

# Specification-Weed Control

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## 1. SCOPE

- 1.1 This is a materials specification covering pre-emergence weed control fabrics for use under guardrails along highways, under fences, around posts and signs, and in any other areas where surface weeds must be controlled by use of mechanical means or spraying. The product functions to provide both a physical and chemical barrier zone to prevent vegetative root encroachment, minimizing surface vegetation.
- 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

|     |    |      |                  |
|-----|----|------|------------------|
| EPA | CG | 1500 | Water Solubility |
| EPA | CG | 1600 | Vapor Pressure   |

## 3. PHYSICAL AND CHEMICAL REQUIREMENTS

- 3.1 Fibers used in the manufacture of pre-emergence weed control 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.
- 4.2 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.

4.3 The Manufacturer's certificate shall state that the preemergence weed 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.

4.4 Either mislabeling or misrepresentation of materials shall be reason to reject those products.

**5. SAMPLING, TESTING, AND ACCEPTANCE**

5.1 Preemergence weed 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 preemergence weed 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, contaminants and to prevent premature release of herbicide. The protective wrapping shall be maintained during periods of shipment and storage.

6.3 During storage, preemergence weed 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.

**7. PRODUCT DESCRIPTION**

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

| <b><u>Trifluralin Characteristics</u></b><br><b><u>Method*</u></b> | <b><u>Typical Values</u></b> |                      | <b><u>Test</u></b> |
|--|------------------------------|----------------------|--------------------|
|  | <b><u>English</u></b>        | <b><u>Metric</u></b> |                    |
| Vapor pressure<br>(mm Hg @ 25 ° C)                                 | 1x10-4                       | 1x10-4               | EPA CG 1600        |
| Solubility in Water<br>(ppm @ 25 ° C)                              | <0.3                         | <0.3                 | EPA CG 1500        |

| <b><u>Fabric Properties</u></b> | <b><u>Minimum Values</u></b> |                      | <b><u>Test Method*</u></b> |
|---------------------------------|------------------------------|----------------------|----------------------------|
|                                 | <b><u>English</u></b>        | <b><u>Metric</u></b> |                            |
| Unit Weight                     | 3.9 oz/yd <sup>2</sup>       | 130 g/m <sup>2</sup> | 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)

<sup>1</sup> Available from ASTM, 1916 Race Street, Philadelphia, PA 19103