NORHAM

MANUFACTURING FROM
RECYCLABLE MATERIALS

ECO-FLAP®

VALVES

Protection solution against the risk of backflow flooding

- UV-resistant
- **Optimum watertightness** up to 1,0 bar (10 mWG)
- **Vandal-resistant flap :** fitted with security clips
- Made of recyclable PA and PPH.

NORHAM

afaq ISO 9001 Qualité AFNOR CERTIFICATION N° 1997 | 8004.7

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ECO-FLAP®

VALVES

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ECO-FLAP®
VALVES

INTRODUCTION

AREA OF USE

Designed for rainwater pipes and gravity systems, **ECO-FLAP®** non-return valves are protective devices to prevent water from flowing up pipes (heavy rain, storms, floods) and flooding homes.

To protect homes near watercourses or bodies of water, the **ECO-FLAP®** sange is available in two models for installation at the end of networks :

- **ECO-FLAP® END-OF-PIPE** or fitting to all types of pipe by spigot and socket or with a **NORHAM COUPLING** ;
- **ECO-FLAP® FLANGE** for fixing to a concrete wall or ISO PN 10 pipe flange.

Product not suitable for use in marine environments (swell, swirls). Please contact us for further information.

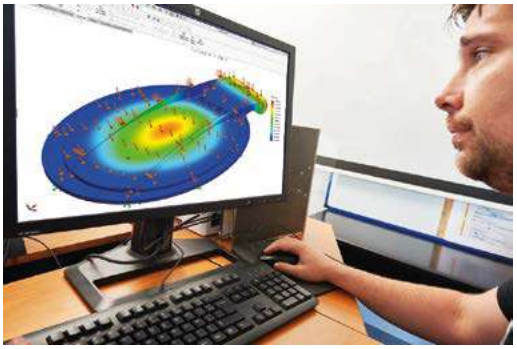
ECO-FLAP® END-OF-PIPE

ECO-FLAP® FLANGE

TECHNICAL DATA

DESIGN

Since NORHAM was certified in 1997, each design has been carried out in accordance with the requirements defined in the ISO 9001 standard. In particular, the mechanical strength and watertightness criteria of the **ECO-FLAP®** range have been studied.



3D modelling of the EFxxxN flap.
All designs are produced and validated by NORHAM's R&D department.

MATERIALS RESISTANCE (RDM STUDY)

This involves finite element modelling of the mechanical strength of **ECO-FLAP®** valves.

The ability of **ECO-FLAP®** to withstand a back pressure of 1.0 bar was validated in this study.

Dimensions in mm. Weight in kg. Operating pressure (W_p) in bar. Non-contractual visuals.

ECO-FLAP®

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VALIDATION CRITERIA

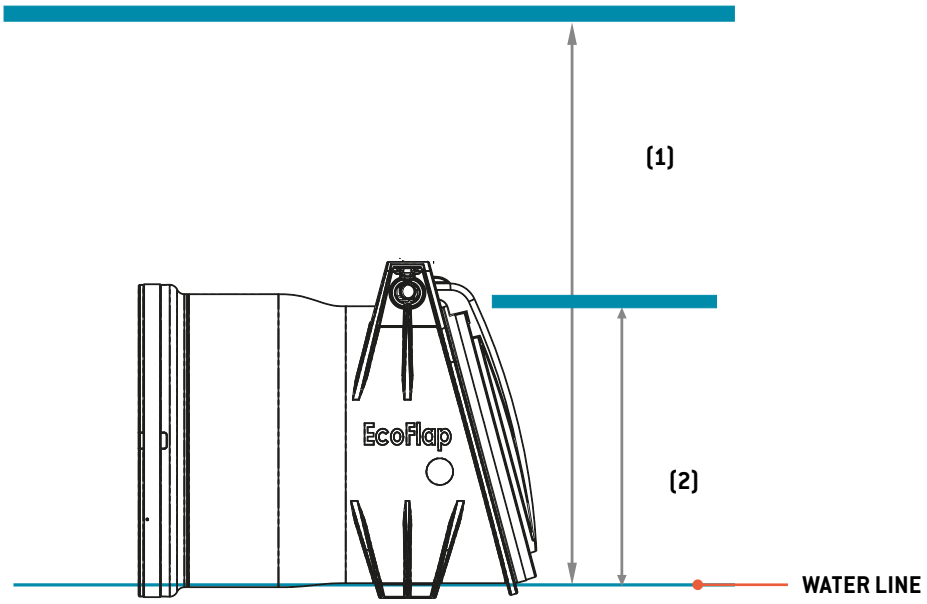
The **ECO-FLAP®** range of non-return valves was bench tested by NORHAM's R&D department.
The tightness criteria they have to meet are more demanding than those defined in standard EN 13564-1(1).
The aim of this approach is to offer the best possible range of non-return valves.

(1) EN 13564-1: defines the requirements for materials, performance, design, construction and marking for non-return systems.

NORHAM criteria :

- optimum tightness for a head of water/thread of water equal to the DN of the valve :
  - maximum acceptable leakage rate (maximum leakage rate = "drip") ;
- watertight up to 1.0 bar (10 mWG)..

REF.	REQUIREMENTS STANDARD EN 13564 WATERTIGHTNESS / WATER LINE: DN + 100 MM	NORHAM REQUIREMENTS WATERTIGHTNESS / WATER LINE: DN
EF100N	200	100
EF110N	210	110
EF125N	225	125
EF150N	250	150
EF200N	300	200



(1) Water level required to seal the valve in accordance with EN 13564: DN valve + 100 mm.

(2) Water level required to seal the valve in accordance with NORHAM requirements: DN Valve.

ECO-FLAP®
VALVES

THE RANGE

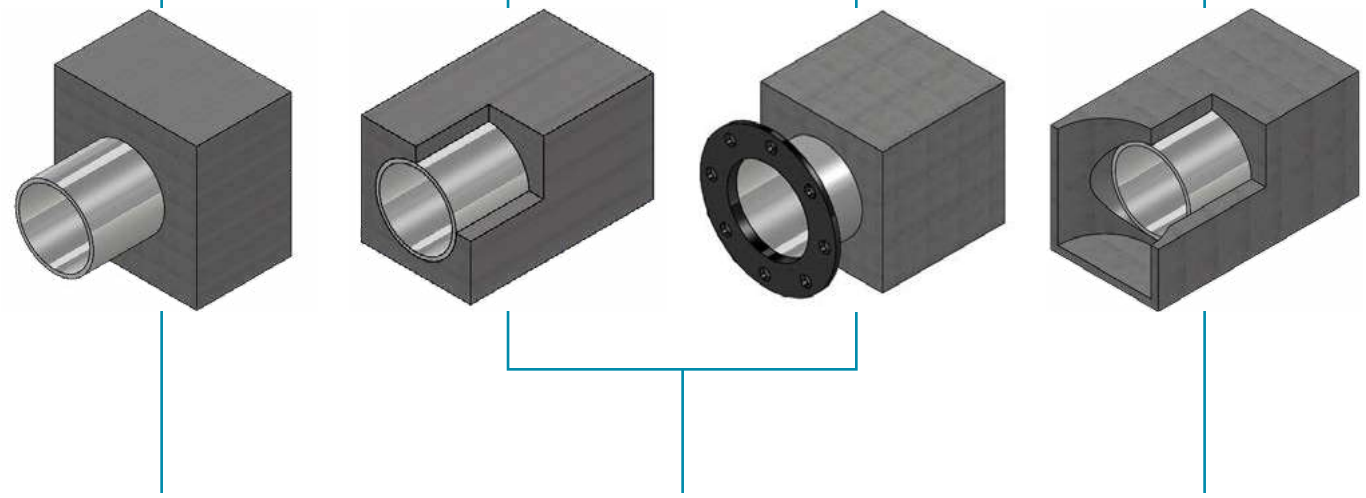
The following diagram will help you choose the **ECO-FLAP®** alve best suited to your configuration :

PIPE INSTALLATION

WALL MOUNTING ON STRAIGHT WALL

MOUNTING ON STANDARD FLANGE

WALL-MOUNTED ON CIRCULAR WALL



ECO-FLAP® END-OF-PIPE

From DN 100 to DN 200

W_p : 1,0 bar

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ECO-FLAP® FLANGE

From DN 100 to DN 200

W_p : 1,0 bar

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ECO-FLAP® FLANGE WITH AR_V_B ADAPTATION

From DN 100 to DN 200

W_p : 1,0 bar

Page 8 and 9

Dimensions in mm. Weight in kg. Operating pressure (W_p) in bar. Non-contractual visuals.

ECO-FLAP®
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ECO-FLAP® END-OF-PIPE

TECHNICAL DATA

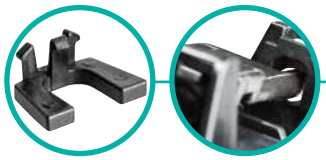
Materials :

- **Body** made of 20% glass-fibre reinforced polyamide ;
- **Flap** made of 30% glass bead reinforced PPH ;
- **Seal** made of TPE

FABRICATION EN MATÉRIAUX RECYCLABLES : PA - PPH - TPE.

Assembly : installed **at the end of** rainwater pipes or gravity networks.

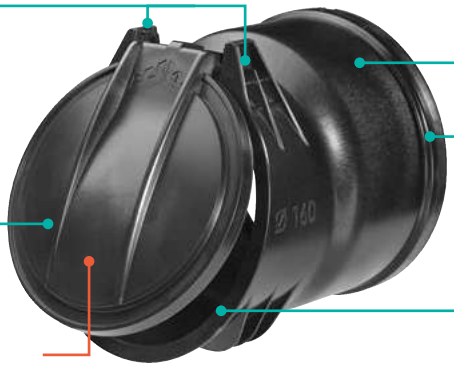
- **PVC or materials with the same external diameter :** by fitting together. If the pipe is not perfectly circular or is damaged, a bead of PU-type adhesive can be applied to the **ECO-FLAP®** body to complete the sea ;
- **Other types of pipe (cast iron, corrugated pipes, fibre cement, clay, etc.) :** with a **NORHAM COUPLING**(1) (sold separately).



VANDAL PROOF FIXING SYSTEM :
"invisible" clips.

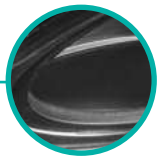
FLAP
made of
polypropylene 30% reinforced
with recyclable glass beads.

RING-NUT
(optional, see table below)



BODY
made of 20% glass-fibre
reinforced polyamide.

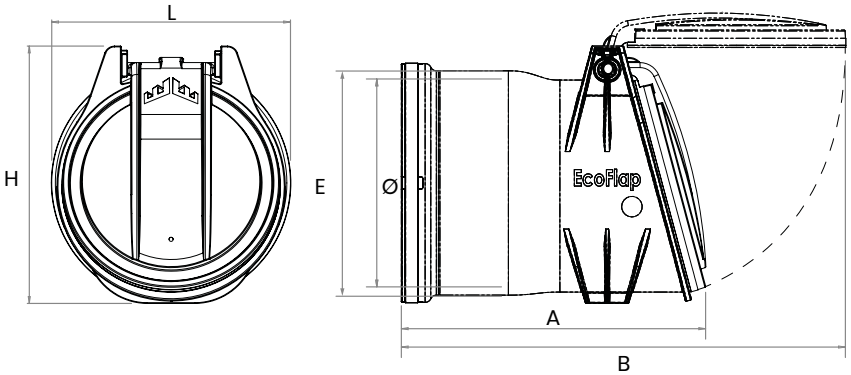
STACKING SEAL
made of embedded TPE.



EMBEDDED TPE SEAL
for optimum sealing.

ECO-FLAP® END-OF-PIPE RANGE FROM DN 100 TO DN 200

REF.	DN	Ø	A	B	H	L	E	WEIGHT	W_p
EF100N	100	100	149	216	125	116	109	0,3	
EF110N	110	110	149	216	130	126	119	0,3	
EF125N	125	125	164	246	145	141	134	0,4	1,0
EF150N	160	160	192	299	178	176	169	0,6	
EF200N	200	200	229	365	221	220	211	1,0	



(1)

MULTIMATERIAL CONNECTION WITH NORHAM COUPLING
For all types of connections, the external diameters of the pipes must be specified.

Dimensions in mm. Weight in kg. Operating pressure (W_p) in bar. Non-contractual visuals.

ECO-FLAP®
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ECO-FLAP® FLANGE

TECHNICAL DATA

Materials :

- **Body and flap :** made of 20% glass-fibre reinforced polyamide ;
- **Seal :** EPDM

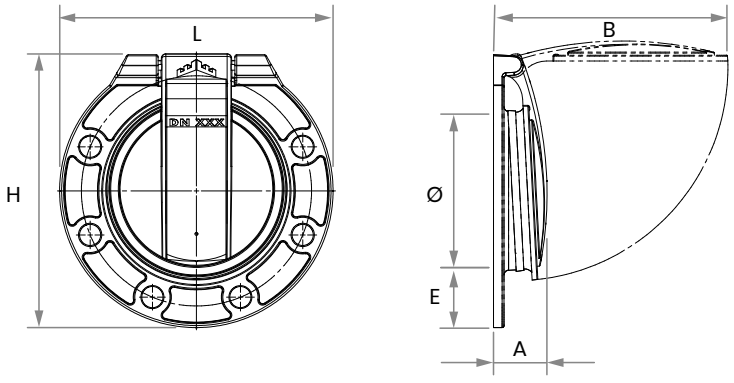
DESIGNED WITH RECYCLABLE MATERIALS: PA

Assemby : designed for installation **at the end of** rainwater drainage networks or gravity networks, on a vertical wall.

- **On concrete wall** using 4 Ø 8 mm mechanical anchors supplied by NORHAM ;
- **On an ISO PN 10 pipe flange** (screws not supplied).

ECO-FLAP® FLANGE RANGE FROM DN 100 TO DN 200

REF.	DN	Ø	A	B	H	L	E	WEIGHT	W_p
EF100B	100	110	45	188	225	220	55	0,4	
EF150B	160	160	55	244	285	285	63	0,6	1,0
EF200B	200	200	65	296	335	340	70	0,9	

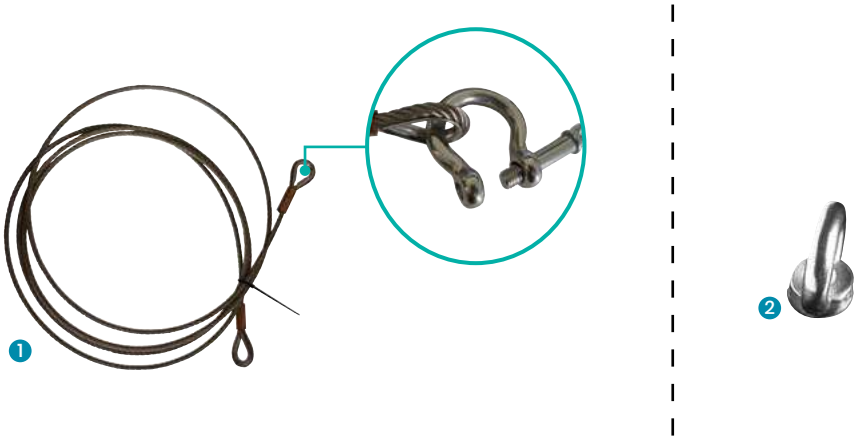


Dimensions in mm. Weight in kg. Operating pressure (W_p) in bar. Non-contractual visuals.

ACCESSORIES

HANDLING OF ECO-FLAP® END-OF-PIPE AND FLANGE

REF.	DESCRIPTION
1 CABLE3M-316	3 m handling cable, AISI 316 stainless steel, Ø 5 mm, 2 thimble loops + shackle
CABLE6M-316	6 m handling cable, AISI 316 stainless steel, Ø 5 mm, 2 thimble loops + shackle
2 ÉCROU-ANNEAU10-316	AISI 316 stainless steel ring (A4)



CIRCULAR WALL INSTALLATION

Adaptor flanges for **ECO-FLAP® FLANGE** valves. Body in HDPE, EPDM seal and screws in AISI 316 stainless steel.

REF.	MANHOLE Ø	DN
AR_V_B_100	600 à 1500	100
AR_V_B_150		150
AR_V_B_200		200

BARE PART, WITHOUT VALVE OR FASTENERS.

INSTALLATION

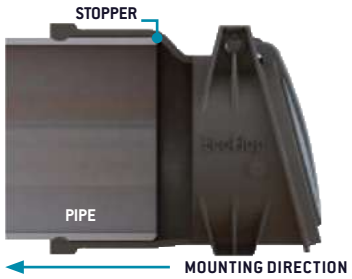
ECO-FLAP® END-OF-PIPE

Before installation, ensure that :

- the DN of the pipe is the same as the DN of the valve
- the pipe is clean, neat and in perfect condition
- the area of use is for rainwater or wastewater in a gravity network.

INSTALLATION SUR CANALISATION PVC OU Ø EXT. IDENTIQUE

PHASE 1	To facilitate installation of the valve, soapy water (or grease, silicone, etc.) can be applied to the pipe.
PHASE 2	Push the valve in as far as it will go and centre it. If necessary, to perfect the seal (particularly for slightly deformed pipes), a bead of PU-type adhesive can be applied to the seal between the valve and the pipe.

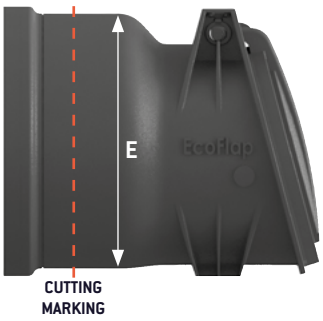


INSTALLATION ON ANOTHER TYPE OF PIPE

The **ECO-FLAP® END-OF-PIPE** valve should be fitted with a **NORHAM COUPLING**, adapted to the external diameter of the pipe.
NORHAM COUPLING documentation, downloadable from www.norham.fr.

ECO-FLAP® END-OF-PIPE	100	110	125	150	200
E(1)	109	119	134	169	211

(1) E = external Ø of the valve without flange.



PHASE 1	Cut the flange with a saw at the marking (see diagram or refer to the *Installation Instruction Sheet* supplied with the product), then debur the cut,
PHASE 2	Fit the **NORHAM COUPLING** (provided in addition) to the valve (fixings positioned on the top of the valve).
PHASE 3	Install the valve + fitting assembly on the pipe and centre the assembly.
PHASE 4	Tighten the fitting to the recommended torque (specified on the fitting label).

Dimensions in mm. Weight in kg. Operating pressure (W_p) in bar. Non-contractual visuals.

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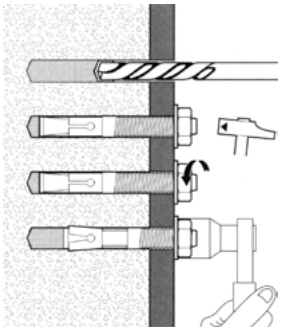
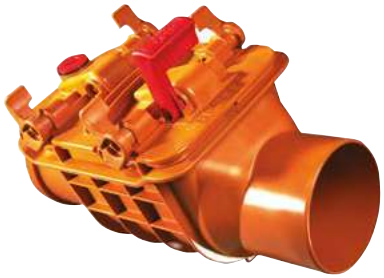
ECO-FLAP® FLANGE ON CONCRETE

PHASE 1	Place the valve body on the wall, centre it and mark the fixing points.
PHASE 2	Drill to Ø 8 mm and a minimum depth of 30 mm.
PHASE 3	Drill the wall and blow out the holes.
PHASE 4	Insert the fasteners into the holes, hammering them in if necessary.
PHASE 5	Reposition the valve body on the existing fixings and tighten all bolts evenly. Tightening torque: 18 Nm.



OTHERS NORHAM SOLUTIONS

MULTITUBE	STAUFIX®	VAN'O'FLEX® KHAM AND KHAS
		
Polyester valves DN 200 to DN 1500	Non-return valves DN 100 to DN 200	Stainless steel wall-mounted pond valves with handle KHAM DN 100 - 500 KHAS DN 100 - 600
DOWNLOAD DOCUMENTATION	DOWNLOAD DOCUMENTATION	DOWNLOAD DOCUMENTATION

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