





# INTERLOCKING CONCRETE PAVERS

Lifestyle Sustainable Development Eco-friendly Pavement Solutions Provider

# INTRODUCTION

Sunway Paving Solutions Sdn Bhd is a wholly owned subsidiary of Sunway Berhad. As a leading company in the manufacturing of innovative interlocking concrete pavers and compressed concrete paving slab (Eurotiles), we command more than 60% of the market shares across Malaysia & Singapore.

As part of Sunway Group, we work towards realising the Group's vision of becoming Asia's model corporation in Sustainable Development and remain committed to the United Nations Sustainable Development Goals. We minimise environmental pollution by maximising the usage of recycled material in our products and helps to conserve natural resources. In addition, the High Solar Reflectiveness of our products in light colours helps reduce heat island effectively.

Interlocking concrete pavers and compressed concrete paving slab are highly durable pavement material and require minimal maintenance. It is certainly the most economical choice to enhance the landscape aesthetically.

At Sunway, we reassure the health & wellbeing of people and we take road safety seriously. All our products are manufactured in accordance with skid resistance index score of above 65. With excellent grip and traction on pathways, we can ensure the safety of users at all times regardless of the weather.

Sunway Paving Solutions Sdn. Bhd. is not just any ordinary paving solutions company, we pave towards a greener and safer nation underscored by our core values of integrity, humility and excellence.

# Benefits of SUNWAY INTERLOCKING CONCRETE PAVERS



## Aesthetic & Versatile Colour Coding Possibilities

Variety of colours leads to interesting designs



Algae Resistance Able to reduce the formation of algae on the pavers' surface



Absolute Durability

Minimal maintenance, hard wearing surface & high skid resistance



## High Solar Reflectance

Light-coloured pavers absorb less heat, results in cooler surface and reduces heat island effect



## Ease of Laying & Immediate Use

Inaccessible areas with slopes and gradients can be paved easily without using heavy equipment. Can be opened to traffic immediately upon completion



Green Product Made from recycled materials, can be reused and recycled





Johor Bahru

Anchorlok : 223mm x 111mm Size Area Coverage : 26.3 pieces/m<sup>2</sup> Thickness : 80mm Approx Weight : 6.35kg



# **Desert Lily**

Size : 210mm x 220mm Area Coverage : 39 pieces/m<sup>2</sup> Thickness : 60 / Z60 / 80mm Approx Weight : 3.05 / 4.10kg



## **Trafika**

: 225mm x 197mm Size Area Coverage : 29 pieces/m<sup>2</sup> Thickness : 80 / 100mm Approx Weight : 5.80 / 7.25kg



Size : 242.5mm x 140mm Area Coverage : 29.7 pieces/m<sup>2</sup> Thickness : 80mm Approx Weight : 5.6kg



#### **Desert Fern**

: 210mm x 136mm Size Area Coverage : 35 pieces/m<sup>2</sup> : 60 / Z60 / 80mm Thickness Approx Weight : 3.65 / 4.70kg



### **Flexipave**

Size : 198mm x 98mm Area Coverage : 49.5 pieces/m<sup>2</sup> : 60 / Z60 / 80 / 100mm Thickness Approx Weight : 2.45 / 3.40 / 4.35kg



## Twinpave

Size : 209mm x 104mm Area Coverage : 44.1 pieces/m<sup>2</sup> Thickness : 60 / Z60 mm Approx Weight : 2.45kg



Size : 275mm x 120mm Area Coverage : 30.3 pieces/m<sup>2</sup> Thickness : 80mm Approx Weight : 5.7kg



## **Uni Decor**

Size : 228mm x 138mm Area Coverage : 37.8 pieces/m<sup>2</sup> Thickness : 60 / Z60mm Approx Weight : 3.35kg



## **Uni Espave**

: 220mm x 190mm Size Area Coverage : 34.7 pieces/m<sup>2</sup> Thickness : 60 / Z60mm Approx Weight : 3.50kg



# : 223mm x 111mm

Size Area Coverage : 39.5 pieces/m<sup>2</sup> : 60 / Z60 / 80 / 100mm Thickness Approx Weight : 3.10 / 4.20 / 5.45kg

# GRASSPAVE



Prime GrasspaveSize: 200mm x 200mmArea Coverage: 25 pieces/m²Thickness: 80mmApprox Weight: 5.24kg



# Size : 495mm x 429mm (Full)

Size	: 495mm x 429mm (Full)
	248mm x 429mm (Half)
Area Coverage	: 6 pieces (Full) +
	4 pieces (Half) /m <sup>2</sup>
Thickness	: 80mm
Approx Weight	: 15.5kg (Full) / 8.8kg (Half)



# Desert LilyGrasspaveSize: 313mm x 313mmArea Coverage: 10 pieces/m²Thickness: 80mmApprox Weight: 12.00kg



KT Grasspave

0120	. 5401111 × 5401
Area Coverage	: 9 pieces/m <sup>2</sup>
Thickness	: 80mm
Approx Weight	: 12.87kg



Uni-grasspave Size : 336mm x 223mm Area Coverage : 13.2 pieces/m² Thickness : 80mm

Approx Weight : 8.80kg



# Super Uni-grasspave

Size : 453mm x 453mm Area Coverage : 4.83 pieces/m² Thickness : 100mm Approx Weight : 29.00kg







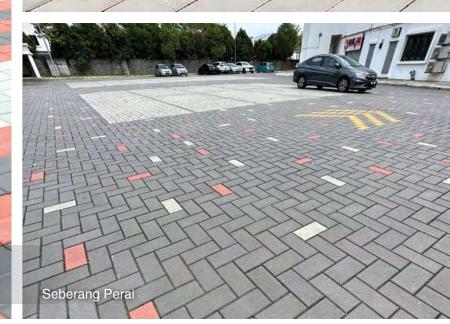
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# PLUS SIZE





Kuala Lumpur

Flexipave



# **Flexipave Plus**

Size	: 150mm x 300mm
Area Coverage	: 22.22 pieces/m <sup>2</sup>
Thickness	: 80mm
Approx Weight	: 7.80kg

Flexipave



i Pavers

# i Pavers

Size	: 1000mm x 1000mm
Area Coverage	: 1 piece/m <sup>2</sup>
Thickness	: 80 / 100mm
Approx Weight	: 180.00 / 225.00kg



# GEOPAVE



Geopave

Size Area Coverage : 25 pieces/m<sup>2</sup> Thickness Approx Weight : 4.90 / 6.50kg

: 200mm x 200mm : 60 / Z60 / 80mm



# HEXALOCK







# PRIME PAVERS



Size Area Coverage : 25 pieces/m<sup>2</sup> Thickness Approx Weight : 6.00 / 6.80kg

: 200mm x 200mm : 60 / Z60 / 80mm



: 200mm x 400mm Size Area Coverage : 12.50 pieces/m<sup>2</sup> Thickness : 60 / Z60mm Approx Weight : 10.42kg



Size : 400mm x 400mm Area Coverage : 6.25 pieces/m<sup>2</sup> Thickness : 60 / Z60mm Approx Weight : 22.00kg



Size : 600mm x 600mm Area Coverage : 2.78 pieces/m<sup>2</sup> Thickness : 60 / Z60mm Approx Weight : 49.00kg



Size : 400mm x 600mm Area Coverage : 4.16 pieces/m<sup>2</sup> Thickness : 60 / Z60mm Approx Weight : 33.00kg

# MULTIPLE SIZE

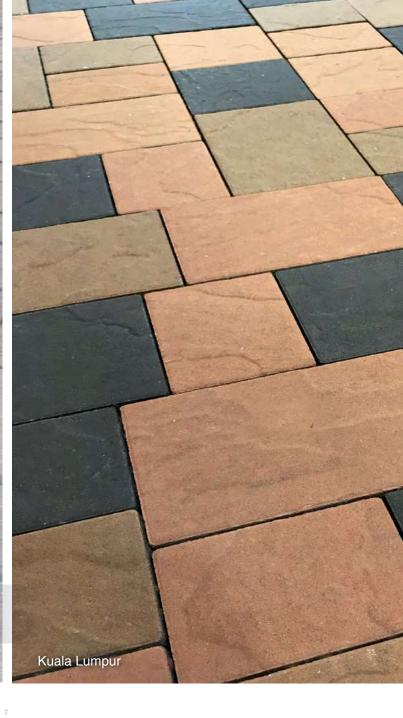
Johor Bahru



## ΜI

Size (mm)	Thickness (mm)	Approx Weight (kg/pcs)	Area Coverage (pcs/m2)
201 x 201		7.00	
201 x 268		9.60	
201 x 335	80	11.70	4 sets
268 x 335		15.50	

\* Only sold in full set of 4 pcs.





M II

Size (mm)	Thickness (mm)	Approx Weight (kg/pcs)	Area Coverage (pcs/m2)
120 x 160 160 x 160 160 x 240	60 / Z60	2.35 3.15 4.60	12 sets

\* Only sold in full set of 3 pcs.



# **SR PAVE** (speed reducer pavers)



SR	Pave New!
Size	: 200mm x 200mm
Area Coverage	: 25 pieces/m <sup>2</sup>
Thickness	: 80mm

Approx Weight : 6.8kg

# **Special Feature:**

- Act as a barrier to reduce the vehicle speed when approaching road junctions, roundabouts, pedestrian crossings, road humps and other dangerous areas or premises
- Consist of 2 line transverse bars that will provide speed bump effect (sound and vibration)
- It comes with Reflective Yellow/ White for long lasting effect (R Series)

# PRIME LOCK





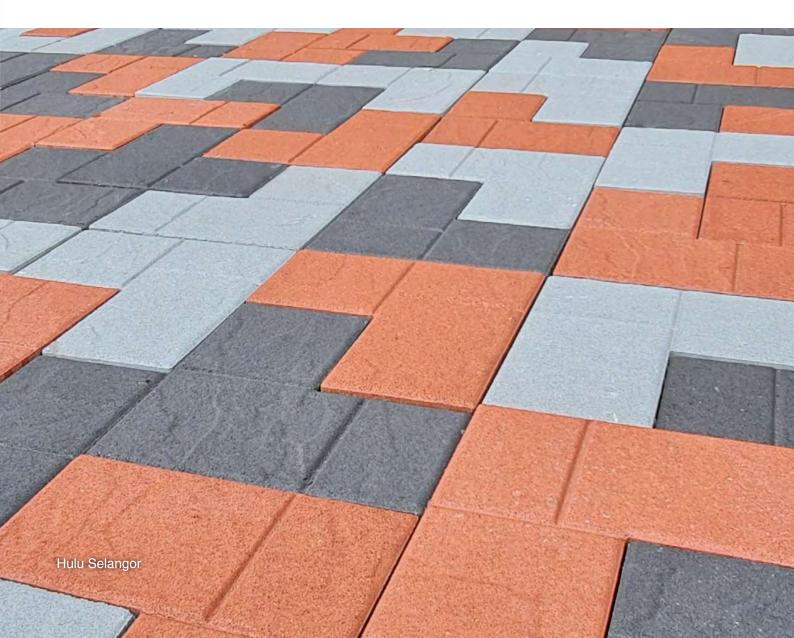
 Area Coverage
 14.8 pieces/m²

 Thickness
 : 80mm

 Approx Weight
 : 11.93kg

# **Special Features:**

- A L-shaped prime paver with enhanced spacer that gives the pavement better locking properties among each pieces
- The uneven rock surfaces finishing giving the pavement a different vibe of naturalistic look









# COBBLEPAVE



Kuala Langat

# Cobblepave

Size : 100mm x 100mm Thickness : 100mm Approx Weight : 2.20kg



# Cobblepave 2.0

Size: 125mm x 125mmThickness: 80mmApprox Weight: 2.40kg



# WOOD PAVERS



 Size
 : 200mm x 600mm

 Area Coverage
 : 8.33 pieces/m²

 Thickness
 : 60 / Z60mm

 Approx Weight
 : 14.50kg



# LED PAVERS

### Kuala Langat

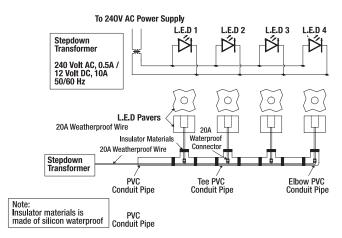


Size: 111mm x 111mmArea Coverage: 78.9 pieces/m²Thickness: 80mmApprox Weight: 2.00kg

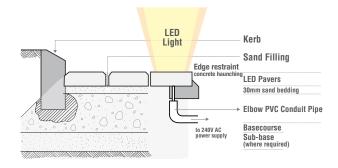


Size: 100mm x 200mmArea Coverage: 49.5 pieces/m²Thickness: 80mmApprox Weight: 3.40kg

# L.E.D Pavers Installation



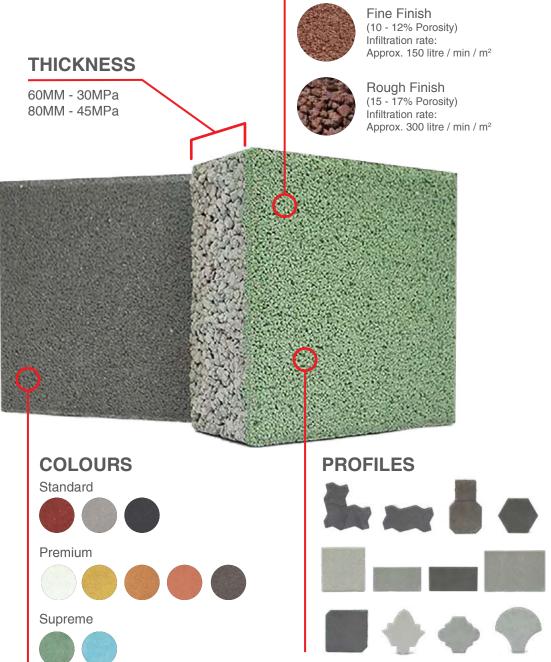
# **Typical Pavement Cross-section**



# NEUPAVE



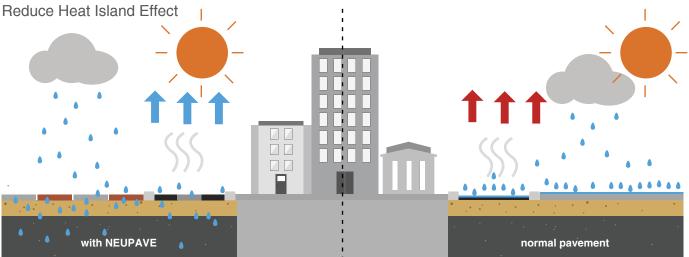
# FINISHES



As the first in Malaysia to manufacture this new paving technology, Neupave is a paving alternative to more traditional types of hardscape flooring materials, where water is now allowed to permeate through the surface to underlying soil.

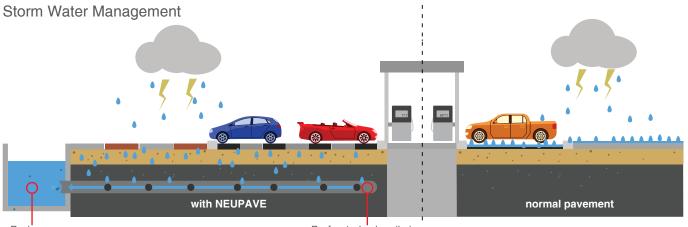
Normal concrete pavements do not allow much water to infiltrate particularly if they are mortared in place. The flowing water would normally hit the surface and then flow down to the nearest drainage channel, becoming storm water runoff. Neupave differs vastly from the above as its hard surfacing allows water to percolate to an underlying reservoir base. Permeable pavement can be used instead of standard concrete for surfacing sidewalks, driveways, parking areas and many types of pavement surfaces. As the usual concrete is considered to be impermeable, water that falls usually stays on the surface and cannot flow through the surface to the soils below, but rather runs to the lowest points to be drained away.

# SYSTEM A FULL EXFILTRATION



This full exfiltration system allows water to fully infiltrate into the ground directly through series of permeable materials and also the subgrade with good water permeability. The moisture within the ground evaporates through Neupave pores and draws the heat out cooling the surrounding. This system works well in area with low water table and at residential area.

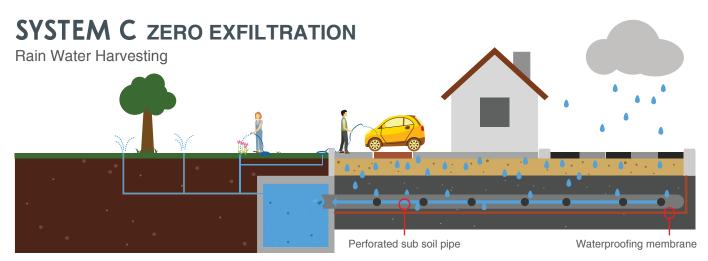
# SYSTEM B PARTIAL EXFILTRATION



Drainage

Perforated sub soil pipe

This partial exfiltration system allows water to either infiltrate into the ground directly or drained through the perforated sub-soil pipe. The pipes are connected to nearby drainage system to speed up the water discharge, preventing surface water built up at the area. This system works well in area with medium water table and at residential area.



This zero exfiltration system capture and retain water above the ground in the permeable sub-base by a layer of waterproofing membrane, and drains through pipe outlets to nearby drainage system or a water treatment system. This system does not only act as a storm water retention basin, it also allows rainwater to be captured and reuse for plants watering and cleaning when it is installed in a park or households. On top of that, it minimizes direct water contamination to the environment by capturing the contaminated water at areas with high pollutant contamination and transfer it to a waste water treatment plant before discharging into drains or river.

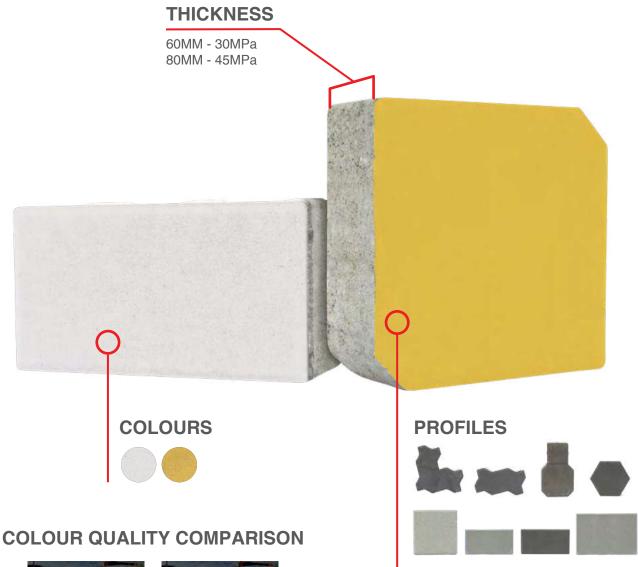






ITT!







R Series Yellow (Reflective At Night)



Normal Yellow



Seberang Perai



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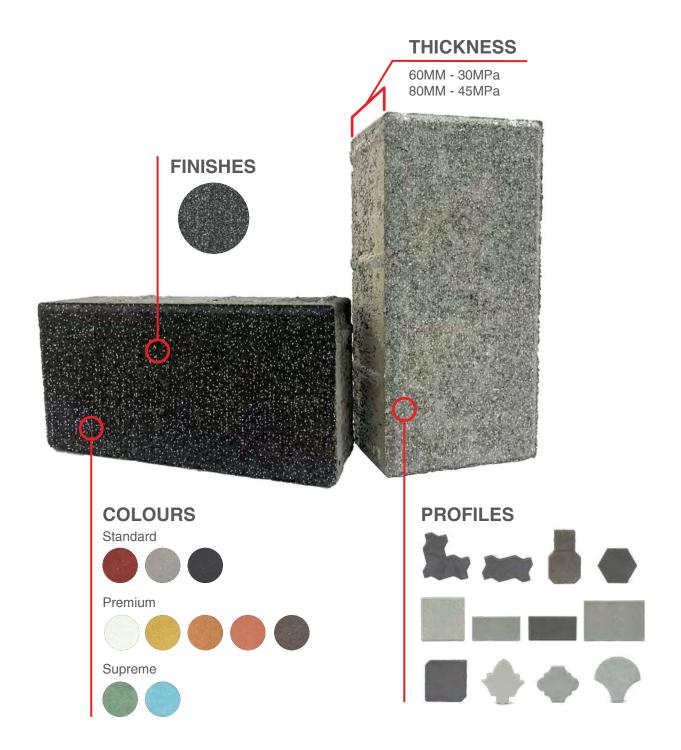
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Petaling Jaya

# **BLINK SERIES**







# **SUNVAY**®

A member of Sunway Group

# SUNWAY PAVING SOLUTIONS SDN BHD **REPAIR AND MAINTENANCE** INTERLOCKING CONCRETE PAVERS COMPRESSED CONCRETE SLABS (EUROTILES)



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# Please Call Hotlines: 03 - 5639 9929 03 - 5639 9317





www.sunwaypavingsolutions.com

# **TECHNICAL SPECIFICATION**

## Malaysia's 1<sup>st</sup> Algae Resistance Interlocking Concrete Pavers (ICP)

Interlocking Concrete Pavers (ICP) by Sunway Paving Solutions Sdn Bhd (SPS) were developed to ensure the surfaces of our ICPs are free from algae growth, as it is commonly happened on almost all other places. Our ICPs are algae resistance up to 80%, where our R&D department has undergone many research over the years and we are proud to say that we are Malaysia's 1st Algae Resistance Interlocking Concrete Pavers since 2013, to have such properties in all of our product range except for Neupave.

#### **Algae Resistance Trial Products since 2013**



With Algae Resistance **Properties Application** 

## Specification



**Properties Application** 

#### Algae growth test result on SPS ICPs

Identification No.	Algae Growth Area (%)	Rating
SPS Control 01	1.6 : Trace of growth	1
Sample 01	0 : None	0
Sample 02	0 : None	0
Sample 03	1 : Trace of growth	1
Sample 04	0 : None	0
Sample 05	0 : None	0

Note: 0: None, 1: Traces of growth (less than 10%), 2: Light growth (10 to 30%), 3: Medium growth (30 to 60%), 4: Heavy growth (60% to complete coverage).

	Strength	Application	**Typical Basecourse Requirements	
Thickness			Type of Material	Recommended Thickness
60mm	30MPa	Pedestrian traffic ie. Footpath, Bicycle Track, Jogging Track, Park & Garden Landscape, Pool Deck, Patio etc	(a) Quarry Dust (Footpaths)	100 to 150
Z60mm	45MPa	Occasional vehicular traffic ie. Boulevard, Assembly area, Plaza, Buggy Track etc	(b) Crusher Run (Driveways)	225 to 600
80mm	45MPa	Vehicular Traffic ie. Driveway, Drop-off area, Cul-de-Sac, Warehouse, Industrial Area, Temporary Access, Roundabout, Junction, Backlane, Feeder Road, Internal Road, Fire Engine Access etc	(c) Crusher Run (Roads & container yards)	225 to 600
100mm	45MPa	Heavy-Duty Traffic ie. Inland port, maritime port etc	(d) Lean Concrete (Very heavy concentrated loads)	225 to 600

MS 1380 : 1995 (Specification for Precast Concrete Paving Blocks)

BS EN 1338 : 2003 (Specification for Concrete Paving Blocks) BS 6717 : 1993 (Specification for Precast Concrete Paving Blocks)

## **Colour Selection**



Colours can be custom-made to suit your design requirement.

Finished product colour may vary, subject to the colour of sand, cement and colour pigments used at the time of production.

#### Efflorescence

This superficial phenomenon is commonly found in most concrete-based or cementitious products. However, this efflorescence effect will disappear over time (weathering) whereby rain usually washes the efflorescence away in about six months to a year and in the worst-case scenario could take up to two years.

# INTERLOCKING CONCRETE PAVERS (ICP) STANDARD

	Standard		
	MS 1380 : 1995	BS EN 1338 : 2003	BS 6717 : 1993
Use in	Malaysia only	International	International, (superseded by BS EN 1338:2003, but still accepted in Singapore)
Physical Properties	Length ± 2mm Width ± 2mm Height ± 3mm	Length ± 2mm Width ± 2mm Height ± 3mm	Length ± 2mm Width ± 2mm Height ± 3mm
Compressive Strength	> 45MPa	N/A	> 49MPa
Abrasion	≥ 1.5ª	≤ 23mm <sup>b</sup> ≤ 20,000mm <sup>3</sup> / 5000mm <sup>2,c</sup>	N/A
Water Absorption	N/A	≤ 6%	N/A
Tensile Splitting Strength	N/A	> 3.6MPa (Failure load >250N/mm)	N/A
Slip/ Skid Resistance	N/A	Minimum value <sup>d</sup>	N/A

#### Note:

MPa = MegaPascal (N/mm<sup>2</sup>)

<sup>a</sup> Abrasion Test using Drill method (Method no longer practical).

<sup>b</sup> Abrasion Test using Wide Wheel method (BS EN 1338:2003 Annex G). Conducted at SPS.

 $^{\circ}$  Abrasion Test using Böhme Test (BS EN 1338:2003 Annex H). Conducted at SIRIM.

<sup>d</sup> Average of three (3) values. Higher value indicates better slip/skid resistance.

# **INSTALLATION PROCEDURE**



#### Basecourse

Based on the existing sub-grade / soil conditions and the anticipated traffic loading into consideration, an adequate thickness of well compacted basecourse must be provided to ensure good pavement performance. Any existing bituminious or concrete surfaces need not be removed and can act as good base.



## Sand Bedding Layer

A layer of sand should be loosely spread and screeded to a uniform thickness such that its compacted thickness would be approximately 30mm. It is important that the layer of sand remains undisturbed prior to the laying of paving blocks.

#### Laying The Blocks

Paving blocks are placed side by side on the sand bed with gaps of approximately 2mm between adjoining blocks.



Blocks Cut To Fit Paving blocks can be cut to fit edges and awkward corners.



#### Sand Infill

Fine sand is brushed in to fill gaps in between paving blocks. Hand-guided plate vibrator is applied once again to ensure that sand filling in the gaps are fully compacted to stabilize the paving blocks pavement.

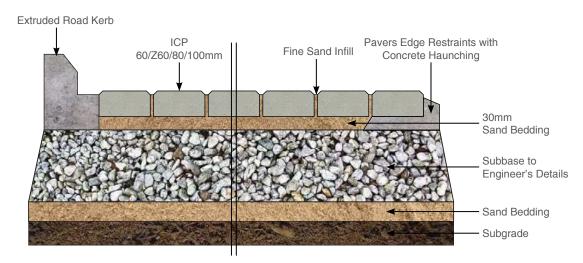


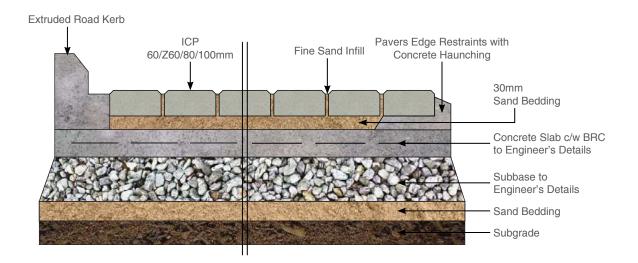
#### Pavement Compaction

Paving blocks pavement is compacted with a hand-guided compactor until it is firmly embedded in the sand layer.

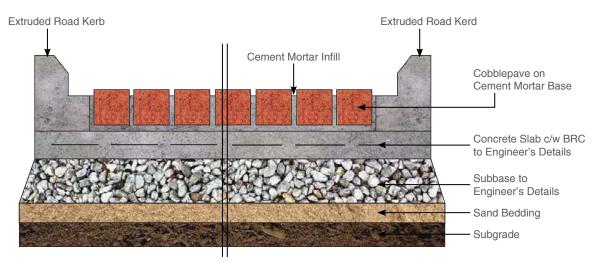
# **TYPICAL CROSS SECTION**

# Interlocking Concrete Pavers (ICP)

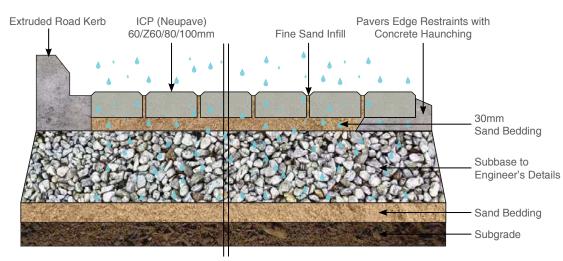




# Cobblepave

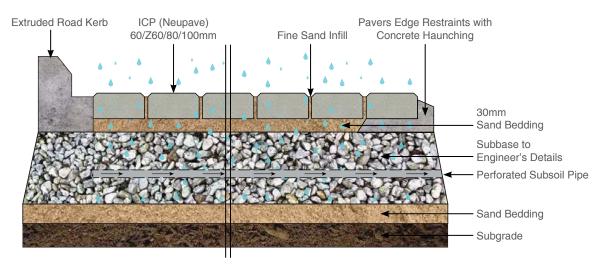


# Neupave - System A (Full Exfiltration)



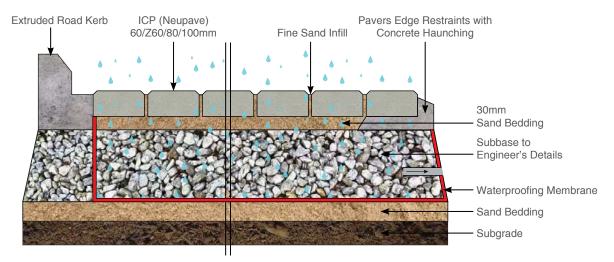
All water falling onto the NeuPave infiltrates down though the pavers, passing through the aggregate layers, and eventually into sub-grade. The sub-base shall act as temporary storage device.

## Neupave - System B (Partial Exfiltration)



Similar to System A, but with a series of perforated subsoil pipe at the bottom of sub-base. This is to extract out the remaining water.

## Neupave - System C (Zero Exfiltration)



Used for complete capture of water using as waterproofing membrane at the bottom of sub-base. Pipes can be fixed to have restricted outflow from the system.



BESTEMPLOYERS BESTEMPLOYER MALAYSIA 2016

MALAYSIA 2018

Sunway Paving Solutions Sdn Bhd Registration No. 198101011363 (77490-W) A member of Sunway Group

# **CENTRAL SALES & MARKETING OFFICE: BANDAR SUNWAY**

#3.2, Level 3, Menara Sunway, Jalan Lagoon Timur, Bandar Sunway, 47500, Selangor Darul Ehsan, Malaysia. Tel: (+603) 5639 9325 Fax: (+603) 5639 9600

# Factory: Batang Kali

Lot 10071, Mukim Batang Kali, 44300 Daerah Ulu Selangor, Selangor Darul Ehsan, Malaysia.

Tel: (+603) 6057 2407 Fax: (+603) 6057 2423

## Northern Region Sales & Marketing Office/ **Factory: Nibong Tebal**

Lot 2788, 2796, 2797, Kawasan Perindustrian Bukit Panchor, Mukim 7, Nibong Tebal, Seberang Perai Selatan, 14300 Pulau Pinang, Malaysia.

Tel: (+604) 593 8697/8

Fax: (+604) 593 8695

# Southern Region Sales & Marketing Office/ Factory: Senai

PLO 6, Jalan Lapangan Terbang, Fasa 1, Kawasan Perindustrian Senai, 81400 Senai, Johor Darul Takzim, Malaysia. Tel: (+607) 599 5553 Fax: (+607) 599 3827

## East Coast Region Sales & Marketing Office/Factory: Marang

Lot 61601. Kawasan Perindustrian Bukit Kor. 21600. Mukim Rusila, Marang, Terengganu Darul Iman, Malaysia. Tel: (+609) 617 3924 / 925 Fax: (+609) 617 3923

# East Malaysia Sales & Marketing Office/Factory: Sabah

Mile 17 1/2, Kg.Bakut, Jalan Tuaran, 89208 Tuaran, Sabah, Malaysia. Tel: (+6088) 785 146 Fax: (+6088) 787 169



spssales@sunway.com.my





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