- The technical information, including quality test results, described in this catalog is intended to explain the typical characteristics and performance of our products. Unless otherwise specified, it does not imply a guarantee.
- When using the products, please follow the product applications, handling precautions, and work instructions described in this catalog.



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Revision 1,000 (SY) April 2020



(SGP-VA, VB, VD)



KEYLON LP pipes provide safe drinking water.

Water, a resource indispensable for our affluent lives, is delivered to our homes from a distant source via a long way.

KEYLON LP pipes are widely used in industrial and household water supply piping, without causing problems of red water (rusty water) and white water (aerated water).

Black carbon steel pipes for ordinary piping (JIS G3452) or galvanized steel pipes for ordinary piping (JIS G 3442) are internally lined with unplasticized PVC pipes for water supply (JIS K 6742 equivalent), being approved as a standard product (JWWA K 116) by the Japan Water Works Association.

Hygienic KEYLON LP pipes with excellent corrosion resistance provide you with a wide range of applications.

COLOR SYSTEM



Features

Hygienic pipe

A hygienic pipe with excellent corrosion resistance causes no rusty or turbid water.

Excellent workability



No worries about pinholes, cracks, or peeling

With uniform thickness and quality, the inner hard PVC pipe has no pinholes or cracks. In addition, the strongly adhered inner lining eliminates

concerns about peeling. Safety



Least scale adhesion

The smooth inner surface with little friction resistance prevents scale adhesion.



High mechanical strength



VD outer surface with excellent corrosion resistance

The outer surface of the SGP-VD steel pipe is also coated with hard PVC, eliminating concerns about stray current and corrosion with low resistivity soil.



Types

Type VA is made of black carbon steel pipes for ordinary piping (JIS G 3452), while type VB is made of galvanized steel pipes for ordinary piping (JIS G 3442). Both are internally lined with unplasticized PVC pipes for water supply (JIS K 6742 equivalent) and widely used for water supply piping. The type VD carbon steel black pipes for ordinary piping (JIS G 3452) are internally lined with unplasticized PVC pipes for water supply (JIS K 6742 equivalent).

Standard product under Japan Water Works Association (JWWA K 116)

	Types	Code	Color	Usage	Steel pipe	Outer surface	Inner surface
VA	Steel pipe with hard PVC lining for water supply	SGP-VA	Brown	Indoor piping	Black carbon steel pipes for ordinary piping	Primary rust-proof coating	
VB	Steel pipe with hard PVC lining for water supply	SGP-VB	Silver (galvanization)	Indoor piping Outdoor exposed piping	Galvanized steel pipes for ordinary piping	Galvanization	Unplasticized PVC pipes for water supply
VD	Steel pipe with hard PVC lining for water supply	SGP-VD	Blue	Underground piping Outdoor exposed piping	Black carbon steel pipes for ordinary piping	Hard PVC	

Product labeling



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Structures and standards



Listed in the Public Building Construction Standard Specifications

												Ur	nit: mm							
			L	Р							Jacket		Steel							
	Oute	r dia.		Inner			Extornal	(Pofor	ionco)	Т	hicknes	s	pipe							
VA (Ø	• VB • D)	ν (Φ	D D)	dia. (¢d)	Len (l	igth _)	uncoated	(Neier Wei (kg	ght /m)	Inner s (t	surface 1)	Outer surface (t2)	Thickness (t3)							
Standard	Allowance	Standard	Allowance	Standard	Standard	Allowance	(Ø)	VA·VB	VD	Standard	Allowance	Standard	Standard							
21.7		25.7		13.1			15	1.41	1.62			1.5	0.0							
27.2		31.0		18.6				10	1.82	2.07			or more	2.0						
34.0	.0.5	37.8	.0.0	24.6				2.60	2.92				3.2							
42.7	±0.5	46.3	±0.9	32.7								00	3.60	3.97	1.5			0.5		
48.6		52.0		38.6								+40 -0	+40 -0	+40 -0	+40 -0	+40 -0	20	4.17	4.55	
60.5		63.7		49.9	4000	4000	4000	4000	4000	4000	4000						000 +40 -0	+40 -0		5.66
76.3	±0.7	79.5	±1.1	64.9			20	7.92	8.47				4.0							
89.1		92.3	±1.2	76.7				30	9.52	10.14		1 		4.2						
114.3	.0.0	118.3	.1.4	101.3				13.12	14.12	2.0			4.5							
139.8	±0.0	143.8	±1.4	126.8			35	16.26	17.46			1.5 or more	4.0							
165.2		170.2	±1.5	150.2				21.54	23.34	2.5			5							

Fitting types and standards

For SGP-VA/VB, please use a commercially available fitting with anticorrosive ends. For SGP-VD, please use a KEYLON O-VD fitting.

KEYLON O-VD is a built-in-core-type fitting with anticorrosive ends. The outer surface of a screwed type malleable cast iron pipe fitting (JIS B 2301) is integrally formed with hard PVC. In addition, a seal ring is placed in the back of the core to eliminate the possibility of corrosion from the inner and outer surfaces, making it available not only for underground piping but also for building utility applications.



Unit: mm

Socket common dimensions and shape Anticorrosion Body sealant Thread Socket ől

e			-					-	Unit: mr
	Nom	inal size	D	Do	Do	dı	do	L	Lo
	(A)	Thread		02	03	u	U2		
	15	Rc 1/2	37.0	34.0	32.2	10.5	27.5	20	4
	20	Rc 3/4	43.1	40.1	37.9	16.0	32.8	20	5
	25	Rc 1	51.2	48.2	46.1	22.0	40.0	25	5
	32	Rc 11/4	60.3	57.3	54.5	29.8	48.4	25	5
	40	Rc 11/2	69.0	65.5	61.5	35.6	55.5	25	5
	50	Rc 2	84.2	81.0	75.1	46.5	67.1	25	6
	65	Rc 21/2	102.4	98.0	90.6	60.4	82.6	25	9
	80	Rc 3	119.0	113.3	106.1	71.1	96.1	30	12
	100	Rc 4	147.1	141.4	132.3	95.7	122.1	35	17
								* RC: Ta	apered threa



Elbow

T-fitting

45° elbow

Core L2 L1



lominal size (A)

50

80

100

Nominal size (A)

171

225

Н

85

98 113





Reducing/enlarging T-fitting Unit: mm Nominal size (A) 20×15 Н 103 51 25×15 25×20 120 123 55 57 32×20 32×25 132 63 136 40×20 131 65 40×25 137 73 40×32 146 50×20 138 73 Unit: mn 50×25 143 79 151 50×32 82 50×40 160 84 145 178 65×20 82 65×50 94 80×20 80×25 80×50 159 167 192 97 101 80×65 212 100×80 245 104

Butyl tape types and standards

Standard (W × T × L)	Quantity per package
22 mm × 3 mm × 4000 mm	20

* Colors: Gray or ivory

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Quality

	G	uality			
	-	ltem	Quality	or test conditions	Test temperature
		Appearance and shape	The pipe ends should be perpendicus should be smooth.	ular to the pipe axis, and the inner surface	
		Adhesive strength	PVC pipe push off 0.2 MPa [20 N/ 2.0 MPa [200 N	cm²] or more (internal surface) I/cm²] or more (external surface)	Ordinary temperature
	nct	Allowance of PVC shrinkage at the pipe ends	Not exceeding the thickness of PVC	pipe	Ordinary temperature
	Prod	Bending	There should be no breaks or cracks $D \times 8$ (D = pipe outer diameter). Ap	s when being bent 10 degrees at a radius of plicable products: 50 A or smaller	Ordinary temperature
		Flatness	There should be no breaks or cracks of the pipe outer diameter. Applicab	s when being compressed to a height of 2/3 le products: 65 A or larger	Ordinary temperature
		Pinhole	There should be no pinholes (outer s from a holiday detector is applied.	surface) when a voltage of 10,000 to 12,000 V	Ordinary temperature
	Steel pipe		JIS G 3452 JIS G 3442 (Japan Water Works As	sociation inspection passed product)	
		Tensile yield strength	45 MPa or more		23±2°C
		Water pressure resistance	There should be no water leakage o 1.0 MPa is applied for 1 minute.	r other abnormality when water pressure of	Ordinary temperature
ዲ		Flatness	There should be no breaks or cracks of the pipe outer diameter.	s when being compressed to a height of 1/2	23±2°C
ON L		Vicat softening temperature	76°C or more		
ΧE			Lead and its compounds	When used for private water supply equipment, the product must comply with the	
_	M		Zinc and its compounds	Standard for Leachate from Water Supply Bipes or Water Supply Equipment Installed	
	hard		Organic matter [Amount of total organic carbon (TOC)]	Other than the End of Water Supply Equipment in Appended Table 1 of the	
	ner		Taste	Ministerial Ordinance Concerning the Standards for the Structure and Materials of	
	-	Leach test	Odor	Water Supply Equipment.	Ordinary temperature
			Chromaticity	product must comply with Appended Table 2	
			Turbidity	Technical Standards for Waterworks Facilities.	
			Iron and its compounds	The product must comply with Appended Table 2 of the Ministerial Ordinance for Defining Technical Standards for Waterworks Facilities.	
			Reduction of residual chlorine	0.7 mg/L or less	
	Ş	Tensile yield strength	45 MPa or more		23±2°C
	ard P	Vicat softening temperature	76°C or more		
	uter h	Volume specific resistivity	10 ¹⁵ Ω cm or more		23±2°C
	ō	Immersion test	Mass change is within ±0.2 mg/cm ²	with each test solution.	
	5	Appearance and shape	The outer surface coating should be free find burns, foreign matter contamination, and c	rom defects, such as scratches, unevenness, wrinkles, bracks, that are harmful to corrosion protection.	
	rodu	Pinhole	I here should be no pinholes (outer s from a holiday detector is applied.	surface) when a voltage of 10,000 to 12,000 V	Ordinary temperature
ling	Ľ	Torque test	a specified torque is applied by usin	ge or preakage of corrosion protection even if g a pipe wrench.	temperature
D fitt	Body		JIS B 2301 screwed type malleable	galvanized cast iron pipe fittings	
>-		Vicat softening	60°C or more		

	t	shape	burns, foreign matter contamination, and cracks, that are harmful to corrosion protection.	
	quc	Pinhole	There should be no pinholes (outer surface) when a voltage of 10,000 to 12,000 V	Ordinary
	2			temperature
		Torque test	There should be no abnormal slippage or breakage of corrosion protection even if	Ordinary
g		rorque test	a specified torque is applied by using a pipe wrench.	temperature
D fitti	Body		JIS B 2301 screwed type malleable galvanized cast iron pipe fittings	
N-0		Vicat softening temperature	60°C or more	
VLON	PVG	Tensile yield strength	24 MPa or more	Ordinary temperature
КË	r harc	Volume specific resistivity	10 ¹⁵ Ω cm or more	Ordinary temperature
	Oute	Immersion test	Mass change is within ± 0.2 mg/cm ² with each test solution.	
		Leach test	According to JWWA Z 108	Ordinary temperature

Installation

The product is inner-lined with a hard PVC pipe. Therefore, you cannot use some standard installation techniques for conventional steel pipes.



Installation



After applying the anticorrosion sealant, please tighten the pipe at the standard torque by using a tool, such as a pipe wrench. VA 6 VB Connection with the fitting * Refer to the right table (Guidelines for the number of ridges to be screwed and standard tightening torque). Use a sealant to repair any scratches made on the fitting, which was caused while tightening with a tool, such as a pipe wrend Also, please check if the screwed length is appropriate. Number of remaining ridges and remaining thread length ~~~~ 7 Repair/ check after connection اممما

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	-				- Do r	not apply wrench	a here.
					1	WICHON	
						S	
Guidelines for the n	umber of rid	lges to be Standard	e screw Pipe	ed and s wrench	tandard tigh	tening torqu	e (reference)
	size (A)	torque (N∙m)	nominal x Applie	l size (mm) ed force (N)	ridges to be screwed		
	15 20	40 60	300 300)×200)×290	6 7		
	25	100 120	450 450)×290)×350	6		
	40	150	600	×320	7		
	40	000	000	400			
	40 50 65	200 250	600 900)×420)×350	9 10		
After connec please make wrapped all a	ting the sure that	200 250 300 400 pipe a at the k	600 900 950 950 950 950 950 950 950 950 9)×420)×350)×430)×530 he fitti tape i cket.	9 10 11.5 14 ng, S _{Tu}	ick in with yo	our fingertips.
After connect please make wrapped all a Press and fill from the gap fitting with yo	ting the sure that around the betwee	200 250 300 400 at the b he PV(utyl ta n the p rtips.	600 900 950 and th putyl C soc pe un pipe a	x420 x350 x430 x530 tape i tape i cket. ntucke and th	9 10 11.5 14 ng, S Tu		our fingertips.
After connect please make wrapped all a Press and fill from the gap fitting with your How to contra	ting the sure that around the betwee our finge	200 250 300 400 pipe a at the b he PV(utyl ta n the p rtips. amou	and the second s	×420 ×350 ×430 ×530 he fitti tape i cket. ntucke and th Nominal size (A)	9 10 11.5 14 ng, S Tu ed ed Standard length from the pipe end. X(mm)	Standard Installation length Y1 (mm)	Minimum installation length Y2 (mm)
After connect please make wrapped all a Press and fill from the gap fitting with your How to contra appropriate set To control the a	ting the sure that around the betwee our finge	200 250 300 400 pipe a at the k he PV(utyl ta n the p rtips. amou	and the second s	x420 x350 x430 x430 he fitti tape i cket. ntucket and th Nominal size (A) 15 20	9 10 11.5 14 ng, S Tu ed Standard length pipe end, X (nm) 60	Standard installation length Y1 (mm) 29.0	Minimum installation length Y2 (mm) 23.5
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Handling precautions

Storage precautions

storage Do not leave the products under extreme heat or cold. Store them indoors on a skid to avoid direct contact with the ground. If it is unavoidable to place them outdoors, please store them on a platform, cover them with a sheet to avoid direct sunlight and rainwater, and provide a well-ventilated condition to prevent the accumulation of heat.



Working running water temperature range.....

0

Appropriate



Prohibition of negative

Do not use the products in locations where a high vacuum condition occurs, which may peel off hard PVC.



Use the products with running water of a temperature between -5°C and +40°C. High water temperature may soften the hard PVC and cause internal PVC peeling and clogging.



No fire.....

No

0

Keep fire away. Heated hard PVC may carbonize, shrink, bloat, and bubble, causing internal clogging.



- Avoid gas cutting and arc cutting that gives high heat.
- Use an automatic chamfering-on-type thread cutting machine. For VD, please use a pipe wrench for the outer surface coated steel pipe.
- Bending is not possible.
- Never remove the anticorrosion sealant built in the O-VD fitting.
- Do not reuse the O-VD fitting.
- Do not connect the O-VD fitting with a commercially available screw-in-type fitting, such as hexagonal nipples, plugs, bushings, and an external screw of meters and valves, which may cause damage to the fitting core.
- Avoid sand, dust, etc. from entering into the O-VD fitting, which may cause water leakage or corrosion.
- Repair any damage that reaches the surface of the steel pipe with anticorrosion tape.

Handling and transportation precautions.....



Strong shock and impact, including falling, may damage hard PVC. Be sure to protect the products with cushions, such as a rubber plate, when you use a non-nylon sling during transportation. Pay extra attention during loading and unloading on site.



Prohibited chemicals...



While installing the products, please avoid contact with organic chemicals (ketones, carbon disulfide, carbon tetrachloride, etc.), wood preservative creosote, etc., which may cause swelling, softening, cracking, etc. of the PVC. If you have any questions about usage of this product, please contact us.

Deformed pipe end.....



Cut and remove the deformed pipe end, if any.

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