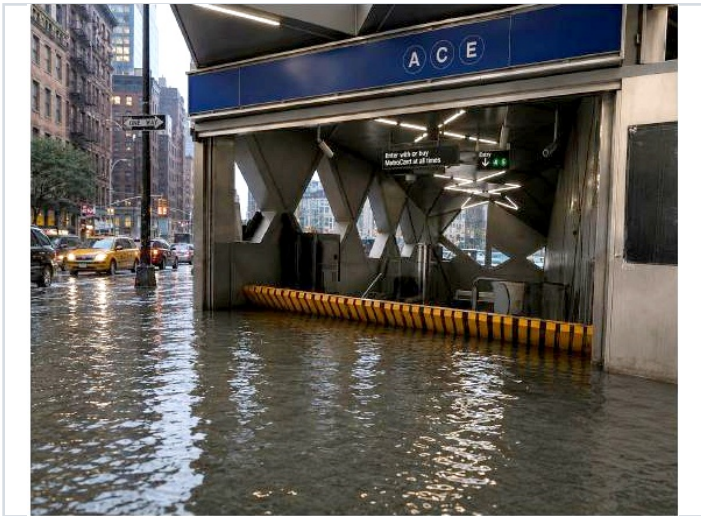


PASSIVE SELF-RISING FLOOD BARRIER • AUTOMATIC. NO POWER. NO HUMAN INTERVENTION.



PASSIVE SELF-RISING FLOOD BARRIER

RISES AUTOMATICALLY WHEN FLOODWATER ARRIVES

The barrier sits at ground level and deploys itself. Floodwater enters the stainless steel base through an inlet grille; when water reaches the trigger level, buoyancy lifts the gate leaf upright and hydrostatic pressure holds it in position. No power, no pumps, no personnel. Between events it lies flat at grade and carries vehicle and pedestrian traffic.

WATER ACTIVATED

NO POWER REQUIRED

DRIVE-OVER SURFACE

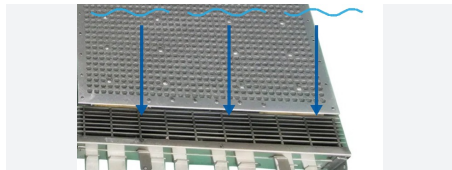
MODULAR — ANY WIDTH

HOW IT WORKS



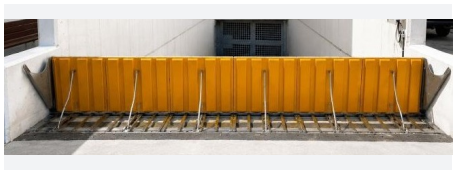
① **NORMAL TRAFFIC**

The gate leaf lies flat on its base at grade. Vehicles and pedestrians pass over it unobstructed.



② **WATER ENTERS THE CHAMBER**

Floodwater flows through the stainless steel inlet grille into the chamber beneath the leaf.



③ **BARRIER RISES**

Buoyancy raises the leaf and hydrostatic pressure holds it upright — no power, no intervention.

KEY SPECIFICATIONS

Retaining height	2 or 4 ft above ground; 2, 3 or 4 ft embedded
Deployment	Automatic — buoyancy activated
Power required	None to deploy — optional accessories run on 110V AC, stepped down to 12V DC
Reset	Automatic — self-adjusts and lowers with the water level

Manual override	Can be raised and locked before a forecast event
Down-position height	≈2 in (2 ft) / ≈4 in (4 ft) above grade — flush when embedded
Width	Modular, ~23.6 in sections + filler pieces — filler width chart, p.4
Side seals	EPDM/silicone, sized per retaining height
Service life	20+ years

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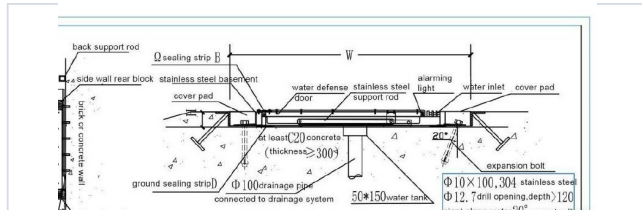
PASSIVE SELF-RISING FLOOD BARRIER • PAGE 2 – MODELS, COMPONENTS, TESTING & DURABILITY

ABOVE GROUND — SURFACE MOUNTED WITH DRIVE-OVER RAMPS

Model	Barrier Height	Down-Pos.	Ramp Type	Concrete Min.	Duty / Traffic
FRA-SR-S24-HD	2 ft	≈2 in (50 mm)	Metal	C20, ≥8 in	125 kN — full panel rating + pedestrian
FRA-SR-S48-HD	4 ft	≈4 in (100 mm)*	Rubber	C20, ≥8 in	125 kN panel — rubber ramps limited to 14,000 lbs + pedestrian

EMBEDDED — RECESSED IN A FORMED CHANNEL

Model	Barrier Height	Down-Pos.	Channel (W × D)	Concrete Min.	Duty
FRA-SR-E24	2 ft	Flush, 2.0 in deep	35.4 × 2.0 in (900 × 50 mm)	C20, ≥8 in	Heavy, 125 kN
FRA-SR-E36	3 ft	Flush, 4.1 in deep	48.8 × 4.1 in (1,240 × 105 mm)	C20, ≥12 in	Heavy, 125 kN
FRA-SR-E48	4 ft	Flush, 4.1 in deep	60.6 × 4.1 in (1,540 × 105 mm)	C20, ≥12 in	Heavy, 125 kN



Recessed channel detail — manufacturer drawing.

Drain & sump

Every embedded channel includes a 50 × 150 mm collection sump at its base, draining through a Φ100 mm (4 in) pipe tied into site drainage — or a sump pump where gravity fall isn't available — so the chamber stays dry between events.

SYSTEM COMPONENTS

Gate leaf	Buoyant leaf, anti-slip drive-over surface
Base frame	Stainless steel, anchored to the slab
Water inlet	Stainless steel inlet grille
Supports	Back support struts and pull rods
End sealing	EPDM/silicone sealing boards at each wall
Drain / sump	50×150 mm sump, Φ100 mm discharge pipe
Warning	LED strip — 110V AC supply, 12V DC to fixture
Ramps	Drive-up/down ramps (above ground)
Control box	Optional auto-dialer, 110V AC / 12V DC

TESTING & DURABILITY

Static load test	250 kN
Roll-over crush test	40 t vehicle, > 60 min
Design service life	20+ years
Crossing speed	≤ 12 mph (20 km/h)
ANSI 2510	Certified
Warranty	2-year manufacturer's warranty — manufacturing defects only

OPERATION & ALERTS

- **Fully passive** — buoyancy only, no power or personnel.
- **Self-adjusting** — follows the flood level and reseats as it recedes.
- **Manual pre-deployment** before a forecast event.

PASSIVE SELF-RISING FLOOD BARRIER • AUTOMATIC. NO POWER. NO HUMAN INTERVENTION.

PASSIVE SELF-RISING FLOOD BARRIER • PAGE 3 – ABOVE GROUND VS EMBEDDED, SITE REQUIREMENTS & MAINTENANCE



Integrated drive-over ramp, above-ground install

ABOVE GROUND — SURFACE MOUNTED



Recessed channel & drain grate, embedded install

EMBEDDED — FLUSH WITH FINISHED SURFACE

SITE & CONCRETE REQUIREMENTS

- **Concrete:** min. C20 ($\approx 2,900$ psi), fully cured, free of cracks, hollowing or spalling
- **Slab thickness:** ≥ 8 in for the 2 ft channel; ≥ 12 in for 3/4 ft channels & above-ground anchors
- **Apron:** concrete extends ≥ 12 in beyond the frame/channel on all sides
- **Sealing:** concrete must be sealed by others prior to installation
- **Grade/levelness:** ≤ 30 mm height difference between side walls across the run (laser level)
- **Flatness/slope:** ≤ 2 mm deviation over a 2 m straightedge — reslope/level first if it doesn't meet this
- **Side walls:** solid brick or reinforced concrete, taller than the barrier's retaining height

INSTALLATION SEQUENCE

See separate document — **Installation Manual**.

MAINTENANCE & INSPECTION

- Keep the inlet grille, chamber and drain sump clear of silt, leaves and debris.
- Function test annually and after every deployment.
- **Inspect all rubber and sealing components** — end sealing boards, gaskets and silicone seals — for drying, cracking, compression set or wear, and replace any that show it.
- Inspect the base frame, struts, pull rods and anchors for corrosion, damage or loose fixings.
- Rinse and clear the chamber and drain sump after each event and confirm it drains freely.
- Confirm the warning strip and, where fitted, the auto-dialer are operating.

PASSIVE SELF-RISING FLOOD BARRIER • AUTOMATIC. NO POWER. NO HUMAN INTERVENTION.

PASSIVE SELF-RISING FLOOD BARRIER • PAGE 4 – PANEL LAYERS, MODULE WIDTH, SEALS & MODULAR DESIGN

FLEXIBLE SIDE-WALL SEALS



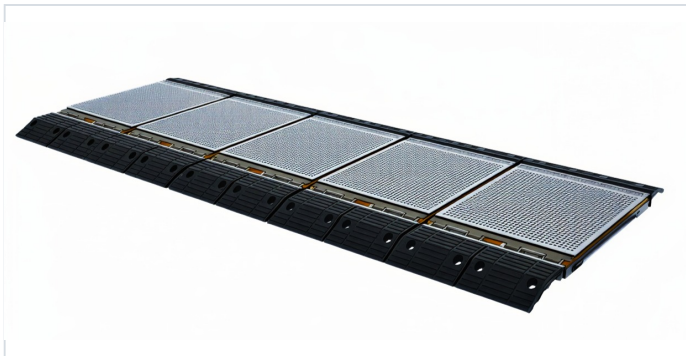
EPDM/silicone side seal flexing against the wall as the panel rises.

To span the distance between the panel run and the side walls and create a secure seal, flexible **EPDM/silicone** sealing flaps run from the side of the panel to the wall and flex upward as the barrier rises. Triangular side seals are fixed to the wall with stainless steel strips and anchors, sized per retaining height.

Retaining Height	Wall-to-Panel Gap (each side) — Preferred	Tolerance Range
24 in (2 ft)	2.4 – 3.9 in	2.0 – 4.3 in
36 in (3 ft)	3.1 – 4.7 in	3.1 – 5.5 in
48 in (4 ft)	3.9 – 5.5 in	3.5 – 5.9 in

Distance is measured from the side wall to the side edge of the panel and applies on both sides of the run. This gap is required so the flexible rubber side seals can flex up and down without impedence as the barrier operates — confirm exact clearances for a given site with the manufacturer before fabrication.

RAMPED EDGE PIECES



Metal ramp — 2 ft barrier



Rubber ramp — 4 ft barrier

PANEL CONSTRUCTION (BY LAYER)

Drive-over surface	Textured anti-slip tread top for vehicle and pedestrian grip
Buoyant core	Sealed stainless steel cavity that generates lift as water rises
Protective underside	Stainless steel, shields the buoyant core from impact and corrosion

Base frame	Stainless steel, anchored to the slab
End / slope sections	Cast iron or stainless steel, depending on style
Sealing components	EPDM/silicone — ground, inter-panel, side and wall seals

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PASSIVE SELF-RISING FLOOD BARRIER • PAGE 5 – WHERE IT IS USED & CONFIGURATION EXAMPLES

MODULAR DESIGN & FILLER WIDTH CHART



Standard modules in multiple widths, ready to assemble into a run.

Sections assemble side by side to build the barrier out to any opening width; a damaged module can be replaced without disturbing the rest of the run.

Module Type	Width
Standard module	~23.6 in (23.75 in effective, with splice hardware)
Filler modules (non-standard)	6.3 / 11.4 / 13.2 / 18.5 in

Example: a 9 ft opening = 4 standard modules + 1 × 6.3 in filler = a 101.3 in (8 ft 5.3 in) run. The remaining 4.7 in is closed with flexible EPDM/silicone side-wall seals.

IDEAL FOR

Parking garage entrances and ramps • Transit and metro entrances • Underground and below-grade access • Commercial building entrances • Loading docks and service drives • Utilities and critical infrastructure • Residential communities and gated entries • Low-lying driveways and lanes

CONFIGURATIONS



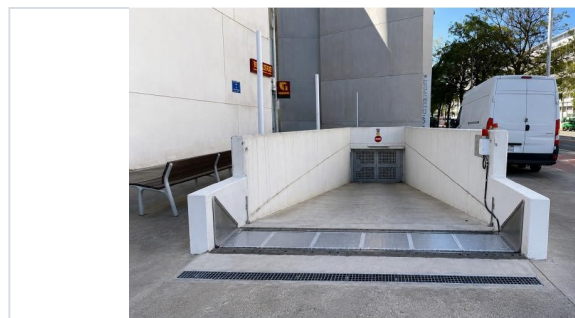
PARKING GARAGE ENTRANCE



TRANSIT / METRO ENTRANCE



BELOW-GRADE PARKING RAMP — DEPLOYED



THE SAME ENTRANCE AT REST — FLUSH AND TRAFFICABLE

Modular sections build to any opening width.

Send opening width, slab details and available flat space for a configuration.

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