


Version: 00 Version date: 22/09/2015	Technical Specifications ECOBAG	
Document #: ECO-STD-Gen	Series: EcoBag	Page: 1/6


BENEFITS OF ECOBAG flexible storage system:

1. High storage volume for liquids;
2. Suitable for almost any type of liquid (special foil might be required);
3. Low-cost investment compared to cubic meter (m³) storage alternatives;
4. Immediate use of available storage capacity after installation;
5. Blends into the landscape;
6. Durable UV-resistant bi-axial reinforced PVC foil;
7. Highly gas-tight and flame-retardant foil;
8. Service opening with stainless steel frame;
9. Suitable for
 - a. electrical mixers with protection frame and concrete foundation
 - b. power take off (PTO) mixer systems
10. Report with AutoCAD drawings on groundwork are included;
 - a. Dimensions and chemical properties
 - b. Geographic location
 - c. Legislation/standards
11. Fluid volume indicator (optionally)
12. Annual service agreement
13. Wiefferink-trained installation team

Reference period:

For over 25 years Wiefferink is the proud supplier of Ecobags to our clients worldwide.



Version: 00 Version date: 22/09/2015	Technical Specifications ECOBAG	
Document #: ECO-STD-Gen	Series: EcoBag	Page: 2/6

WIEFFERINK COMPANY PROFILE

Since 1956, the Wiefferink Group has been processing flexible foil and providing products and services for storage and covering solutions.

Based on decades of experience with plastic foil and its ISO 9001:2008 Kiwa certification, Wiefferink is primarily active in the development of products such as cover and storage systems for the agriculture, biogas, industrial, water management and oil & gas sectors. Wiefferink has been active in these sectors for years as a result of ever more strict European and other environmental requirements, new product technologies and sustainable covering methods.

Working with 3D engineering and CNC cutting machines, we can also apply the latest welding techniques. This makes our products stronger, lighter, more flexible, precisely toleranced *and* more durable. The extensive in-house expertise and collaboration with end users and their experience in the area of cover systems, made Wiefferink products leading with global appeal.

Wiefferink would be pleased to make its knowledge and expertise available to you for sound, durable and custom made cover systems.

OUR MISSION

Wiefferink aims to fulfil sustainable improvement and transformation of the environment both technically and visually.

ECOBAG SERIES

The Ecobag is a flexible storage system developed to store manure, digestate, fuel, oils and other liquids in an odorless manner. The Ecobag has a maximum storage capacity of up to 10.000 m³.

To avoid accumulation of air and gases inside the Ecobag, it is equipped with multiple breathers. The size of the Ecobag determines the amount of these air valves.



The Ecobag is mounted within an earth bank, with a slope of 2% toward the center, to make sure that the Ecobag will empty almost complete. The groundwork must satisfy the local standards for installing a so called “manure basin”.

In addition it is considered a landscape-friendly appearance due to the eco-green/grey colour.

Compared to alternative products, the Ecobag offers end users the benefits of;

- low-cost investment compared to cubic meter (m³) storage volume;
- fast installation on site;
- immediate use of storage capacity.

Detailed ground work AutoCAD drawings will be provided by Wiefferink, ground work itself is not part of the scope of supply. Groundwork needs to be free from sharp objects that could potentially damage the Ecobag. Before installation our experts will inspect the available area at your site, to provide the fastest and most efficient installation as possible.



ECOBAG STORAGE

The standard Ecobag series are available with storage capacity starting at 500m³ up to 10.000 m³.

Volume [m ³]	Shape	Dimensions			Groundwork								
		L [m]	B [m]	H [m]	hti [m]	bt [m]	X [m]	hto [m]	Lf [m]	Bf [m]	Lto [m]	Bto [m]	Slope [mm]
500	Square	14,5	14,5	3,5	2,75	1	1,51	1,24	9	9	18,98	18,98	90
1000	Square	20	20	3,5	2,75	1	1,23	1,52	14,5	14,5	25,04	25,04	145
1500	Square	23	23	3,5	2,75	1	1,11	1,64	17,5	17,5	28,28	28,28	175
2000	Rectangular	34,5	20	3,5	2,75	1	1,01	1,74	29	14,5	39,98	25,48	145
2500	Rectangular	42	20	3,5	2,75	1	0,94	1,81	36,5	14,5	47,62	25,62	145
3000	Rectangular	50	20	3,5	2,75	1	0,88	1,87	44,5	14,5	55,74	25,74	145
3500	Rectangular	45,5	25	3,5	2,75	1	0,79	1,96	40	19,5	51,42	30,92	195
4000	Rectangular	51,5	25	3,5	2,75	1	0,75	2	46	19,5	57,5	31	195
4500	Rectangular	57	25	3,5	2,75	1	0,71	2,04	51,5	19,5	63,08	31,08	195
5000	Rectangular	45	35	3,5	2,75	1	0,66	2,09	39,5	29,5	51,18	41,18	295
5500	Rectangular	49	35	3,5	2,75	1	0,62	2,13	43,5	29,5	55,26	41,26	295
6000	Rectangular	53	35	3,5	2,75	1	0,59	2,16	47,5	29,5	59,32	41,32	295
6500	Rectangular	57	35	3,5	2,75	1	0,55	2,2	51,5	29,5	63,4	41,4	295
7000	Rectangular	61	35	3,5	2,75	1	0,52	2,23	55,5	29,5	67,46	41,46	295
8000	Rectangular	69	35	3,5	2,75	1	0,49	2,26	63,5	29,5	75,52	41,52	295
9000	Rectangular	64,5	35	4,5	3,75	1	0,97	2,78	57	27,5	72,06	42,56	275
10000	Rectangular	71	35	4,5	3,75	1	0,94	2,81	63,5	27,5	78,62	42,62	275

Source: Wiefferink general arrangement drawing Ecobag, drawing number EB-D-1035

The Ecobag can also be custom-tailored to available space on site, specific operational needs or external factors.

FOIL

The Ecobag is manufactured from special reinforced plastic foil, consisting of a polyester fabric fitted on both sides with a biogas-resistant PVC coating. The coating is designed for optimal gas impermeability, suited specifically for high volume liquid storage applications and meets the highest of quality standards. The coating ensures that the foil is perfectly integrated into the landscape.


MATERIAL PROPERTIES

Parameters

Coating material	Value
Lining/fabric material	PVC-P
Adhesive	polyester, 100% PES
Colour	100 N/5cm
Temperature resistance	standard Green or Grey
Fire retardant	- 30°C to + 70°C
	<100 mm/min



Foil type	Weight (± 5%)	Tensile strength (N/5cm)	Fabric (dtex)
Type I KIWA	1150 g/m ²	3500/3800	1100

Version: 00 Version date: 22/09/2015	Technical Specifications ECOBAG	
Document #: ECO-STD-Gen	Series: EcoBag	Page: 4/6

MIXERS

Subject to client specific applications or liquid viscosity, the Ecobag is suitable for various types of (ATEX) mixing systems, such as electrical driven mixers and power take off (PTO) mixers.

Electrical mixing systems:

All electrical mixing systems are supplied with a galvanized protection frame, which is bolted onto a concrete foundation. Stainless steel frames are available upon request. The power supply is 400V/3 phase/50Hz.

Standard the electrical mixers have a range of: 7.5kW up to 22kW, subject to size of Ecobag and liquid viscosity.



PTO mixing systems:

These tractor driven mixing systems provide high mixing performance. By means of the drive head with dual tapered roller bearings, the radial and axial forces are transferred to the mixer tube and to the frame so that operation is possible at 1,000 rpm. Required tractor power starts at 60kW.

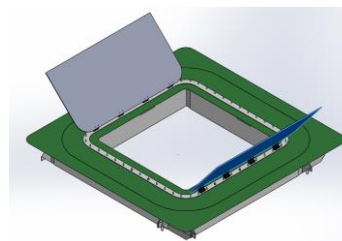


The PTO mixers are completely ready for use, supplied with drive, max. 12-15m pipe frame and drive shaft, propeller with scraper and rest. Including a galvanized support construction.

OPTIONS – ACCESSORIES

1. INSPECTION OPENING


For periodical inspections and maintenance the Ecobag is standard equipped with an user friendly and liquid tight foil inspection opening. The inner dimensions are 1200x1200 mm, the opening is supported by a reinforced stainless steel frame (1500x1500 mm) and unique floating device.



Optionally available is a liquid tight inspection opening from Trespa (as per photo above) or a stainless steel hatch

2. HEIGHT INDICATOR

- a. Digital level indicator
This signal-by-wire system digitally indicates the volume in the Ecobag.
- b. Mechanic level indicator
The system indicates the volume in the Ecobag by means of a tube and floater (bobber).

Version: 00 Version date: 22/09/2015	Technical Specifications ECOBAG	
Document #: ECO-STD-Gen	Series: EcoBag	Page: 5/6

INSTALLATION

The Ecobag is positioned between 4 earth banks by using stainless steel poles, elastic polyester belts and springs. The Ecobag is secured to the earth banks at 3 levels from top to bottom, with a distance in between of ± 250 cm.

The earth walls can optionally be covered with protection cloth against vegetation and a thick vilt layer on the bottom part for extra protection of the Ecobag against sharp materials or rocks. Subject to local regulations the Ecobag can be mounted on special PELD anti-leakage liner, with a guaranteed 20 years lifespan.

Standard the Ecobag is supplied with one central fill/emptying point, including galvanized steel spray cap, flange connection and pipe knee part (with 90 degree angle). Additional piping is to be arranged by the client.




The Ecobag is installed by specially trained mechanics or under the supervision of a senior engineer from Wiefferink. Wiefferink will ensure clean on site delivery, and the end user will handle disposal of packaging and residual waste.

The following must be available onsite for installation:

- Mobile crane
- On-site support team for;
 - o unfolding the Ecobag
 - o securing all the steel stabilizing pipes into the ground



Version: 00 Version date: 22/09/2015	Technical Specifications ECOBAG	
Document #: ECO-STD-Gen	Series: EcoBag	Page: 6/6

SERVICE

In order to preserve your Ecobag storage system and ensure its functional properties in all areas of application and weather conditions, periodic maintenance is crucial in order to guarantee long-term operation.

Wiefferink's Service Agreement is a complete inspection and maintenance plan for cost-conscious owners and managers. Wiefferink offers cost-saving maintenance for your Ecobag by means of inspections, advice and original replacement parts.

The guaranteed benefits of this include:

- Single point of contact for your 24-hour service
- Recommendation reports for parts and maintenance on your system
- Fixed prices for necessary maintenance with original replacement parts ensure cost-savings and guarantee proper components and accurate budgeting.
- Professional Wiefferink-certified mechanics with years of hands-on experience, who know your system inside and out.
- Lower insurance premiums (contact your insurance provider)

DOCUMENTATION

The documentation is standardly provided in Dutch or, if desired, German or English. Upon request documentation can be supplied in other languages at extra cost.

APPROVAL AND CERTIFICATES

The Ecobag is supplied with the following:

- Material data
- Operation and installation manuals
- Drawings

DELIVERY

The project is handed over to the client, after completion of the installation works. The project is completed upon signing of the delivery statement by the client or an authorised signatory.

GAS & LIQUID STORAGE

Should gas storage be required as well, besides liquid storage, Wiefferink can offer the Combibag as a suitable alternative to the Ecobag system. Please contact Wiefferink for further information via info@wiefferink.nl.