PCV-U Systems

kalde®
First Choice


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TÜRK STANDARDLARINA UYGUNLUK BELGESİ
TURKISH STANDARDS INSTITUTION
CERTIFICATE OF CONFORMITY TO TURKISH STANDARDS

KALDE PVC-U WASTE WATER PIPES (TS 275-1 EN 1329-1)

Kalde PVC-U waste water pipes and fittings are produced according to TS 275-1 EN 1329-1 standard. Pipe and fittings dimensions range from Ø50mm up to Ø250mm in diameter with gaskets in the sockets.
All pipes are available in different lengths as well: 150, 250, 500, 1000, 2000, 3000 and 6000 mm (not including muf)

Advantages of Kalde PVC-U pipes and fittings;

- Long service life
- Strong, elastic and corrosion resistant

• Raw Material and General Properties

Kalde Waste Water Systems are formed of pipes and joints parts which are produced of PVC-U raw material. They are manufactured according to the B and BD application areas of EN 1329 -1,2 standard.
PVC-U pipe and joints parts (B and BD marked) are used for the below mentioned purposes.

- Warm and cold domestic waste water,
- Air conditioning systems for domestic waste water lines,
- Building rain water installation,

Pipes and joints parts: the ones which are marked with "B" can be used only inside the building and the "BD" marked ones can be used as embedded under the ground in the building and within the building.

Application area code: The application area code is the code showing the application areas of pipes and fittings according to the below mentioned information .

B: The application area code for pipes and fittings which are mounted on the wall outside the building or for pipes and fittings which will be used on the ground inside the building

D: The application area code used for pipes and fittings used embedded under the ground which are one (1) meter away from the building and under the building in order to make connections for the underground drainage and sewerage systems

BD: the application area code for the pipes and fittings used in both application areas specified in B and D codes.

Note: The nominal diameter of the elements which are used as embedded under the ground inside the building (BD marked) should be at least 75 mm. Additional properties for the ground surface applications outside the building according to the weather conditions are determined by the user and manufacturer.

The elements which are produced according to the other plastic pipe system standards can be used together if they conform the PVC-U pipe and fittings, fitting dimensions and functional properties according to the EN 1329-1,2' standard.

Kalde PVC-U pipes and fittings are produced in DN 50, DN 75, DN 110, DN 125, DN 160, DN 200 and DN 250 dimensions. It is long-term and reliable system with its problem-free assembly technique. It provides long-term and easy usage with its interrelated easy fitting system.

Because the seals used in the Kalde PVC-U pipes and fittings are covered by a special silicone layer, the seal is prevented from deformation and degradation in case of being exposed to sunbeam.

The smooth and bright internal and external layers of Kalde PVC-U pipes and fittings prevent the blockage of installation by keeping the residue and lime accumulation at the lowest level and provides fast and uniform flow.

• PVC-U Physical and Mechanical Properties

Polyvinyl chloride comes under the amorphous plastics and it is a granulated polymer with white or light yellow color. It is possible to process polyvinyl chloride up to 60°C. When it is heated, it is solved by chlorinated hydrocarbons. It is resistant against the effect of acids and bases. Water, alcohol and benzene do not show any reaction to PVC. PVC has high electrolysis feature and it is a fireproofing polymer. PVC decomposes slowly at 140°C and easily at 170°C by HCL decomposition and double bond is formed at the polymer. Thus stabilizers partake in the polymer.

Property	Value	Standard
Density (g/cm^3)	1.41	ISO 1183
Water Absorption, 24 hrs. (%)	0.05	ASTM D570
Tensile Strength N/mm^2	52	ASTM D638
Flexural Strength (N/mm^2)	88	ASTM D790
Modulus of Elasticity, (N/mm^2)	3316	ASTM D790
Hardness (Rockwell R)	115	ASTM D785
IZOD Notched Impact (kg cm/cm)	5.40	ASTM D256
Coefficient of Linear Thermal Expansion K(°C)	0.06	ASTM D696
Thermal Conduction, W/mK	0.15	ASTM D648
VICAT softening temperature, (°C)	93	ASTM D1525
Surface Resistance (ohm)	$>10^{12}$	ASTM D257

Resistant: Kalde PVC-U Waste water Pipes and Fittings keep their physical properties up to 60 °C. In case no internal pressure is applied and no external mechanical impact is applied, it is resistant against pH 2-7 acids at 20 °C and pH 7-12 alkaline. Kalde PVC-U Waste Water pipes and fittings are resistant against various mechanical effects. The impact durability is controlled with the falling ball test.

Abrasion-proofing: Because Kalde PVC-U Waste Water pipes and fittings are hard PVC, it is more resistant against the external factors.

Smooth Internal Surface: The smooth and flat internal surface of Kalde PVC-U Waste water pipes and fittings provide ideal viscosity property. It is out of question to develop pollution which will cause choking.

Explosion-proof: The Kalde PVC-U Waste Water pipes and fittings do not have spontaneous combustion property due to the structure of PVC-U and fittings. They can only burn under open flame.

• Deformation of PVC

PVC degradates by two ways:

1) by HEAT

2) by LIGHT

1) Its degradation by heat is formed by HCl (Hydrogen Chloride) liberation. Together with this gas liberation, yellowing occurs on the PVC Color. When PVC is directly exposed to heat, hydrogen chloride (HCl) liberates and yellowing occurs on the PVC color. Related to the degradation level; yellowing, reddening, brown and black colors are seen on the PVC color. Together with this, changes in the physical and chemical properties of the product are seen. The waste gases and humidity which are formed during the process are removed from the environment and then eliminated.

2) When PVC does not include any stabilizer material, it degrades over 100 °C temperature or if it is exposed to UV rays or gamma rays.

• PVC-U Formulation

PVC-U is the material which some additives are added in the raw material of PVC. The PVC content of the material is at least 80% by mass for the pipes suitable to EN 1905 and at least 85% by mass for the fittings which are produced by injection molding. In PVC-U processes, according to the product type, it is compulsory to add some adjuvant additives. Correspondingly, the formulation is generally as follows:

1) PVC resin,

2) Stabilizers,

3) Lubricants,

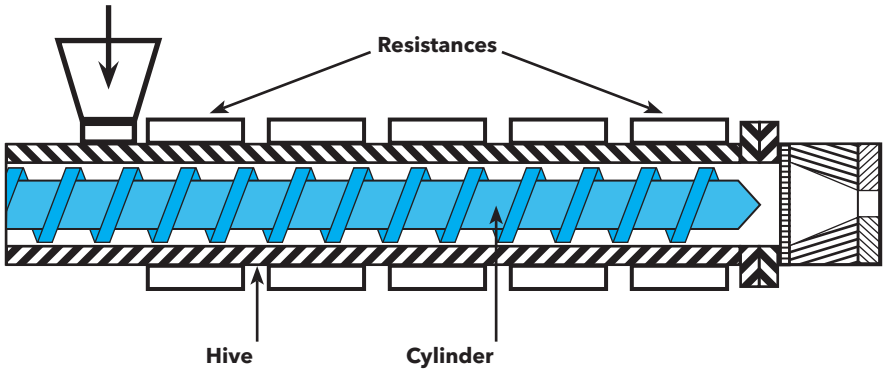
4) Durability improvers,

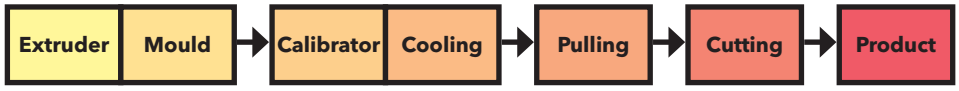
5) Process adjuvant,

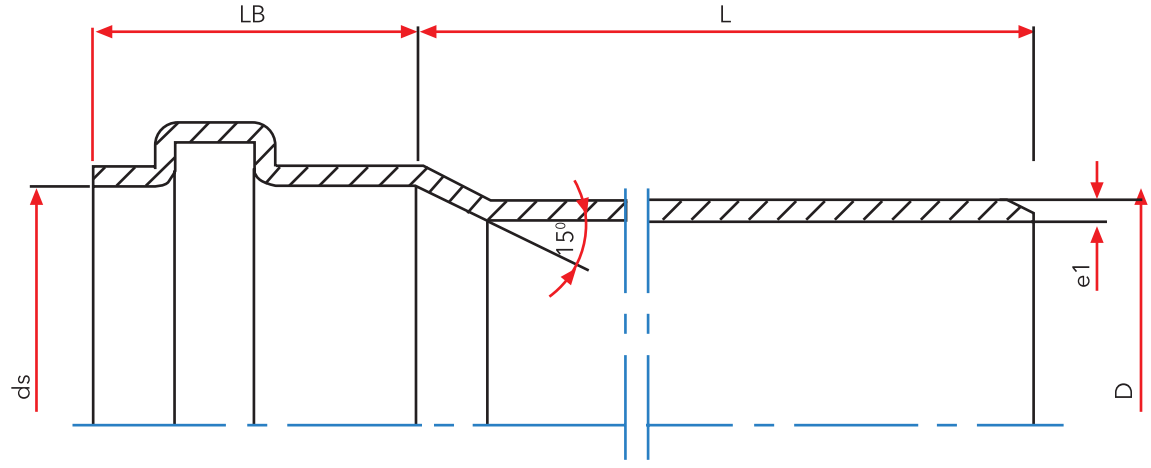
6) Pigments

Together with the above mentioned items, some other additives such as fire protectors, optic bleaches are used in the formulation.

• PVC Process







Dimension (TS 275-1 EN 1329-1)

Outside Diameter D (mm)	ds (mm)	Wall Thickness (mm) e1 (min)	e1(max)	LB	Approximately weight kg/m
50	50,2	3,0	3,5	50	0,725
75	75,3	3,0	3,5	58	1,150
110	110,3	3,2	3,8	72	1,750
125	125,3	3,2	3,8	72	2,100
160	160,4	3,2	3,8	102	2,614
200	200,5	3,9	4,5	102	4,050
250	250,5	4,9	5,6	125	6,250

Chemical Resistance Table of PVC-U According to ISO/TR 10358,TS 11448

Chemical Material	Concentration (%)	Temperature °C	
		20	60
Adipic acid	Saturated solution % 1,4	D	YD
Aluminium hydroxide	Suspension	D	D
Ammonia, aqueous	Saturated solution	D	D
Ammonium chloride	Saturated solution	D	D
Ammonium sulphate	Saturated solution	D	D
Acetic acid	50	D	YD
Acetone	ts-s	ZD	ZD
Copper 2 sulphate	Saturated solution	D	D
Benzene	ts-s	ZD	ZD
Gasoline	Working solution	D	D
Beer	Working solution	D	D
Mercury	ts-s	D	D
Iron 2 chloride	Saturated solution	D	D
Iron 3 chloride	Saturated solution	D	D
Ethanol	95	D	YD
Phenol	90	ZD	ZD
Formaldehyde	30-40	D	D
Phosphoric acid	25-85	D	-
Glycerine	ts-s	D	D
Hydrogen peroxide	30	D	D
Hydrofluoric acid gas	ts-g	YD	ZD
Hydrofluoric acid	≤10	D	D
Hydrofluoric acid	40	YD	ZD
Urine		D	YD
Calcium carbonate	Suspension	D	D
Calcium chloride	Saturated solution	D	D
Carbon dioxide, gas	ts-g	D	D
Carbon monoxide, gas	ts-g	D	D

Chemical Material	Concentration (%)	Temperature °C	
		20	60
Carbon tetrachloride	ts-s	ZD	ZD
Chlorine, dry gas	ts-g	YD	ZD
Chloroform	ts-s	ZD	ZD
Sulphur dioxide, dry gas	Süsp.	D	D
Methyl alcohol	ts-s	D	YD
Nitric acid	25	D	-
Nitric acid	>50	ZD	ZD
Oxygen, gas	ts-g	D	D
Aliphatic hydrocarbons		ZD	ZD
Potassium hydroxide	Solution	D	D
Potassium hydroxide	≤ 50	D	D
Soap	Solution	D	YD
Vinegar	Working solution	D	D
Sodium bicarbonate	Saturated solution	D	D
Sodium hydroxide	Saturated solution	D	D
Sodium carbonate	Saturated solution	D	D
Sodium chloride	Saturated solution	D	D
Sodium sulfate	Saturated solution	D	D
Water distilled		D	D
Water, use, mineral	Working solution	D	D
Sulfuric acid	50	D	D
Sulfuric acid	98	ZD	ZD
Sulfuric acid	Smoky	ZD	ZD
Milk	Working solution	D	D
Wine	Working solution	D	D
Toluene	ts-s	ZD	ZD
Trichlorethylene	ts-s	ZD	ZD
Oils plant and animal	ts-s	D	D

Abbreviations:
D: Resistant
YD: Resistant adequately
ZD: Poor resistance
Solution: More than 10% concentrated but unsaturated aqueous solution.
Saturated aqueous solution, at 20 °C
Ts: at technical purity, at least
Ts-k: at technical purity, solid
Ts-s: at technical purity, liquid
Ts-g: at technical purity, gas
Working Solution: at the concentration which is commonly used in the industry
Suspension: prepared at 20 °C saturated solution

• Thermal Expansion in PVC- U Pipes

The PVC-U pipes have an expansion coefficient that is much higher than the metal pipes. It is critical to take this characteristic into consideration during installations.

Calculation of thermal expansion is as follows: $\Delta L = L * \Delta T * \lambda$

where

ΔT = Variation of working temperature in Kelvin degrees (K) or Celsius (°C).

ΔL = Variation of length in mm.

L = Initial length of the pipe in m.

λ = Coefficient of linear thermal expansion. The value of λ is $0,6 * 10^{-4}$ (K^{-1}) for PVC-U tubes.

Pipe length (m)	Temperature variation ΔT in K									
	10	20	30	40	50	60	70	80	90	100
	Linear expansion ΔL (mm)									
1.0	0,60	1,20	1,80	2,40	3,00	3,60	4,20	4,80	5,40	6,00
4.0	2,40	4,80	3,60	9,60	12,00	14,40	16,80	19,20	21,60	24,00
5.0	3,00	6,00	9,00	12,00	15,00	18,00	21,00	24,00	27,00	30,00
6.0	3,60	7,20	10,80	14,40	18,00	21,60	25,60	28,80	32,40	36,00
7.0	4,20	8,40	12,60	16,80	21,00	25,20	29,40	33,60	37,80	42,00
8.0	4,80	9,60	14,40	19,20	24,00	28,80	33,60	38,40	43,20	48,00
9.0	5,40	10,80	16,20	21,60	27,00	32,40	37,80	43,20	48,60	54,00
10.0	6,00	12,00	18,00	24,00	30,00	36,00	42,00	48,00	54,00	60,00

Note: When water temperature circulating in the pipe is higher than environmental temperature, the pipe will elongate. But if the water temperature circulating in the pipe is lower than environmental temperature, the result will be a shortage.

• Assembly and Stroge

Points to take into consideration in the assembly of Kalde PVC-U Pipes

1. Kalde PVC-U pipes and fittings must be protected from impacts, hits etc effects because the fragility of the pipe increases when the temperature is approximately 0 °C. This matter gains importance.
2. Processes which can cause any notches, cuts or races on the Kalde PVC-U pipes and fittings must be avoided. The clamps to be used ,should have round corners, smooth and flat internal surface and should wrap the pipe completely.
3. For the vertically assembled Kalde PVC-U pipes, the pipes should be fixed together by the clamps right after they are interlaced together and thus their shifting should be prevented.
4. Due to thermal expansion 10 mm space should be left between pipe muf end and fitting at joint prints .
5. During the assembly, Kalde PVC-U pipes and fittings should be easily interlaced together by greasing with liquid soap or grease oil.
6. Kalde PVC-U pipes and fittings should not be coupled without gaskets.
7. The Kalde PVC-U pipes which will stay under the alum should be tested with the below mentioned methods before pouring the alum. AS 2032

- **Water Test:** The pipe to be tested should be filled with water at a level of not less than minimum 1 mt. from the surface. The mechanism should be tested from the upper point but this upper point should not exceed 5 meters from the minimum level. The test should keep the water level for at least 15 minutes without any leakage. Each joint should be controlled visually whether there is a leakage or not and if there is any defect, it should be repaired and the test should be repeated.

- **Air Test:** It is applied to the pipe line slowly till obtaining 0,5 bar pressure by the appropriate method. This pressure should be kept for at least 3 minutes. No visual leakage should be present at the end of the 3rd minute. Then the system providing air should be closed and if the air pressure provided inside the pipe does not go under 0,35 bar within 60 seconds, the pipe line is accepted as sufficient. For any reason, if the pressure cannot be kept between the specified limits, air is again given inside the line and the solution prepared by soapy water should be poured on the joint and it is controlled visually whether there is a leakage or not. If there is a leakage, it should be repaired and the test should be repeated.

Points to take into consideration for storage of Kalde PVC-U Pipes

1. It should be remarked that during storage, the height of the pipe links should not exceed 1,5 meters.
2. When the pipes are stored, it should be considered to leave the muf parts outside in order not to have them to contact with each other.

PVC-U Products

PVC-U Pipe

Code	Size	Wall Thickness (mm)		L (mm)	Pcs/Box
		e min	e max		
5203-tbe-0k0150	50x150	3.0	3.5	150	100
5203-tbe-0k0250	50x250	3.0	3.5	250	80
5203-tbe-0k0500	50x500	3.0	3.5	500	50
5203-tbe-0k1000	50x1000	3.0	3.5	1000	10
5203-tbe-0k2000	50x2000	3.0	3.5	2000	10
5203-tbe-0k3000	50x3000	3.0	3.5	3000	10
5203-tbe-0k6000	50x6000	3.0	3.5	6000	1
5203-tbe-0l0150	75x150	3.0	3.5	150	40
5203-tbe-0l0250	75x250	3.0	3.5	250	35
5203-tbe-0l0500	75x500	3.0	3.5	500	30
5203-tbe-0l1000	75x1000	3.0	3.5	1000	5
5203-tbe-0l2000	75x2000	3.0	3.5	2000	5
5203-tbe-0l3000	75x3000	3.0	3.5	3000	5
5203-tbe-0l6000	75x6000	3.0	3.5	6000	1
5203-tbe-0m0150	110x150	3.2	3.8	150	25
5203-tbe-0m0250	110x250	3.2	3.8	250	15
5203-tbe-0m0500	110x500	3.2	3.8	500	14
5203-tbe-0m1000	110x1000	3.2	3.8	1000	5
5203-tbe-0m2000	110x2000	3.2	3.8	2000	5
5203-tbe-0m3000	110x3000	3.2	3.8	3000	2
5203-tbe-0m6000	110x6000	3.2	3.8	6000	1
5203-tbe-0n0150	125x150	3.2	3.8	150	15
5203-tbe-0n0250	125x250	3.2	3.8	250	12
5203-tbe-0n0500	125x500	3.2	3.8	500	10
5203-tbe-0n1000	125x1000	3.2	3.8	1000	2
5203-tbe-0n2000	125x2000	3.2	3.8	2000	2
5203-tbe-0n3000	125x3000	3.2	3.8	3000	2
5203-tbe-0n6000	125x6000	3.2	3.8	6000	1
5203-tbe-0p0150	160x150	3.2	3.8	150	10
5203-tbe-0p0250	160x250	3.2	3.8	250	8
5203-tbe-0p0500	160x500	3.2	3.8	500	6
5203-tbe-0p1000	160x1000	3.2	3.8	1000	2
5203-tbe-0p2000	160x2000	3.2	3.8	2000	2
5203-tbe-0p3000	160x3000	3.2	3.8	3000	2
5203-tbe-0p6000	160x6000	3.2	3.8	6000	1
5203-tbe-0r0150	200x150	3.9	4.5	150	6
5203-tbe-0r0250	200x250	3.9	4.5	250	4
5203-tbe-0r0500	200x500	3.9	4.5	500	4
5203-tbe-0r1000	200x1000	3.9	4.5	1000	2
5203-tbe-0r2000	200x2000	3.9	4.5	2000	2
5203-tbe-0r3000	200x3000	3.9	4.5	3000	2
5203-tbe-0r6000	200x6000	3.9	4.5	6000	1
5203-tbe-0s0150	250x150	4.9	5.6	150	4
5203-tbe-0s0250	250x250	4.9	5.6	250	3
5203-tbe-0s0500	250x500	4.9	5.6	500	3
5203-tbe-0s1000	250x1000	4.9	5.6	1000	1
5203-tbe-0s2000	250x2000	4.9	5.6	2000	1
5203-tbe-0s3000	250x3000	4.9	5.6	3000	1
5203-tbe-0s6000	250x6000	4.9	5.6	4000	1

PVC-U Elbow (45°)

Code	Size	Wall Thickness, e min (mm)	Pcs/Box
5213-elb-0k0045	50	3.0	200
5213-elb-0l0045	75	3.0	75
5213-elb-0m0045	110	3.2	30
5213-elb-0n0045	125	3.2	20
5213-elb-0p0045	160	3.2	10
5213-elb-0r0045	200	3.9	5
5213-elb-0s0045	250	4.9	3

PVC-U Elbow (87°)

Code	Size	Wall Thickness, e min (mm)	Pcs/Box
5213-elb-0k0087	50	3.0	150
5213-elb-0l0087	75	3.0	75
5213-elb-0m0087	110	3.2	25
5213-elb-0n0087	125	3.2	15
5213-elb-0p0087	160	3.2	10
5213-elb-0r0087	200	3.9	4
5213-elb-0s0087	250	4.9	2

PVC-U Single Tee (45°)

Code	Size	Wall Thickness, e min (mm)	Pcs/Box
5213-sbr-0k0k45	50/50	3.0	80
5213-sbr-0l0k45	75/50	3.0	50
5213-sbr-0l0l45	75/75	3.2	20
5213-sbr-0m0k45	110/50	3.2	15
5213-sbr-0m0l45	110/75	3.2	15
5213-sbr-0m0m45	110/110	3.2	10
5213-sbr-0n0k45	125/50	3.2	10
5213-sbr-0n0l45	125/75	3.2	10
5213-sbr-0n0m45	125/110	3.2	10
5213-sbr-0n0n45	125/125	3.2	8
5213-sbr-0p0k45	160/50	3.2	10
5213-sbr-0p0l45	160/75	3.2	10
5213-sbr-0p0m45	160/110	3.2	6
5213-sbr-0p0n45	160/125	3.2	5
5213-sbr-0p0p45	160/160	3.2	4
5213-sbr-0r0k45	200/50	3.9	5
5213-sbr-0r0l45	200/75	3.9	5
5213-sbr-0r0m45	200/110	3.9	5
5213-sbr-0r0n45	200/125	3.9	5
5213-sbr-0r0p45	200/160	3.9	4
5213-sbr-0r0r45	200/200	3.9	4
5213-sbr-0s0k45	250/50	4.9	3
5213-sbr-0s0l45	250/75	4.9	3
5213-sbr-0s0m45	250/110	4.9	3
5213-sbr-0s0n45	250/125	4.9	3
5213-sbr-0s0p45	250/160	4.9	3
5213-sbr-0s0r45	250/200	4.9	3
5213-sbr-0s0s45	250/250	4.9	3

PVC-U Single Tee (87°)

Code	Size	Wall Thickness, e min (mm)	Pcs/Box
5213-sbr-0k0k87	50/50	3.0	100
5213-sbr-0l0k87	75/50	3.0	30
5213-sbr-0l0l87	75/75	3.0	20
5213-sbr-0m0k87	110/50	3.2	15
5213-sbr-0m0l87	110/75	3.2	20
5213-sbr-0m0m87	110/110	3.2	15
5213-sbr-0n0k87	125/50	3.2	10
5213-sbr-0n0l87	125/75	3.2	10
5213-sbr-0n0m87	125/110	3.2	10
5213-sbr-0n0n87	125/125	3.2	10
5213-sbr-0p0k87	160/50	3.2	10
5213-sbr-0p0l87	160/75	3.2	10
5213-sbr-0p0m87	160/110	3.2	6
5213-sbr-0p0n87	160/125	3.2	5
5213-sbr-0p0p87	160/160	3.2	5
5213-sbr-0r0m87	200/110	3.9	5
5213-sbr-0r0n87	200/125	3.9	3
5213-sbr-0r0p87	200/160	3.9	3
5213-sbr-0r0r87	200/200	3.9	4
5213-sbr-0s0m87	250/110	4.9	3
5213-sbr-0s0n87	250/125	4.9	3
5213-sbr-0s0p87	250/160	4.9	3
5213-sbr-0s0r87	250/200	4.9	3
5213-sbr-0s0s87	250/250	4.9	3

PVC-U Double Tee (45°)

Code	Size	Wall Thickness, e min (mm)	Pcs/Box
5213-dbr-0k0k45	50/50	3.0	60
5213-dbr-0l0k45	75/50	3.0	20
5213-dbr-0l0l45	75/75	3.0	20
5213-dbr-0m0k45	110/50	3.2	20
5213-dbr-0m0l45	110/75	3.2	10
5213-dbr-0m0m45	110/110	3.2	8
5213-dbr-0n0k45	125/50	3.2	10
5213-dbr-0n0l45	125/75	3.2	10
5213-dbr-0n0m45	125/110	3.2	10

PVC-U Reduction

Code	Size	Wall Thickness, e min (mm)	Pcs/Box
5213-rdc-0l0k00	75/50	3.0	100
5213-rdc-0m0k00	110/50	3.2	60
5213-rdc-0m0l00	110/75	3.2	60
5213-rdc-0n0l00	125/75	3.2	40
5213-rdc-0n0m01	125/110	3.2	30
5213-rdc-0p0l00	160/75	3.2	25
5213-rdc-0p0m00	160/110	3.2	25
5213-rdc-0p0n00	160/125	3.2	25
5213-rdc-0r0m00	200/110	3.9	15
5213-rdc-0r0n00	200/125	3.9	15
5213-rdc-0r0p00	200/160	3.9	10
5213-rdc-0s0m00	250/110	4.9	10
5213-rdc-0s0n00	250/125	4.9	10
5213-rdc-0s0p00	250/160	4.9	10
5213-rdc-0s0r00	250/200	4.9	10

PVC-U Double Tee (87°)

Code	Size	Wall Thickness, e min (mm)	Pcs/Box
5213-dbr-0m0m87	110/110	3.2	8

PVC-U Cleaning Aparat

Code	Size	Wall Thickness, e min (mm)	Pcs/Box
5213-clp-0k0000	50	3.0	100
5213-clp-0l0000	75	3.0	25
5213-clp-0m0000	110	3.2	15
5213-clp-0n0000	125	3.2	10
5213-clp-0p0000	160	3.2	5
5213-clp-0r0000	200	3.9	4
5213-clp-0s0000	250	4.9	3

PVC-U S (45°)

Code	Size	Wall Thickness, e min (mm)	Pcs/Box
5213-spi-0l0045	75	3.0	25
5213-spi-0m0045	110	3.2	10

PVC-U S (87°)

Code	Size	Wall Thickness, e min (mm)	Pcs/Box
5213-spi-0l0087	75	3.0	25
5213-spi-0m0087	110	3.2	10

PVC-U Air Hole

Code	Size	Wall Thickness, e min (mm)	Pcs/Box
5213-arh-0l00000	75	3.0	30
5213-arh-0m0000	110	3.2	18

PVC-U

Code	Size	Wall Thickness, e min (mm)	Pcs/Box
5213-cad-0m0000	110	3.2	36

PVC-U Coupling

Code	Size	Wall Thickness, e min (mm)	Pcs/Box
5213-soc-0k0000	50	3.0	200
5213-soc-0l0000	75	3.0	100
5213-soc-0m0000	110	3.2	30
5213-soc-0n0000	125	3.2	25
5213-soc-0p0000	160	3.2	10
5213-soc-0r0000	200	3.9	8
5213-soc-0s0000	250	4.9	4

PVC-U Stopend

Code	Size	Wall Thickness, e min (mm)	Pcs/Box
5213-ste-0k0000	50	3.0	500
5213-ste-0l0000	75	3.0	400
5213-ste-0m0000	110	3.2	150
5213-ste-0n0000	125	3.2	100
5213-ste-0p0000	160	3.2	80
5213-ste-0r0000	200	3.9	30
5213-ste-0s0000	250	4.9	10

PVC-U Joint

Code	Size	Wall Thickness, b(mm)	h(mm)	Pcs/Box
5213-rur-0k0000	50	6.5	3.5	7000
5213-rur-0l0000	75	6.5	4.0	5000
5213-rur-0m0000	110	7.9	4.0	2500
5213-rur-0n0000	125	8.9	4.5	2000
5213-rur-0p0000	160	10.2	4.8	1000
5213-rur-0r0000	200	11.2	6.5	700
5213-rur-0s0000	250	15.2	10.5	250

PVC-U Bracket

Code	Size	Pcs/Box
5213-bcc-0k0000	50	250
5213-bcc-0l0000	75	100
5213-bcc-0m0000	110	150
5213-bcc-0n0000	125	100
5213-bcc-0p0000	160	50
5213-bcc-0r0000	200	35

PVC-U Adaptor Joint

Code	Size	Pcs/Box
5213-aru-0k0000	50	200

PVC-U Check Valve

Code	Size	Pcs/Box
5213-cvl-0m0000	110	8
5213-cvl-0n0000	125	8
5213-cvl-0p0000	160	8
5213-cvl-0r0000	200	1

Assembly of Gasket

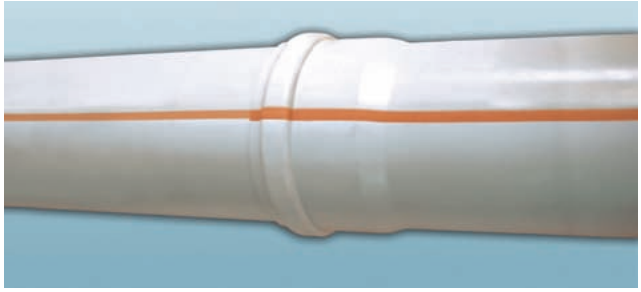
1- Please clean the PVC Pipes' opening and the nest of the gasket with a clean cloth leaving no humidity and dust particles on the surface of the pipe.

2- Place the gasket to the already cleaned nest putting the flat side of the gasket on the nest's surface and the dome of the gasket to face inner side of the pipe.

3- Apply liquid soap or a suitable lubricant to the gasket.

4- Also clean and apply a suitable lubricant to the surface of the connecting pipe or fitting which will be fixed to the related pipe.

5- Fix the male pipe into the other pipe to make the connection.



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We go where our vision is, come with us...

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