



YOUR QUALITY SOLUTIONS, INC.

YOUR QUALITY Inlet Filter Specifications and Operations and Maintenance Manual

1.0 Description of Work:

- 1.1 The work covered shall consist of supplying, installing, and maintaining/cleaning of the YOUR QUALITY INLET FILTER assembly. The purpose of the YOUR QUALITY INLET FILTER system is to collect pollutants in stormwater runoff including: trash, debris, vegetation, hydrocarbons, metals, phosphorus, nitrogen and sediment at drainage locations shown on the plans or as directed by the Engineer.

2.0 Material:

- 2.1 The YOUR QUALITY INLET FILTER system is comprised of a 304 stainless steel frame and assembly which secures a replaceable geotextile filter bag attached to the assembly. The filter bag is securely suspended from the 304 stainless steel frame in an assembly that allows full stormwater flow into the inlet filter and the catch basin drainage structure in all conditions.

- 2.2 The YOUR QUALITY INLET FILTER system includes:

- 2.2.1 304 stainless steel frame;
- 2.2.2 304 stainless steel assembly and baskets
- 2.2.3 Filter fabric (type of filter fabric specified after inspection of site conditions)
 - 2.2.3.1

Ultra-X-Tex

Ultra X-Tex has a variety of uses as it pertains to Stormwater and clean up applications. It is made of a proprietary blend of fibers that are treated and naturally adsorb oils and greases from water while allowing water to flow through the material.

Ultra X-Tex will hold onto the oils and greases and will not release them back into the water.

Produced from recycled synthetic fibers.

Utilizing state-of-the-art technology, materials are blended and processed into a lightweight fiber mass with an enormous surface area and interstitial spaces creating a high-performance sorbent and filter media.

Designed for use as a durable long lasting geotextile and filter media.

Allows large volumes of water to pass through while sorbing liquid hydrocarbons, including petroleum, animal and vegetable oils.

Cost effective — absorbs an average of 13 times its own weight of liquid hydrocarbons.

Great for use in oil/water separators, stormwater and wastewater filtration systems and water "polishing" applications.

2.2.3.2 **Skaps**

SKAPS' robust, yet flexible, geotextiles engineered for subsurface drainage applications ensure excellent filtration properties.

The three dimensional structure of SKAPS needle-punched non-woven geotextiles allows water to pass through the plane while filtering soils and other solid particles from compromising the overall drainage system. The geotextile subsurface drainage fabric must have the ability to retain fine particles of soil while permitting an unimpeded flow of water into a selected drainage media.

GT140, GT160, GT170, GT180, GT110, GT112, GT116

TerraTex® N04.5

TerraTex® N04.5 Is a nonwoven geotextile made up of polypropylene fibers. These fibers are needle to form a stable and durable network such that the fibers retain their relative position. It is non-biodegradable and resistant to most soil chemicals, acids, and alkali with a PH range of 3 to 12. TerraTex® N04.5 is manufactured to meet or exceed the following minimum average roll values.

Property	Test Method	English	Metric
Weight (Typical) 1	ASTM D5261	4.2 oz/yd ²	142 g/m ²
Grab Tensile	ASTM D4632	120 lbs	0.533 kN
Grab Elongation	ASTM D4632	50 %	50 %
Trapezoid Tear	ASTM D4533	50 lbs	0.222 kN
CBR Puncture	ASTM D6241	340 lbs	1.51 kN
Permittivity 1	ASTM D4491	1.70 sec-1	1.70 sec-1
Water Flow Rate 1	ASTM D4491	135 gpm/ft ²	5,500 Lpm/m ²

3.0 Filter Fabric Specifications and Capabilities:

3.1 The filter fabric used in the YOUR QUALITY INLET FILTER system specifications and capabilities are taken from the filter fabric manufacturers and are as follows:

3.1.1 Ultra-X Tex

Ultra X-Tex has a variety of uses as it pertains to Stormwater and clean up applications. It is made of a proprietary blend of fibers that are treated and naturally adsorb oils and greases from water while allowing water to flow through the material.

Ultra X-Tex will hold onto the oils and greases and will not release them back into the water.

- Produced from recycled synthetic fibers.
- Utilizing state-of-the-art technology, materials are blended and processed into a lightweight fiber mass with an enormous surface area and interstitial spaces creating a high-performance sorbent and filter media.
- Designed for use as a durable long lasting geotextile and filter media.
- Allows large volumes of water to pass through while sorbing liquid hydrocarbons, including petroleum, animal and vegetable oils.
- Cost effective — absorbs an average of 13 times its own weight of liquid hydrocarbons.
- Great for use in oil/water separators, stormwater and wastewater filtration systems and water "polishing" applications.

Ultra-X-Tex is a new and unique lipophilic media with a multitude of potential environmental applications. Ultra-X-Tex is produced from *recycled* synthetic fibers. Utilizing state-of-the-art technology, these fibers are blended and processed into a lightweight fiber mass with enormous surface area and interstitial spaces creating a high performance sorbent and filter media*. Our fiber blend is also utilized in our Ultra-X-Tex Rolled Fabric, designed for use as a durable long lasting geotextile and filter media.

- Because of Ultra-X-Tex's selective affinity for *lipophilic* ("oil attracting") it is very efficient in removing hydrocarbons from water.
- Ultra-X-Tex excels as a spill removal media capable of sorbing liquid hydrocarbons, including petroleum, animal and vegetable oils onto its vast fiber mass surfaces and into process-created interstitial spaces.
- When used as a filter medium, water passes freely, while adsorption of target hydrocarbons begins on contact. Ultra-X-Tex is extremely efficient due to the enormous lipophilic surface area of the altered fibers.
- Ultra-X-Tex works well as a fibrous supporting matrix for other water conditioning materials such as selective zeolites, activated carbon, zero-valent iron filings, etc. Ultra-X-Tex can be 'conditioned' to remove specific chemical compounds.
- Ultra-X-Tex is cost effective in comparison to many conventional filtering media, adsorbing/absorbing an average of 13 times its own weight of liquid hydrocarbons.
- Approximately 85-90 % of sorbed oils can be reclaimed from Ultra-X-Tex and the media reused.
- In bench-scale testing, Ultra-X-Tex has shown promising results in filtering out emulsified oils and hydrocarbons out of a water stream. This characteristic creates opportunities for the use of Ultra-X-Tex in oil/water separation applications and other hydrocarbon filter projects.
- Ultra-X-Tex forms into cohesive mats or "wads" which can easily conform to various applications or filter devices.
- Ultra-X-Tex is environmentally benign and user-friendly. It does not leach harmful substances into the environment and when incinerated produces minimal residue or ash.

- References 1. M.E.Hrachovec, and P.E., G.R.Minton, PhD., P.E. (2001), "Field Testing of a Sock-Type Catch Basin Insert".
- 2. M.E.Hrachovec, P.E., and G.R.Minton, PhD., P.E. (2001), "Bench Testing of a Sock-Type Catch Basin Insert for Removal of Free Petroleum".
- 3. M.K. Stenstrom, S.L Lau, and E.Khan (1998). "Catch Basin Inserts to Reduce Pollution From Stormwater".

4.0 3.1.2 SKAPS

SKAPS GT-160 is a needle-punched nonwoven geotextile made of 100% polypropylene staple fibers, which are formed into a random network for dimensional stability. SKAPS GT-160 resists ultraviolet deterioration, rotting, biological degradation, naturally encountered basics and acids. Polypropylene is stable within a pH range of 2 to 13. SKAPS GT-160 conforms to the physical values listed below. This data sheet for SKAPS GT-160 is provided for comparison purposes only.

Filtration Efficiency and Pollutant Removal Rates:

Mass Per Unit Area	ASTM 5261	oz/yd.(g/m)	11.0(341.16)
Grab Tensile MD	ASTM D-4632	lbs(kb)	118(53.5)
Grab Tensile TD	ASTM D-4632	percent	89(40.4)
Elongation at Peak MD	ASTM D-4632	percent	131
Elongation at Peak TD	ASTM D-4632	percent	172
Wide Width Tensile MD	ASTMD-4595	lbs/in(kg/cm)	33(5.89)
Wide Width Tensile TD	ASTMD-4595	lbs/in(kg/cm)	23(4.11)
Elongation at Brake MD	ASTMD-4595	percent	110
Elongation at Brake TD	ASTMD-4595	percent	156
Mullen Burst	ASTM D-3786	lbs/sq.in(kg/cm ²)	214(15)
Puncture Resistance	ASTM D-4833	lbs(kg)	72(32.7)
Permeability	ASTM D-4491	cm/sec	0.72
Flow rate	ASTM D-4491	gal/ft ² /min.(1/m ² /min.)	151(6152)
Opening Size/micron	ASTM D-4751	microns U.S. Sieve	100/140/150
Hydrocarbon Capacity (nominal)		gal/yds(1/m ²)	0.70(3.17)
TSS Capture %			95% to 99%
Phosphorus %			83% to 84%
Nitrogen %			71% to 74%

5.0 Identification of Drainage Structures to Determine YOUR QUALITY INLET FILTER system:

5.1 The Installer (Contactor) shall inspect the plans and/or worksite to determine the catch basin drainage structure casting type. The foundry casting number or the exact grate size and clear opening size will provide the information necessary to identify the required to properly size the YOUR QUALITY INLET FILTER system. YOUR QUALITY INLET FILTER systems are supplied to the field pre-configured to fit the specified drainage structure.

6.0 Installation Into Standard Grated Catch Basin Drainage Structures:

6.1 Remove the grate from the casting or concrete drainage structure. Clean the ledge (lip) of the casting frame or drainage structure to ensure it is free of stone and dirt. Drop in the YOUR QUALITY INLET FILTER system through the clear opening and be sure the 304 stainless steel frame rests firmly on the inside ledge (lip) of the casting. Replace the grate and confirm it is elevated no more than 1/8".

7.0 Inspection and Operation and Maintenance Guidelines: The frequency of maintenance will vary depending on the application (during construction, post construction, or industrial use), the area of installation (relative to grade and runoff exposure), and the time of year relative to the geographic location (infrequent rain, year round rain, rain and snow conditions).

7.1 Frequency of Inspections: Construction site inspection should occur following each 1/2" or more rain event. Post Construction inspections should occur three times per year (every four months) in areas with year round rainfall and three times per year (every three months) in areas with rainy seasons before and after snowfall season. Industrial application site inspections (loading ramps, wash racks, maintenance facilities) should occur on a regularly scheduled basis no less than three times per year.

7.2 General Maintenance for filter bags: Upon inspection, the YOUR QUALITY INLET FILTER system should be emptied if the filter bag is more than half filled with sediment and debris, or as directed by the Engineer. Remove the grate and lift the YOUR QUALITY INLET FILTER system from the drainage structure. Machine or other mechanical assistance is not required. Dispose of the sediment or debris as directed by the Owner and/or the Engineer. As an alternative, an industrial vacuum may be used to collect the accumulated sediment if available. Remove any caked on pollutant from the filter bag and reverse flush the bag for optimal filtration. During inspection remove the grate and remove the inner stainless steel assembly with the filter fabric. The filter fabric is to be removed when it is half full with sediment or as directed by the owner and / or engineer and replaced with a fresh filter fabric. The filter fabric being removed shall be disposed, along with the captured material, at a DEP approved disposal site. After the fresh filter fabric is replaced, place with three oil absorbent booms on top of the filter fabric.

8.0 ASTM Standards

8.1 YOUR QUALITY INLET FILTER system in conjunction with the filter fabric manufactures that supply the filter fabric for use in the filter bags complies with the following ASTM standards:

ASTM D-3786 Standard Test Method for Bursting Strength of Textile Fabrics—Diaphragm Bursting Strength Tester Method

ASTM D-4491 Standard Test Methods for Water Permeability of Geotextiles by Permittivity

ASTM D-4595 Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method

ASTM D-4632 Standard Test Method for Grab Breaking Load and Elongation of Geotextiles

ASTM D-4751 Standard Test Methods for Determining Apparent Opening Size of a Geotextile

ASTM D-4833 Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products

ASTM 5261 Standard Test Method for Measuring Mass per Unit Area of Geotextiles

ASTM D 6459 Determination of Rolled Erosion Control Product (RECP) Performance in Protecting Hillslopes from Rainfall-Induced Erosion

ASTM D 6460 Determination of Rolled Erosion Control Product (RECP) Performance in Protecting Earthen Channels from Stormwater-Induced Erosion

ASTM D 7208 Determination of Temporary Ditch Check Performance in Protecting Earthen Channels from Stormwater-Induced Erosion

ASTM D 7351 Determination of Sediment Retention Device Effectiveness In Sheet Flow Applications

ASTM D8057 Standard Specification for Inlet Filters with a Rigid Frame