

**SUNWAY®**

New and Improved  
**TRENCHLESS  
TECHNOLOGY**



Sunway VCP  
**FULLY GLAZED** vitrified clay jacking pipes



**SUNWAY VCP**

# Leadership & Expertise

Sunway VCP Sdn Bhd was originally a joint venture between Sunway Holdings Berhad and Keramo Steinzeug N.V of Belgium. This joint venture combines the expertise of one of Europe's leaders in clay pipe technology with one of the largest and most diversified conglomerates in Malaysia.

Sunway VCP is playing a vital role in providing cost effective solutions to the Sewerage Industry by making and developing glazed vitrified clay jacking pipes of the highest quality.

Sunway VCP aspires and continues to be the leader in sewerage and complements the wastewater management in the Industry. Besides Malaysia, Sunway VCP has made several inroads in many overseas countries-far and near.



*work under limited space*



**cutting and grinding**

# Why Trenchless?

## Economic advantages

- **Faster and precise installation**  
limited excavation required
- **Social cost savings**  
minimise diversion of traffic  
avoid delays & economic losses
- **Lower construction cost**  
more cost effective for even  
deeper pipeline installations



## Ecological advantages

- **Minimal space required**  
existing utility services stay undisturbed
- **Minimal pedestrian & traffic disruptions**  
business as usual
- **More environmentally friendly**  
reduced noise & green house gas emissions



# Why Sunway VCP vitrified clay(VC) jacking pipes?

## **Fully glazed / Low maintenances**

We are the first and only fully glazed (both external and internal) vc jacking pipes in Malaysia. External glaze reduces friction during jacking between the pipe and the soil and safeguards against infiltration of ground water. Internal glazing increases hydraulic flow and reduces exfiltration of effluents.

During deblocking with high water pressure jetting, full glazing provides easy and lower maintenance.

## **Tight and leak proof flexible joint**

The joints are tested in accordance to EN295 with 0.5 bar internal pressure, including the angular deflection and sheer loads specified in the Standard of EN295-part 7.

## **High structural strength**

Resist higher jacking force as compared with other materials. Allow the jacking machine to apply higher force to improve the speed. Saves time and money.

## **Heat and Chemical Resistant**

Low thermal expansion and chemically inert to sewer gases and corrosive soils.

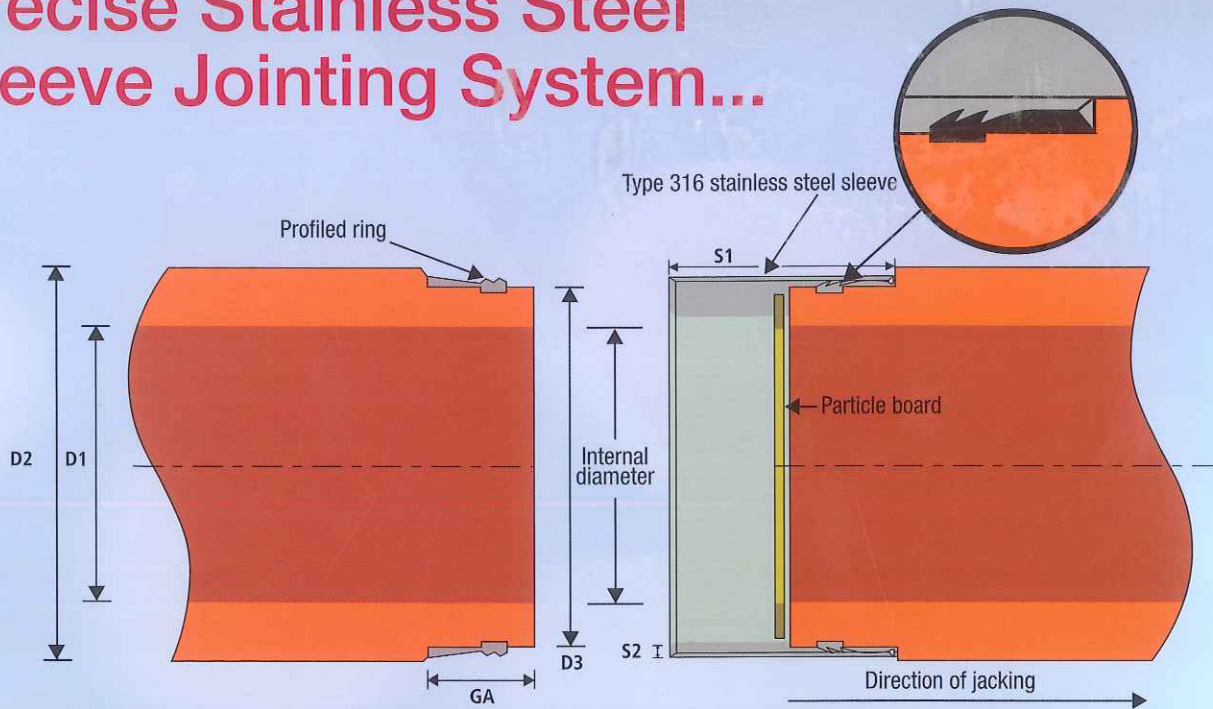
The resistance of the VC material and seals is tested using chemicals, including sulphuric acid in conforming to EN295.

## **Long Service life**

VC jacking pipes are a permanent structure. The Sunway VCP VC jacking pipes do not degrade over time. Once properly installed, no replacement and maintenance needed. The Type 316 stainless steel coupling lasts a long time.

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# Precise Stainless Steel Sleeve Jointing System...



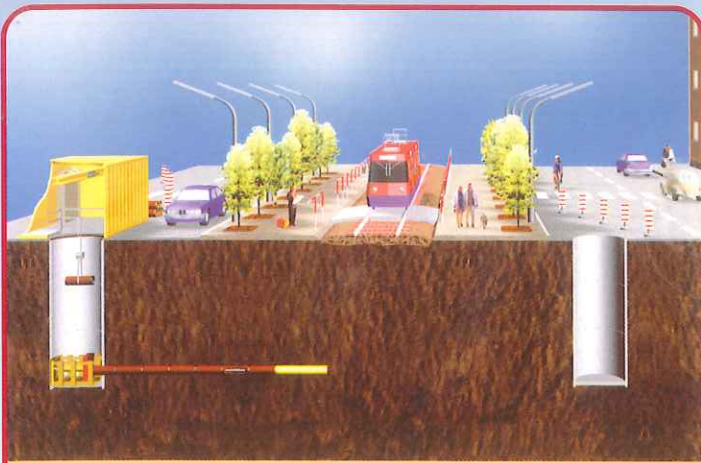
DN	Pipe Dimension (mm)			Coupling (mm)			Effective Length 1m/ 2m (mm) ± 2	Crushing Strength, KN/m	Maximum permissible jacking force, kN *	Average Weight 1m/2m (kg)
	D1 ID (min)	D2 OD +0/-10	D3 GD ± 1	GA ± 1	S1 ± 1	S2 ± 0.2				
225	219	315	292	64	124	1.5	990 / 1990	54	900	80 / 160
250	244	365	338	64	124	1.5	990 / 1990	60	1000	105 / 210
300	293	410	383	64	124	2.0	990 / 1990	72	1150	125 / 250
375**	366	530	505	64	124	2.0	990 / 1990	90	1300	200 / 400
400	390	560	518	64	124	2.0	990 / 1990	96	1500	225 / 450
450	439	615	580	64	124	2.0	990 / 1990	108	1800	270 / 540
500**	488	660	631	64	124	3.0	990 / 1990	120	2500	300 / 600
600**	585	765	738	64	124	3.0	990 / 1990	144	2500	350 / 700

\*Jacking force for automatic recording and control, safety factors 2.0, 1.6

\*\* Dimension details are as at 1st April 2011 but subject to change with further modification

Sunway VCP jacking pipes are factory fitted with...

- **Type 316 stainless steel sleeve**  
high corrosion resistance
- **Profiled rubber seal ring**  
provides tight sealing system
- **Precut particle board**  
distributes compressive stresses at pipe interface



### Jacking Method 1: **AUGER METHOD**

- Soil cutting at the face by the bore head and soil removal by means of continuous flight of augers
- Augers run in a separate guiding pipe
- Better suited for cohesive soils
- Recommended jacking span between 60m to 75m (Max length ~ 100m)



### Jacking Method 2: **SLURRY METHOD**

- Tunnel face is supported mechanically or by a pressurized slurry
- Spoil (cuttings) removed hydraulically in the form of a slurry
- Cutting head designs depends on soil or rock type
- Recommended for longer jacking span exceeding 100m



CERTIFIED TO ISO 14001:2004  
CERT. NO.: ER0888



CERTIFIED TO ISO 9001:2008  
CERT. NO.: AR0506



PSB Singapore



BS EN 295-7:1996



*Clay...the preferred choice*

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