
Tough Reinforced Vulcanised Construction

See how Check-Flex® duckbill valves work.

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# Check-Flex® G3 Duckbill Check Valve

- Flap valve replacement
- 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® G3 is built from layers of fabric reinforced rubber, which are hot vulcanised into a single piece valve. The symmetrical valve delivers full port flow and fast drainage, with minimal length and is ideal for locations that are higher than bed level or permanently submerged, where clearance below pipe invert level is available.

The G3 is an ideal economic replacement for failing flap valves on CSO/ESO, including pumped flows. The tough one piece reinforced Neoprene construction is offers long life in all drainage locations, including coastal and saltwater areas without periodic maintenance.

In partially filled pipes, the low upstream head acts on the large area of the G3 walls (compared to the flap valve chord), delivers the force to open the valve and clear shingle and rocks. The G3 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, (35mm). The flange contains a fully encapsulated backing 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 G3 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® G3: 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 G3 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 steel ring that requires only washers to fix.

**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.

**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. G3 valves can be used as multiport diffuser nozzles to improve the mixing of effluent into receiving waters.


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# Check-Flex® G3 Duckbill Check Valve

## Technical Specification

| Check-Flex® CF-DBF-G3 and CF-DB-G3-SDP Specification [Option] | |
|---|---|
| Nominal Diameter | EN1092-1 flange sizes DN50-DN2400mm [ANSI, JIS] |
| Material | Neoprene to ASTM D2000: 5BC520 A14 C12 Eo34 G21 Z1<br>Z1= flame resistance per ASTM C1166<br>Meets and exceeds:<br>D412 modulus (300%)<br>D573 heat age test<br>D1171 ozone resistance<br><br>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 |
| Weight | See specific drawing |
| 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® G3 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
- Clearance is required below pipe Invert Level
- Complete flow data for any valve is available on request
- Valve performance data verified at Utah Water Research Laboratory
- These valves are patented, with a continuous product development program
- These valves can be installed on any pipe orientation

## Order Checklist

| Check-Flex® CF-DBF-G3 | Flanged Valve |
|---|---|
| **Headwall Mount:** Pipe Size | |
| **Mating Flange:** Flange Drill Pattern | |
| Max Back Pressure | |

| Check-Flex® CF-DB-G3-SDP | Slide Direct to Pipe |
|---|---|
| **SDP:** Pipe Outside Diameter | |
| Max Back Pressure | |


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# Check-Flex® G4 Duckbill Check Valve

## Model Order Code

| Model- | Size- | Elastomer- | Metal- | Connection- | Option- |
|---|---|---|---|---|---|
| **CF-DB-G3-** | Symmetrical Slide Direct onto Pipe SDP | | | | |
| **CF-DBF-G3-** | Symmetrical Flanged to pipe or headwall | | | | |
| | **S**0100-**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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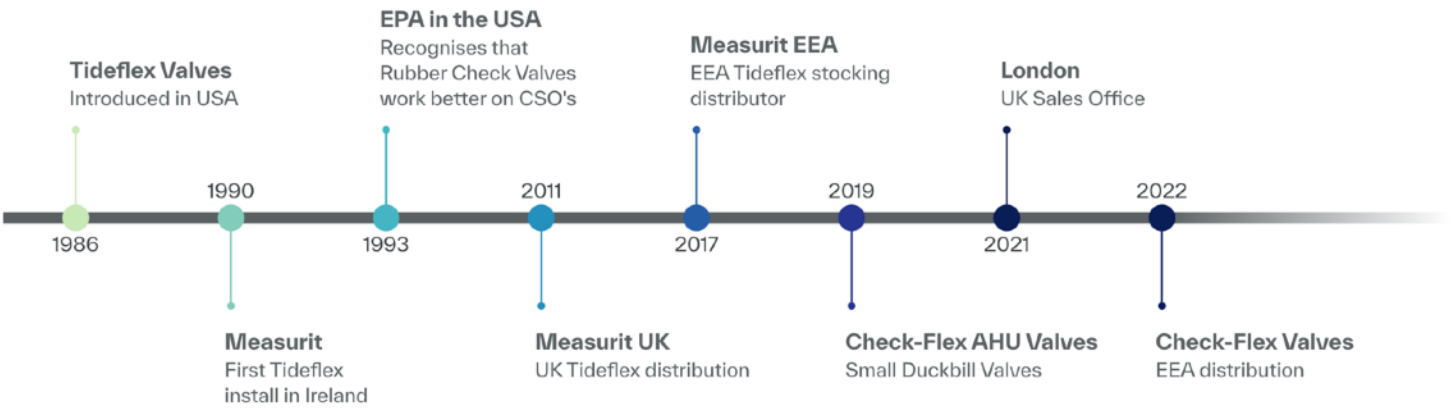
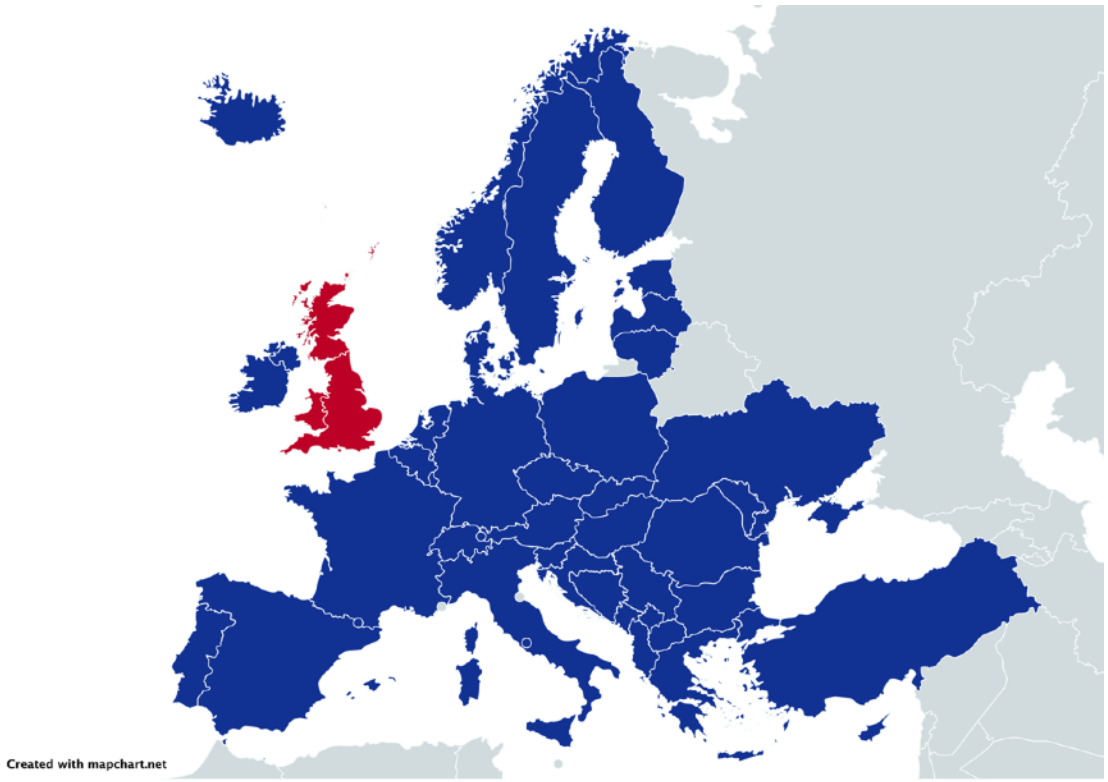
# Our Journey




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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