

# NON CLEAN, SEWAGE & WASTEWATER COMBINATION AIR VALVE

## Model C50

BERMAD C50 is a high quality combination air valve for a variety of sewage and wastewater networks and operating conditions. It evacuates air during pipeline filling, allows efficient release of air and gas pockets from pressurized pipes, and enables large volume air intake in the event of network draining.

The elongated body and lower float prevent the fluid to be in contact with the upper mechanism.

With its advanced aerodynamic design, double orifice and Surge Protection device (optional), this valve provides excellent protection against air and gas accumulation and vacuum formation with improved sealing under low pressure conditions.

### Features & Benefits

- Straight flow body with large diameter automatic orifice: Higher than usual air flow.
- Aerodynamic, full-body kinetic shield: Prevents premature closing without disturbing air intake or discharge.
- Dynamic Sealing: Prevents leakage under low pressure conditions (0.8 psi; 0.05 bar).
- Elongated body design: Prevents solids from making contact with valve's operating parts.
- Compact, simple and reliable structure with fully corrosion-resistant internal parts: Lower maintenance and increased life span.
- Two service ports: Enabling back flushing and drainage.
- Threaded Side outlet (2"; DN50) for connection of Surge Protection (SP) or Inflow prevention (IP) devices.
- Factory approval and Quality Control: Performance and specification tested and measured with specialized test bench, including vacuum pressure conditions.

### Additional Features & Accessories

- Surge Protection (code SP): Smoother operation, preventing damage to the valve and the system.
- Inflow Prevention (code IP): Prevents intake of atmospheric air in cases where this could lead to damaged pumps, required re-priming, or disruption of siphon.
- Drainage Valve (code Z).

### Typical Applications

- Pumping stations: Air relief and vacuum prevention.
- Non Clean Water pipelines: Protection against air and gas accumulation and vacuum formation at elevations, slope change points and at road/river crossings.
- Wastewater Treatment plants: Air relief, protection against air and gas accumulation and vacuum formation.

All images in this catalog are for illustration only



C50-P



C50-J



C50-C



C50-G



C50-N



### Inlet and Outlet Connections

- Inlets:
  - Glass-reinforced Nylon Body (C50-P): male threaded 2-3"; DN50-80, flanged 2-4"; DN50-100
  - Ductile Iron Body (C50-C, C50-J): male threaded 2"; DN50, flanged 2-4"; DN50-100
  - Stainless Steel Body (C50-G, C50-N): male threaded 2-3"; DN50-80, flanged 2-3"; DN50-80
- Outlets: Sideways, female threaded 2"; DN50

### Operational Data

- Pressure Rating: 150 psi; ISO PN10 (C50-P), 230 psi; ISO PN16 (C50-C, C50-J, C50-G, C50-N)
- Minimum operating pressure: 0.8 psi; 0.05 bar
- Maximum operating pressure: 150 psi; 10 bar (C50-P), 230 psi; 16 bar (C50-C, C50-J, C50-G, C50-N)
- Media and operating temperature: Water, 33-140°F; 1-60°C

### Materials

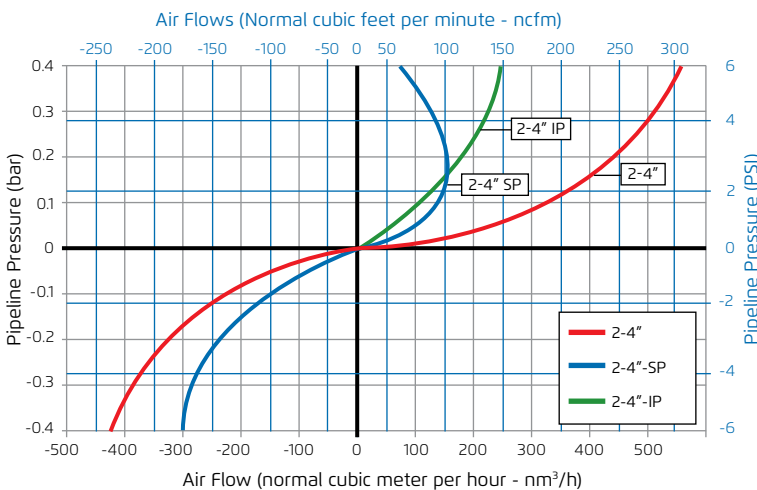
- Body, Neck and Cover:
  - Glass-Reinforced Nylon (C50-P)
  - Ductile Iron (C50-C)
  - Stainless Steel 316 (C50-N)
- Ductile Iron body with Glass-reinforced Nylon neck and cover (C50-J)
- Stainless Steel 316 body with Glass-reinforced Nylon neck and cover (C50-G)
- Upper Float Assembly: Polypropylene, Glass-Reinforced Nylon.
- Lower Float Assembly: Polypropylene, Optional – Stainless Steel 316.
- Float Rod: Stainless Steel 316
- Elastomers: EPDM, NBR. Optional – Viton.
- Coating of Ductile Iron: Fusion Bonded Epoxy

### Orifice Specifications

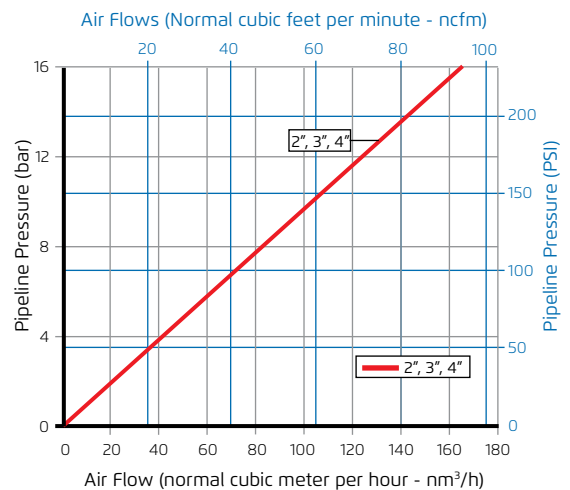
Inlet Sizes	Automatic Orifice	Kinetic Orifice		Surge Protection		
	Area	Diameter	Area	Number of holes	Hole Diameter	Total Area
Inch	Sq inch	inch	Sq inch	--	inch	Sq inch
mm	Sq mm	mm	Sq mm		mm	Sq mm
2"-4"	0.019	1.772	2.465	4	0.157	0.078
DN50-DN100	12.2	45.0	1,590		4	50

### Air Flow Performance Charts

**Air Relief and Intake** (Pipeline Filling, Draining and Vacuum Conditions)



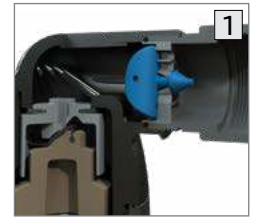
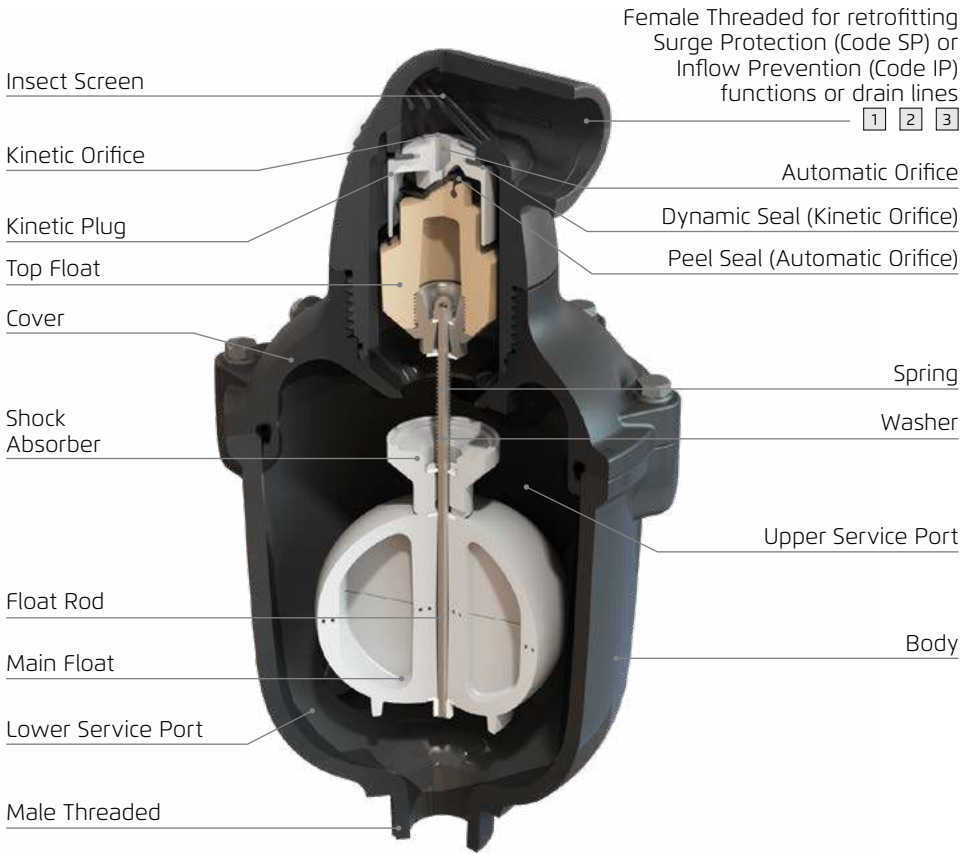
**Air Release** (Pressurized Operation)



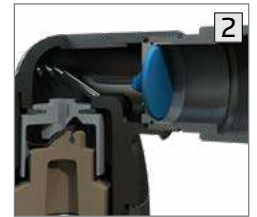
Air relief and intake charts are based on actual measurements, measured in Bermad Air Flow test bench, according to EN-1074/4 standard and refer to Side outlet. Use Bermad Air software for optimized Sizing & Positioning of Air Valves.



### Cutaway - Glass-reinforced Nylon Body (C50-P)



Surge Protection  
(code C50-SP)

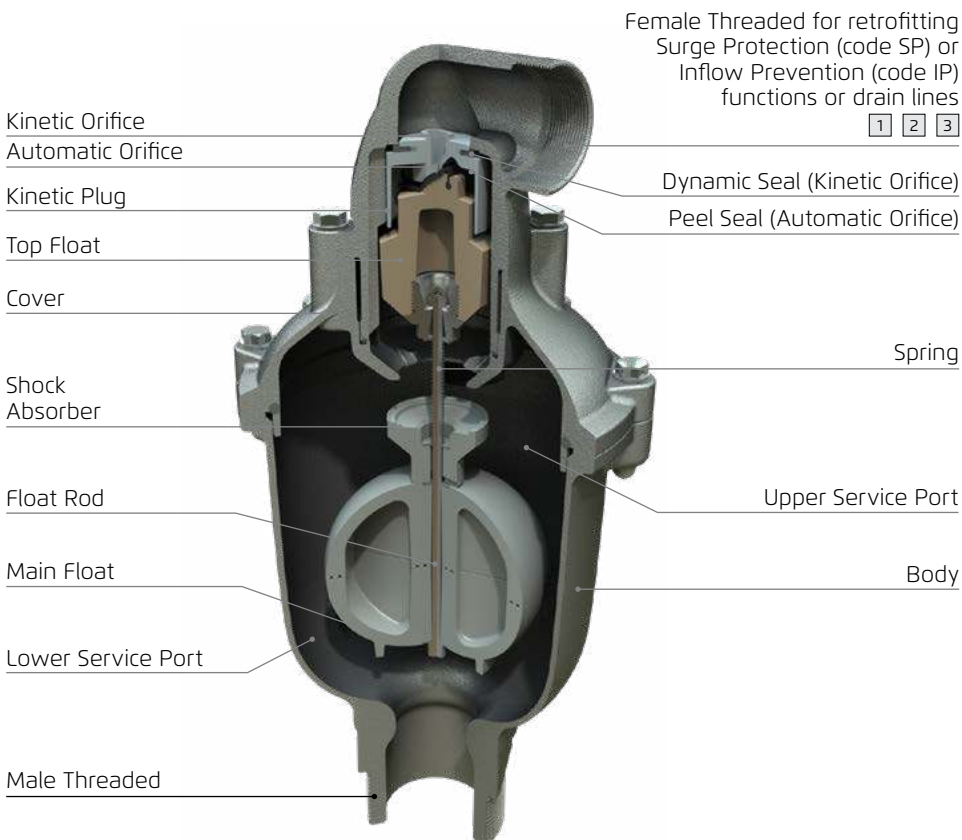


Inflow Prevention  
(code C50-IP)



Extension with  
downwards outlet

### Cutaway - Stainless Steel Body (C50-N)





Dimensions & Weights

		 Glass Reinforced Nylon (C50-P)			 Ductile Iron (C50-C)			 Ductile Iron & Glass Reinforced Nylon (C50-J)		
Inlet Size	Connection	Width (D)	Height (H)	Weight	Width (D)	Height (H)	Weight	Width (D)	Height (H)	Weight
inch		inch	inch	lbs	inch	inch	lbs	inch	inch	lbs
mm		mm	mm	Kg	mm	mm	Kg	mm	mm	Kg
2"	Threaded	13.622	18.031	12.8	14.488	19.291	45.2	13.740	19.252	26.4
DN50		346	458	5.8	368	490	20.5	349	489	12.0
2"	Flanged	13.622	18.504	14.1	14.488	19.724	49.1	13.740	19.724	30.2
DN50		346	470	6.4	368	501	22.3	349	501	13.7
3"	Threaded	13.622	18.031	13.0	---	---	---	---	---	---
DN80		346	458	5.9	---	---	---	---	---	---
3"	Flanged	13.622	18.504	14.8	14.488	19.291	52.5	13.740	19.252	33.5
DN80		346	470	6.7	368	490	23.8	349	489	15.2
4"	Flanged	13.622	18.504	15.3	14.764	19.291	55.1	14.764	19.291	37.5
DN100		346	470	7.0	375	490	25.0	375	490	17.0

\* including assembled extension + 90 degrees elbow. For an addition of SP/IP device, add to the Width (D) 2.087"; 53mm

		 Stainless Steel & Glass Reinforced Nylon (C50-G)			 Stainless Steel (C50-N)		
Inlet Size	Connection	Width (D)	Height (H)	Weight	Width (D)	Height (H)	Weight
inch		inch	inch	lbs	inch	inch	lbs
mm		mm	mm	Kg	mm	mm	Kg
2"	Threaded	13.622	19.213	23.4	13.661	19.252	37.0
DN50		346	488	10.6	347	489	16.8
2"	Flanged	13.622	19.134	29.1	13.661	19.370	41.7
DN50		346	486	13.2	347	492	18.9
3"	Threaded	13.622	20.197	28.7	13.661	20.197	41.9
DN80		346	513	13.0	347	513	19.0
3"	Flanged	13.622	19.409	35.7	13.661	19.843	48.3
DN80		346	493	16.2	347	504	21.9
4"	Flanged	13.622	19.409	41.2	13.661	19.843	49.4
DN100		346	493	18.7	347	504	22.4

\* including assembled extension + 90 degrees elbow. For an addition of SP/IP device, add to the Width (D) 2.087"; 53mm