Ori-Plast®

HEALTHY PIPES

SRD

SIPHONIC ROOF DRAINAGE SYSTEM

ENGINEERED FOR LARGE INDIAN ROOFS

One system.

Complete solution from roof to discharge.

Oriplast SRD is an engineered siphonic roof drainage solution for large industrial, commercial and institutional roofs. The SRD outlet is designed to reduce air entry at design flow, support rapid system priming and enable high-velocity full-bore rainwater evacuation when used as part of a hydraulically designed system.

Unlike conventional drainage, Oriplast SRD uses available building height as hydraulic driving head. Fewer outlets, smaller collector pipes and fewer downpipes are achievable when the system is correctly specified and designed.

FULL-BORE FLOW
Pipes run 100% water-filled at design rainfall intensity

LEVEL COLLECTORS
No mandatory fall in horizontal runs -subject to hydraulic design

FEWER DOWNPIPES
Routes consolidated to preferred discharge locations

SMALLER PIPE DIAMETERS
Higher velocity enables reduced sizes - subject to calculation

RAINWATER HARVESTING READY
Preferred discharge routing to storage or ground recharge systems

Design note:
Final performance depends on project-specific hydraulic design, rainfall intensity, available head, roof geometry, pipe routing and validated outlet flow data. Oriplast SRD must be specified as part of a complete hydraulically designed system.

SRD 110
110 mm outlet family

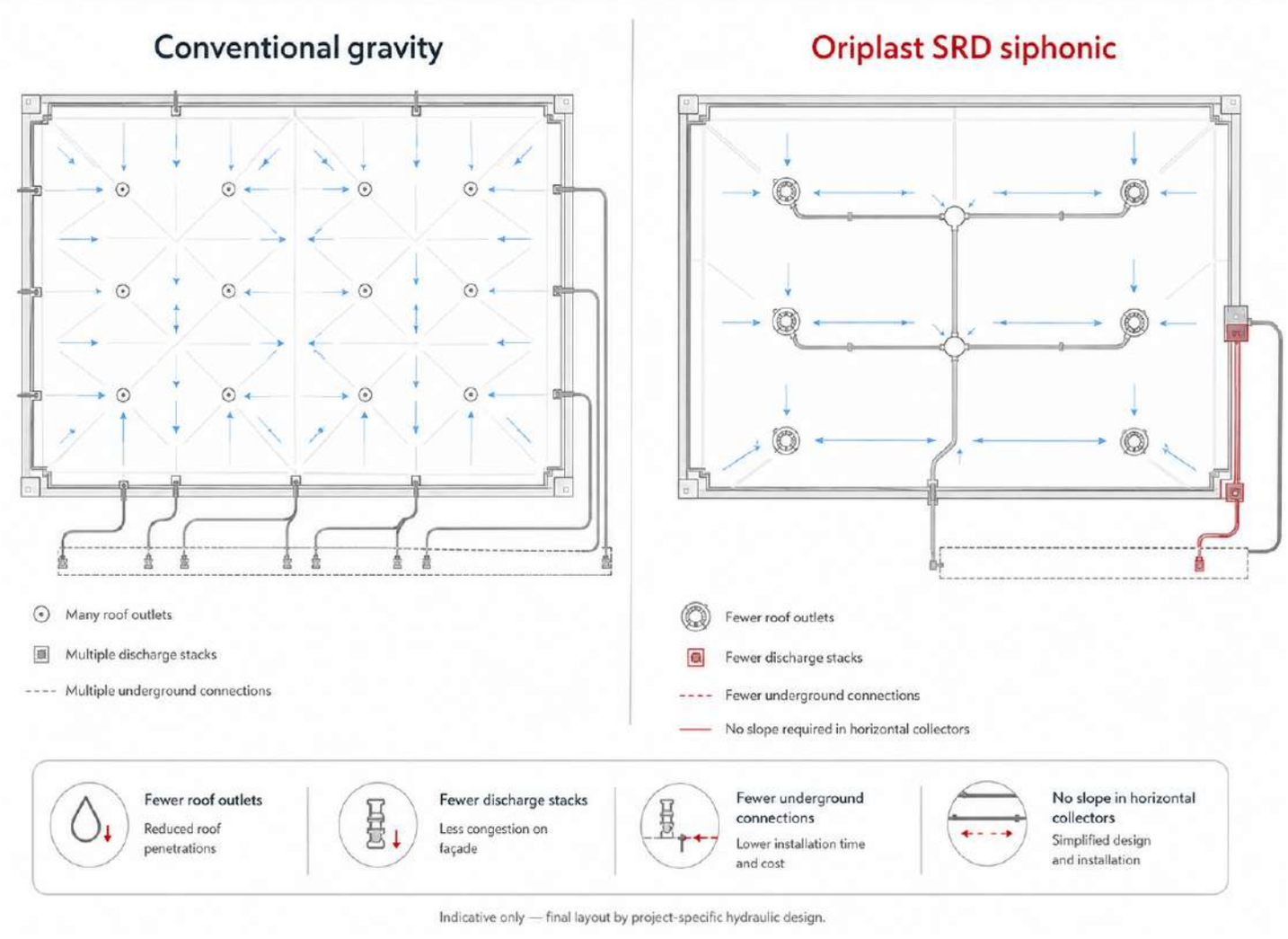
SRD 160
160 mm outlet family

INDUSTRIAL SHEDS | WAREHOUSES | AIRPORTS | METRO STATIONS | MALLS | IT PARKS | DATA CENTRES | INSTITUTIONAL RCC ROOFS

Technical Principle

How Oriplast SRD Siphonic Drainage Works

THE HYDRAULIC DIFFERENCE

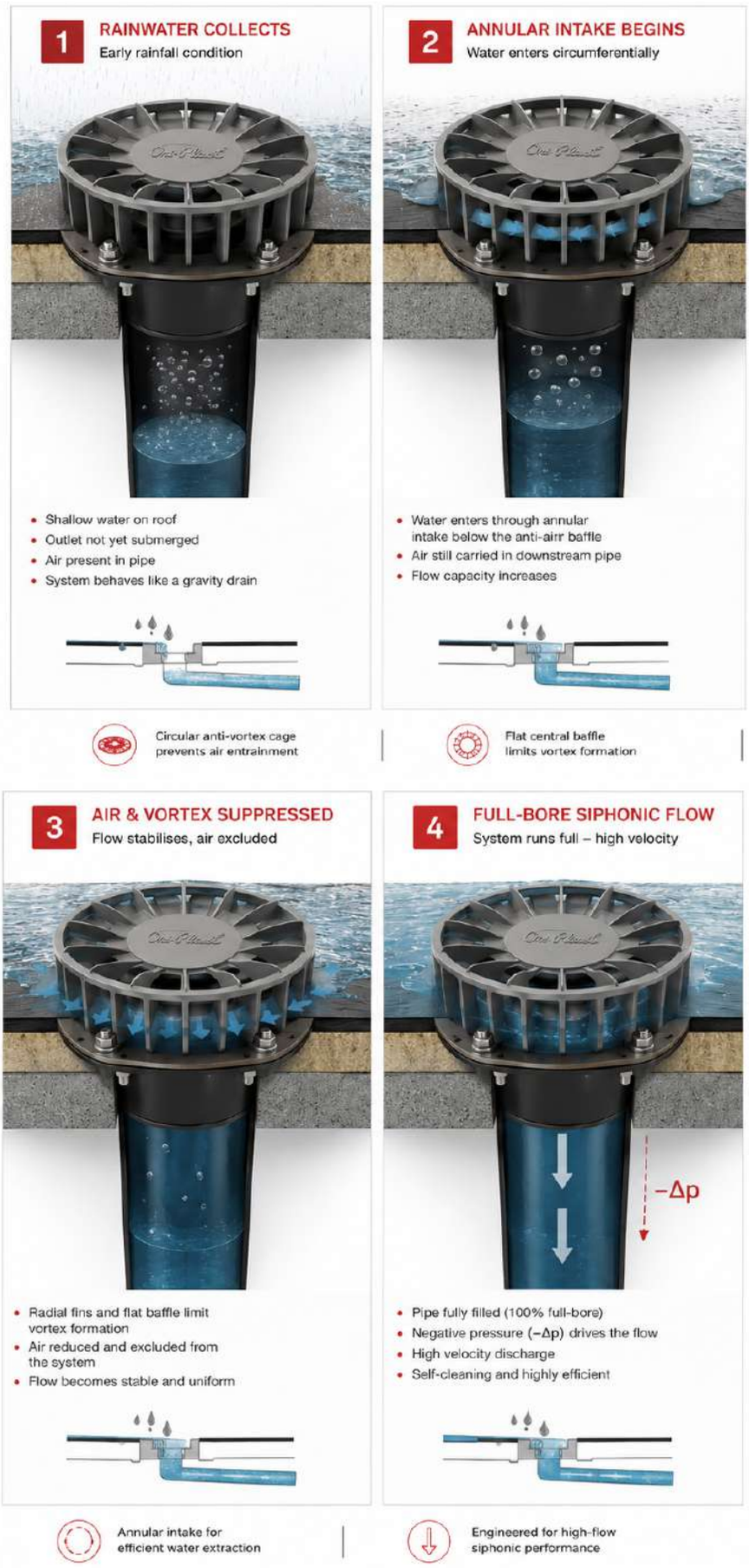


Indicative only — final layout by project-specific hydraulic design.

Conventional roof drainage carries water and air together. Pipework is designed for part-full flow, requiring falls in horizontal pipes, larger pipe diameters and multiple downpipes distributed across the roof. In a siphonic system, the outlet is designed to restrict air entry as rainfall intensity increases. This allows the pipework to transition progressively from gravity behaviour through stratified flow, plug flow and bubble flow to full-bore flow. Once the system is primed, the falling water column in the downpipe creates sub-atmospheric (negative) pressure, drawing rainwater from the roof through level horizontal collector pipes at high velocity. No pumps, valves or moving parts are involved.

FOUR - STAGE FLOW SEQUENCE

Ori-Plast SRD SIMPHONIC ROOF DRAINAGE - FLOW SEQUENCE



1

RAINWATER COLLECTS

Low rainfall. System behaves like gravity drainage - part-full flow, air and water together.

2

ANNULAR INTAKE ACTIVE

Rising water level. Circumferential entry begins below the anti-air baffle plate.

3

VORTEX SUPPRESSED

Radial fins and baffle restrict air entrainment. System transitions through plug and bubble flow.

4

FULL-BORE SIPHONIC FLOW

Pipe runs 100% water. Negative pressure draws rainwater from the roof - design condition.

SYSTEM COMPARISON

PARAMETER	CONVENTIONAL GRAVITY	ORIPLAST SRD SIPHONIC
Pipe flow condition	Air + water, part-full	Full-bore water flow at design condition
Horizontal pipe slope	Required throughout	Not required when hydraulically designed
Pipe diameter	Larger, sized for part-full flow	Smaller achievable - subject to calculation
Downpipe count	Multiple, dictated by roofdrainage points	Fewer; routed to preferred locations
Below-ground drainage	More trenching and connections	Reduced underground network complexity
Design method	Code-based sizing for part-full flow	Project-specific hydraulic calculation
Outlet role	Collects water and air	Restricts air entry; supports priming
Self-cleansing	Dependent on pipe gradient	High-velocity full-bore flow at design condition
Emergency overflow	Typically required	Required - independently designed
Maintenance	Roof/gutter cleaning required	Roof/gutter cleaning still required

Outcomes achievable when system is correctly designed. Results vary by project. Conventional data indicative only.

THE SIPHONIC EFFECT

Created by a primed water column - not by pumps, valves or moving parts.

The driving mechanism is building height. At low rainfall, the system may behave like conventional drainage. At design rainfall, the system is intended to prime and operate full-bore - subject to validated hydraulic design and project-specific calculation.

Siphonic drainage is not a product substitution. It is a designed system. Hydraulic calculation by a qualified engineer is mandatory for every project. System performance cannot be guaranteed without tested outlet data and project-specific design.

PRODUCT ENGINEERING & INSTALLATION

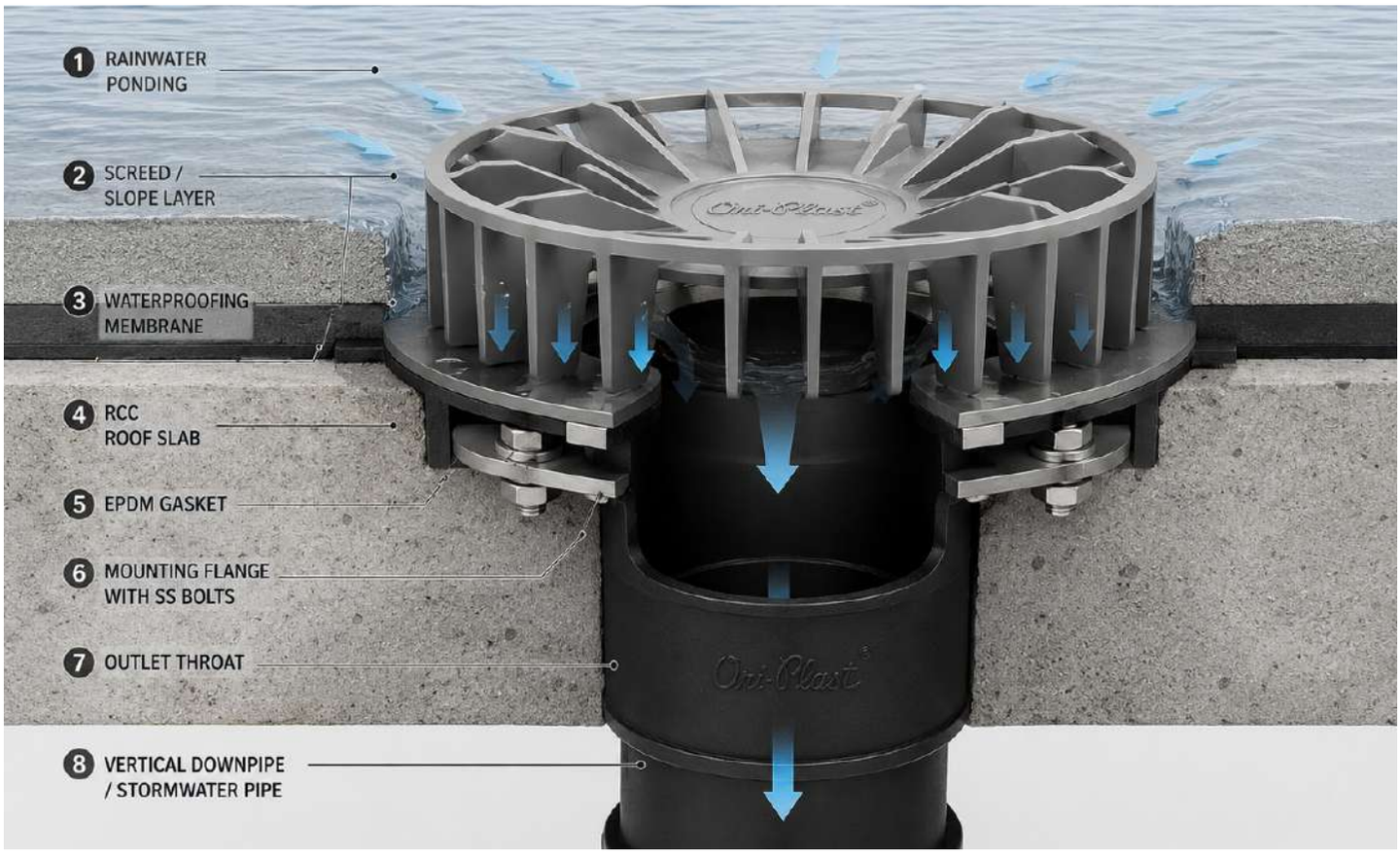
Engineered Outlet. Watertight Interface. System-Ready Connection

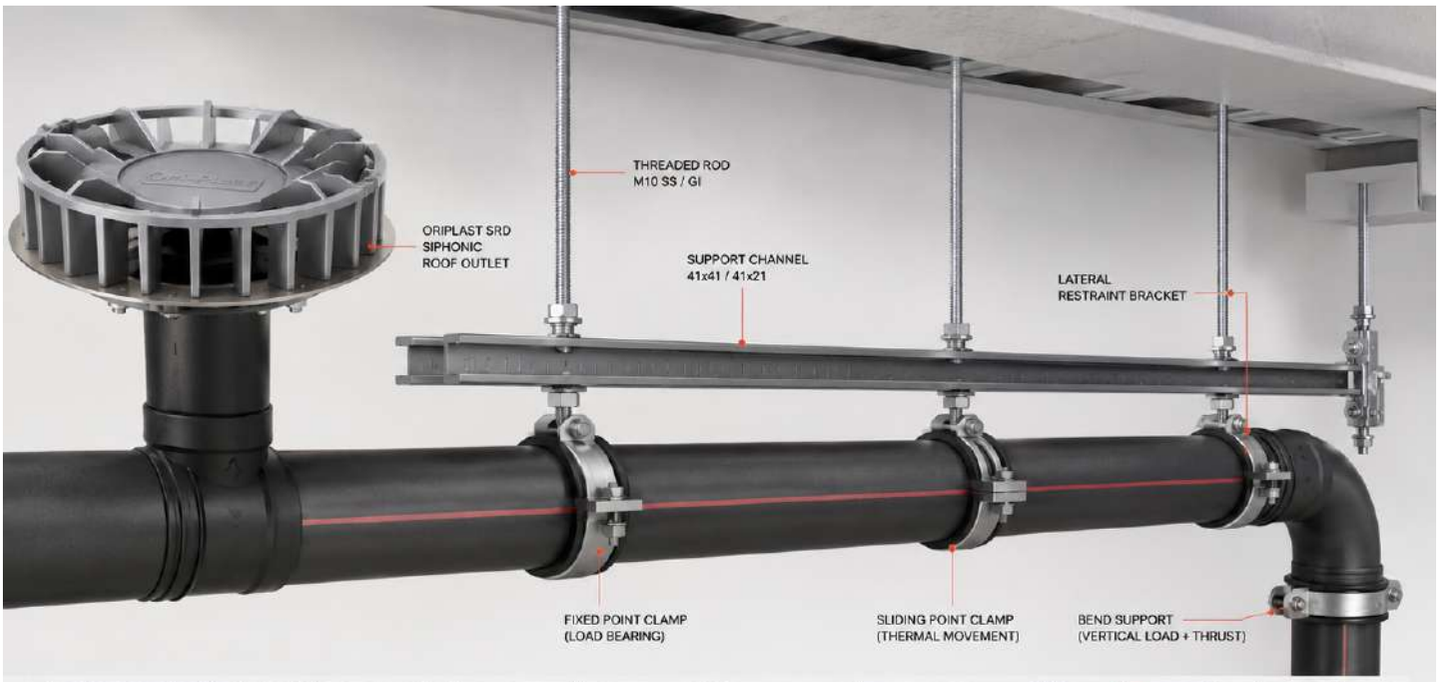
The Oriplast SRD outlet combines an anti-air baffle, radial flow-stabilising fins, annular intake geometry and a gasketed mounting interface to support controlled water entry and reduced air entrainment.

Designed for integration into RCC flat roofs and industrial metal gutters.

ORIPLAST SRD OUTLET - KEY COMPONENTS

NO.	COMPONENT	FUNCTION	MATERIAL / FINISH
1	Flat central anti-air baffle	Limits vortex formation; restricts air entry at intake plane	UV-stabilised engineered polymer; grey
2	Radial fin intake cage	Stabilises circumferential flow; protects intake from debris	Engineered polymer; grey
3	Annular intake opening	Circumferential water entry below the baffle	Integrated moulded geometry
4	Circular mounting flange	Seating, fixing and waterproofing interface	Moulded polymer body
5	EPDM gasket	Watertight compression seal at membrane /flange interface	EPDM rubber
6	Fixing bolts / nuts washers	Secures outlet; clamps flange to roof or gutter	SS / plated steel - grade TBC





ORIPLAST SRD OUTLET DETAIL | FIXED POINT CLAMP (FULL LOAD CAPACITY) | SLIDING POINT CLAMP (THERMAL MOVEMENT) | LATERAL RESTRAINT (THRUST CONTROL) | BEND SUPPORT (VERTICAL + THRUST)

ENGINEERED FOR FULL PIPE WEIGHT | VIBRATION CONSCIOUS DESIGN | THERMAL MOVEMENT ACCOMMODATED | THRUST & LATERAL FORCE RESISTANT | PREVENTS BUCKLING & MAINTAINS STRAIGHTNESS | DESIGNED FOR FULL BORE SIPHONIC FLOW | SUITABLE FOR INDIAN INDUSTRIAL / COMMERCIAL BUILDINGS

INDUSTRIAL SHEDS | WAREHOUSES | AIRPORTS | METRO STATIONS | MALLS | IT PARKS | DATA CENTRES | INSTITUTIONAL RCC ROOFS

A. RCC Flat Roof Installation

Designed for integration with RCC roof build-ups including waterproofing membrane, screed/slope layer, gasketed flange interface and vertical outlet penetration through the structural slab. Installation interface must be coordinated with the waterproofing system supplier.

B. Metal Roof / Industrial Gutter Installation

Suitable for industrial metal roof gutters subject to gutter depth, outlet positioning, sealing method, structural support and hydraulic calculation for each project.

C. Waterproofing Interface

Membrane dressing, gasket compression, fastener torque and flange seating must be coordinated with the waterproofing supplier and project engineer. This is a critical long-term performance detail.

PRELIMINARY PRODUCT FAMILY - TO BE VALIDATED BY PHYSICAL TESTING

PARAMETER	SRD 110	SRD 160	NOTES
Nominal outlet family	110 mm OD	160 mm OD	Final sizing TBC
Main body material	Engineered polymer	Engineered polymer	UV testing required
Gasket	EPDM	EPDM	Waterproofing interface
Fasteners	SS / plated	SS / plated	Final grade TBC
Pipe connection	Compatible Oriplast stormwater	Pipe system	Jointing method TBC
Flow capacity (Kv)	To be tested	To be tested	Physical test required
Finish	Grey baffle cage + black	Outlet barrel	As per product render

SYSTEM DESIGN & APPLICATIONS

From Roof Outlet to Discharge - A Complete Engineered System

1 Anti-Air Baffle / Top Plate
Flat circular plate with moulded Ori-Plast® emboss. Prevents air entry and vortex formation.

2 Radial Fin / Intake Cage
Annular intake with evenly spaced radial fins that guide water into the outlet while restricting air ingress and debris entry.

3 Mounting Flange
Circular flange for secure fixing to the roof structure and waterproofing interface.

4 EPDM Gasket
Continuous EPDM gasket ensures watertight seal between flange and roofing membrane.

5 Fixing Set (SS)
Stainless steel bolts, washers and nuts for secure fastening of the flange to the substrate.

6 Outlet Throat / Spigot Body
High strength outlet body with moulded Ori-Plast® emboss for brand authenticity. Connects to downpipe system.

7 Pipe Connection Socket (Optional)
For direct fusion/socket connection to Oriplast stormwater pipe system.

OUTLET SIZE OPTIONS

110 mm OD OUTLET | 160 mm OD OUTLET

BRAND EMBOSS DETAIL

- **A** SRD roof outlet - air-restricting siphonic outlet
- **B** Tailpipe - vertical drop from outlet to collector level
- **C** Level horizontal collector - no mandatory slope
- **D** Pipe support / bracketing - fixed and sliding points
- **E** Vertical downpipe - creates negative pressure
- **F** Siphon break - transition to atmospheric drainage
- **G** Underground stormwater network - receiving system
- **H** Rainwater harvesting - preferred discharge routing
- **I** Emergency overflow - mandatory on every roof area

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ORIPLAST SRD
SIPHONIC ROOF DRAINAGE SYSTEM

ENGINEERED FOR LARGE ROOFS

- High Capacity Full-Bore Flow
- Smaller Pipes Fewer Stacks
- Faster Drainage Zero Ponding
- Cost Effective System
- Routed to Preferred Discharge Point
- Compatible with Oriplast Stormwater Network


INDUSTRIAL WAREHOUSE / LOGISTICS PARK


MANUFACTURING FACTORY / INDUSTRIAL SHED


AIRPORT TERMINAL / AIRCRAFT HANGAR


SHOPPING MALL / COMMERCIAL COMPLEX


IT PARK / DATA CENTRE BUILDING


LARGE RCC FLAT ROOF

ORIPLAST SRD
SIPHONIC ROOF OUTLET

- Flat Anti-Air Baffle with Ori-Plast® Emboss
- Annular Intake Opening
- Radial Anti-Vortex Fins
- Mounting Flange with EPDM Gasket
- Outlet Barrel with Ori-Plast® Emboss

EN 1253-2 Compliant


RCC ROOF INSTALLATION


METAL ROOF GUTTER APPLICATION

Designed for Large Roofs | Fast & Easy Installation | Reliable & Safe Performance | Engineered System Solution | Routed to Preferred Point | Sustainable Stormwater Management

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MINIUM PROJECT DATA REQUIRE

INPUT	REQUIRED FROM	PURPOSE
Roof plan with catchment areas	Architect / consultant	Outlet placement and tributary area
Roof levels, slopes and low points	Architect / structural	Ponding depth and flow path
Design rainfall intensity (mm/hr)	MEP / hydraulic consultant	Design flow rate at each outlet
Building height / available head	Architect / structural	Negative pressure calculation
Preferred downpipe locations	Architect / client / MEP	Routing strategy and pipe layout
Discharge point / stormwater invert level	Civil / infrastructure	Siphon break elevation and backflow
Roof build-up and waterproofing type	Architect / WP vendor	Outlet interface selection
Pipe material and jointing method	Oriplast / MEP	Pressure and installation compatibility
Maintenance access strategy	Client / FM team	Long-term operational performance
Emergency overflow requirement	MEP / architect	Secondary drainage and roof safety

APPLICATION SEGMENTS

SEGMENT	SRD VALUE PROPOSITION
Industrial sheds & factories	Fewer downpipes; unobstructed floor areas; efficient routing
Warehouse & logistic parks	Level collectors; preferred discharge points; reduce underground network
Draft - Not for construction	Reduce pipe clashes; high-capacity drainage at limited outlet locations

DESIGN & VALIDATION REFERENCES

- ASPE / ANSI 45 — Siphonic Roof Drainage
- ASME A112.6.9 — Siphonic Roof Drains
- BS EN 12056-3 — Roof drainage, layout and calculation
- BS 8490:2007 — Guide to siphonic roof drainage systems
- ASTM F2021 — Thermoplastic siphonic drainage installation
- NBC (India) — Plumbing and drainage clauses
- Project authority and hydraulic consultant criteria

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References listed indicate relevant design and testing frameworks. Final compliance must be confirmed based on tested Oriplast SRD product data, project design and local authority requirements. Oriplast SRD has not yet been submitted for third-party certification testing.

Maintenance - consultant note: Siphonic drainage systems are high-performance drainage systems. They are not maintenance-free. Leaves, sediment and debris must be removed regularly from roof surfaces, gutters and outlets. Outlet bafles must be correctly reinstated after any removal for cleaning — failure to do so allows air ingress and will prevent siphonic operation.

PROJECT ENQUIRIES

For technical submissions, hydraulic design coordination and product documentation:

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