



Public Services

Engineering
212 Operations Center Drive
Wilmington, NC 28412
910 341-7807
910 341-5881 fax
wilmingtonnc.gov
Dial 711 TTY/Voice

July 22, 2016

Mr. Gordon Kolb, Jr.
Bragg Road Development Company, LLC
3920 Magazine St.
New Orleans, LA 70115

**Subject: Stormwater Management Permit No. 2015020R1
Bragg Road Development (Publix)
High Density - Temporary Revision**

Dear Mr. Kolb:

The City of Wilmington Engineering Division has received a request for a revision to the Stormwater Management Permit for The Bragg Road Development project (proposed Publix). Having reviewed the application and all supporting materials, the City of Wilmington has determined that the proposed revision meets the requirements of the City of Wilmington's Comprehensive Stormwater Ordinance.

The revisions include:

- Due to extended construction requirements on the proposed and previously permitted stormwater pond, a temporary stormwater treatment system is being installed to treat stormwater until the stormwater pond is constructed.
- This temporary system has been designed to treat the first flush of stormwater through a series of filters and flocculants as described in the approved packet.
- this system is an alternative design system. It is being issued under the alternative design provisions of 18-765 (b) of City code.
- The system must be installed and certified a prior to issuance of a certificate of occupancy as required by City Code.
- This is a temporary permit revision that will automatically expire and revert back to the previously approved system upon certification of the previously approved system or on September 19, 2016 whichever occurs first.
- There is no change to the built-upon area associated with this approval

Please be aware all terms and conditions of the permit 8/7/2015 remain in full force and effect. Any additional changes to the approved plans must be approved by this office prior to construction. The issuance of the plan revision does not preclude the permittee from complying with all other applicable statutes, rules, regulations or ordinances which may have jurisdiction over the proposed activity, and obtaining a permit or approval prior to construction.



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The revised stamped, approved stormwater management drawings will be released for construction by the Wilmington Planning Division under separate cover. Please replace any old plan sheets from the approved set with the new, revised sheet. An electronic copy of the approved drawing set, permit, application and supplementary documents will be maintained by the Wilmington Engineering Division. If you have any questions, or need additional information, please contact Robert Gordon at (910) 341-5856 or rob.gordon@wilmingtonnc.gov

Sincerely,

A handwritten signature in black ink, appearing to read 'Sterling Cheatham'.

for Sterling Cheatham, City Manager
City of Wilmington

cc: Jason Henderson PE, Bluewater Civil Group
Jeff Walton, Wilmington Development Services/Planning

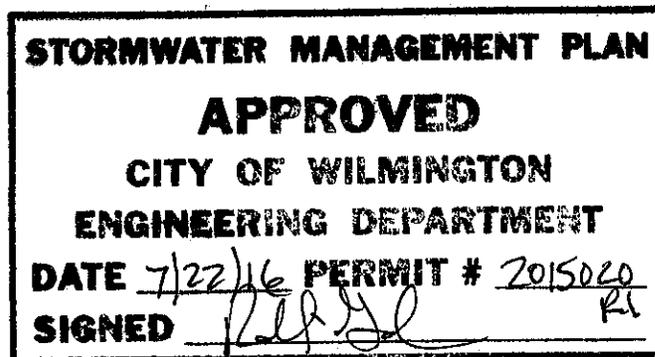
System Details

1. The proposed storm water bypass for the retention pond at the Publix Grocery (Bragg Drive) will require the installation of a temporary bypass system designed at an estimated flow of 800 GPM. At the #2 junction box there will be a 30" line plug installed to stop any water from entering the proposed retention pond.
2. The bypass will draw suction by means of a junction box in between the existing box culvert #2 and # 3. The bypass system will utilize heavy duty 6" suction hose.
3. The discharge line (6" Bauer pipe) will run approximately 48' (feet), where it will pump into the proposed Frac Tank.

Note: Two (2) Tanks will be utilized to allow us 40,000 Gallons of redundant storage to the existing 30" storm water system.

The 2nd pump set (Godwin CD150m, diesel Dri Prime) will pull suction from existing tank and discharge downstream through a Filter vessel, then to an existing storm water outfall structure.

4. Both Godwin pump sets will automatically start and stop via Floats, and will be sound attenuated, 69 DBA at 30' (feet).
5. The Godwin Dri Prime Model Cd150m 6" x 6" diesel driven pump set is able to run dry and automatically self – prime making it ideal for intermediate storm water flows. The Godwin CD150m can handle flows up to 1500 GPM and pass 3 inch solids.
6. The Filter Vessel will be equipped with (9) 10 Micron filter bags to catch any residuals from the existing 30" storm water line. Xylem will check every three days or as needed for filter servicing or exchange.
7. As an added benefit, each of the (9) filter bags will have a Flock tab added to help with TSS or turbidity concerns. Fresh Flock tabs will be added every three days or as needed.

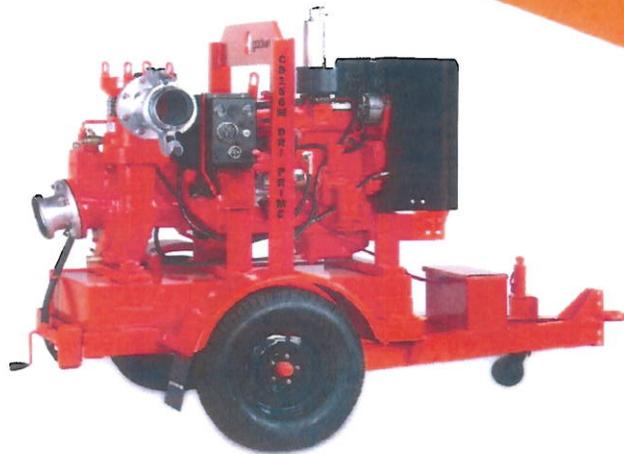


CD150M Dri-Prime[®] Pump

The Godwin Dri-Prime CD150M pump offers flow rates to 2290 USGPM and has the capability of handling solids up to 3.0" in diameter.

The CD150M is able to automatically prime to 28' of suction lift from dry. Automatic or manual starting/stopping available through integral mounted control panel or optional wireless-remote access.

Indefinite dry-running is no problem due to the unique Godwin liquid bath mechanical seal design. Solids handling, dry-running, and portability make the CD150M the perfect choice for dewatering and bypass applications.



Features and Benefits

- Simple maintenance normally limited to checking fluid levels and filters.
- Dri-Prime (continuously operated Venturi air ejector priming device) requiring no periodic adjustment. Optional compressor clutch available.
- Extensive application flexibility handling sewage, slurries, and liquids with solids up to 3.0" in diameter.
- Dry-running high pressure liquid bath mechanical seal with high abrasion resistant solid silicon carbide faces.
- Close-coupled centrifugal pump with Dri-Prime system coupled to a diesel engine or electric motor.
- All cast iron construction (stainless steel construction option available) with cast steel impeller.
- Also available in a critically silenced unit which reduces noise levels to less than 70 dBA at 30'.
- Standard engine John Deere 4045TF290 (IT4 Flex). Also available with Mitsubishi S4Q2-VSC (IT4 Flex).

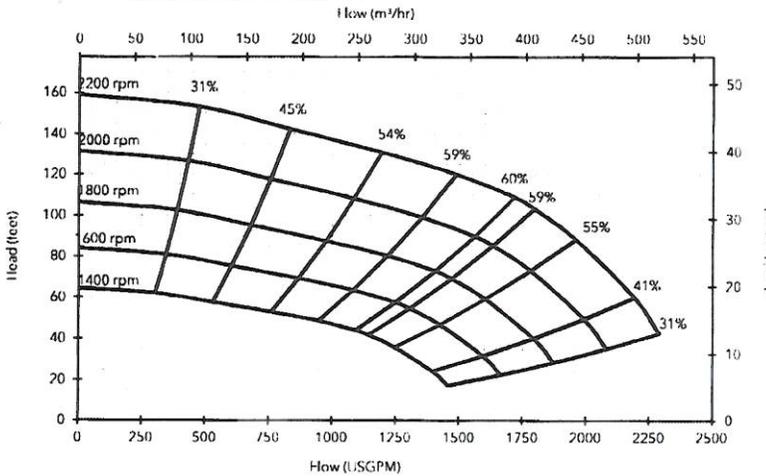
Specifications

Suction connection	6" 150# ANSI B16.5
Delivery connection	6" 150# ANSI B16.5
Max capacity	2290 USGPM †
Max solids handling	3.0"
Max impeller diameter	11.0"
Max operating temp	176°F*
Max pressure	70 psi
Max suction pressure	58 psi
Max casing pressure	105 psi
Max operating speed	2200 rpm

* Please contact our office for applications in excess of 176°F.

† Larger diameter pipes may be required for maximum flows.

Performance Curve



Engine option 1

John Deere 4045TF290 (IT4 Flex), 75 HP @ 2200 rpm

Impeller diameter 11.0"

Pump speed 2200 rpm

Suction Lift Table

Total Suction Head (feet)	Total Delivery Head (feet)				
	30	46	62	81	121
	Output (USGPM)				
10	2179	2131	2083	1889	1356
15	2058	1937	1816	1574	1162
20	1453	1453	1453	1332	848
25	1259	1211	1114	969	484

Fuel capacity: 60 US Gal

Max Fuel consumption @ 2200 rpm: 4.8 US Gal/hr

Max Fuel consumption @ 1800 rpm: 2.7 US Gal/hr

Weight (Dry): 3,020 lbs

Weight (Wet): 3,430 lbs

Dim.: (L) 119" x (W) 66" x (H) 77"

Performance data provided in tables is based on water tests at sea level and 20°C ambient. All information is approximate and for general guidance only. Please contact the factory or office for further details.

Materials

Pump casing & suction cover	Cast iron BS EN 1561 - 1997
Wearplates	Cast iron BS EN 1561 - 1997
Pump Shaft	Carbon steel BS 970 - 1991 817M40T
Impeller	Cast Steel BS3100 A5 Hardness to 200 HB Brinell
Non-return valve body	Cast iron BS EN 1561 - 1997
Mechanical seal	Silicon carbide face; Viton elastomers; Stainless steel body

Engine option 2

Mitsubishi S4O2-VSC (IT4 Flex), 36 HP @ 1800 rpm

Impeller diameter 10.4"

Pump speed 1800 rpm

Suction Lift Table

Total Suction Head (feet)	Total Delivery Head (feet)				
	10	19	29	40	64
	Output (USGPM)				
10	1688	1650	1613	1463	1050
15	1594	1500	1406	1219	900
20	1125	1125	1125	1031	656
25	975	938	863	750	375

Fuel capacity: 60 US Gal

Max Fuel consumption @ 1800 rpm: 2.4 US Gal/hr

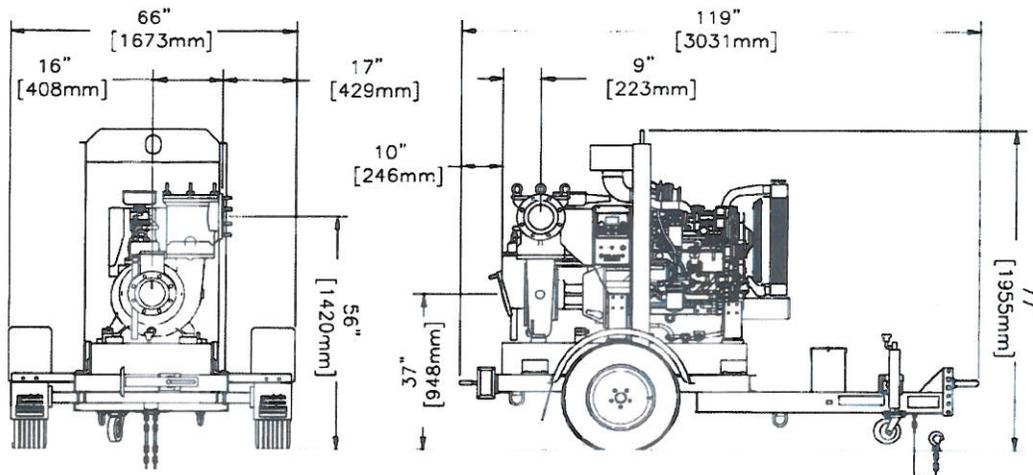
Max Fuel consumption @ 1800 rpm: 2.5 US Gal/hr

Weight (Dry): 2,460 lbs

Weight (Wet): 2,880 lbs

Dim.: (L) 119" x (W) 66" x (H) 77"

Performance data provided in tables is based on water tests at sea level and 20°C ambient. All information is approximate and for general guidance only. Please contact the factory or office for further details.



xylem
Let's Solve Water

84 Floodgate Road
Bridgeport, NJ 08014 USA
(856) 467-3636 · Fax (856) 467-4841

Reference number: 95-1011-3000
Date of issue: June 5, 2015
Issue: 6

www.godwinpumps.com

Critically Silenced Dri-Prime[®] Pumps

The Godwin Critically Silenced enclosure houses the versatile Dri-Prime CD, HL, NC and Wellpoint range pumps in a specially designed, acoustically-silenced enclosure. The Critically Silenced unit is intended for use in any pumping application where engine and other noise must be kept to a minimum. Sound levels are approximately 69 dBA at 30 feet (9 meters).

Features and Benefits

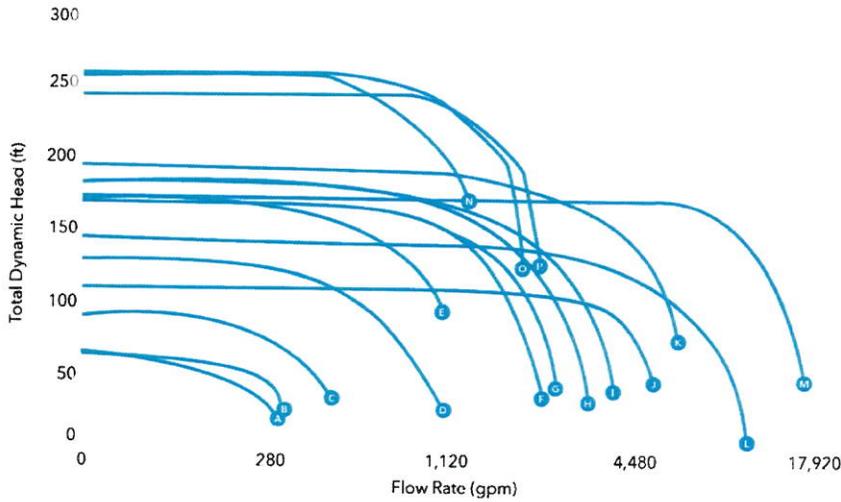
- 14-gauge sheet metal (12-gauge on larger units) enclosure lined with 1" and 2" (25mm and 50mm) layers of polydamp acoustical sound-deadening material
- Engine designed with critical grade muffler, silenced priming exhaust, and isolated engine vibration to further reduce operating noise
- Hinged, lockable doors for controlled access to operating controls and service locations
- Entire unit can be unbolted and removed from the optional DOT highway trailer for added versatility
- UL142 rated and double wall fuel tanks are available



godwin 
a xylem brand

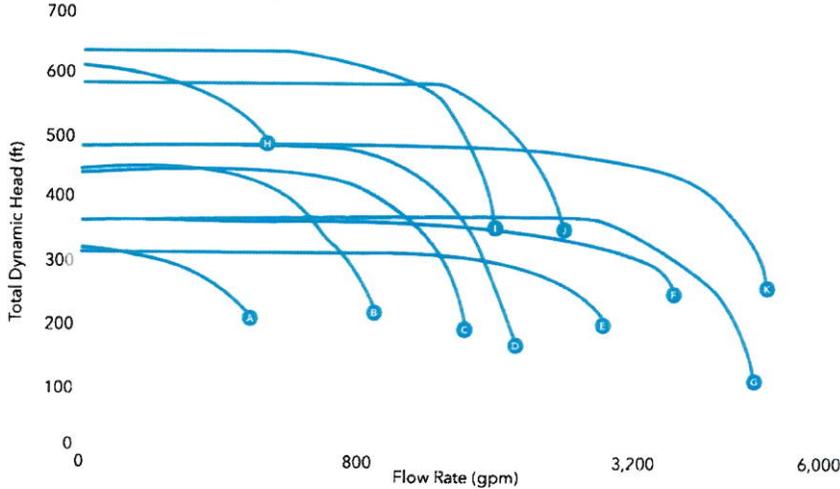
Please contact the factory or office for further details. A typical picture of the pump is shown. All information is approximate and for general guidance only.

Pump Curve - CD Range



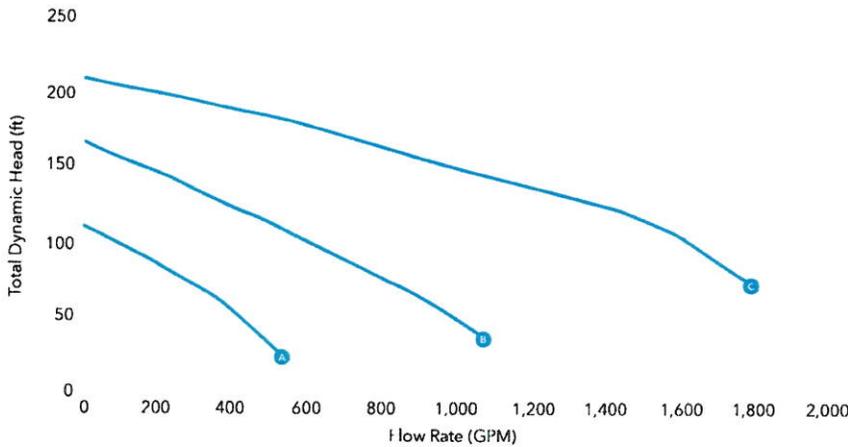
- A CD75MA5
- B CD80D
- C CD80M
- D CD100M/CD100MV
- E CD103M
- F CD150M/CD150MV
- G CD200M
- H CD225M/CD225MV
- I CD250M
- J DPC300
- K CD300M
- L CD400M
- M CD500M
- N CD140M
- O CD160M
- P CD180M

Pump Curve - HL Range



- A HL80M
- B HL100M
- C HL125M
- D HL150M
- E HL200M
- F HL225M
- G HL250M
- H HL110M
- I HL130M
- J HL160M
- K HL260M

Pump Curve - NC Range



- A NC80
- B NC100
- C NC150

Composite curves for comparison purposes only. Consult engineering data for exact flow and head capabilities.



84 Floodgate Road
 Bridgeport, NJ 08014
 (856) 467-3636 . Fax (856) 467-4841
 sales@godwinpumps.com

Reference number: Critically Silenced
 Date of issue: June 05, 2014
 Issue: 1

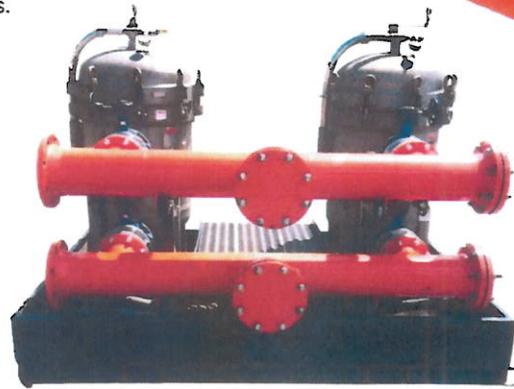
www.godwinpumps.com

Godwin Duplex Filter Pods

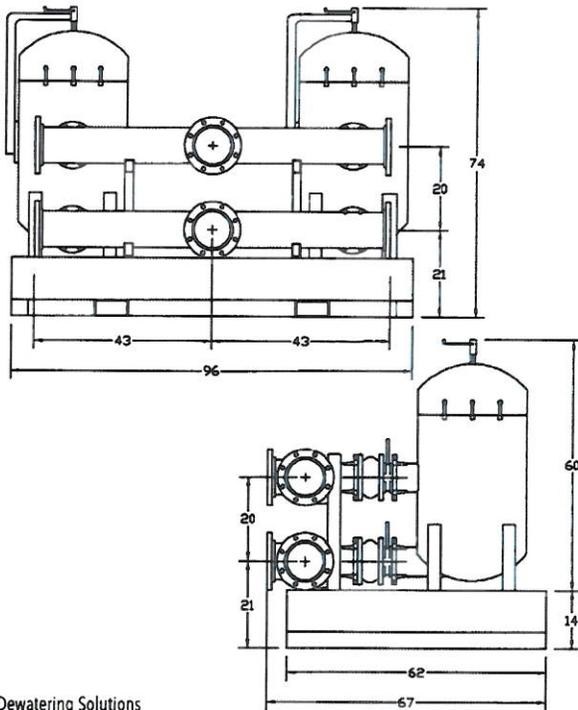
Xylem is pleased to offer Godwin Duplex Filter Pods for filtering particulates or sediments from fluids. The skid-based pods are ideal for environmental and oil & gas applications. They are enhanced with operator-accessible catwalk platforms for easy and uninterrupted servicing.

Features

- Operating range of 1 micron to 100 microns
- Capable of operating at up to 150 psi
- Forklift pockets
- Dual containment base
- Walkway platform for servicing and changing of bag elements



Drawing



Dewatering Solutions
84 Floodgate Road, Bridgeport, NJ 08014
Tel +1.856.467.3636
www.godwinpumps.com

Please contact the factory or office for further details. A typical picture of the pump is shown.

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Specification

	310 Filter Pods	
Max. Flow*	750 GPM ; Duplex System: 1500 GPM	(Handwritten initials)
Design Pressure	150 psig	
Design Temp	250°F max. - based on gasket	
Material	304 Stainless Steel	(Handwritten initials)
Bag Elements	6 per pod, size #2, 7" x 30"	
Lid Seal	Buna N O-Ring	
Skid Base		
Manifold Flange	6" 8#/150#	(Handwritten initials)
Height	74"	
Width	96"	
Depth	67"	
Weight (dry)	4500 lb 1750 LB	(Handwritten initials)

*Flowrate varies based on product being filtered

godwin 
a xylem brand

Duplex Filter Pods 09.02.2014

The following chart relates to size of some common particles:

Lower Limit	Upper Limit	Contaminant
Micron	Micron	
0.3	0.4	Smoke, Paint Pigments
0.4	0.55	Bacteria
0.55	0.7	Lung Damaging Paint
0.7	1.0	Atmospheric Dust
1.0	1.3	Molds
1.6	2.2	Flour Mill Dust
3	4	Cement Dust
4	5.5	Pulverized Coal
5.5	7	Commercial Dust
7	10	Pollen
10	75	Silt
75	1000	Sand



10 MICRON

9-BASS
90 GPM
810 GPM

F27

IN



DURAGAF™

Extended Life Filter Bags Can Improve Your Filtration Process and Save You Money

DURAGAF™ Filter Bags for High Performance

DURAGAF filter bags represent the state-of-the-art in needled felt bag filter media. Their unique structure delivers equal filtration performance with lifetimes 2-5 times longer than ordinary felt media. The result is reduced operating costs due to lower bag consumption, downtime, change-out labor, storage and disposal.

Why DURAGAF™ Filter Bags Last Longer

DURAGAF filter bags are available in two extended life materials: polypropylene (code POXL) or polyester (code PEXL). These two materials utilize a fiber blend with a finer fiber diameter and a higher weight than ordinary media. The result is a dramatically higher dirt holding capacity at the same efficiency and differential pressure. Processes run longer and need fewer bag changes with DURAGAF filter bags.

All-Welded Construction for Superior Performance

All DURAGAF filter bags feature 100% welded fabrication and the Eaton SENTINEL® seal. This construction eliminates the bypass which can occur in standard sewn filter bags. Eaton proprietary welding technology produces a super-strong seam that will stand up to even the most demanding applications without failure.

DURAGAF™ Filter Bags Seal Better in Critical Applications

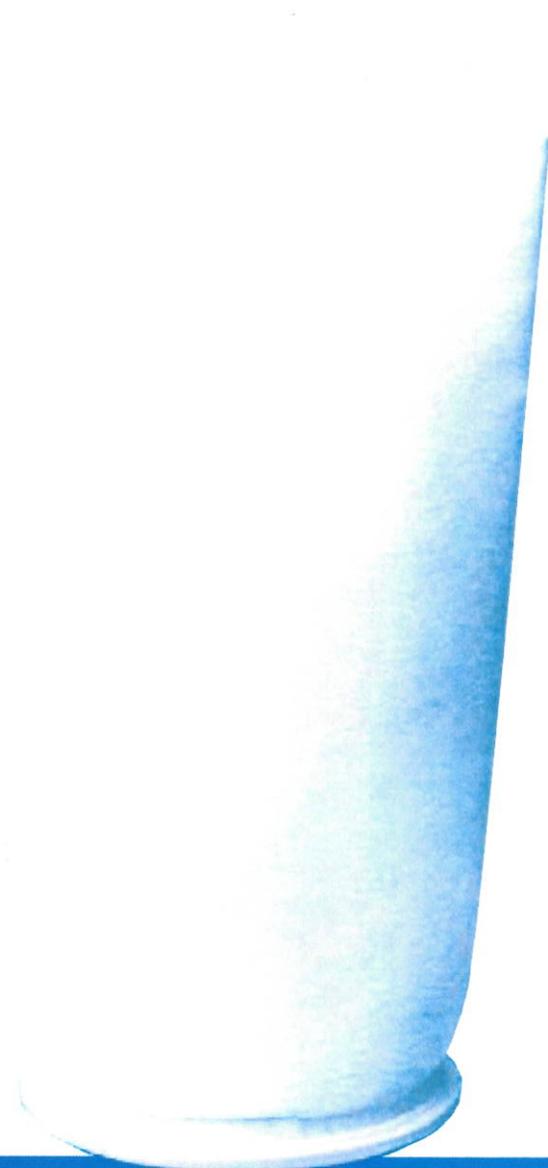
The SENTINEL® seal is standard on all DURAGAF filter bags. The unique, pressure-actuated ring actually improves its seal as differential pressure increases.

No Downstream Fiber Contamination

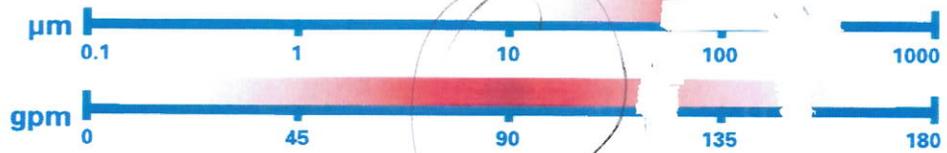
All DURAGAF filter bags are manufactured with a proprietary downstream surface treatment to prevent fiber migration. A special finish is obtained by glazing the surface, melting fibers together to form a tight, secure downstream matrix. In addition, the weld seams are heat bonded to eliminate loose fibers which might result during fabrication.

Food and Beverage Applications

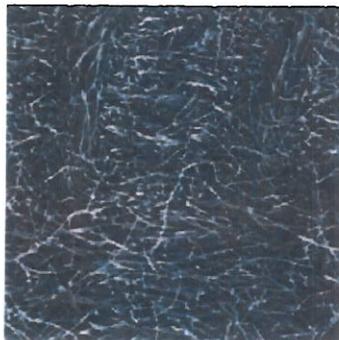
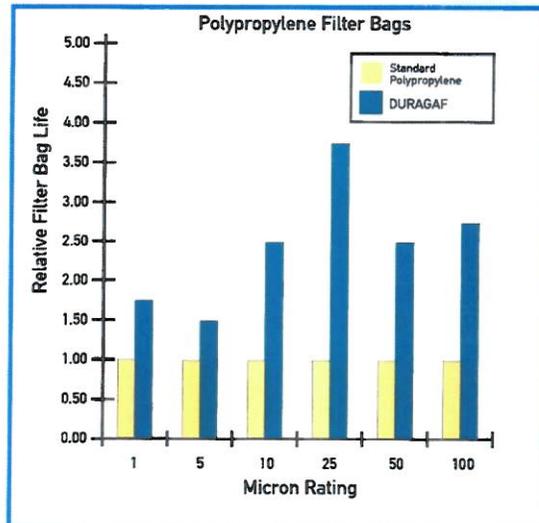
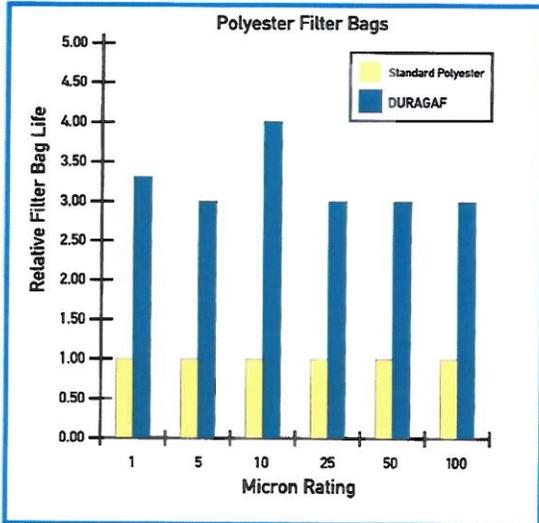
DURAGAF filter bags are available in models (POXLF, PEXLF) which are compliant with FDA and EC requirements for food contact.



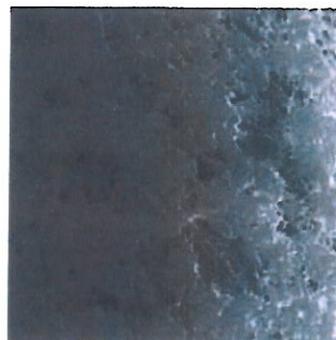
NOMINAL



How much longer will a DURAGAF™ Filter Bag last in your application?



Extended Life Felt
finer fibers
more pores
thicker media



Surface of Extended Life Felt
no fiber release
full flow through surface channels

PRODUCT CODES

DURAGAF™ POXL Polypropylene PEXL Polyester POXLF Polypropylene Food Grade PEXLF Polyester Food Grade	P Plain	E Polypropylene SENTINEL Ring Welded (POXL/POXLF) H Hytral SENTINEL Ring Welded (PEXL) Z-WW Santoprene SENTINEL Ring Welded (PEXLF)
POXL Bag Material	50 Micron Rating µm	P Bag Cover Level
01 Bag Size	E Collaring Style	30L Packaging
Code	Size	Bags/Box Box Size (mm)
01	7 x 17 inches	L Large
02	7 x 32 inches	

POXL/PEXL	PEXL/PEXLF	POXLF
1	5	1
5	1	5
10	25	5
25	5	10
50	100	10

Eaton Filter Bags

Selection Guide

HIGH EFFICIENCY



PROGAF filter bags

Combines high-efficiency media with a high-capacity pre-filter for effective retention rating down to the sub-micron level.



ACCUGAF filter bags

Highly efficient with an extremely high particle retention rating.



ABP filter bags

Cost-effective filtration solutions for demanding applications with efficiencies greater than 99%.



LOFCLEAR filter bags

Highly effective filter bags with a special, multi-layer construction that results in *absolute* efficiency for demanding applications.

HIGH CAPACITY



MAX-LOAD filter bags

Extended-life pleated material increases dirt-holding capacity and lasts up to ten times longer than standard needle-felt filter bags.



HAYFLOW filter elements

Combines the best of filter bags and filter cartridges in one element.



HAYFLOW Q filter elements

High capacity extended-life needle felt with ultrafine nylon mesh cover layer with *absolute* efficiency.



DURAGAF filter bags

Extended-life material results in fewer filter bag change-outs, improves operating efficiencies and reduces operating costs.

10 micron

FOOD



CLEARGAF filter bags

Meets EC and FDA requirements for pharmaceutical, food and beverage industries.

STANDARD



SENTINEL filter bags

Fully-welded construction for high efficiency and bypass-free filtration.



SNAP-RING filter bags

Sewn construction in needle felt, monofilament and multifilament material.



ABSORPTION INSERT filter elements

The ultimate solution for increased dirt and oil removal capacity.

STANDARD



UNIBAG filter bags

High performance, fully-welded construction using environmentally-friendly materials without optical white additives or bleaching agents.



Monofilament filter bags

Different materials of SENTINEL and SNAP-RING monofilament filter bags cover many applications with chemical and thermal properties.



Multifilament filter bags

Affordable and reliable sewn SNAP-RING multifilament filter bags.



BANDSEAL filter bags

Tie-on filter bags for filtration without a bag filter housing.

Technical Data

Ranges	Codes	Available grades	Sizes	Seal rings	Welded or sewn ring/side/bottom	Materials	Media types	Surface finish	Max. oper. temp. °F (°C)
PROGAF	PGF	50, 51 or 55	02	E	W/W/W	PP	Melt		194 (90)
ACCUGAF	AGF	51, 53, 55, 57 or 59	01, 02	E	W/W/W	PP	Melt		194 (90)
	AGFE	51, 55 or 57	01, 02	H	W/S/S	PET	Melt		302 (150)
ABP	ABP	1, 5, 10 or 25	03, 04	E	W/W/W	PP	Melt		194 (90)
LOFCLEAR	LCR	123, 124, 125, 126, 128, 129, 130 or 135	01, 02	E	W/S/S	PP	Melt		194 (90)
	LCR	522, 525, 527 or 529	02	Z	W/W/W	PP	Melt		194 (90)

Ranges	Codes	Available grades													Sizes	Seal rings	Welded or sewn ring/side/bottom	Materials	Media types	Surface finish	Max. oper. temp. °F (°C)			
		1	5	10	25	50	80	100	125	150	200	250	300	400								600	800	1000
MAX-LOAD	POXL	■	■	■	■	■												01, 02	E	W/W/W	PP	Felt	Glazed	194 (90)
	PEXL	■	■	■	■	■												01, 02	H	W/W/W	PET	Felt	Glazed	275 (135)
HAYFLOW	POXL	■	■	■	■	■	■											02	E	W/W/W	PP	Felt	Glazed	194 (90)
	PEXL	■	■	■	■	■	■											02	H	W/W/W	PET	Felt	Glazed	302 (150)
	LCR	128																02	E	W/S/W	PP	Melt		194 (90)
HAYFLOW Q	POXL	■	■	■	■	■	■											02	E	W/W/W	PP	Felt	Glazed	194 (90)
	PEXL	■	■	■	■	■	■											02	H	W/W/W	PET	Felt	Glazed	302 (150)
DURAGAF	POXL	■	■	■	■	■	■											01, 02	E	W/W/W	PP	Felt	Glazed	194 (90)
	PEXL	■	■	■	■	■	■											01, 02	H	W/W/W	PET	Felt	Glazed	302 (150)
CLEARGAF	POF	■	■	■	■	■	■											01, 02	E	W/W/W	PP	Felt	Singed	194 (90)
	POXLF	■	■	■	■	■	■											01, 02	E	W/W/W	PP	Felt	Glazed	194 (90)
	PEF	■	■	■	■	■	■											01, 02	H	W/W/W	PET	Felt	Singed	284 (140)
	PEXLF	■	■	■	■	■	■											01, 02	H	W/W/W	PET	Felt	Glazed	284 (140)
	NMOF	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	01, 02	H	W/S/S	Nylon	Mesh		284 (140)
SENTINEL	PO	■	■	■	■	■	■											01, 02, 03, 04	E	W/W/W	PP	Felt	Singed	194 (90)
	PE	■	■	■	■	■	■											01, 02, 03, 04	H	W/W/W	PET	Felt	Singed	302 (150)
SNAP-RING	PO	■	■	■	■	■	■											01, 02	S	S/W/S	PP	Felt	Singed	230 (110)
	PO	■	■	■	■	■	■											03, 04	S	S/S/S	PP	Felt	Singed	230 (110)
	PE	■	■	■	■	■	■											01, 02	S	S/W/S	PET	Felt	Singed	374 (190)
	PE	■	■	■	■	■	■											03, 04	S	S/S/S	PET	Felt	Singed	374 (190)
	NY	■	■	■	■	■	■											01, 02, 03, 04	S	S/S/S	Nylon	Felt		374 (190)
	W	■																01, 02	S	S/S/S	Wool/PET	Felt		275 (135)
	PT	■	■	■														01, 02	A	S/S/S	PTFE	Felt		500 (260)
	HT	■	■	■	■	■	■											01, 02	A	S/S/S	MA	Felt	Singed	401 (205)
UNIBAG	POU	■	■	■	■	■	■											01, 02	UE	W/W/W	PP	Felt		374 (190)
	PEU	■	■	■	■	■	■											01, 02	UK	W/W/W	PET	Felt		536 (280)
Monofilament	NMO	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	01, 02, 03, 04	S	S/S/S	Nylon	Mesh		374 (190)
	NMO	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	01, 02, 03, 04	Z	S/S/S	Nylon	Mesh		257 (125)
	PMO	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	01, 02	A	S/S/S	PP	Mesh		230 (110)
	PEMO	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	01, 02	S	S/S/S	PET	Mesh		374 (190)
PEEKMO	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	01, 02	A	S/S/S	PEEK	Mesh		484 (240)	
Multifilament	PEMU	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	01, 02	S	S/S/S	PET	Mesh		283 (145)	
BANDSEAL	NMO	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	01		S/S/S	Nylon	Mesh		374 (190)
	NMO	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	43, 45	R	S/S/S	Nylon	Mesh		374 (190)

10 mic flow →

Chart abbreviations: PET: polyethylene terephthalate, PP: polypropylene, MA: Meta-Aramid, Melt: melt-blown, W: welded seams, S: sewn seams.
Ring abbreviations: E: polypropylene/SENTINEL seal ring, H: polyester/SENTINEL seal ring, Z: Santoprene™/SENTINEL seal ring, S: zinc-plated steel SNAP-RING, A: Stainless steel SNAP-RING, R: without seal ring, UE: welded polypropylene seal ring, UK: welded polyester seal ring
Maximum flow rates for most filter bag ranges are as shown below with the following exceptions:
 1. POXL, PEXL, POXLF and PEXLF filter bags, size 01: 15 m³/h and size 02: 30 m³/h, 2. AGF, AGFE and LCR 100 filter bags, size 01: 8 m³/h and size 02: 15 m³/h, 3. LCR 500 filter bags, size 02: 12 m³/h, 4. PGF filter bags, size 02: 10 m³/h

Filter specifications

Size	Max. flow rate GPM (m³/h)	Filter area ft² (m²)	Volume gal (l)	Diameter in (mm)	Length in (mm)
01	90 (20)	2.6 (0.24)	2.0 (7.6)	7 (180)	17 (430)
02	180 (40)	5.2 (0.48)	4.5 (17)	7 (180)	32 (810)
03	26 (6)	0.9 (0.08)	0.5 (1.9)	4 (100)	9 (230)
04	53 (12)	1.7 (0.16)	0.7 (2.7)	4 (100)	15 (380)
43	26 (6)	1.0 (0.09)	0.8 (3.0)	3.5 (89)	12 (300)
45	53 (12)	1.6 (0.15)	1.2 (4.5)	3.5 (89)	20 (500)

Chemical resistance of filter bags

Materials	Codes	Aqueous media	Aliphatic solvents	Aromatic solvents	Alkaline media	Strongly alkaline	Acid media	Strongly acidic
Needle felt polypropylene	PO/POXL/POF/POXLF	□	□		□		□	□
Needle felt polyester	PE/PEXL/PEF/PFXLF	□	□	□	□		□	
Needle felt nylon	NY	□	□	□	□	□		
Needle felt meta-Aramid	HT	□	□	□	□		□	
Multifilament polyester	PEMU	□	□	□	□		□	
Monofilament polypropylene	PMO	□	□		□		□	□
Monofilament nylon	NMO	□	□	□	□	□		
Needle felt PTFE	PT	□	□	□	□	□	□	
Monofilament PEEK	PEEKMO	□	□	□	□	□	□	



Applications

Automotive Filtration of pre-treatment bath, filtration of e-coat, top coat and clear coat, primer, paint ring line filters, parts cleaning fluids, drawing compounds, lubricants, metal working fluids and pump intake filters.

Chemical Catalyst recovery, removal of pipe scale, polishing of aqueous process fluids, alkalis, acids and solvents, filtration of emulsions and dispersions, gel removal from resins. Activated carbon or catalyst removal in the fine chemicals industry is a typical example of a demanding application in chemical processing. Eaton filter bags meet the requirements for high-efficiency, yet also offer long service life and reliability.

Electronics Wafer and chip processing, electronic etching

baths, photo-chemical polishing, and high-purity water filtration and pre-filtration of various membrane filtration processes to improve their cost-effectiveness. Eaton filter bags demonstrate the required purity, efficiency and consistent performance.

Food and beverage Filtration of wine, spirits and beer, removal of particles from edible oils, removal of carbon black from cellulose, slime removal in gelatin, liquid sugar, thick juice, corn syrup polishing, starch processing, milk processing and soft drinks. Many Eaton filter bags conform to FDA and EC food processing standards and can meet the unique and varied demands of these applications.

Metal working Filtration of hydraulic oil, pre-treatment

system filtration, precious metal recovery, metal working fluids and drawing compounds. Parts cleaning machines use our filter bags for minimizing residual dirt on parts.

Paint and lacquer Removal of agglomerates, removal of paint coagulates, solvent filtration, removal of storage contaminants, filling lines, paint mixing lines and monomer purification.

Petrochemicals Filtration of lube oils, fuel additives, enhanced oil recovery, filtration of amine solutions, filtration of glycol fluids, gas purification processes, distillation and cracking processes, amine washers, off-shore filter stations, oil drilling and injection fluids.

Pharmaceutical Recovery of expensive active ingredients, catalyst recovery, active carbon

purification and removal, filtration of gelatin, hormones, vitamin extracts, polishing of herbal mixtures, protein removal from plasma, filtration of saline solutions

Resins, plastics, inks and coatings Oil and polymer filtration, dispersions, polymerization batches, resins for can coatings, plastics compounding, printing ink, plastics processing, paper coatings, high-purity ink-jet fluid filtration.

Water treatment Well water filtration, water treatment plants, silt removal, pipe scale removal, sand and algae removal from sea water, ion exchange resin recovery, calcium deposit removal, filtration of chemicals used for water treatment, dust removal from cooling tower installations.

Contaminant Spectrum

Factors to consider when selecting a filter bag range

	Contaminant particle size			
	Fine filtration		Coarse filtration	
	1 μm	10 μm	100 μm	1,000 μm
Ranges		<ul style="list-style-type: none"> MAX-LOAD pleated filter bags HAYFLOW filter elements DURAGAF filter bags CLEARGAF filter bags SENTINEL filter bags 	<ul style="list-style-type: none"> MANAGEMENT filter bags SNAP-RING filter bags 	
	<ul style="list-style-type: none"> PREGAF filter bags ACCUGAF filter bags ABP filter bags LORCLEAR filter bags UNIBAG filter bags 			
Materials			Nonfilament mesh materials <ul style="list-style-type: none"> Accurate, absolute retention rating High precision 	
		Precision needle felt materials <ul style="list-style-type: none"> MAX-LOAD pleated filter bags HAYFLOW filter elements DURAGAF extended-life filter bags CLEARGAF filter bags UNIBAG needle felt filter bags Standard needle felt filter bags 		
	Precision melt-blown materials <ul style="list-style-type: none"> PREGAF filter bags ACCUGAF filter bags LORCLEAR filter bags 			
Seal rings			BANDSEAL seal ring <ul style="list-style-type: none"> Simple, effective 	
		SNAP-RING seal rings <ul style="list-style-type: none"> Versatile, cost-effective Wide range of material 		
	SENTINEL seal rings <ul style="list-style-type: none"> "The best in the business" Pressure activated seal ring Wide fluid and temperature compatibility 			

Filter Bags

PROGAF™
ACCUGAF™
ABP
LOFCLEAR™

MAX-LOAD™
HAYFLOW™
DURAGAF™
CLEARGAF™

SENTINEL
SNAP-RING
UNIBAG™
BANDSEAL™

High performance
unparalleled selection



EATON

Powering Business Worldwide

GeoScrub Bubbles
(effervescent tablets)

Application Rate:

Turbidity Control:

GeoScrub Bubbles contain 5 grams of Polyacrylamide per tablet. Recommended application rate for the use of PAM is 1 ppm or 1 mg/L water treated. Use number of tablets based on watershed drainage size and peak flow rates (designed on E&SC plans). Tablets need to be replaced when they have fully dissolved and are no longer present in treatment area.

Application:

Turbidity Control-

GeoScrub Bubbles may be applied in many different areas/treatment zones where expected flow will occur:

catch basins, drop inlets, check dams, baffles in sediment basins, slope drains, culvert pipes, etc.

Benefits:

Turbidity Control:

Easy application method
Reduction in turbidity
Compliance with regulations, both state and federal
Reduction in elemental pollutants entering waterways
Reduction in offsite transport of sediment
Healthier waters leading to healthier aquatic species

*****Note: GeoScrub Bubbles effervescent property keeps sediment from accumulating on the tablets, keeping them free from clogging.**