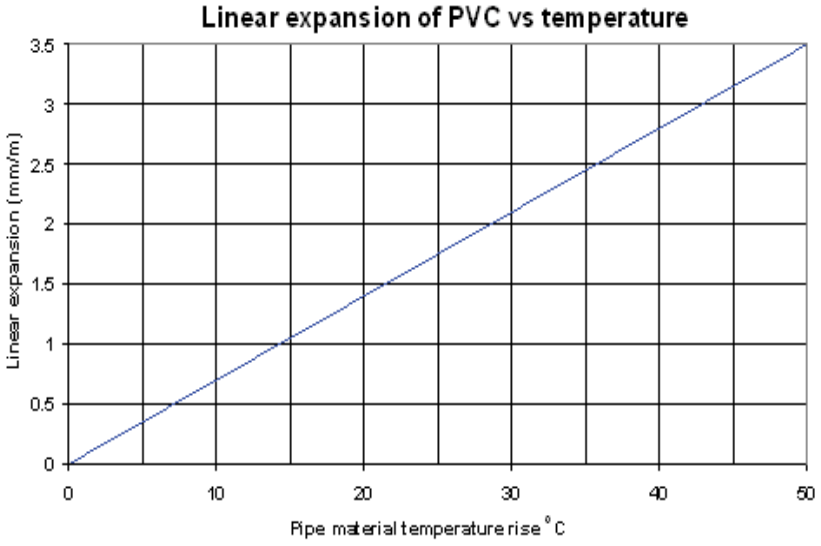
Example

A 150 meter line of PVC pipe is being installed with the temperature at 28°C. The service temperature will be18°C. What allowance has to be made for expansion?

1. Find difference between maximum and minimum temperature,i.e. 28°C - 18° C = 10°C.
2. Check chart above for expansion per metre.10° C = 0.7 mm.
3. Multiply answer by total length of line 0.7 x 150 = 105 mm

This means the pipe will contract approximately 0.1 metres when in service.

Methods of providing for thermal expansion or contraction will depend on the nature of the installation and whether it is above or below ground. (See Installation section).



Length of run 10 meter

Temp. Change ΔT °C	Thermal Expansion(ΔL) in mm of UPVC
10	15
15	17
20	19
30	22
35	25
40	26

Length of run 15 meter

Temp. Change ΔT °C	Thermal Expansion(ΔL) in mm of UPVC
10	23
15	27
20	32
30	37
35	41
40	46

Length of run 20 meter

Temp. Change ΔT °C	Thermal Expansion(ΔL) in mm of UPVC
10	32
15	38
20	45
30	51
35	58
40	64

Length of run 25 meter

Temp. Change ΔT °C	Thermal Expansion(ΔL) in mm of UPVC
10	36
15	44
20	51
30	58
35	66
40	73

Length of run 30 meter

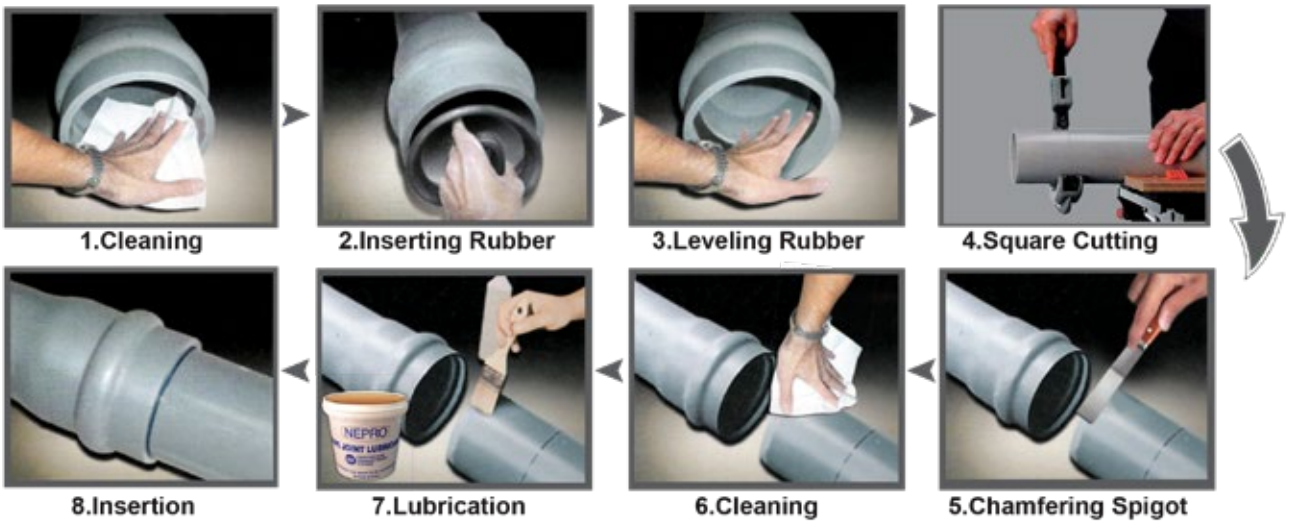
Temp. Change ΔT °C	Thermal Expansion(ΔL) in mm of UPVC
10	46
15	55
20	64
30	73
35	82
40	91

SOLVENT WELDING UPVC PIPES AND FITTINGS

The following information are intended to assist Engineers and Contractors to take full advantages of the physical and mechanical properties of uPVC pipes and to achieve the desired results:

A) Method for rubber ring joint installation:

1. Ensure that the mating areas of spigot and socket are throughly clean.
2. Setting the rubber ring in grove.
3. Assess the full socket depth by simple measurement and mark spigot accordingly.
4. Apply lubricant to the spigot side and to the inside of the joint on rubber.
5. Accurate axial alignment of the spigot and socket prior to jointing is important, hand feed spigot into rubber joint until resistance from the inner sealing section is felt.
6. Bar and block assembly is recommended because a worker is able feel the amount of force being used and whether the joint goes together smoothly.
7.If undue resistance to pipe insertion is encountered , disassemble the joint and check the position of the rubber ring.



B) Method of solvent welded joint installation:

1. Joint Preparation - Cut Pipe square with the axis, using a fine - tooth saw with a miter box or guide. Remove all burrs and break the sharp lead edges.
2. Cleaning & Priming-Surface to be joined must be cleaned and free of dirt, Moisture, Oil, and other FOREIGN material Applying Weld-On primer.
3. Mark on spigot the full length of the socket side to make sure that the spigot will fit exactly the socket length.
4. Application of solvent cement - PVC solvent cement is fast drying and should be applied as quickly as possible,consistent with good workmanship, Follow up the manufacturer's recommendation to both spigot and socket side with an adequate quantity of cement.
5. Joint Assembly - While both the inside socket surface and the outside surface of the spigot of the pipe are WET with solvent cement, forcefully bottom the spigot in the socket.
Turn the pipe or fittings 1/4 turn during assembly (but not after the pipe is bottomed) to distribute the cement evenly.
Hold for a while until handling strength is developed.
Assembly should be completed within 30 seconds after the last application of solvent cement.
6. After Assembly -Wipe excess cement from the pipe at the end of the socket.
Gaps in the cement bead around the pipe perimeter may indicate a defective assembly.
Handle the newly assembled joints carefully after 1 hour.

Importance Points of Pipe Installation with Solvent Cement Joints

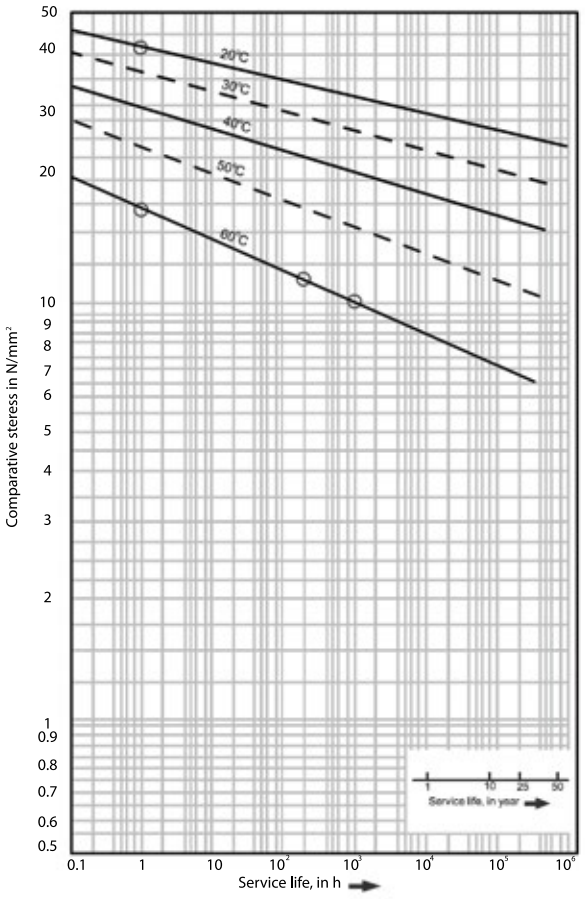
1. The joining surfaces must be clean and dry
2. Sufficient cement must be applied to fill the gap between male and female ends
3. The Assembly must be made while the surfaces are still wet and Audi.

4. Completed joints should not be disturbed until they have cured sufficiently to withstand handling.
5. Keep the solvent cement closed and shaded when not actually in use. Discard the solvent cement when a noticeable change in viscosity occurs, when the cement does not How freely from the brush, or when the cement appears lumpy and stringy.

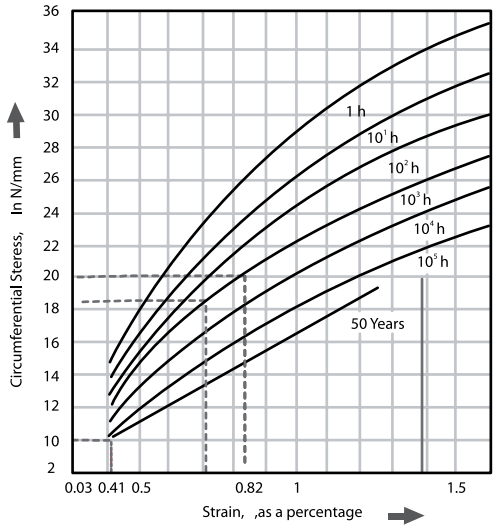
UPVC PIPES & FITTINGS DIAGRAMS

PIPES

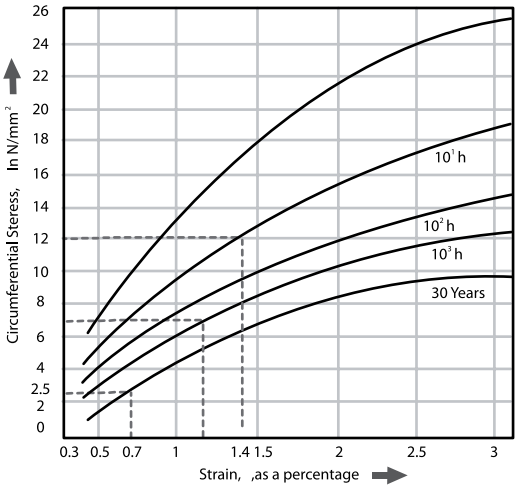
Behaviour of UPVC pipes under long-term stressing



FITTINGS



Stress-strain diagram for UPVC at 20°C



Stress-strain diagram for UPVC at 60°C

When UPVC 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

Standards & Regulations

It is our mission at ABOU GHALY to maintain the highest levels of quality through clear operating-procedures, work instructions, forms and records throughout the company.
Statistical quality control andsound documentation ensures traceability ismaintained anytime in the future.
This means that all corporateand plant functions within ABOU GHALY, whether commercial, or operational, are required to be clearlystated and documented, ensuring that the quality of your product is never compromised or been leftto chance.
ABOU GHALY Pipes and Fittings are produced according to DIN, BS, ASTM, ISO and Egyptian standards demand, there is also the facility of manufacturing products with special specifications according to customer requirements.

- ABOU GHALY Pipes and fittings are produced with the following standards and regulations:
ES: 1717/2008 pipe and fittings made of un plasticized poly (vinyl chloride)
(UPVC) for sewage.
ISO 4065:1996, Thermoplastics pipes (Universal wall thickness table.
ISO 4422 (1:1996, Pipes and fittings made of unplasticized poly (vinyl chloride) (UPVC) for water supply Specifications(Part1:General).

ES: 848 unplasticized poly (vinyl chloride) (PVC U) PIPES and fittings for water supply
ISO 265 1, Pipes and fittings of plastics materials - Fittings for domestic and industrial waste pipes -
Basic dimensions: Metric series F Part 1: Unplasticized poly (vinyl chloride) (PVC U).
ISO 3126, Plastics piping systems - Plastics piping components - Measurement and determination of dimensions.
ISO 4633, Rubber seals - joint rings for water supply, drainage and sewerage pipelines - Specification for materials.
EN 580, Plastics piping systems -Unplasticized poly (vinylchloride)(PVC-U) pipes - Test method for
the resistance to dichloromethane at a specified temperature (DCMT) .
EN 727, Plastics piping and ducting systems - Thermoplastics pipes and fittings - Determination of vicat softening temperature (VST) .
EN 743:1994, Plastics piping and ducting systems Thermoplastics pipes - Determination of
the longitudinal reversion.
EN 744, Plastics piping and ducting systems - Thermoplastics pipes - Determination of the longitudinal reversion.
EN 763: 1994 Plastics piping and ducting systems - Injection-moulded thermoplastics fittings - Test method for visually assessing effects of heating.

EN 921, Plastics piping systems - Thermoplastics pipes - Determination of resistance to internal pressure at constant temperature.
EN 1053, Plastics piping systems - Thermoplastics piping systems for non-pressure applications - Test method for water tightness.
EN1411, Plastics piping and ducting systems - Thermoplastics pipes - Determination of resistance to external blows by the staircase method.
EN 1905, Plastics piping systems Unplasticized poly (vinyl chloride) (PVC - U) pipes, fittings and material - Method for assessment of the PVC content based on total chlorine content.
EN 12061, Plastics piping systems - Thermoplastics fittings - Test method for impact resistance.
EN 12256, Plastics piping systems - Thermoplastics fittings - Test method for mechanical strength or flexibility of fabricated fittings.

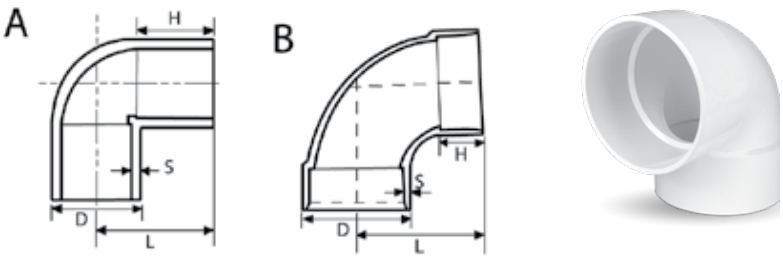
(ABOU GHALY) ‹JUMPO› ‹GPF› Products

TECHNICAL DATA OF›JUMPO›(ABOU GHALY) UPVC FITTINGS FOR PLUMBING SYSTEMS (DWV)

According to ASTM - D2466 & D3311 (Sch 40)

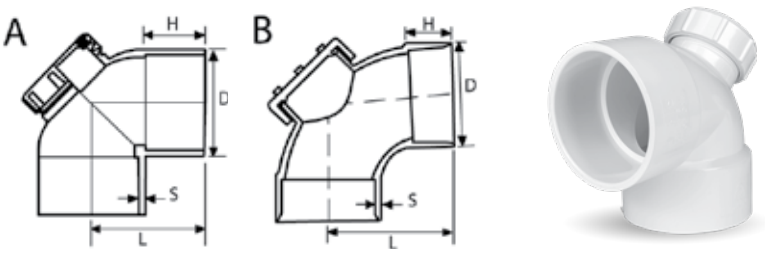
ELbow 90°

Nominal size(inch)	D mm	S mm	H mm	L mm	Type
½"	27	2.8	16	27	A
¾"	33	3.2	19	33	A
1"	41	3.8	22	39	A
1¼"	50	3.8	26	47	A
1½"	56	3.7	31	58	A
2"	68	4.0	38	70	A
3"	100.5	5.5	48	126	B
3"	100.5	5.5	48	102	A
4"	127	6.1	51	149	B
4"	127	6.1	51	120	A
6"	183	7.5	76	168	B



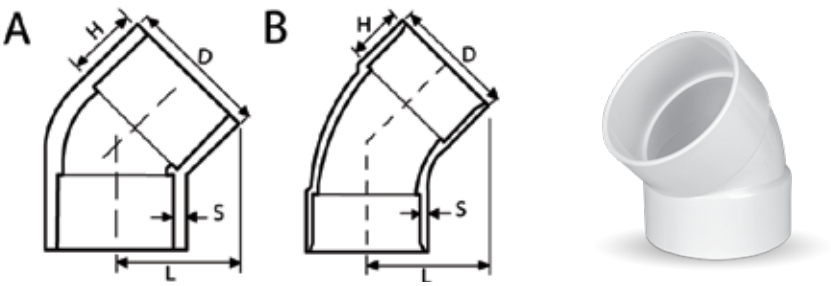
Elbow 90° with access cap

Nominal size(inch)	D mm	S mm	H mm	L Mm	Type
2"	68	4.0	38	70	A
3"	100.5	5.5	48	126	B
3"	100.5	5.5	48	102	A
4"	127	6.1	51	149	B
4"	127	6.1	51	120	A
6"	183	7.5	76	168	A



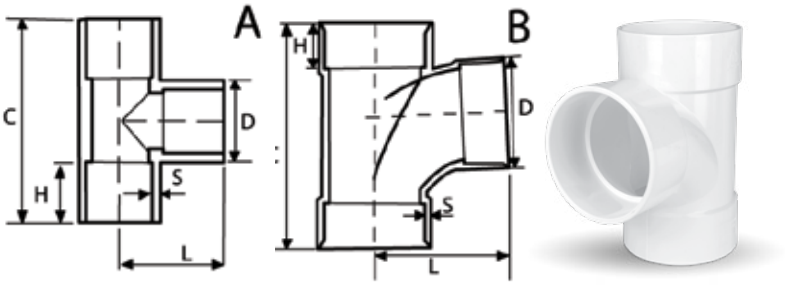
Elbow 45°

Nominal size(inch)	D mm	S mm	H mm	L mm	Type
½"	29	3.75	22	32	A
¾"	35	4.1	26	35	A
1"	44	5.2	29	40	A
1¼"	52	3.6	31	50	A
1½"	56	3.7	31	54	A
2"	68	4	38	62	A
3"	100	5.5	48	100	B
3"	100	5.5	48	87	A
4"	127	6.1	51	120	B
4"	127	6.1	51	103	A
6"	183	7.5	76	160	A



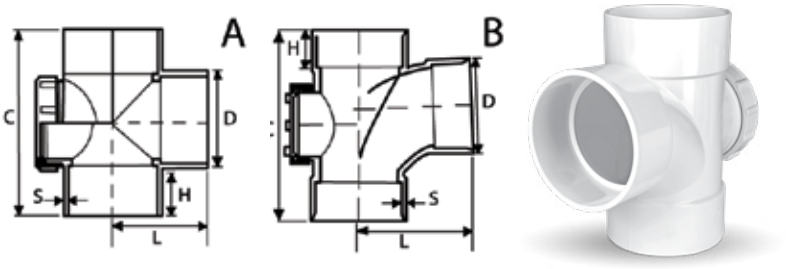
Tee 90°

Nominal size(inch)	D mm	S mm	H mm	L mm	C mm	Type
½"	28	3.3	16	27	54	A
¾"	35	4	19	33	65	A
1"	42	4.2	22	39	78	A
1¼"	52	4.8	31	54	108	A
1½"	56	3.7	31	58	116	A
2"	68	4	38	70	140	A
3"	100	5.5	48	126	220	B
3"	100	5.5	48	102	204	A
4"	127	6.1	51	149	257	B
4"	127	6.1	51	119	239	A
6"	183	7.5	76	168	336	A



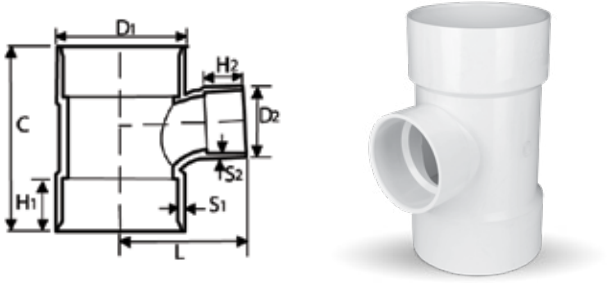
Tee 90 with / cap

Nominal size(inch)	D mm	S mm	H mm	L mm	C mm	Type
2"	68	4	38	70	140	A
3"	100	5.5	48	126	220	B
3"	100	5.5	48	102	204	A
4"	127	6.1	51	149	257	B
4"	127	6.1	51	119	239	A
6"	183	7.5	76	168	336	A



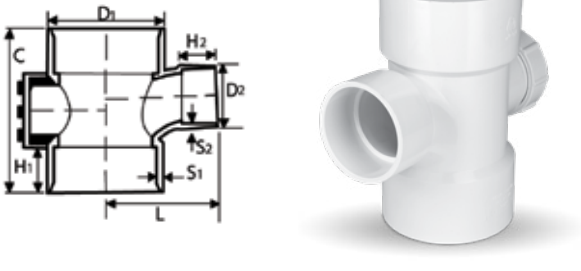
Tee reducer 90°

Nominal size(inch)	D1 mm	D2 mm	S1 mm	S2 mm	H1 mm	H2 mm	L mm	C mm
3"* 2"	100	70	5	4.5	48	38	111	180
4"* 2"	127	70	6	4.5	51	38	122	183
4"* 3"	127	100	6	5.5	51	48	138	222
6"* 4"	183	126.5	7.5	6	76	51	168	280.5



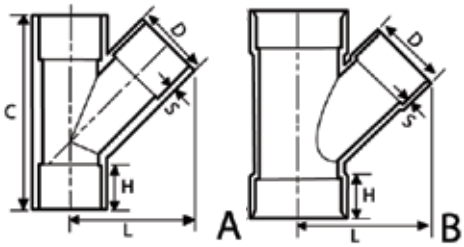
Tee Reducer 90° with / cap

Nominal size(inch)	D1 mm	D2 mm	S1 mm	S2 mm	H1 mm	H2 mm	L mm	C mm
3"* 2"	100	70	5	4.5	48	38	111	180
4"* 2"	127	70	6	4.5	51	38	122	183
4"* 3"	127	100	6	5.5	51	48	138	222
6"* 4"	183	126.5	7.5	6	76	51	168	280.5



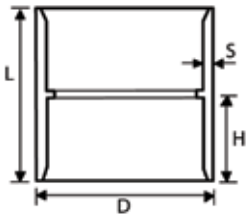
Tee 45°

Nominal size(inch)	D mm	S mm	H mm	C mm	L mm	Type
1½"	56	3.7	31	141	91	A
2"	69	4.5	38	170	110	A
3"	100	5.5	48	264	161	B
4"	127	6.1	51	312	195	B
6"	181.3	6.5	76	421	354	B



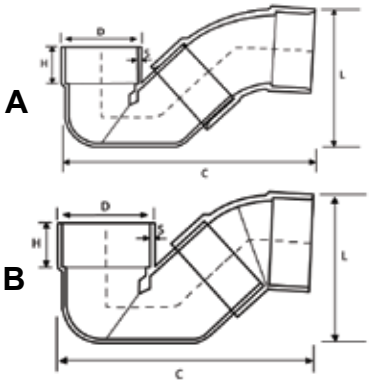
Coupling

Nominal size(inch)	D mm	S mm	H mm	L mm
½"	27	2.8	16	36
¾"	33	3.2	19	41
1"	41	3.8	22	48
1¼"	50	3.8	26	56
1½"	55	3.7	31	65
2"	68	4.0	38	80
3"	100.5	5.5	48	101
4"	127	6.1	51	108
6"	183	7.1	76	157.4



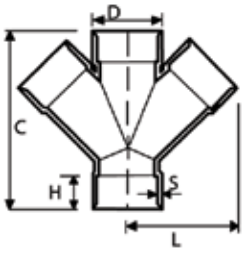
Syphon

Nominal size(inch)	D mm	S mm	H mm	L mm	C mm	Type
4"	127	6.1	51	230	370	A
4"	127	6.1	51	215	330	B



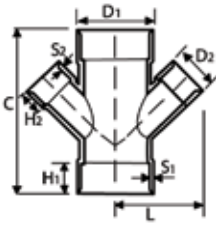
Double branch tee 45°

Nominal size(inch)	D mm	S mm	H mm	L mm	C mm
3"	100	5.5	48	161	264
4"	127	6.1	51	195	312



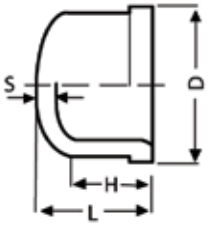
Double branch tee reducer45°

Nominal size(inch)	D1 mm	D2 mm	S1 mm	S2 mm	H1 mm	H2 mm	L mm	C mm
4" * 2"	127	70	6	4.5	51	38	150	231
4"*3"	127	100	6	5.5	51	48	175	270



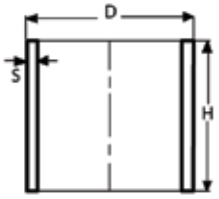
End Cap

Nominal size(inch)	D mm	S mm	H mm	L mm
½"	29.5	3.9	16	23
¾"	35.5	4.5	19	28
1"	44	5.3	22	31
1¼"	54	5.3	26	34
1½"	55	4.1	31	39
2"	68	5.1	38	45
3"	110	5.6	48	69
4"	130	7.5	61	85
6"	188	8.5	86	114



Repair Coupling

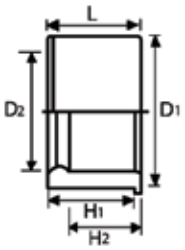
Nominal size(inch)	D mm	S mm	H mm
3"	100	5.5	101
4"	127	6.2	108
6"	183	7.1	157.1



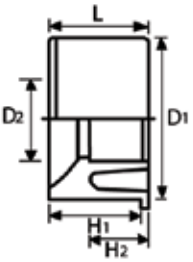
Reducing bush

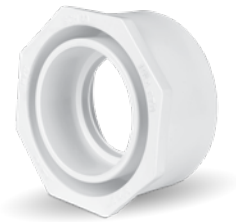
Nominal size(inch)	D1 mm	D2 mm	H1 mm	H2 mm	L mm	Type
¾" * ½"	26.7	21.5	25.5	22.5	25.5	A
1" * ½"	33.4	21.5	30	22.5	30	A
1" * ¾"	33.4	26.85	30	22.5	30	A
1½"* ½"	48.1	21.5	31	22.5	31	A
1½" *¾ "	48.1	26.85	31	22.5	31	A
1½"* 1 "	48.1	33.6	31	30	31	A
2"* ½ "	60.3	21.5	38	22.5	46	B
2" * ¾ "	60.3	26.85	38	22.5	46	B
2" * 1 "	60.3	33.6	38	22	46	B
2"*1½ "	60.3	48.2	38	31	46	A
3" * 2"	88.9	60.5	48	38	58	B
4" * 2"	114.3	60.5	51	38	61	B
4" * 3"	114.3	89.1	51	48	61	A
6" * 4"	168.2	114.7	76	51	76.2	B

A



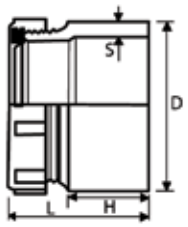
B





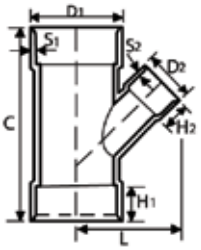
Clean Out

Nominal size(inch)	D mm	S mm	H mm	L mm
1½"	48.3	3.7	31	60
2"	60.3	4.0	38	69
3"	88.9	5.5	48	87
4"	114.3	6.1	51	94
6"	168.3	6	76	120



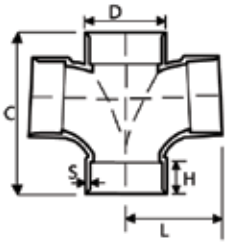
Tee Reducer. 45°

Nominal size(inch)	D1 mm	D2 mm	S1 mm	S2 mm	H1 mm	H2 mm	C mm	L mm
4" * 2"	127	70	6	5.2	51	38	231	150
4" * 3"	127	100	6	5.5	51	48	270	175
6" * 4"	181.5	127	6.5	6	76	51	351	305



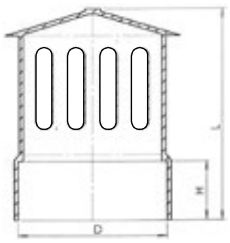
Double sanitary Tee 87.5 °

Nominal size(inch)	D mm	S mm	H mm	C mm	L mm
3"	100	5.5	48	220	126
4"	127	6.1	51	257	149



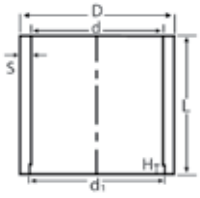
Air vent

Nominal size(inch)	D mm	H mm	L mm
3"	100	48	88
4"	123	51	100



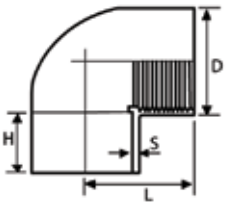
Extension Sockets

Nominal size(inch)	D mm	d mm	d1 mm	S mm	H mm	L mm
110 mm	122	114.5	119	6	8	100
125 mm	140	127	132	6.7	8	100
125 mm	140	127	132	6.7	8	150



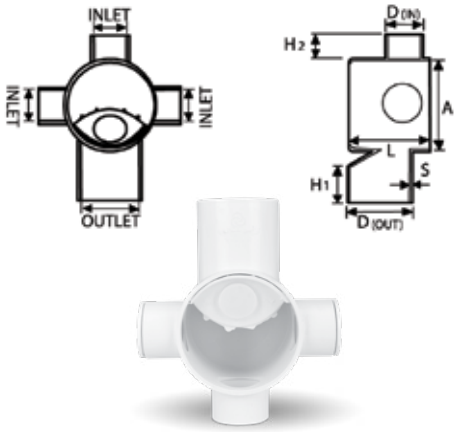
Elbow 90° SJXF.th

Nominal size(inch)	D mm	S mm	H mm	L mm
1½" * 1½"	56	3.5	31	58
1½" * 1¼"	56-50	3.5	31	58



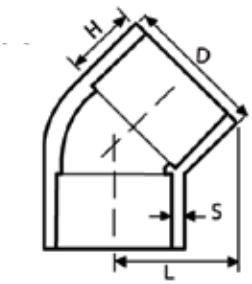
Floor Trap

Nominal size(inch)	D mm	H1 mm	H2 mm	A mm	S mm	L mm	Type
outlet 3"	96.5	48		125	4.2	99	A
inlet 1½"	56.5		31				
outlet 3"	96.5	48		125	4.2	99	A
inlet 2"	68.8		38				
outlet 2"	68.8	38		125/110	4.2	99	A
inlet 1½"	56.5		31				
outlet 2"	68.8	38		125/110	4.2	99	A
inlet 2"	68.8		38				
outlet 2"	69.8	27.0		110	4.8	70	B
inlet 1½"	58.8		30.2				
Outlet 1½"	61.6	34		110	5.5	70	B
inlet 1½"	58.8		30.2				



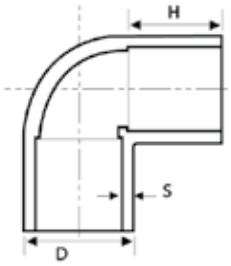
Elbow 45°

Nominal size(inch)	D mm	S mm	H mm
20 mm	29	4.4	22
25 mm	35	4.9	26
32 mm	44	5.8	29
40 mm	52	5.8	26
50 mm	60.5	5.2	32
63 mm	73.5	5.2	38
75 mm	84.5	4.5	45
90 mm	100	5.2	48
110 mm	122	6	52
160 mm	172	6	70



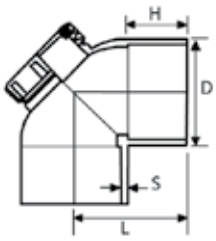
Elbow 87.5 °

Nominal size(inch)	D mm	S mm	H mm
20 mm	27	3.4	16
25 mm	33	3.9	19
32 mm	41	4.5	22
40 mm	50	5	26
50 mm	58	4	32
63 mm	71	4	38
75 mm	84.5	4.5	45
90 mm	100	5.2	48
110 mm	122.5	6	52
160 mm	172.5	6	70



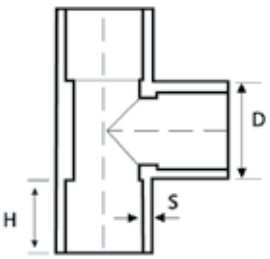
Elbow87.5° with access cap

Nominal size(inch)	D mm	S mm	H mm
63 mm	70	3.5	38
75 mm	84.5	4.5	45
90 mm	100	5.2	48
110 mm	122.5	6	52
160 mm	172.5	6	70



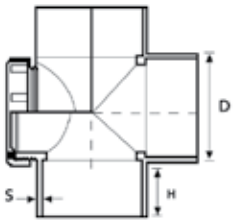
Tee 87.5 °

Nominal size(inch)	D mm	S mm	H mm
20 mm	27	3.4	16
25 mm	33	3.9	19
32 mm	43	5.5	22
40 mm	50	5.9	31
50 mm	57	3.5	32
63 mm	70	3.5	38
75 mm	84.5	4.7	45
90 mm	100	5	48
110 mm	122.5	6	52
160 mm	172.5	6	70



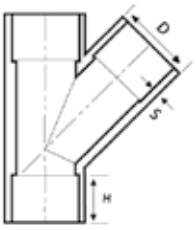
Tee 87.5 ° with cap

Nominal size(inch)	D mm	S mm	H mm
50 mm	57	3.5	32
63 mm	70	3.5	38
75 mm	84.5	4.7	45
90 mm	100	5	48
110 mm	122	6	52
160 mm	172	6	70

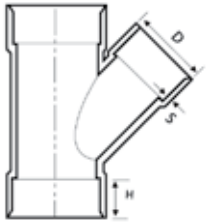


Tee 45 °

Nominal size(inch)	D mm	S mm	H mm	L mm
50 mm	57.5	3.6	32	A
63 mm	71	3.7	38	A
75 mm	84.5	4.7	45	B
90 mm	100	5	48	B
110 mm	122.5	6	51	B
160 mm	174	7	75	A



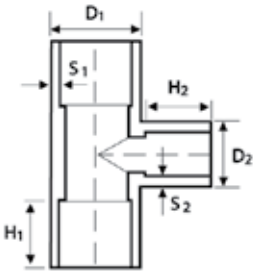
A



B

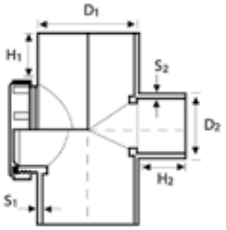
Tee Reducer 87.5°

Nominal size(inch)	D1 mm	D2 mm	S1 mm	S2 mm	H1 mm	H2 mm
110/50 mm	122	57	6	3.5	52	39
110/63 mm	122	70	6	3.5	52	38
110/75 mm	122	85	6	4.7	52	45
160/110mm	172	122	6	6	70	52
75/2" mm	85	67.5	4.5	3.5	45	38
110/2" mm	122	67.5	6	3.5	52	38



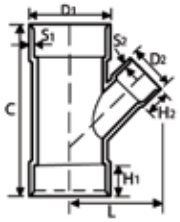
Tee Red. 87.5° with cap

Nominal size(inch)	D1 mm	D2 mm	S1 mm	S2 mm	H1 mm	H2 mm
110/50 mm	122	57	6	3.5	52	39
110/63 mm	122	70	6	3.5	52	38
110/75 mm	122	85	6	4.7	52	45
160/110mm	172	122	6	6	70	52
75/2" mm	85	67.5	4.5	3.5	45	38
110/2" mm	122	67.5	6	3.5	52	38



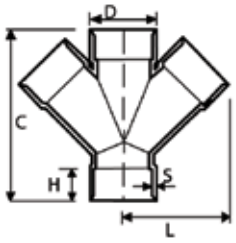
Tee Reducer 45°

Nominal size (inch)	D1 mm	D2 mm	S1 mm	S2 mm	H1 mm	H2 mm
110/50 mm	122	57	6	3.5	52	32
110/63 mm	122	70	6	3.5	52	38
110/75 mm	122	85	6	5	52	45
160/110mm	174	122	7	6	75	52
110/2" mm	122	67	6	3.5	52	38



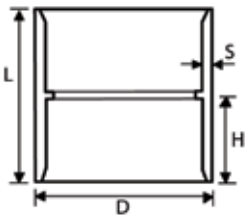
Double branch tee 45°

Nominal size(inch)	D mm	S mm	H mm
90 mm	100	5	48
110 mm	122	6	52



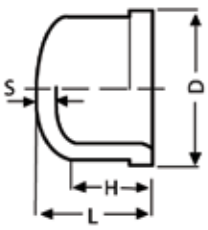
Coupling

Nominal size(inch)	D mm	S mm	H mm
20 mm	27	3.4	16
25 mm	33	3.9	19
32 mm	41	4.5	22
40 mm	50	5	26
50 mm	57	3.5	32
63 mm	70	3.5	39
75 mm	84	4.5	45
110 mm	122.5	6	52
160 mm	172.5	6	70



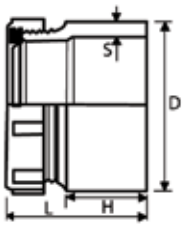
End Cap

Nominal size(inch)	D mm	S mm	H mm
20 mm	29.5	3.4	16
25 mm	35.5	3.9	19
32 mm	44	4.5	22
40 mm	54	3.5	26
50 mm	57	3.5	32
63 mm	71	3.5	38
75 mm	90	5	44
110 mm	125	6	61
160 mm	188	7	86



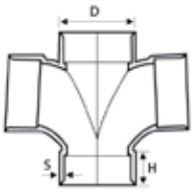
Clean Out

Nominal size(mm)	D mm	S mm	H mm
50mm	50	3.7	35
63mm	63	4.0	40
75mm	75	5	44
90mm	90	5	52
110mm	110	5	53
160mm	160	6	79

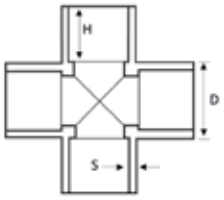


Double branch tee 90°

Nominal size(inch)	D mm	S mm	H mm	Type
75 mm	84	4.5	45	A
90 mm	100	5.2	48	B
110 mm	121	5.3	51	A



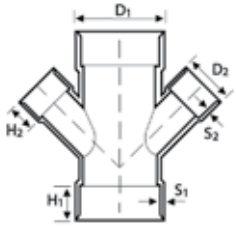
A



B

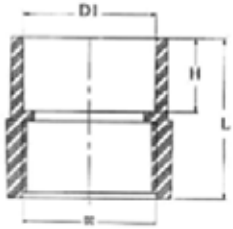
Double branch Reducer. 45°

Nominal size(inch)	D1 mm	D2 mm	S1 mm	S2 mm	H1 mm	H2 mm
110/75 mm	122	85	6	5	52	45
110/2" mm	122	67.5	6	3.5	52	38



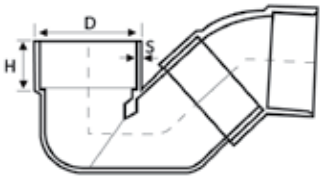
Famale Thread Adaptor

Nominal size(inch)	D mm	S mm	H mm
1½" * 1½	56	3	32



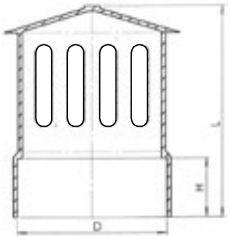
Syphon

Nominal size(inch)	D mm	S mm	H mm
4mm	122	6	52



Air vent

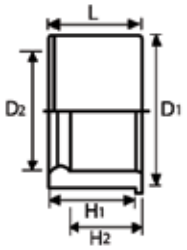
Nominal size(inch)	D mm	S mm	H mm
75mm	82	3	40
110mm	118	4	50



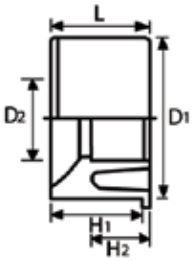
Reducing bush

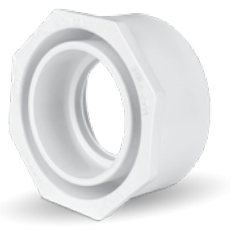
Nominal	D1 mm	D2 mm	H1 mm	H2 mm	Type
25 - 20mm	25	20.2	25.5	22.5	A
32 - 20mm	32	20.2	30	22.5	A
32 - 25mm	32	25.2	30	25.5	A
40 - 20mm	40	20.2	26	16	A
40 - 25mm	40	25.2	26	19	A
40 - 32mm	40	32.2	26	22	A
50 - 32mm	50	32.2	32	22	A
50 - 40mm	50	40.2	32	26	A
63 - 40mm	63	40.2	38	26	A
63 - 50mm	63	50.2	38	31	A
75 - 50mm	75	50.2	44	31	A
75 - 63mm	75	63.2	44	38	A
90 - 50mm	90	50.2	48	32	B
90 - 63mm	90	63.2	48	38	B
90 - 75mm	90	75.2	51	48	B
110 - 50mm	110	50.2	52	38	B
110 - 63mm	110	63.2	52	38	B
110 - 75mm	10	75.2	52	45	B
110 - 90mm	110	90.2	52	48	B
160 - 110mm	160	110.3	70	52	B
110 - 2”	110	60.2	52	38	B
75 - 2”	75	60.2	47	38	A
2” - 50mm	60	50.2	38	32	A

A



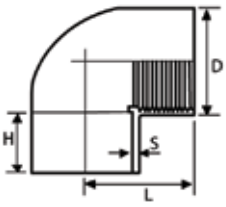
B





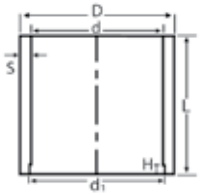
Elbow 90° SJXF.th

Nominal size(inch)	D mm	S mm	H mm
50 *1¼"	55	3	32
50 *1½"	65	3	32



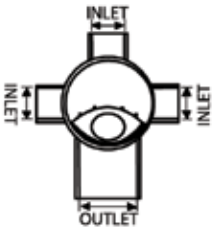
Extension Sockets

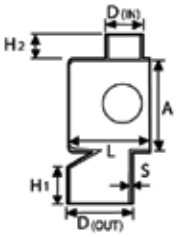
Nominal size(inch)	D mm	d mm	d1 mm	S mm	H mm	L mm
110 mm	122	114.5	119	6	8	150
125 mm	139	127	132	6.7	8	100
125 mm	139	127	132	6.7	8	150



Floor Trap

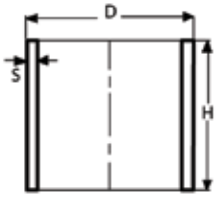
Nominal size(mm)	D mm	S mm	H mm	L mm
110mm	109.5	3.5	7	147.5
125mm	124.5	3.5	7	147.5





Repair Coupling

Nominal size(mm)	D mm	S mm	H mm
75mm	84	4.5	94
110mm	122	5.5	109



TECHNICAL DATA OF (ABOU GHALY) ‹JUMPO› ‹GPF› UPVC PIPES FOR PLUMBING SYSTEMS (DWV)

According to ASTM D 2241 (SDR) Series

		Wall Thickness						
		SDR 13.5	SDR 17	SDR 21	SDR 26	SDR 32.5	SDR 41	SDR 64
Nominal Size (inch)	Outside (D) mm	(21.7 Bar)	(17.8 Bar)	(13.8 Bar)	(11.0 Bar)	(8.6 Bar)	(6.9 Bar)	(4.3 Bar)
½"	21.34	1.9		-----	-----	-----	-----	-----
¾"	26.67	2.0	1.6	1.52	-----	-----	-----	-----
1"	33.40	2.5	2.0	1.60	1.52	-----	-----	-----
1¼"	42.16	3.1	2.5	2.01	1.63	1.52	-----	-----
1½"	48.26	3.6	2.9	2.29	1.85	1.52	-----	-----
2"	60.32	4.5	3.6	2.87	2.31	1.58	-----	-----
3"	88.90	6.6	5.2	4.24	3.43	2.74	2.16	-----
4"	114.30	5.8	6.7	5.44	4.39	3.51	2.79	1.78
6"	168.28	12.5	9.9	8.03	6.48	5.18	4.11	2.64
8"	219.08	-----	12.9	10.41	8.43	6.73	5.33	3.43

METRIC UPVC PIPES FOR PLUMBING SYSTEM (DWV)

Outside Dia (mm)	Thickness (mm)	Weight Kg/M
32	1.5	0.240
32	1.8	0.285
32	2.4	0.370
40	1.8	0.395
40	1.9	0.415
48	2.5	0.550
48	3.7	0.821
50	1.8	0.422
50	2.4	0.546
60	2.7	0.785
60	3.9	1.011
63	1.9	0.568
63	3	0.842
75	1.8	0.680
75	2.2	0.830
75	3	1.122
75	4	1.311
75	5	1.788
110	2.2	1.220
110	3	1.635
110	3.2	1.744
110	4	2.122
110	5	2.632
110	6	3.200
110	7	3.620
160	3.2	2.410
160	4.7	3.005
160	4	3.310
160	5	3.763
160	7	5.431

According to ASTM D 1785(SCH 40 / 80)

Nominal outside diameter inch	Outside Diameter mm		SCH40 Thickness mm		SCH40 Weight Kg/mt	SCH40 Pressure rating (bar)	SCH80 Thickness mm		SCH80 Weight Kg/mt	SCH80 Pressure rating (bar)
	MIN	MAX	MIN	MAX			MIN	MAX		
½"	21.2	21.2	2.8	3.3	0.24	41.4	3.7	4.2	0.31	58.6
¾"	26.6	26.9	2.9	3.4	0.33	33.1	3.9	4.4	0.41	47.6
1"	33.4	33.7	3.4	3.9	0.48	31.0	4.6	5.1	0.60	43.4
1¼"	42.1	42.4	3.6	4.1	0.65	25.5	4.9	5.4	0.48	35.9
1½"	48.1	48.4	3.7	4.2	0.77	22.8	5.1	5.7	1.03	32.4
2"	60.2	60.5	3.9	4.4	1.04	19.3	5.5	6.2	1.41	27.6
3"	88.7	89.1	5.5	6.2	2.14	17.9	7.6	8.5	2.88	25.5
4"	114.1	114.5	6.0	6.7	3.05	15.2	8.6	9.6	4.22	22.1
6"	168	168.5	7.1	8.0	5.37	12.4	11.0	12.3	8.05	19.3
8"	218.8	219.4	8.2	9.2	8.11	11.0	12.7	14.2	12.23	17.2

Pipes with three layers

		Wall Thickness				
		SDR 21	SDR 26	SDR 32.5	SDR 41	SDR 64
Nominal Size (inch)	Outside (D) mm	(13.8 Bar)	(11.0 Bar)	(8.6 Bar)	(6.9 Bar)	(4.3 Bar)
1½"	48.26	2.29	1.85	1.52	----	----
2"	60.32	2.87	2.31	1.58	----	----
3"	88.90	4.24	3.43	2.74	2.16	----
4"	114.30	5.44	4.39	3.51	2.79	1.78
6"	168.28	8.03	6.48	5.18	4.11	2.64
8"	219.08	10.41	8.43	6.73	5.33	3.43

UPVC PIPES FOR WATER SUPPLY AND IRRIGATION,ACCORDING TO EGYPTIAN STANDARDE.S 2008/1-848 – ISO 1996/2-4422

Normal outside diameter mm	6bar		8bar		10 bar		12.5 bar		16 bar		25 bar	
	S 16.7 SDR 34.4 PN 6		S 12.5 SDR 26 PN 8		S 10 SDR 21 PN 10		S 8 SDR 17 PN 12.5		S 6.3 SDR 13.6 PN 16		S 4 SDR 9 PN 25	
	Wall Thickness mm	weight kg/m	Wall Thickness mm	No. wt kg/m	Wall Thickness mm	weight kg/m	Wall Thickness mm	weight kg/m	Wall Thickness mm	weight kg/m	Wall Thickness mm	weight kg/m
20									1.5	0.137	3.2	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	0.482
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

UPVC PIPES FOR WATER SUPPLY AND IRRIGATION, ACCORDING TO EGYPTIAN STANDARDE.S 2008/1-848 – ISO 1996/2-4422

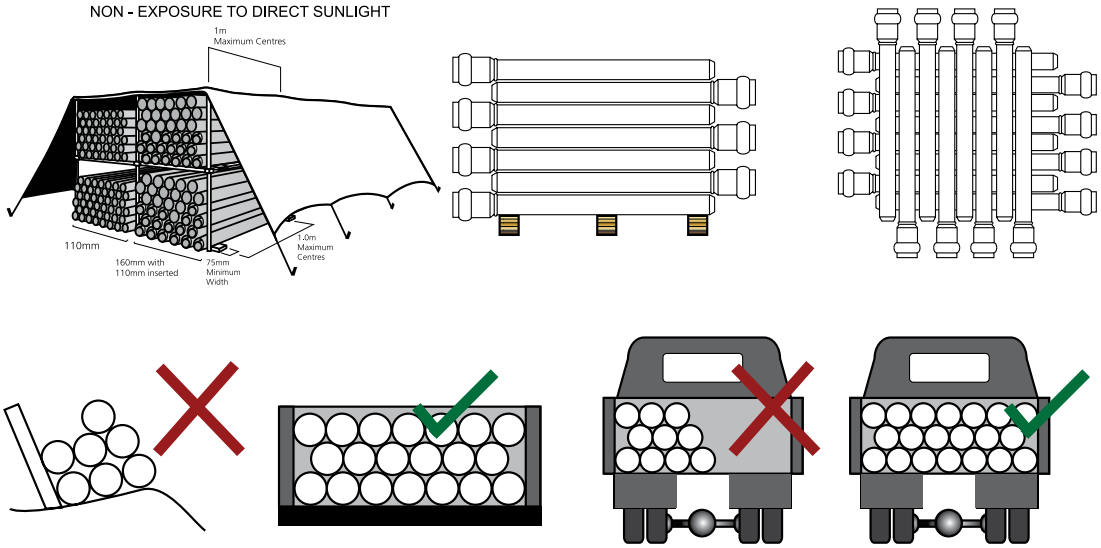
Normal outside diameter mm	8 bar		12.5 bar		20 bar		25 bar	
	S 16 SDR 33 PN 8		S 10 SDR 21 PN 12.5		S 6.3 SDR 13.6 PN 20		S 5 SDR 11 PN 25	
	Wall Thickness mm	weight kg/m	Wall Thickness mm	No. wt kg/m	Wall Thickness mm	weight kg/m	Wall Thickness mm	weight kg/m
110	3.4	1.70	5.3	2.61	8.1	3.90	10	5.00
125	3.9	2.21	6	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	12.63	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	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		

TRANSPORT, HANDLING & STORAGE

Un plasticized PVC pipes are strong but light, its specific gravity being approximately one-fifth that of cast iron. As a result, these pipes are more easily handled than their metal counterparts. Reasonable care, however, should be exercised at all times, and when offloading, pipes should be lowered, not dropped to the ground.

Pipe 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 when joining and for pipe alignment. Any pipe with ends prepared for joining (socket and spigot joints, RR joints, etc.) should be stacked in layers with the socket, placed at alternate ends of the stack and with sockets protruding to avoid lop-sided stacks and the Imparting of permanent set to pipes.

Particularly in the case of Ring pipe, rubber rings should not be exposed to solar radiation for any length of time if they are not coated. It is recommended to stock them in a cool and shady place. Rubber rings should not come in touch with chemicals, grease, oil and to be stored for too long a time.



For long-term storage, pipe racks should provide continuous support, but if this is not possible, timber of at least 75 mm bearing width at spacing not greater than 1 m centers for pipe sizes 150 mm and above, should be placed beneath the pipes and at 2 m centers at the side, if the stacks are rectangular. These spacing apply to pipe size 160 mm and above. Closer supports will be required for sizes below 160 mm. In such pipe racks, pipes may be stored not more than seven layers or 1.5 m high, whichever is the lesser, but if different classes of pipe are kept in the same racks, then the thickest classes must always be at the bottom.

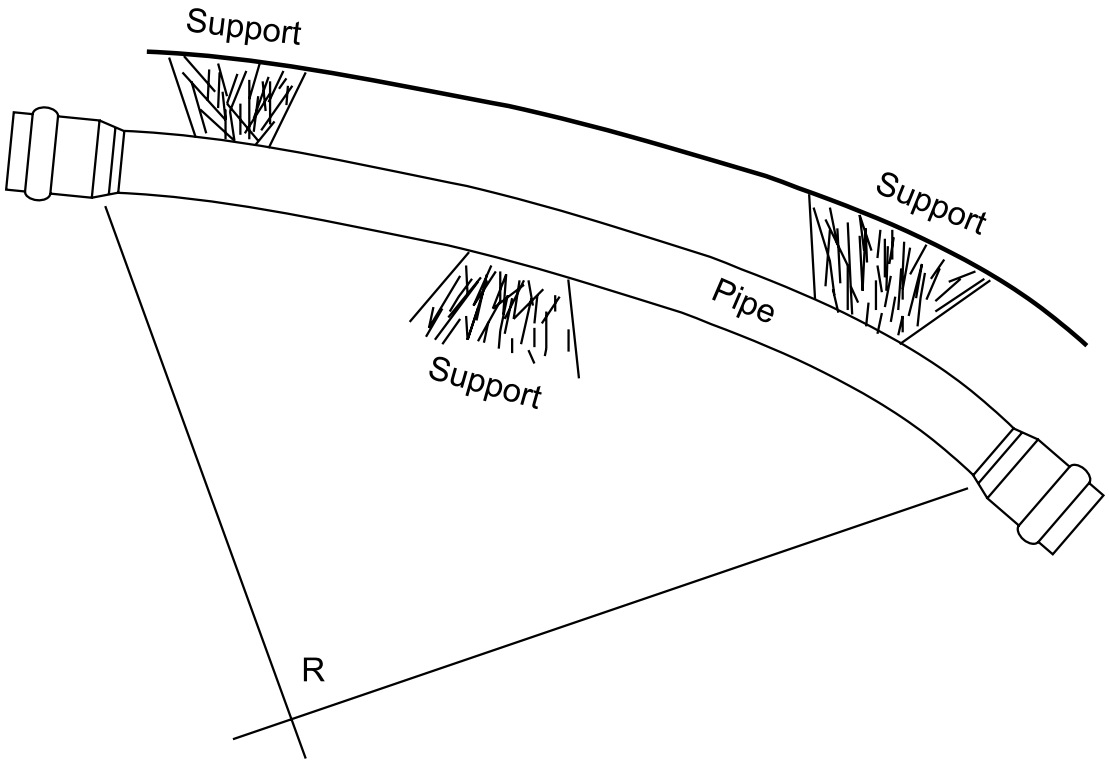
For temporary storage in the field, where racks are not provided, the ground should be level and free from coarse stones. Pipes stored thus should not exceed three layers high and should be staked to prevent movement.

Stack heights should be reduced if pipes are nested, i. e. pipes stored inside pipes of larger diameters. Reductions in height should be proportional to the weight of the nested pipe compared to the weight of the pipes normally contained in such stowage's.

Since the soundness of any joint depend on the condition of the spigot and the socket, special care must be taken in transit, handling and storage to avoid damage to the ends.
When loading pipes on the vehicles, care must be taken to avoid their coming into contact with any sharp corners such as cope irons, loose nail-heads, etc., 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 and or by rolling them gently down timbers, care being taken to ensure that pipes do not fall one upon
another nor on any hard or uneven surfaces. Fork-lift trucks will have to be used for bundles and large unit loads.

DEFLECTION

The ring integral socket permits an angular deflection at the joint of 2 to 3 degree the introduction of joint deflection is however, generally unnecessary in an inherently flexible uPVC pipeline.
Sufficient flexibility \ is provided by individual pipe lengths to enable gentle curves to be negotiated without imparting deflection at the joints.
As a general guide the cold bending radius R of a uPVC pipe length can be calculated as follows"
R = 300*External Diameter
Where a shorter radius of curvature is required, then uPVC formed bends must be introduced.



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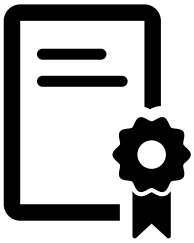

Certificates

BUREAU VERITAS
Certification

BUREAU VERITAS 1828

JUMBO FOR PLASTIC INDUSTRIES

Address: New EL-Salhia City-Industrial zone1 –sector E - #10
ARAB REPUBLIC OF EGYPT

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System Of the above organisation has been audited and found to be in accordance with the Requirements of the management system standards detailed below

ISO 9001:2015

Scope of certification

MANUFACTURING OF PVC PLASTIC PIPES AND FITTINGS

Original cycle start date:	8th June 2015
Expiry date of previous cycle:	7th June 2018
Recertification Audit date:	7th May 2018
Certification / Recertification cycle start date:	7th June 2018

Subject to the continued satisfactory operation of the organization's Management System, This certificate expires on: 7th June 2021

Certificate No.** IND18.9208 U/Q* *Version: **No.1 *Revision date: **7-JUN-2018***

Signed on Behalf of BVCH UK Branch
Ayman Ibrahim
Certification BL. Manager

UKAS MANAGEMENT SYSTEMS
0008

Certification body address: *66, Prescot Street, London, E1 8HG, United Kingdom*
Local office: *51 Hassan Aflaton Street, Ard El Golf, Nasr City, P.O. Box 1731, Cairo, Arab Republic of Egypt*
Further clarifications regarding the scope of this certificate and the applicability of the management system Requirements may be obtained by consulting the organisation. To check this certificate validity, Please call: ***(+202 2418 3020)***

Page 1 of 1

وزارة التجارة والصناعة
الهيئة المصرية العامة للمواصفات واجودة

شهادة ترخيص بعلامة الجودة

EQM-8

اسم الشركة : جامبو للصناعات البلاستيكية

العنوان : القطعة رقم ١٠ - بلوك قطاع هـ - المنطقة الصناعية الأولى - مدينة الصالحية - محافظة الشرقية

السلعة المرخص لها بعلامة الجودة : مواسير بولى (كلوريد الفينيل) غير الملدن لنقل مياه الشرب حتى قطر ٣١٥ مم

العلامة / العلامة التجارية :

المواصفات القياسية : م ق م ١٠٨٤٨ / ٢٠٠٨

تاريخ الاصدار : ١٥ / ٤ / ٢٠١٨

ملاحية الترخيص : عامين

رقم الشهادة : ك ص / ٧٢ - ٠٣٣ / ٢٠١٨

مدير عام الجودة

رئيس مجلس الادارة

مهندس / أشرف إسماعيل عليفي

العنوان : ١٦ تدريب المدربين - الاميرية - القاهرة ت : ٠٢٢٢٨٥٥٥٢٢ / ٠٢٢٢٨٥٥٥٢٤-فاكس

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وزارة التجارة والصناعة
الهيئة المصرية العامة للمواصفات واجودة

شهادة ترخيص بعلامة الجودة

EQM-8

اسم الشركة : جامبو للصناعات البلاستيكية

العنوان : القطعة رقم ١٠ - بلوك قطاع هـ - المنطقة الصناعية الأولى - مدينة الصالحية - محافظة الشرقية

السلعة المرخص لها بعلامة الجودة : مواسير بولى (كلوريد الفينيل) غير الملدن لأغراض الصرف الصحى حتى قطر ٣١٥ مم

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المواصفات القياسية : م ق م ١٧١٧ / ٢٠٠٨ تحديث ٢٠١٧

تاريخ الاصدار : ١٥ / ٤ / ٢٠١٨

ملاحية الترخيص : عامين

رقم الشهادة : ك ص / ٠٣٣ / ٠٦٤ / ٢٠١٨

مدير عام الجودة

رئيس مجلس الادارة

مهندس / أشرف إسماعيل عليفي

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السلعة المرخص لها بعلامة الجودة : وصلات بولى كلوريد الفينيل غير الملدن المستخدمة لأغراض الصرف الصحى

المواصفات القياسية : م ق م ١٧١٧ لسنة ٢٠٠٨

تاريخ الاصدار : ١ / ٦ / ٢٠١٧

ملاحية الترخيص : عامين

رقم الشهادة : ك ص / ٠٦١ / ٠٨٠ / ٢٠١٧

مدير عام الجودة

رئيس مجلس الادارة

مهندس / أشرف إسماعيل عليفي

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البريد الالكتروني : Eos@idsc.net.eg

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مصلحة التسجيل التجاري
ادارة العلامات التجارية

(استمارة رقم ٢ علامات تجارية)

شهادة تسجيل علامات تجارية

العلامة

GPF

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NATIONAL RESEARCH CENTRE
TAHRIR St. DOKKI, CAIRO, EGYPT
Central Unit For Analysis And
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Material Test Lab.

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الدقى - القاهرة - جمهورية مصر العربية
وحدة التحاليل والخدمات العلمية المركزية
معمل اختبار المواد

تقـــرير الاختبـــارات

رقم التقرير	:	MOI 8156 08 2017
إسم الشركة أو العميل	:	شركة جامبو للصناعات البلاستيكية (أبو غالى)
تاريخ الطلب	:	٢٠١٧/٨/٢٢
النوع المطلوب إختباره	:	طلب إجراء الاختبارات اللازمة على عدد (٣) عينة كوع UPVC قطر ١١٠مم ذات لون أبيض.
المواصفات المستخدمة	:	طبقا للمواصفة الأمريكية ASTM D1784 , D2241 , D2665 .
النتائج	:	جميع نتائج الاختبارات مدونة وموضحة بالتفصيل فى صفحات التقرير المرفقة (عدد صفحات التقرير ٨ صفحات) .
الفريق العامل بكتابة كمبيوتر وحاسب آلى	:	كمبيوتر / نجلاء محمد عبد المسيح كمبيوتر / سارة عبد الرحيم اسماعيل كمبيوتر / اشرف سيد محمود كمبيوتر / نهى محمد ربيع
القائمون بالتشغيل والاختبارات	:	عضو مساعد / احمد سيد ابراهيم عضو مساعد / فاطمة الزهراء فاخرى الكيميائى / هبه عبد الرحمن الشافعى
أشراف	:	أ.د/ مصطفى زكى مصطفى أ.د/ أبو الفتوح عبد المنعم عبد الحليم
المدير المسئول	:	الاستاذ الدكتور / محمد زكى محمد فرج رئيس مجلس ادارة وحدة التحاليل والخدمات العلمية - معمل اختبار المواد ورئيس قسم الحرير الصناعى والبلاستيك والمواد العازلة ومعامل الادارة العليا ومعمر الجودة بالوحدة
تاريخ الإصدار	:	٢٠١٧/٩/٧
طرق التشغيل والاختبارات	:	كل الاختبارات قد تمت عند ٢٣ م ورطوبة نسبية ٥٠ - ٦٠٪ ضمن مدى الاختبارات اللازمة لأجهزة القياس بصفة دائمة ومستمرة

(٨١٥٦-٨/٢١)

☎ ٢٣٣٧١٦١٥ - ٢٣٣٧١٣٦٢ - ٢٣٣٥٥١٩٢ - ٣٧٦٠٧٥٤١
داخلى ١٢٣١ مباشر : ٣٣٣٨٧٨٠٢ وفاكس ١٠٨٤
شارع التحرير - الدقى - القاهرة
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وحدة التحاليل والخدمات العلمية المركزية
معمل اختبار المواد

السـادة / شركة جامبو للصناعات البلاستيكية (أبو غالى)

تحية طيبة وبعـــد ...

بالإشارة إلى خطابكم الوارد بتاريخ ٢٠١٧/٨/٢٢ بشأن إجراء الاختبارات التالية على عدد (٣) عينة كـوع UPVC قطـر ١١٠مـم ذات لـون أبـيض ، طبقـا للمواصـفة الامريكيـة ASTM D1784 , D2241 , D2665 ، وكانت الاختبارات كالتالى :

١- اختبار الفحص الظاهرى .
٢- اختبار الأبعاد .
٣- اختبار درجة حرارة الميود ثلجات قل.
٤- اختبار الكثافة .
٥- اختبار قوة التحمل للشد قبل وبعد المعالجة .
٦- اختبار قوة التحمل للصدمات قبل وبعد المعالجة .
٧- اختبار تأثير الكيماويات .
٨- اختبار تأثير الأشعة فوق البنفسجية لمدة ٢٠٠ ساعة .

وقد تم الانتهاء من الاختبارات فى ظروف التشغيل التالية :

١) فى قياس الخواص الميكانيكية استخدم جهاز GALDABINI-QUASAR 600-MADE IN Italy المزود بجهاز تسجيل أوماتيكـــى بالاضافة الى نظام تحكم ذاتى و معايرة الكترونية للتحميل والاتزان ومعايرة الجهاز يوميا لرسم خطوات الاختبارات و ذلك لمعايرة الأعمال الناتجة .
٢) إستخدم فرن كهربائى طراز Memmert West Germany فى الاختبارات الحرارية
٣) إستخدام جهاز Impact Tester CS- 137 فى قياس قوة التحمل للصدمات .
٤) إستخدم بفرجار دقته ٠,٠٠١ سم فى قياس أبعاد العينات .
٥) استخدام جهاز ترانسة لتحويل الظـروف الجوية من طراز Fadorneter
٦)استخدم ميزان حساس لأربعة أرقام عشرية : ٠,٠٠٠١جم طراز Chyo JK 180
٧) إستخدم جهاز Ray Ran HHT-Vicat Selling point RR/HDV 4/029 - England
٨)علما بان جميع الأجهزة المستخدمة معايرة .

و انيا يأتى جميع النتائج الفنية للاختبارات الذى تمت على العينات الواردة عليها بأن جدة النتائج تمثل فقط العينات الواردة الى قسم الحرير الصناعى والبلاستيك والمواد العازلة بمعمل اختبار المواد بالمركز القومى للبحوث

(٨١٥٦-٨/٢)

☎ ٢٣٣٧١٦١٥ - ٢٣٣٧١٣٦٢ - ٢٣٣٥٥١٩٢ - ٣٧٦٠٧٥٤١
داخلى ١٢٣١ مباشر : ٣٣٣٨٧٨٠٢ وفاكس ١٠٨٤
شارع التحرير - الدقى - القاهرة
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الدقى - القاهرة - جمهورية مصر العربية
وحدة التحاليل والخدمات العلمية المركزية
معمل اختبار المواد

نتـــائج اختبـــار الفحص الظاهرى

على عينة كوع UPVC قطر ١١٠مم لون ابيض

من انتاج شـــركـــة جامبو للصناعات البلاستيكية (أبو غالى)

السمك = ٣.٤مم
القطر الداخلى = ١١٠.٢مم
القطر الخارجى = ١٢٢.١مم

* عينة كوع لون ابيض خالية من التشوق والفجوات من الداخل و الخارج و لا يوجد بها أى عيوب ظاهرية من تشققات أو تشـوهات على طول جسم العينة من انتاج ابو غالى .

(٨١٥٦-٨/٣)

☎ ٢٣٣٧١٦١٥ - ٢٣٣٧١٣٦٢ - ٢٣٣٥٥١٩٢ - ٣٧٦٠٧٥٤١
داخلى ١٢٣١ مباشر : ٣٣٣٨٧٨٠٢ وفاكس ١٠٨٤
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معمل اختبار المواد

نتائج اختبار الكثافة النوعية

على عينة كوع UPVC قطر ١١٠مم ذو لون ابيض

من انتاج شـــركـــة جامبو للصناعات البلاستيكية (أبو غالى)

م	وزن العينة في الهواء (جـــم)	وزن العينة + السلك في السائل (جـــم)	وزن السلك (جم)	الكثافة النوعية (جـــم/ســـم٣)
١	٥,٤٧٣٥	١,٨٥٥٥	٠,٠٣٧٠	١,٤٩٥٨
٢	٥,٣٢٤٠	١,٨٠٣٥	٠,٠٣٧٠	١,٤٩٤٨

متوسط الكـــثافة النوعـــية = ١,٤٩٥٣ (جم/سـم٣)

*هذه القيمة حدودها فى المواصفات قيمة استرشادية فقط لنوع المواد المستخدمة وحجم حبيباتها وقيمة الضـــغط المستخدم فى الانتاج .

نتائج إختبار درجة حرارة الحيود تحت ثقل (HDT)

*درجة الحرارة (HDT) تساوى ٧٦,٥°م تحت حمل ١,٨٢ نيوتن/مم٢

نتائج إختبار الاحماض بالغمر فى حمض الكبريتيك بتركيز ٩٣,٥% لمدة ٧٢ ساعة

* لم يحدث بالعينة المختبرة أى تشقق أو تغير فى اللون .

نتائج إختبار الاحماض بالغمر فى حمض الكبريتيك بتركيز ٨٠% لمدة ٧ أيام

* لم يحدث بالعينة المختبرة أى تشقق أو تغير فى اللون .

(٨٢٥٦-٨/٤)

شارع التحرير - الدقى - القاهرة
داخلى ١٣٢١ مباشر ٣٣٣٨٧٨٠٢ وفاكس ١٠٨٤
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معمل اختبار المواد

نتائج إختبار قوة التحمل للشد

على عينة كوع UPVC قطر ١١٠مم ذو لون ابيض

من انتاج شـــركـــة جامبو للصناعات البلاستيكية (أبو غالى)

م	قوة التحمل للشد قبل العرض*		قوة التحمل للشد بعد العرض*	
	(كجم/سم٢)	(نيوتن/مم٢)	(كجم/سم٢)	(نيوتن/مم٢)
١	٦٦٩.٢٦٤	٦٥.٦٣٢	٥٧٧.٨٤٦	٥٦.٦٦٧
٢	٥٣٠.٠٨٧	٥١.٩٨٤	٤٤١.٨٢٠	٥٣.١٣٤
٣	٥١١.١٨٣	٥٠.١٣٠	٥٣٢.١١١	٥٢.١٨٢
المتوسط	٥٧٠.١٧٨	٥٥.٩١٥	٥٥٠.٥٩٢	٥٣.٩٩٥

نتائج إختبار قوة التحمل للصدمات

م	قوة التحمل للصدمات قبل العرض*		قوة التحمل للصدمات بعد العرض*	
	(كجم.سم/سم)	(جول/سم)	(كجم.سم/سم)	(جول/سم)
١	٤٠٣.٩٩٩	٣٩.٦١٦	٤٠٤.٢٥٥	٣٩.٦٤٤
٢	٤٠٦.٥٦٢	٣٩.٨٧٠	٤٠١.٤٠٨	٣٩.٣٦٥
٣	٤٠٢.٨٢٧	٣٩.٥٠٤	٤٠٢.٥٤٢	٣٩.٤٧٦
المتوسط	٤٠٤.٤٥٣	٣٩.٦٦٣	٤٠٢.٧٣٥	٣٩.٤٩٥

* التعرض لظروف الجوية المعجلة لمدة ٥٠ ساعة والمتمثلة فى (الاشعة فوق البنفسجية U.V + جو من الاوزون + رطوبة ٦٠% + درجة حرار ٤٠°م)

(٨٢٥٦-٨/٥)

شارع التحرير - الدقى - القاهرة
داخلى ١٣٢١ مباشر ٣٣٣٨٧٨٠٢ وفاكس ١٠٨٤
٣٣٣٧١٦١٥ - ٣٣٣٧١٣٩٢
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وحدة التحاليل والخدمات العلمية المركزية
معمل اختبار المواد

نتائج اختبار الظروف الجوية المعجلة بالتعرض للـ U.V لمدة ٥٠ ساعة

على عينة كوع UPVC قطر ١١٠مم دو لون ابيض

من انتاج شـــركـــة جامبو للصناعات البلاستيكية (أبو غالى)

العينة	قبل التعرض للظروف الجوية	بعد التعرض للظروف الجوية
L	٨٩,٤٤	٨٩,٦١
a	٢,٩٠-	٢,٣٥-
b	٢,٨٢	٢,٣٨
Δ E		٠,٧٢٩

* بتعريض العينة للظروف الجوية المعجلة لمدة ٥٠ ساعة لم يحدث اى تغير فى اللون حيث ان Δ E اقل من الواحد الصحيح .

(٨١٥٦-٨/٦)

٢٣٣٧١٦١٥ - ٢٣٣٧١٣٦٢ ☎ داخلى ١٣٢١ مباشر : ٢٣٣٨٧٨٠٢ شارع التحرير - الدقى - القاهرة
٣٧٦٠٧٥٤١ - ٢٣٣٥٥١٩٢ ١٠٨٤ وفاكس
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معمل اختبار المواد

ملخـــص عـــام للنتـــائج

على عينة كوع UPVC قطر ١١٠مم دو لون ابيض

من انتاج شـــركـــة جامبو للصناعات البلاستيكية (أبو غالى)

م	الاختبارات	النتائج	حدود المواصفة ASTM D1784
١	نتائج اختبار الكثافة (جم/سم٣)	١,٤٩٥٣	١,٤
٢	نتائج اختبار درجة حرارة الحيود تحت حمل ١,٨٢ نيوتن/سم٢(م)	٧٦,٥	٧٠
٣	نتائج اختبار الاحماض لمدة ٧٢ ساعة	لم يحدث اى تأثير على العينة	عدم حدوث تأثير
٤	نتائج اختبار الاحماض لمدة ٧ ايام	لم يحدث اى تأثير على العينة	عدم حدوث تأثير
٥	نتائج اختبار قوة التحمل للشد قبل التعرض (نيوتن /سم٢)	٥٥,٩١٥	١٨,٣
٦	نتائج اختبار قوة التحمل للشد بعد التعرض (نيوتن /سم٢)	٥٣,٩٩٥	١٨,٣
٧	نتائج اختبار قوة التحمل للصدمات قبل التعرض(جول /م)	٣٩,٦٦٣	٣٤,٧
٨	نتائج اختبار قوة التحمل للصدمات بعد التعرض(جول /م)	٣٩,٤٩٥	٣٤,٧
٩	نتائج اختبار تأثير الظروف الجوية المعجلة لمدة ٥٠ ساعة	لم يحدث تغير فى اللون	عدم حدوث تأثير

(٨١٥٦-٨/٧)

٢٣٣٧١٦١٥ - ٢٣٣٧١٣٦٢ ☎ داخلى ١٣٢١ مباشر : ٢٣٣٨٧٨٠٢ شارع التحرير - الدقى - القاهرة
٣٧٦٠٧٥٤١ - ٢٣٣٥٥١٩٢ ١٠٨٤ وفاكس
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معمل اختبار المواد

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مركز تكنولوجيا البلاستيك

وزارة الصناعة والتجارة والمشروعات الصغيرة والمتوسطة
مجلس الصناعة للتكنولوجيا والابتكار

تقرير الإختبار
رقم :٧٧٧

اسم العميل : جماسيو للصناعات البلاستيكية .
تاريخ الاصدار : ٢٠١٦/١٢/٤ .
العينة : عدد (١) عينة جلبة PVC قطر ١٦٠مم .
لون العينة : أبيض .
المواصفة : المصرية ١٧١٧ لسنة ٢٠٠٨.
درجة الحرارة : ٢٣°م ± ٢°م نسبة الرطوبة : ٥٠% ± ٥%
الأجهزة المستخدمة : - HDT-VICAT Tester (Ceast - Italy).
- Oven with forced convection (BINDER).

• في حالة وجود أى شكوى رجاء الاتصال على رقم التليفون ٠٣/٥٠١٤١٩١

مدير عام الإدارة الفنية
(كيميائية / أمل عبد الرحمن)

مديرة المركز
(مهندسة / نجوى المغاورى)

تحريرا فى ٢٠١٦/١٢/٢١
بحر

مركز تكنولوجيا البلاستيك

وزارة الصناعة والتجارة والمشروعات الصغيرة والمتوسطة
مجلس الصناعة للتكنولوجيا والابتكار

شهادة تحاليل
رقم التقرير : (٧٧٧)

اسم العميل : جماسيو للصناعات البلاستيكية .
تاريخ الإصدار : ٢٠١٦/١٢/٤.
العينة* : عدد (١) عينة جلبة PVC قطر ١٦٠مم .
لون العينة : أبيض.
* العينة وبياناتها وردت إلى المركز بمعرفة العميل

الاختبارات	متوسط النتائج @ ١٦٠مم	القياسات المرجعية
١- التأثير الحرارى على الجلبة - الفحص الظاهرى (١٥٠°م ٣٠ دقيقة) - نسبة التأثير %	لم تتأثر لا يوجد تغير	لا يزيد عمق التقطفات أو التشرخ او البثور عن ٥٠% من سمك الجدار فى منطقة الحفن عند النقطة المتأثرة
٢- درجة حرارة التلين (الفيكات) ٥٠ نيوتن ، ٥٠ °م / ساعة	٧٨ °م دقائق	حد ادنى ٧٧

الخلاصة
نجحت العينة جلبة PVC قطر (١٦٠مم) الاختبارات المذكوره اعلاه طبقا للمواصفة المصرية ١٧١٧ لسنة ٢٠٠٨.

ملحوظة :-
١- هذا التقرير يشير الى العينة محل الاختبار فقط.
٢- هذا التقرير لا يتم نسخه مرة أخرى إلا كاملا وبموافقة كتابية من مدير المركز.

مدير المعمل الميكانيكى
(كيميائى) مختار أحمد)

مدير إدارة المعامل
(كيميائية / وفاء على مرسى)

مدير إدارة الجودة
(مهندس/ ابراهيم مسعود)

NOTE

NOTE

THANK YOU

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