SAE

SOUTH ASIA EXACT

Flow with Confidence

Since 1982

UPVC RAINWATER DRAINAGE SYSTEM BROCHURE

SAE uPVC Rainwater drainage system was developed in close consultation with the Malaysian construction industry. A full complement of solvent cement jointed pipes and fittings are available from 82 to 315mm. We offer uPVC pipes uniquely design for rainwater system from light duty to heavy duty to cater a variety of building sizes.

All SAE uPVC Rainwater Pipes and Fittings have been tested to the strictest requirements as detailed in BS EN 12200. In building types where particularly high-rise installation and concrete encasement might be expected, rainwater pipes at higher stiffness class ranging from normal duty to heavy duty are recommended.

The recommended classes of SAE rainwater pipes are based on the following:

LIGHT DUTY -
Exposed installation for low rise building
Examples : Terrace houses, Bungalows

NORMAL DUTY -
Exposed installation for high rise building
Examples : Condominiums, Commercial buildings

MEDIUM DUTY -
Exposed installation for high rise building or low-rise concrete encasement

HEAVY DUTY -
Installation for high-rise concrete encasement or underground columns

Colour : White
Length : 5.8m
Type of Joint : Solvent Cement Weld Joint

LIGHT DUTY - Recommended for exposed installation for low rise building

Nominal Size		Outside Diameter (mm)		Wall Thickness (mm)		Specification
(inches)	(mm)	Min	Max	Min	Max	
3	82	82.4	82.8	1.8	2.3	BS EN 12200
4	110	110.0	110.3	2.2	2.7	BS EN 12200
6	160	160.0	160.4	3.2	3.8	BS EN 12200

NORMAL DUTY - Recommended for exposed installation for high rise building

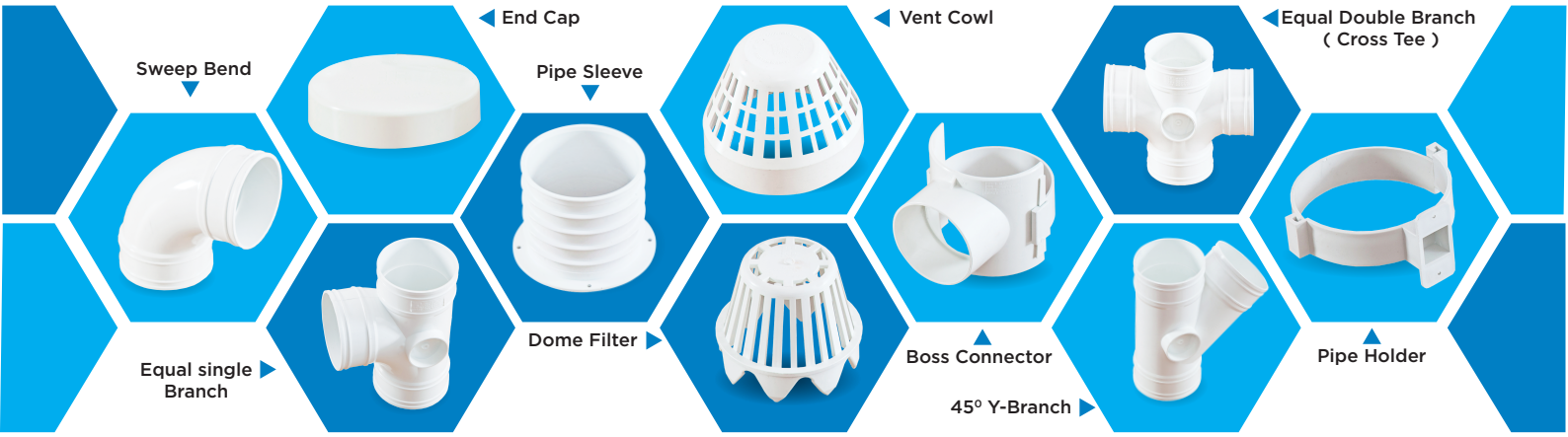
Nominal Size		Outside Diameter (mm)		Wall Thickness (mm)		Specification
(inches)	(mm)	Min	Max	Min	Max	
3	82	82.4	82.8	3.0	3.5	BS EN 12200 / MS 1063 (BD)
4	110	110.0	110.3	3.2	3.8	BS EN 12200 / MS 1063 (BD)
6	160	160.0	160.4	4.0	4.6	BS EN 12200 / MS 1063 (BD)
8	200	200.0	200.5	4.9	5.6	BS EN 12200 / MS 1063 (BD)
10	250	250.0	250.5	6.2	7.1	BS EN 12200 / MS 1063 (BD)
12	315	315.0	315.6	7.7	8.7	BS EN 12200 / MS 1063 (BD)

MEDIUM DUTY - Exposed installation for high rise building or low-rise concrete encasement

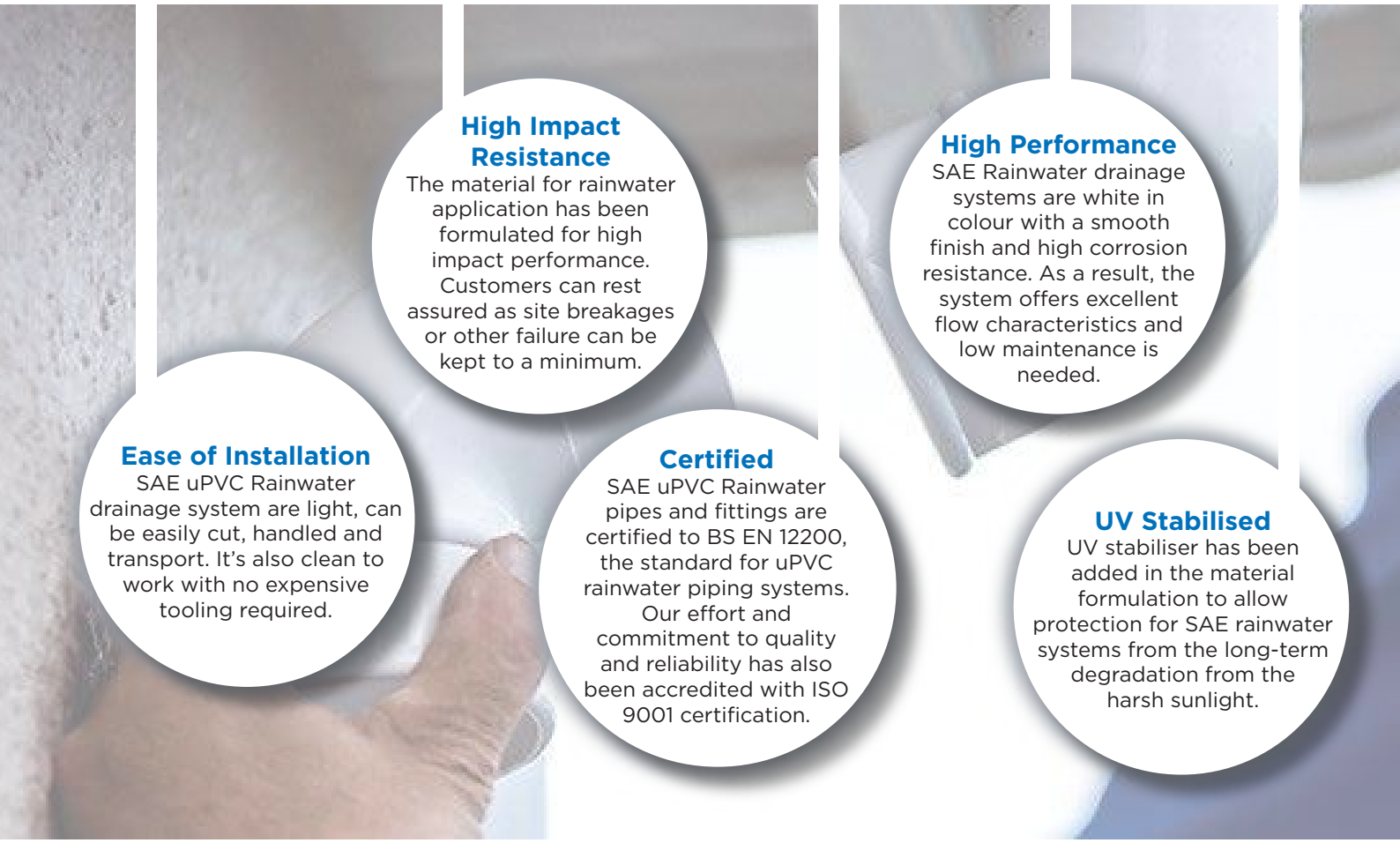
Nominal Size		Outside Diameter (mm)		Wall Thickness (mm)		Specification
(inches)	(mm)	Min	Max	Min	Max	
3	82	82.4	82.8	4.0	4.4	BS EN 12200 / BS EN ISO 1452
4	110	110.0	110.3	4.2	4.9	BS EN 12200 / BS EN ISO 1452
6	160	160.0	160.4	6.2	7.1	BS EN 12200 / BS EN ISO 1452
8	200	200.0	200.5	7.7	8.7	BS EN 12200 / BS EN ISO 1452
10	250	250.0	250.5	9.6	10.8	BS EN 12200 / BS EN ISO 1452
12	315	315.0	315.6	12.1	13.6	BS EN 12200 / BS EN ISO 1452

HEAVY DUTY - Installation for high-rise concrete encasement or underground columns

Nominal Size		Outside Diameter (mm)		Wall Thickness (mm)		Specification
(inches)	(mm)	Min	Max	Min	Max	
3	82	82.4	82.8	4.6	5.3	BS EN 12200 / BS EN ISO 1452
4	110	110.0	110.3	5.3	6.1	BS EN 12200 / BS EN ISO 1452
6	160	160.0	160.4	7.7	8.7	BS EN 12200 / BS EN ISO 1452
8	200	200.0	200.5	9.6	10.8	BS EN 12200 / BS EN ISO 1452
10	250	250.0	250.5	11.9	13.3	BS EN 12200 / BS EN ISO 1452
12	315	315.0	315.6	15.0	16.7	BS EN 12200 / BS EN ISO 1452



MODEL	SIZE AVAILABLE (mm)
Sweep Bend	36, 43, 56, 82, 110, 160, 200, 250 & 315
Sweep Bend With Inspection Opening	43, 56, 82, 110, 160, 200 & 250
Reducing Bend	110x82 only
45° Bend	36, 43, 56, 82, 110, 160, 200, 250 & 315
Straight Coupling	36, 43, 56, 82, 110, 160, 200, 250 & 315
Equal Single Branch	36, 43, 56, 82, 110, 160, 200, 250 & 315
Equal Single Branch With Inspection Opening	43, 56, 82, 110 & 160
Equal Double Branch (Cross Tee)	110 only
Reducing Branch (Reducing Tee)	82x56, 110x56, 110x82, 160x110, 200x110, 200x160, 250x110, 250x160, 250x200, 315x110, 315x160, 315x200 & 315x250
Reducing Branch With Inspection Opening (Reducing Tee with I/O)	160x110only
Reducing Double Branch (Reducing Cross Tee)	160x110 only
45° Y- Branch (Y-Tee)	82 & 110
45° Reducing Y- Branch (Reducing Y-Tee)	160x110 only
45° Reducing Double Y- Branch (Reducing Cross Y-Tee)	160x110 only
Pipe Sleeve	36, 43, 56, 82, 110, 160 & 200
End Cap	56, 82, 110, 160 & 200
Reducing Bush	43x36, 56x36, 56x43, 82x56, 110x56, 110x82, 160x82, 160x110, 200x110, 200x160, 250x110, 250x160, 250x200, 315x110, 315x160, 315x200 & 315x250
Reducing Socket (Level Invert Reducer)	82x56, 110x56, 110x82, 160x110, 200x110, 200x160, 250x160, 250x200, 315x200 & 315x250
Pipe Holder	110 only
Vent Cowl	56, 82, 110 & 160
Dome Filter	110, 160 & 200
Access Plug (Spigot)	82, 110 & 160
Access Plug (Socket)	200, 250 & 315
Boss Connector	82x56, 110x56, 110x82, 160x82 & 160x110



High Impact Resistance
The material for rainwater application has been formulated for high impact performance. Customers can rest assured as site breakages or other failure can be kept to a minimum.

High Performance
SAE Rainwater drainage systems are white in colour with a smooth finish and high corrosion resistance. As a result, the system offers excellent flow characteristics and low maintenance is needed.

Ease of Installation
SAE uPVC Rainwater drainage system are light, can be easily cut, handled and transport. It's also clean to work with no expensive tooling required.

Certified
SAE uPVC Rainwater pipes and fittings are certified to BS EN 12200, the standard for uPVC rainwater piping systems. Our effort and commitment to quality and reliability has also been accredited with ISO 9001 certification.

UV Stabilised
UV stabiliser has been added in the material formulation to allow protection for SAE rainwater systems from the long-term degradation from the harsh sunlight.

DESIGN BASIS

To assess the size and quantity of pipes to drain the roof of a building the following factors need to be taken into consideration:

1. Rainwater catchment area
The catchment area can be determined by calculation in accordance with the following standard :
- BS EN 12056-3 Gravity Drainage System inside buildings – Roof drainage, layout and calculation

2. Rainfall intensity
Rainfall data can be obtained from the Department of Irrigation and Drainage Malaysia. Determine the potential flow rate of every catchment area.

3. The location of downpipes
Determine appropriate location of drainage pipes base on the design of the building.

4. The number and size of downpipes
All SAE rainwater drainage pipes have different capacity to accommodate the maximum flow from the roof. Flow rate of SAE rainwater pipes of different classes can be obtained from our technical department.

INTRODUCTION

South Asia Exact (SAE), with over 20 years of experience supplying high quality pipes and fittings specifically for water supply and soil, waste and ventilation (S.W.V.), is one of the leading brand in Malaysia.

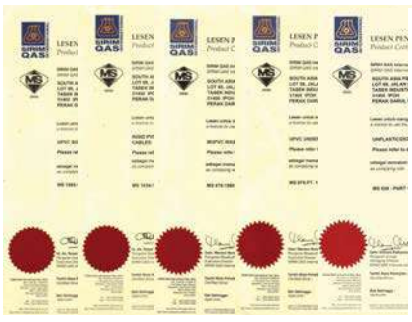
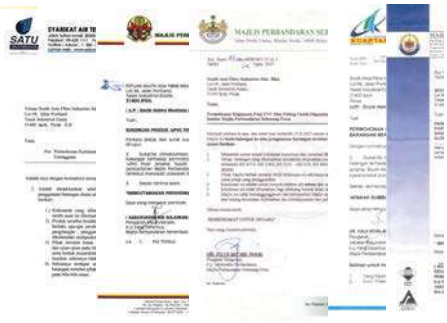
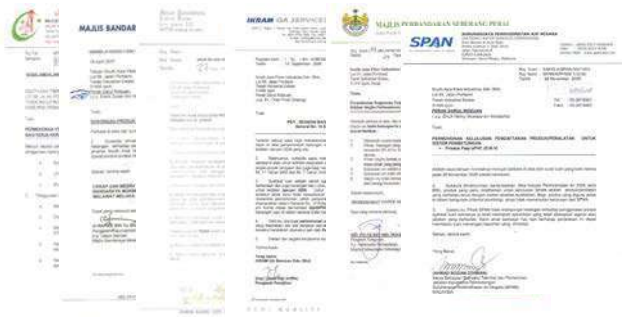
SAE pipes and fittings are manufactured at Tasek Industrial Estate, Perak and Balakong, Selangor respectively. We have 2 distinctive brands namely SA for pipes and EXACT for fittings in order to facilitate the learning of the instrinsic quality of SAE products. Through the years, the company has been actively upgrading its technology and production machineries to achieve its objective of improving efficiency, together with product superiority in order to win total customers' confidence and satisfaction.

SAE products are manufactured with stringent quality control. Our effort to continuously improve on quality and reliability over the years has been rewarded with the accreditation of ISO 9001 certification. Our products are also certified to the relevant Malaysia and British standards by SIRIM, the Malaysian standards authority. Along with Ikram and SPAN approval, Malaysian local authorities have approved the use of SAE products in projects under their jurisdiction.

ACHIEVEMENT

1. uPVC soil, waste and vent applications
   MS 1063 : 2002 Application area code : B & BD
   (BS 5255 / BS 4514 / BS EN 1329)
2. uPVC underground drainage applications - Fittings
   MS 1063 : 2002 Application area code : D
   (BS EN 1329)
3. uPVC underground drainage applications - Pipes
   MS 979 : 1985
   (BS 4660)
4. uPVC water supply applications – Pipes
   MS 628-2 : 2014
5. uPVC water supply applications – Fittings
   MS 628 : PART 2 : SECTION 2.1 : 1999
6. uPVC rainwater applications
   BS EN 12200 - 1 : 2016
7. PVC conduit for underground telecommunication cables
   MS 1034 : 2013
8. Quality Management System
   ISO 9001 : 2015
9. SPAN approval
10. IKRAM listing
11. Local authorities approval

RANGE OF CERTIFICATION

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SIRIM SIRIM 074
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