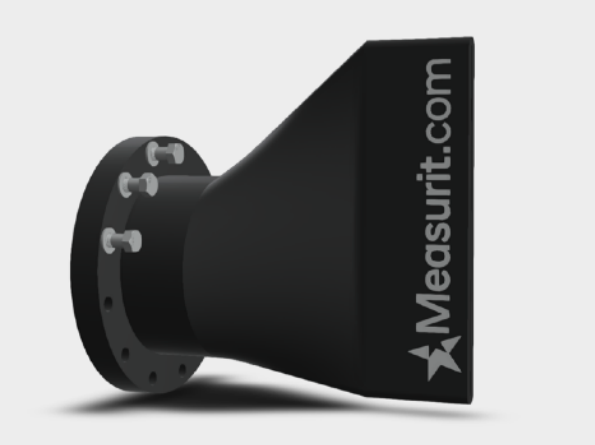
Measurit



Tough Reinforced Vulcanised Construction

See how Check-Flex® duckbill valves work.

Go to Product Video

Check-Flex® G4 Duckbill Check Valve

- Flap valve replacement requiring minimal clearance below pipe invert level
- Works while submerged and partially submerged
- Easy opening in fluid sand, shingle, silt and mud
- Tough - suitable for extreme coastal conditions
- No maintenance

The Check-Flex® G4 is built from layers of fabric reinforced rubber, which are hot vulcanised into a single piece valve. The modern unique asymmetrical (US Patent 11,221,081) delivers full port flow and fast drainage, with minimal clearance below pipe Invert Level.

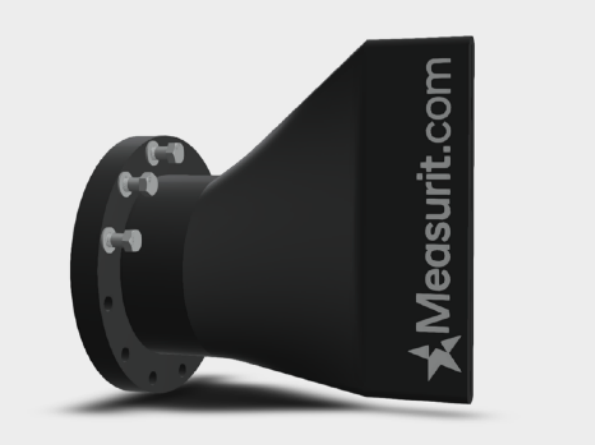
The G4 is an ideal replacement for failing flap valves, particularly for headwall mounting in rivers and estuaries. The tough one piece reinforced Neoprene construction is offers long life in all drainage locations, including coastal and saltwater areas without periodic maintenance. In new designs, the pipe outfall invert level can be submerged and even under river mud or beach sand. Lowering the outfall level maximises gravity flow for a low carbon flood defence design.

In partially filled pipes, the low upstream head acts on the large area of the G4 walls (compared to the flap valve chord), delivers the force to open the valve and clear shingle and rocks. The G4 valves will reliably drain a pipe of standing water and are self-clearing of flow debris. In tidal zones, the valves will continue to work as the valve is submerged.

The flange of the valve forms a deep gasket to the wall, (27-40mm). The flange contains a fully encapsulated retaining ring, so that the standard valve is suitable for marine use.

Duckbill valves work on the same principle as Leonardo Da Vinci's mitre lock gate design. The back pressure of the tide or river water presses the valve walls together to make a seal that can hold a vacuum. The G4 responds instantly to pressure changes on the walls allowing pipes to be drained down to lowest wave trough level, maximising the upstream attenuation.

There are SDP (Slide Direct to Pipe) versions available where a connection to an exposed pipe can be made, such as an outfall pipe in rock armour, or is soft ground that cannot support the structure of a headwall. The valves can be installed directly into river flows without sidewall protection. These valves are often used for land drainage and to maintain saltwater marshes or SAC's using lightweight plastic pipe and SDP valves to control backflow.



FLANGED PIPE CONNECTION (DBF)

SLIDE DIRECT TO PIPE (SDP)

Check-Flex® G4: the modern design

Simple Installation the deep rubber flange will seal to wall imperfections. Installers will easily achieve an effective and secure valve connection in challenging conditions.

Asymmetrical design the bill of the valve will clear the apron of headwalls, where the invert level of the pipe is low. This allows the maximum drainage for SUDS and is an effective flap valve replacement in all situations.

Easy Opening the latest generation of duckbill check valve has the largest wall area to provide the force for partially filled pipes to open the valve, even in silt and sand.

Encapsulated Steel Backing Ring the G4 is built from radial layers of bias reinforced rubber (can move in one direction only), which are hot vulcanised into a single piece valve. The flange of the valve is reinforced with a fully encapsulated retaining ring that is fixed with bolt and washer anchors to suit site structure

Large Sealing Area the large sealing area works to seal around grit. The fibre reinforcement is a rip-stop against glass shards in road drainage. The rubber material can handle the typical abrasion in drainage without significant wear with a maximum recommended pipe velocity of 5.0 m/s.

Headloss Check-Flex valves are designed for minimal headless, the large wall area powers the valve open with as little as 25-50mm head, and will seal effectively preventing sand and silt ingress, maximising stormwater storage in the pipe for many maintenance free years.

Design Life Check-Flex valves are designed for long life without maintenance. The standard two year warranty and this can be extended to five years. Measurit have supplied rubber valves since 1989 and many valves are in service since the 90's.

Pipe Stays Flowing the key advantage of the duckbill valve is that pipeline will remain clear of silt, sand and mud, even when the valve itself is fully buried. The valves will work fully submerged.

Check-Flex® G4 Duckbill Check Valve

Technical Specification

Check-Flex® CF-DBF-G4 and CF-DB-G4-SDP Specification [Option]	
Nominal Diameter	EN1092-1 flange sizes DN100-DN2400mm [ANSI, JIS]
Material	Neoprene to ASTM D2000: 5BC520 A14 C12 Eo34 G21 Z1 Z1= flame resistance per ASTM C1166 Meets and exceeds: D412 modulus (300%) D573 heat age test D1171 ozone resistance Option: [EPDM, BUNA-N]
Backing Ring	Fully encapsulated [316 St-St EN 1.4404, Duplex EN 1.4410]
Pipe Connection	Flanged [SDP: Slide Direct on Pipe]
Cracking Pressure	20-40 mm
Headloss Typical	See specific curve
Max Temp	100°C [130°C]
Max Back Pressure	8m [20m on application]
Max Pipe Velocity	5.0 m/s [10 m/s]

Specification Notes

- Check-Flex® G4 valves are usually installed at “end of pipe” in new designs, with the G5 inline valve used upstream.
- Valves can be manufactured to deliver a specific exit velocity for effluent diffuser design
- STEP files available ISO 10303
- Complete flow data for any valve is available on request
- Valve performance data verified at Utah Water Research Laboratory
- These valves can be installed on any pipe orientation

Order Checklist

Check-Flex® CF-DBF-G4	Flanged Valve
Headwall Mount: Pipe Size	
Mating Flange: Flange Drill Pattern	
Max Back Pressure	

Check-Flex® CF-DB-G4-SDP	Slide Direct to Pipe
SDP: Pipe Outside Diameter	
Max Back Pressure	

Check-Flex® G4 Duckbill Check Valve

Model Order Code

Model-	Size-	Elastomer-	Metal-	Connection-	Option-
CF-DB-G4	Asymmetrical Slide Direct onto Pipe SDP				
CF-DBF-G4-	Asymmetrical Flanged to pipe or headwall				
	S0100-**S**2500 Valve Body Size in mm. e.g. S0300 = DN300				
		NN- Neoprene ASTM D2000: 5BC520 A14 C12 Eo34 G21 Z1			
		EE- EPDM	BN - Buna-N		
			316- Stainless Steel EN 1.4404		
			ENC- Encapsulated Backing Ring		
				SDP-0160 **S**lide **Di**rect to **P**lpe with outside diameter 160mm	
				F-DN150 PN16 Flange Hole Pattern	
					Flat Extended Flange

Fast Delivery Models

Pipe Size	Size-	Elastomer-	Metal-
CF-DB-G3-	42, 50, 100, 200, 355mm		
CF-DBF-G3-	DN100, DN150, DN200, DN250, DN300, DN400, DN500, DN800		
CF-DB-G4	100, 112, 160, 170, 180, 200, 238, 245, 250, 267, 278, 316, 328, 345, 380, 400, 480, 500, 510, 635, 726, 940, 1080mm		
CF-DBF-G4-	DN100, DN150, DN200, DN250, DN300, DN350 DN400, DN450, DN500, DN600, DN800, DN900, DN1000		
		NN- Neoprene ASTM D2000: 5BC520 A14 C12 Eo34 G21 Z1	
			316- Stainless Steel EN 1.4404
			ENC- Encapsulated Backing Ring

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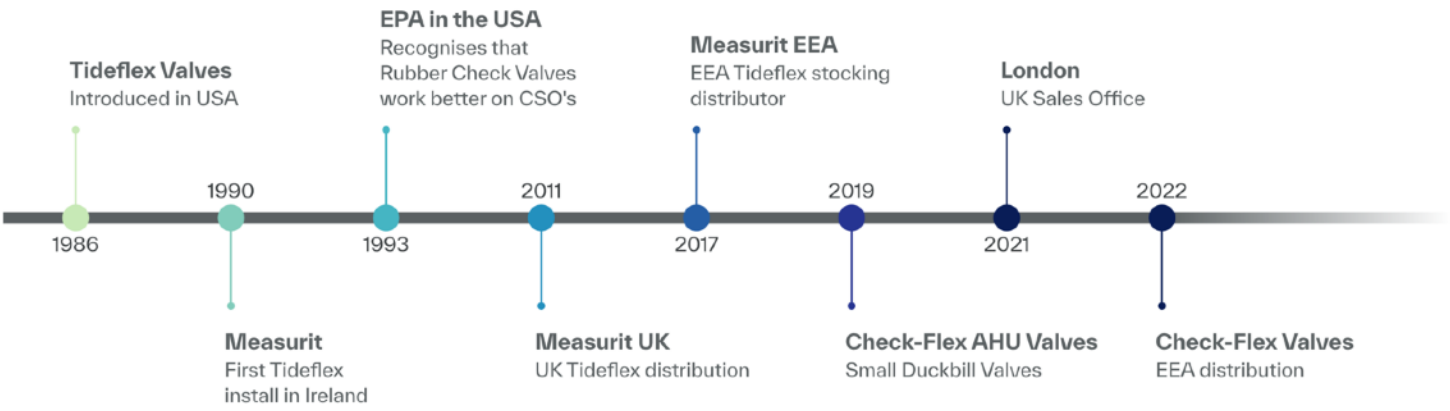
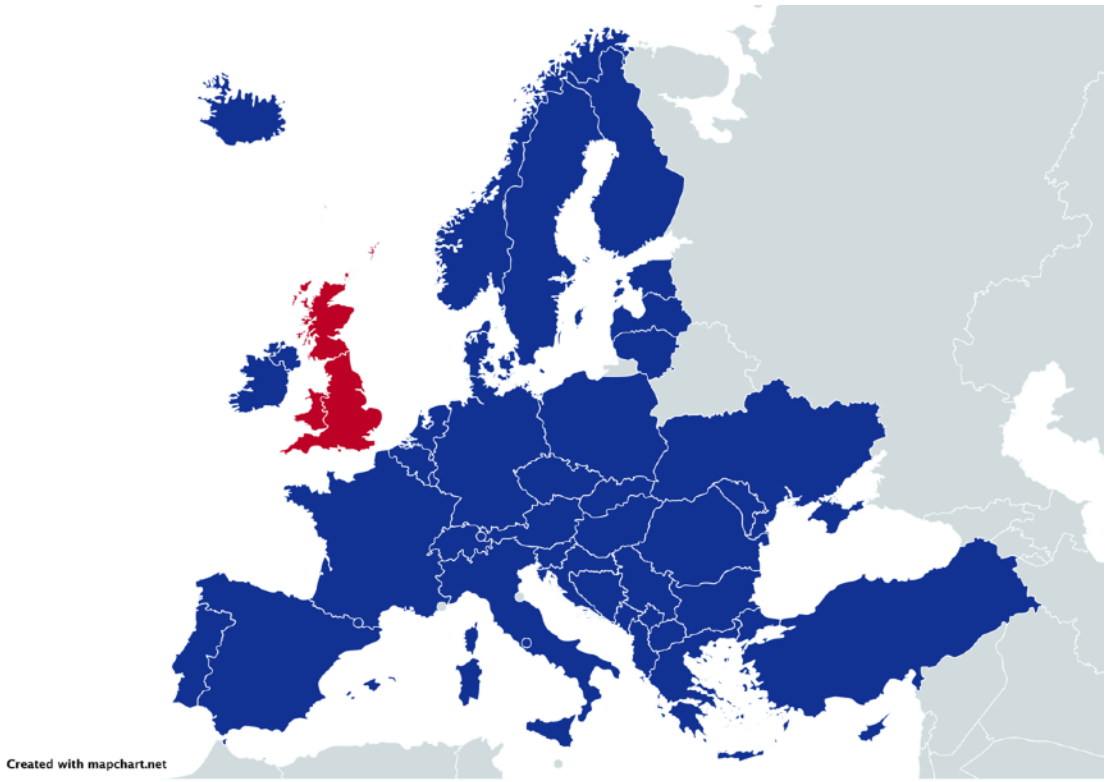
Our Journey



We stock five categories of Rubber Check valves from leading manufacturers in America, Switzerland and South Korea.

Our team has the expertise to advise you on the best check valve for any situation, thanks to our extensive work on the coasts of Ireland and the UK



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