ECOBAG®

Geotextile Pipeline Weight (GPW)

KEYMAY

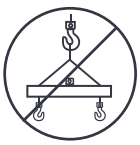
ECOBAG® GPW is an easy-to-install, high-strength, free-standing pipeline set on weight that provides predictable performance in a variety of installation environments. The ECOBAG® GPW is designed with safety in mind — from filling to transport, to installation into the pipeline trench.

ECOBAG

ECOBAG® GWP STANDARD SIZES			
NOMINAL PIPE SIZE	WIDTH	KG (FILLED)	LBS (FILLED)
8″	20″	300	660
10″	20″	500	1,100
12″	24″	700	1,540
16″	32″	1,000	2,200
20″	40″	2,268	5,000
24″	48″	2,268	5,000
30″	56″	3,175	7,000
36″	72″	4,080	9,000
42″	78″	5,650	12,500
48″	84″	6,550	14,500
56″	96″	7,030	15,500

PRODUCT FEATURES

MANUFACTURED IN AN ISO 9001 FACILITY



NO SPREADER BAR REQUIRED TO INSTALL

WORLD-WIDE SHIPPING WITH MINIMAL LEAD TIMES

FILL-ON-SITE FOR REMOTE LOCATION PROJECTS

NO SPECIAL HOPPERS REQUIRED

ADVANTAGES

- The ORIGINAL free-standing, high-strength pipeline weight design
- Equal weight distribution on pipe—no stress concentrations as with other “strap-loaded” designs
- Cathodic Protection is not restricted by the installed weights
- Free-standing weight means easy and safe highway transportation
- Hooks can be removed from top of ditch
- KEYMAY can provide fill stands and training support for remote projects
- Fill up to 300 weights per day with four men
- Geotextile material will not harm pipe coating

ECOBAG® PROPERTY CHART			
PROPERTY	**TEST METHOD**	**TEST FOCUS**	**TYPICAL RESULTS**
Material Mass per Unit Area	ASTM D-5261	Geotextile mass per unit area	411 g/m^2
Puncture Resistance	ASTM D-4833	Puncture resistance of geomembranes	1.14 kN
UV Resistance	GB/T 10454-2000	Strength retainer after 500 hours Strength retained after 1200 hours	87.5% 70.0%
Grab Tensile Strength (MD)[1]	ASTM D-4632	"Breaking load" of a geotextile fabric	2.34 kN
Grab Elongation (MD)	ASTM D-4632	Elongation of a geotextile fabric	15.8%
Grab Tensile Strength (CD)[2]	ASTM D-4632	"Breaking load" of a geotextile fabric	1.94 kN
Grab Elongation (CD)	ASTM D-4632	Elongation of a geotextile fabric	14.4%
Water Permeability of a Geotextile	ASTM D-4491	Quantity of water that can pass through a geotextile material	7.1 L/s/m^2

NOTES

1. MD = Machine Direction
2. CD = Cross Direction

ECOBAG® GWP TRANSPORTATION SPECIFICATIONS		
NOMINAL PIPE SIZE	**MASS (KG)**	**QUANTITY PER LOAD***
8″	300	65
10″	500	45
12″	700	30
16″	1,000	19
20″	2,268	9
24″	2,268	9
30″	3,175	6
36″	4,080	5
42″	5,650	4
48″	6,550	4
56″	7,030	3

*Quantities based on hauling 21,750 kg (48,000 lbs.) loads

MATERIAL DATA			
PIPE SIZE	**GEOTEXTILE MATERIAL WEIGHT**	**LOAD SLINGS**	
		WIDTH	**LOAD RATING**
8″	220 g/m^2	4″	4 straps x 6,000 lbs
10″			4 straps x 6,000 lbs
12″			4 straps x 6,000 lbs
16″	400 g/m^2		4 straps x 6,000 lbs
20″			6 straps x 10,000 lbs
24″			6 straps x 10,000 lbs
30″			6 straps x 10,000 lbs
36″			6 straps x 10,000 lbs
42″			6 straps x 10,000 lbs
48″			6 straps x 10,000 lbs
56″			6 straps x 10,000 lbs

MATERIAL

General

Polypropylene woven fabric is resistant to commonly encountered soil chemicals, mildew, and insects. Polypropylene is stable with a pH range of 2-13 and is non-biodegradable. Polypropylene is the materials of choice for geotextiles, especially relating to longevity underground. The permeability of the woven polypropylene fabric used in the manufacture of the ECOBAG® GPW does not impede cathodic protection.

Body Fabric

The body fabric of the ECOBAG® GPW is black woven polypropylene rated for geotextile use. The breathable nature of the polypropylene is well-suited for buoyancy control, where materials placed directly on the pipe coating need to allow the flow of native electrolytes in order to allow cathodic protection to function. The ECOBAG® GPW material permittivity is 7.1 L/s/m^2 and has a UV rating of over 87% after 500 hours. It is recommended to provide ground cover for ECOBAG® GPW weights stockpiled for extended periods of time.

Webbing and Straps

All lifting and loading slings used in the manufacture of the ECOBAG® GPW are heavy-weave polypropylene, with minimum load capacities of 1,500 lbs plus per inch of width.

FABRIC FACTS

- Woven polypropylene
- 400g +/- 5g/m^2
- Strengths as per test report

WEBBING FACTS

- Tensile strength >1,500 lbs/ inch of width
- Break tests exceed 4 x safety factor

INSTALLATION

Safety

The ECOBAG® GPW is designed with safety in mind

- Once filled, the ECOBAG® GPW is free standing and does not require side rails or stakes for transport.
- Each bag's lifting slings have a minimum 4x safety factor.
- The lifting slings are designed by GPW size to assure a 75% lifting angle.
- It is recommended that the filled GPW be installed using a two (2) point lift.

Filling

Filling can take place at any location where gravel can be dropped off. For large quantities of weights is recommended that the filling take place at a source close to the pipeline.

Each ECOBAG® GPW is designed to hold a specific volume of gravel, based on a dry bulk density of 1,650 kg/m^3. All stone used should be relatively clean and free of silt and clay. Recommended ballast is gravel. This can either be screened rock (¼" to ¾") or crushed and screened (¼" to 5/8").

The ECOBAG® GPW capacity is designed to accommodate more gravel with a lesser density to assure GPW meets designed mass.

Steps

1. Assemble filling Stand
2. Place filling loops on filling stand hooks
3. Fill bag with excavator, conveyor, loader, or skid-steer loader to fill line.
4. Lift off filling stand using lifting straps
5. Carry to stockpile using loader
6. Once in stockpile pull drawstrings to close bag

To assure accuracy of weight it is recommended that either a pallet scale under the filling stand or a lifting scale is used while filling the ECOBAG® GPW.

Stockpiling

The ECOBAG® GPW can easily be stockpiled in rows ready for transport to the pipeline. For safety reasons, stacking of filled ECOBAG® GPW is not recommended.

Lifting

The lifting hooks must be designed for fabric slings. The filled ECOBAG® GPW can be lifted using a variety of equipment including loader, sideboom, excavator, or crane. The length and quantity of the lifting straps varies for each GPW size to assure design lifting stresses are not exceeded. It is recommended that two (2) hooks with a minimum of 2' of sling be attached to the lifting clevis.

Transport of Filled Bags

The filled ECOBAG® GPW bag is free standing and stable in transport. It is recommended that strap tie downs be used. Chains or cable tie downs are not recommended. Stacking is not recommended.

Since the ECOBAG® GPW is made of fabric, care must be taken to ensure that the fabric is not caught or set on any sharp edges of the trailer during the lift / loading / unloading process.

Placing on Pipeline

The ECOBAG® GPW can be strung along the right-of-way in preparation for placement on the pipeline. Care must be taken to ensure the bag is not snagged, cut, or punctured by sharp objects including sticks or logs.

The lifting straps are designed to be released from the lifting hooks without a person being on the pipe or in the ditch. This is achieved in two ways:

- The operator shakes the hooks loose after setting the GPW on the pipe.
- Ropes are tied to the placement hooks and are used to pull the hooks free of the straps after setting the GPW on the pipe.

The ECOBAG® GPW is designed to accommodate uneven trench bottoms and to always set firmly on the pipe. It is also designed to ensure the "legs" of the bag stay open. With the ECOBAG® GPW "legs" remaining open while lifting and setting, there is no requirement for a swamper to guide the weight onto the pipe or for any "jerking" of the ECOBAG® GPW to open it around the pipe.