

Specification-Root Control

1. SCOPE

- 1.1. This is a materials specification covering root control barrier in trenches, alongside hardscape structures such as sidewalks, curbing, pavements, concrete and building foundations to prevent structural damage due to root penetration. The product functions to provide both a physical and chemical barrier zone to restrict vegetative root encroachment.
- 1.2. This is a material purchasing specification and design review of its use is recommended.

2. REFERENCED DOCUMENTS

2.1. *ASTM Standards

D-5261	Test Method for Measuring Mass per Unit Area of Geotextiles
D-4632	Test Method for Grab Breaking Load and Elongation of Geotextiles
D-4833	Test Method for Index Puncture Resistance of Geotextiles, Geomembranes and Related Products
D-4533	Test Method for Trapezoid Tear Strength of Geotextiles
D-4491	Test Method for Water Permeability of Geotextiles by Permittivity
D-4751	Test Method for Determining the Apparent Opening Size of a Geotextile
D-4355	Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)

2.2. *EPA Standards (Reference EPA Label) Registration No. 59823-1 (Attached Exhibit B)

EPA	CG	1500	Water Solubility
EPA	CG	1600	Vapor Pressure

3. PHYSICAL AND CHEMICAL REQUIREMENTS

- 3.1. Fibers used in the manufacture of root control barrier substrate fabric shall consist of long chain synthetic polyolefins (at least 95% by weight) and a UV stabilizer. They shall be formed into a stable network such that the filaments or yarns retain their dimensional stability relative to each other.
- 3.2. Nodules consisting of trifluralin, carbon black, and polyethylene compounded in a patented method utilizing time-released characteristics are permanently attached to the substrate fabric on 1-1/2" centers by a through injection molding process.
- 3.3. All substrate property values, with the exception of apparent opening size (AOS), in these specifications represent minimum average roll values (MARV) in the weakest principal direction (i.e., average test results of any roll in a lot sampled for conformance or quality assurance testing shall meet or exceed the minimum values provided herein). Values for AOS represent maximum average roll values.
- 3.4. Property values for the trifluralin are average run values.

4. CERTIFICATION

- 4.1. The Manufacturer shall provide to the Engineer a certificate stating the name, product name, style number, chemical composition and other pertinent information to fully describe the product. The Manufacturer is responsible for establishing and maintaining a quality control program to assure compliance with the requirements of the specification. Documentation describing the quality control program shall be made available upon request.

- 4.2. The Manufacturer's certificate shall state that the root control product meets requirements of the specification as evaluated under the Manufacturer's quality control program. The certificate shall be attested to by a person having legal authority to bind the Manufacturer.
- 4.3. Either mislabeling or misrepresentation of materials shall be reason to reject those products.

5. SAMPLING, TESTING, AND ACCEPTANCE

- 5.1. Root control substrate product shall be subject to sampling and testing to verify conformance with this specification. Acceptance shall be based on manufacturer's certifications.
- 5.2. Testing shall be performed in accordance with the methods referenced in this specification for the indicated application. The number of specimens to test per sample is specified by each test method.

6. SHIPMENTS AND STORAGE

- 6.1 Product labels shall clearly show the manufacturer or supplier name, style number, and roll number and shall include a compliance statement certifying that all ingredients and inspection standards for this product have been met.
- 6.2 Each root control product roll shall be wrapped with a protective EVOH bag and placed in a box that will protect the product from damage due to shipment, water, sunlight, and contaminants and to prevent premature release of herbicide. The protective wrapping shall be maintained during periods of shipment and storage.
- 6.3 During storage, root control product shall be elevated off the ground and out of direct sunlight. It shall remain sealed in EVOH protective bag inside shipping box at a temperature of not more than 110°F.

6. PRODUCT DESCRIPTION

Overall Product Major Composition and Ingredients		Typical
Active Chemical*: 17.5%	Trifluralin (a,a,a-Trifluoro 2,6 - dinitro - N,N, - Dipropyl - p - toluidine)	
Inert Ingredients: 82.5%	100% Spunbonded Polypropylene, Polyethylene and Carbon	

Trifluralin Characteristics	Typical Values		Test
	English	Metric	
Method*			
Vapor pressure (mm Hg @ 25 ° C)	1x10-4	1x10-4	EPA CG 1600
Solubility in Water (ppm @ 25 ° C)	<0.3	<0.3	EPA CG 1500
Fabric Properties	Minimum Values		Test Method*
	English	Metric	
Unit Weight	3.9 oz/yd ²	130 g/m ²	ASTM D-5261
Grab Tensile Strength	130 lbs.	575 N	ASTM D-4632
Elongation at Break	60%	60%	ASTM D-4632
Puncture Strength	40lbs.	175 N	ASTM D-4833
Trap Tear	60lbs.	265 N	ASTM D-4533
Permittivity	0.7 sec.	0.7 sec.	ASTM D-4491
AOS (Max Value)	0.21 mm	0.21 mm	ASTM D-4751
Ultraviolet Stability	70% @ 500 hrs	70% @ 500 hrs	ASTM D-4355

*Test methods or revision numbers available on request (17.5% Average trifluralin in total composite, Min. of 20% trifluralin in nodules)

¹ Available from ASTM, 1916 Race Street, Philadelphia, PA