



陶涵有限公司

JPC-INTAN SDN BHD

198301011504 (106893-U)

THE STRONGEST VCP
JACKING PIPE PRODUCER
IN ASIA

ELABORATE AND DISTINCTIVE

About JPC-INTAN SDN BHD

Since its inception in 1935, **JOHORE PIPE COMPANY (JPC)** has expanded its operations to encompass a varied product range of vitrified clay pipes. The Company is proud to have undertaken Malaysia's first sewerage project undertaken by the Kuala Lumpur Municipality, and Singapore's first sewerage works in 1952.

In **1983**, **JPC-INTAN SDN BHD (JPCI)** was established to undertake major sewerage projects. **JPCI** has gained the distinction of producing the largest pipes (with a diameter of 700mm) in the ASEAN region in year 2005.

Following a comprehensive study of current vitrified clay pipes and having incorporated the latest technologies, **JPCI** has launched its latest innovative product, the **Jo-Lock Jacking Pipe**.

Jo-Lock Jacking Pipe provides the best solution for the complementation of development plans in densely-built cities without involving movement or disruption of roads, buildings, cables and drains. The jacking method using these pipes is the best choice for pipe installation particularly in these situations.

JPCI ensures that products are technically appropriate and superior for today's demanding construction environment. The controlled blending of clays and state of the art manufacturing processes, especially in the up to 100 hours precession in firing control above 1,100°C, have contributed to the production of vitrified clay pipes of the highest quality in terms of strength, durability, weight to length ratio and dimensional accuracy.

The design of the jointing system for our vitrified clay pipes ensures that it is economical to install, operate and maintain with considerably less wastage of materials and time at site.

OUR PMVPU

PURPOSE

To protect mankind from sickness due to water pollution from (sanitary waste) sewerage system.

MISSION

To prevent the Mother Earth from water pollution with **JPC-INTAN** everlasting GREEN sewerage Vitrified Clay Pipes (VCP Pipes).

VISION

To deliver this most cost effective & most lasting* sewerage transportation solution for Malaysia, SEAsia & the East.

The oldest Ceramic Vitrified Clay Pipes are found in the U.S., which are over 200 years, whereas pipes of other materials averagely last less than 50 years.

POSITIONING

The Strongest VCP Jacking Pipes Producer in Asia.

UNIQUE VALUE PROPOSITION

The only VCP Jacking Pipe from the East / Asia selected by Top International Infrastructure (Sewerage) Developers.



“OVER THE LONG-TERM, VCP DELIVER THE BEST VALUE”

VITRIFIED CLAY PIPE (VCP) has become the go-to material for sewer systems due to its natural properties that make it **highly resistant** to the most demanding environments. With **over 200 years of proven service life in the U.S.**, VCP is the **most reliable and long-lasting option for sewer systems**.

Unlike plastic pipes that become brittle and lose their structural integrity over time, VCP is a kiln-fired ceramic material that is naturally **inert** and **unaffected by age, light, or chemicals**. This means that **VCP pipe systems will not degrade**, ensuring that they **maintain their structural integrity over time**.

The natural properties of VCP also make it **highly resistant to highly abrasive and highly demanding environments**, such as those found in sanitary sewers. VCP's resistance to abrasives and chemicals ensures that it can withstand the most challenging conditions, making it the best choice for any sewer system that requires reliable and long-lasting materials.

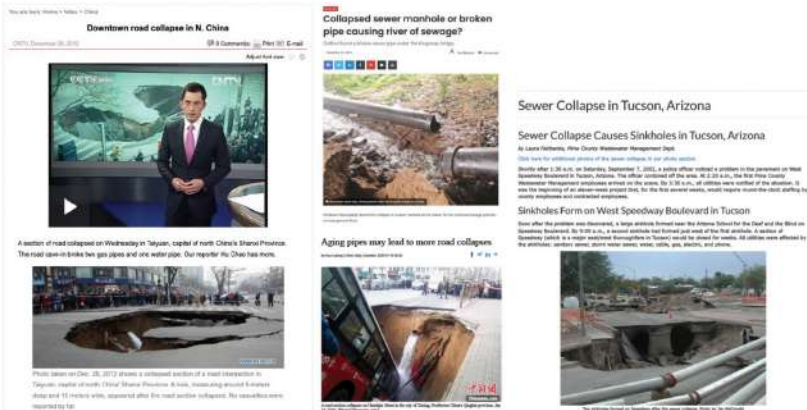
CHARACTERISTIC	VCP	GRP	RCP
MATERIAL	Clay And Water	Reinforced Plastic With Glass Fibers	Reinforced Concrete
PRODUCTION PROCESS	Fired In Kiln	Pultrusion Process	Formed In Molds And Cured
WEIGHT	Moderate	Lightweight	Heavyweight
INSTALLATION	Easy To Install	Requires Specialized Equipment And Expertise	Requires Specialized Equipment And Expertise
DURABILITY	Highly Durable	Moderate	Moderate
MAINTENANCE	Low Maintenance	High Maintenance	High Maintenance
RESISTANCE TO CORROSION	Resistant To Corrosion	Susceptible To Corrosion	Susceptible To Corrosion
ENVIRONMENTAL IMPACT DURING PRODUCTION	Green Product	High Environmental Impact Due To Use Of Chemicals And Energy In Production	Moderate Environmental Impact Due To Use Of Cement And Energy In Production
RECYCLABILITY	Fully Recyclable	Limited Recyclability Due To Use Of Plastic And Glass Fibers	Limited Recyclability Due To Use Of Cement And Steel
COST	In general, VCP tends to be more cost-effective in the long run due to its durability and longer service life. RCP and GRP may have lower upfront costs, but they may require more maintenance and replacements over time, which can add to the overall cost.		
JACKING SPEED	Fast	Slow	Slow
ENVIRONMENTAL IMPACT DURING USE	Very Low	Moderate	Low
RECOMMENDED APPLICATIONS	Smaller Diameter Pipes, High Traffic Areas	Larger Diameter Pipes, Low Traffic Areas	Large Diameter Pipes, High Traffic Areas
GREEN FACTOR	Green	Less Green	Less Green
VALUE TO HUMANITY	Highly Recommended	Moderate	High

REINFORCED CONCRETE PIPE (RCP) is often used in sewer systems due to its strength and durability. However, RCP can be prone to corrosion, cracking, and joint displacement over time. VCP, on the other hand, is naturally inert and does not degrade over time, ensuring that it maintains its structural integrity and longevity.

GLASS REINFORCED PLASTIC PIPE (GRP) is another material used in sewer systems due to its resistance to corrosion and ease of installation. However, GRP is also susceptible to degradation over time due to exposure to UV light and other environmental factors. VCP, on the other hand, is unaffected by light and chemicals, making it a more reliable and long-lasting option.

Overall, VCP's natural properties make it a superior choice for sewer systems compared to other materials like RCP and GRP. Its resistance to degradation, abrasives, and chemicals ensure that it can withstand even the most demanding environments and provide reliable, long-lasting service life.

ROAD COLLAPSED DUE TO NON PERFORMANCE PIPES USED IN SEWER LINE



In Los Angeles, Calif., a fire engine drove over an unsupported layer of asphalt pavement and fell into a hole carved by a water main leak (Bardet et al, 2010).

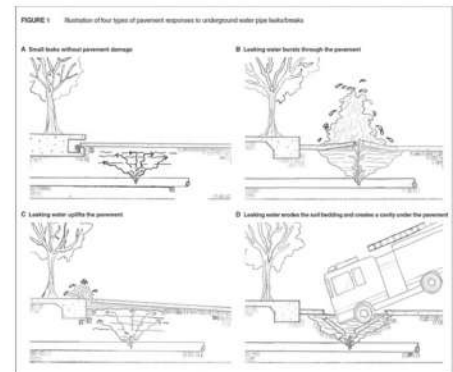
FEW EXAMPLES OF CASES OF RCP DAMAGE IN MALAYSIA

KUALA LUMPUR: In 2018, it was reported that several RCPs in Kuala Lumpur were damaged and in need of repair due to the heavy rainfall and flash floods that occurred in the city.

PENANG: In 2020, it was reported that several RCPs in Penang were damaged due to tree roots growing into the pipes and causing cracks and breaks.

JOHOR BAHRU: In 2019, it was reported that several RCPs in Johor Bahru were damaged due to corrosion and degradation over time, leading to cracks and breaks in the pipes.

KUCHING: In 2021, it was reported that several RCPs in Kuching were damaged due to poor installation practices, leading to cracks and breaks in the pipes.



FEW EXAMPLES OF CASES OF GRP DAMAGE IN MALAYSIA

KUALA LUMPUR: In 2019, it was reported that several GRP pipes in Kuala Lumpur were damaged due to corrosion and degradation over time, leading to cracks and breaks in the pipes.

PENANG: In 2020, it was reported that several GRP pipes in Penang were damaged due to poor installation practices, leading to leaks and other issues with the pipes.

JOHOR BAHRU: In 2018, it was reported that several GRP pipes in Johor Bahru were damaged due to heavy rainfall and flash floods, leading to leaks and other issues with the pipes.

KUCHING: In 2021, it was reported that several GRP pipes in Kuching were damaged due to shifting soil conditions and ground movement, leading to cracks and breaks in the pipes.

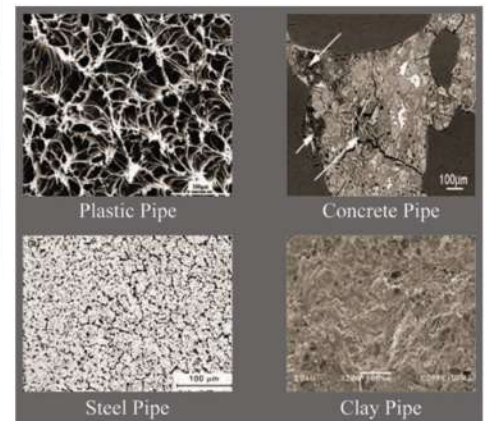
These are just a few examples of the types of incidents that can occur with RCP & GRP pipes in Malaysia. It's important for local authorities to regularly maintain and inspect their water supply and sewerage systems to prevent damage to RCP & GRP pipes and to minimize the risk of leaks and other infrastructure failures.

CORROSIVE OF PIPES RESULTED FROM ACID CONTENT IN SEWERS

The scenario where the sewage pipeline had **COLLAPSED**, will never happen if they have installed vitrified clay pipes.



MICROSTRUCTURE COMPARISON AT 100 MICRON



WHY JPCI'S VITRIFIED CLAY PIPE?

When other competitors merely operate VCP as a business, we take VCP seriously as a mission of our corporation. With our unwavering dedication and professional spirit, we strive to produce the highest quality VCP products to make the greatest contribution to human sewage systems and reduce post-installation maintenance and refurbishment costs. Our firm position is to reduce risks for customers and improve the quality of wastewater discharge in cities and rural areas through our passion for our business and dedication to society. In this way, we can create one beautiful and clean living environment after another.

In order to fulfill our commitment, we demonstrate our efforts through the following elements:



Compliances to **EN295-1:2013**, **CIDB**, **SPAN**, **SIRIM** and **ISO9001:2015** with full testing.



Comprehensive **in-house testing** facilities and state of the **art extruders, firing kilns** & equipment from Japan, Germany, UK and Australia.



Back up by the Management team that has over **100 Years of Technical Know-How** in ceramic field.



Spacious Plant Premises for raw materials & finished VCP pipes storing.



Superior Quality - Produced from clay and is fired up to vitrification state to last over lifetime (>**1,130°C**, below **3% WA** vs **6% STD**).



Committed to **Superior Product Quality** with product liability insurance coverage of **USD One Million** per year.



Have **Comprehensive** range of VCP pipes **Size** and **Accessories**.



A company that is **100% Owned by a Family**, passing from one generation to another, **Fully Committed to Preserve the Skills** in the industry.

ACCREDITATION

In order to pursue excellence, we are not only a company that has obtained ISO9001 quality management certification, but our VCP products are also required to undergo annual quality inspections by domestic and international authoritative quality inspection agencies listed below. Our products have passed various rigorous tests and the annual quality inspection results have continued to improve, ensuring that the product quality is guaranteed and customers' interests are protected.



We will provide copies of certificates and relevant documents upon request for project bidding purposes. Please contact our Sales team or SAS office at info@jpcintan.com for more detailed information.



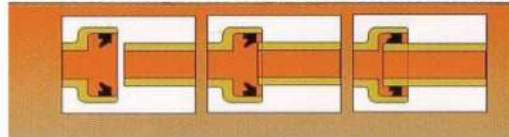
PERMANENT BOND JOINTING SYSTEM

Complemented with technologies from Europe and Japan, **JPC-INTAN**'s vitrified clay pipes (VCP) and fittings are supplied in 2 jointing systems, Jo-Flex or Jo-Link, complying with **MS1061** and **EN295**.



JO-LINK (RUBBER LINK)

- Good elasticity that provided excellent & sufficient interlock of socket to spigot.

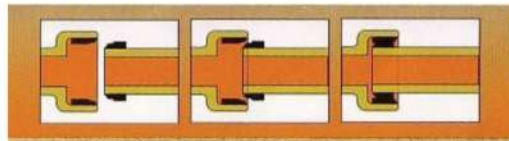


JO-LINK



JO-FLEX JOINT (POLYURETHANE-PU)

- High elastomer substance that resists to heat and chemical.
- This Jo-Flex joint is the only precision joint that can prevent the possibility of water leakage where the plant roots have extended into the joint for big pipes.
- **JPC-INTAN** is the only manufacturer in Asia that has inverted for such precision permanent bond jointing system.



JO-FLEX

NOMINAL SIZE (DN)	JOINT SYSTEM		STANDARD LENGTH (M)
	JO-FLEX	JO-LINK	
DN150		/	(1.25) (1.50)
DN200		/	2.00
DN225	/	
DN250		/	
DN300		/	
DN375	/	/	
DN400	/	
DN450	/	/	
DN500	/		
DN600	/	

Remarks: Other lengths and fittings available upon request

JO-LOCK THRUST BORING JACKING PIPE (TRENCHLESS)

WHY JPC-INTAN JACKING?

- Minimum interference on surface urban areas, pedestrian and motor traffic movements.
- Minimum noise, dirt and smell created during installation.
- Less affected by weather.
- Environment benefit.

RUBBER SEALING ELEMENTS

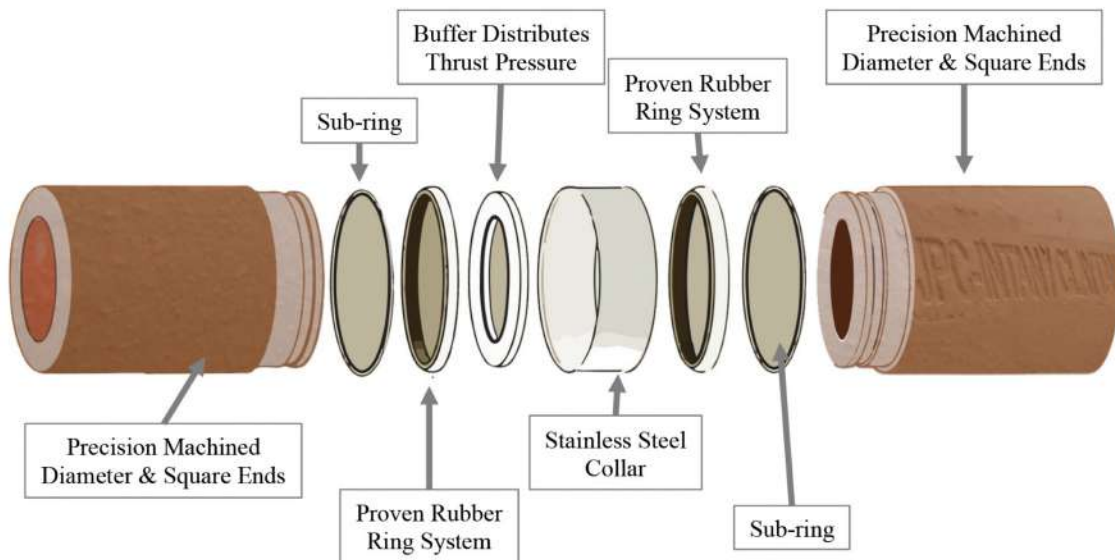
Special designed to provide excellent, stable, durable and perfect joint. The joint is designed to resistance of shear load and deflection during and after installation.

STAINLESS STEEL SLEEVE

Stainless steel sleeve provides strong holding power. High corrosion resistant material increases the pipeline life cycle.

PACKING RING

Special cut ring to distribute evenly the jacking force.



NOMINAL SIZE	MINIMUM CRUSHING STRENGTH F _N kN/m (EN295-7)	STANDARD LENGTH (M)
DN225	72	1 & 2 Meter
DN250	80	
DN300	96	
DN375	100	
DN400	100	
DN450	100	
DN500	100	
DN600	100	

Remarks: Intermediate length and fittings are available upon request

SIMPLIFIED DIRECTION

JPC-INTAN's **Vitrified Clay Pipes (VCP)** and fittings have a high density, strong and impervious body which is achieved through careful selection and blending of the clays, with high extrusion pressures and precise temperature control throughout the firing process.

In view with their high strength, pipe laying shall comply with **SN1610**.



JPC-INTAN SDN BHD
A Member of Clayton Group



OUR PRODUCT RANGE

PIPE

JACKING PIPE (TRENCHLESS)
STRAIGHT PIPE (OPEN CUT)
BEND PIPE

FITTINGS

JUNCTION T & Y
DOUBLE T & Y JUNCTION
BACKDROP / CURVED SQUARE
TUMBLING BAY
SADDLE T & Y

CHANNEL

STRAIGHT CHANNEL
CHANNEL BEND
CHANNEL JUNCTION

ACCESSORIES

ACCESSORIES & ETC

VC JACKING PIPE (TRENCHLESS)



PIPE SIZE	DN225	DN250	DN300	DN375	DN400	DN450	DN500	DN600
STANDARD LENGTH (M)	2.00 Meter							
CRUSHING STRENGTH	90 kN	100 kN	110 kN	115 kN	115 kN	120 kN	120 kN	120 kN

Remarks: Other lengths and fittings available upon request

VC STRAIGHT PIPE (OPEN CUT)



PIPE SIZE		DN150	DN200	DN225	DN250	DN300	DN375	DN400	DN450	DN500	DN600
STANDARD LENGTH (M)		1.25 Meter	2.00 Meter								
CRUSHING STRENGTH	FN28	/									
	FN34	/									
	C120		/	/	/	/	/	/	/	/	/
	C160		/	/	/	/	/	/	/		

Remarks: Other lengths and fittings available upon request



VC BEND PIPE

PIPE SIZE		DN150	DN200	DN225	DN250	DN300	DN375	DN400	DN450	DN500	DN600
ONE PIECE	45°	/									
	90°	/									
SEGMENTED	45°		/	/	/	/	/	/	/	/	/
	90°		/	/	/	/	/	/	/	/	/

Remarks: Degree of bend at 11.25°, 15°, 22.5°, 30°, 60° are available upon request

VC BACKDROP / CURVED SQUARE TUMBLING BAY / T & Y JUNCTION

Backdrop



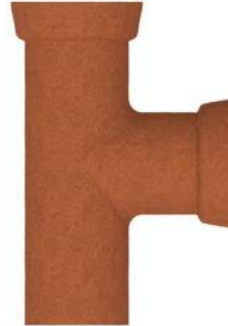
Curved Square



Tumbling Bay



T Junction



Y Junction



BRANCH		PIPE SIZE FOR BRANCH									
BARREL		DN 150	DN 200	DN 225	DN 250	DN 300	DN 375	DN 400	DN 450	DN 500	DN 600
PIPE SIZE FOR MAIN BARREL	DN 150	✓									
	DN 200	✓	✓								
	DN 225	✓	✓	✓							
	DN 250	✓	✓	✓	✓						
	DN 300	✓	✓	✓	✓	✓					
	DN 375	✓	✓	✓	✓	✓	✓				
	DN 400	✓	✓	✓	✓	✓	✓	✓			
	DN 450	✓	✓	✓	✓	✓	✓	✓	✓		
	DN 500	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	DN 600	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

VC DOUBLE T & Y

Double Y



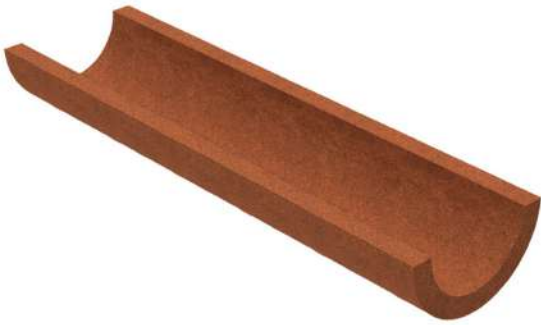
Double T



BRANCH		PIPE SIZE FOR BRANCH				
BARREL		DN 150	DN 200	DN 225	DN 250	DN 300
PIPE SIZE FOR MAIN BARREL	DN 150	✓				
	DN 200	✓	✓			
	DN 225	✓	✓	✓		
	DN 250	✓	✓	✓	✓	
	DN 300	✓	✓	✓	✓	✓

Remarks: Other sizes of junction are available upon request

VC CHANNEL



STRAIGHT CHANNEL

	PIPE SIZE			
	DN 150	DN 200	DN 225	DN 300
Standard Length (m)	0.61m 0.91m	0.50m, 1.00m		
Availability	✓	✓	✓	✓

Remarks: Other lengths (up to 2m) and channel sizes (up to DN600) are available request

CHANNEL BEND

		PIPE SIZE			
		DN 150	DN 200	DN 225	DN 300
One Piece	45°	✓			
	90°	✓			
Segmented	45°		✓	✓	✓
	90°		✓	✓	✓



Remarks: Degree of bend at 11.25°, 15°, 22.5°, 30°, 60° are available upon request



CHANNEL JUNCTION T

		Branch	PIPE SIZE FOR BRANCH			
		Barrel	DN 150	DN 200	DN 225	DN 300
PIPE SIZE FOR MAIN BARREL	DN 150	✓				
	DN 200	✓	✓			
	DN 225	✓	✓	✓		
	DN 300	✓	✓	✓	✓	

Remarks: Other lengths (up DN600) are available request



CHANNEL JUNCTION Y

SADDLE T & Y

		Branch	PIPE SIZE FOR BRANCH				
		Barrel	DN 150	DN 200	DN 225	DN 250	DN 300
PIPE SIZE FOR MAIN BARREL	DN 150	✓					
	DN 200	✓	✓				
	DN 225	✓	✓	✓			
	DN 250	✓	✓	✓	✓		
	DN 300	✓	✓	✓	✓	✓	✓

Remarks: Other sizes are available request

