Commonwealth of Pennsylvania
Department of Transportation

SPECIFICATION FOR NON-REEFLECTIVE SHEETING

December 10, 1999

1. GENERAL REQUIREMENTS

Non-reflective sheeting shall consist of a flexible, pigmented-plastic film completely pre-coated with a solvent or heat activated tack-free adhesive. The adhesive shall be protected by a treated paper liner, which shall be removable without soaking in water or other solvents. The sheeting shall be free from all defects and imperfections that might affect the serviceability of the finished product.

2. SPECIFIC REQUIREMENTS

2.1 Film. The thickness of the plastic film with adhesive shall be 0.003 inch to 0.0045inch. The film shall be capable of being readily processed with, and insure adequate adhesion of, inks recommended by the manufacturer. The material shall be sufficiently flexible to permit application over and conform to moderately contoured surfaces.

2.2 Gloss. The film shall have an initial minimum 60-degree gloss value of 35 when tested in accordance with ASTM Method #D523-53T, measuring at least three portions of the film to obtain uniformity.

2.3 Test Panels. Test panels shall be prepared using a 6.5-inch square piece of film applied to a clean 6-inch square aluminum panel, pre-masked or as recommended by the manufacturer, trimmed evenly at the edges, and aged for 40 hours at 70°F to 90°F.

2.4 Adhesive. The pre-coated adhesive shall form a durable bond to smooth, clean, corrosion and weather-resistant surfaces, shall be of uniform thickness, non-corrosive to applied surfaces and shall have no staining effect on the film. The film on a test panel shall have sufficient bond to prevent removal from the panel in one piece without the aid of a tool. Sheeting shall be furnished with either pressure-sensitive adhesive for roller application or dry adhesive for vacuum application, as specified on order.

2.5 Durability. Processed and applied in accordance with recommended procedures the sheeting shall be weather-resistant and following cleaning shall show no appreciable discoloration, cracking, crazing, blistering or dimensional change when exposed to accelerated weathering for 1,200 hours in an Atlas Twin Arc Weatherometer (ASTM E42-57, Type D) in accordance with ASTM D822-60.

2.6 Dimensional Stability. The material shall show no more than 1/64 inch shrinkage in any direction from edge of the test panel after being subjected to a temperature of 150°F for 48 hours.

2.7 Heat Resistance. The material on a test panel shall retain adhesion after 1 week at 150°F.

2.8 Solvent and Chemical Resistance. The material on a test panel shall withstand immersion in the following liquids at 70°F to 90°F, showing no appreciable decrease in adhesion, color or general appearance:

Liquid	Time
15% xylol/85% mineral spirits (by weight)	1 hour
Distilled water	1 day
SAE #20 motor oil	1 day

2.9 Opacity. The applied material shall be sufficiently opaque to hide a contrasting black printed legend and white surface.

2.10 Shelf Life. The material shall have a 12-month shelf life when stored in a clean area free from exposure to excessive heat, moisture and direct sunlight.

2.11 General Characteristics. The film shall be free from ragged edges, streaks, blisters, foreign matter or other surface imperfections which would make it unsuitable for the intended usage, and shall be readily cut with scissors, knife, blade, shears, and other production tools

2.12 Packaging. Rolls, sheets or letters shall be individually packaged in suitable containers and in such a manner that no damage or defacement may occur to the plastic film during transport to destination. Complete and detailed instructions for mounting the plastic film shall be supplied with each package of material.

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Arthur H. Breneman, P.E.
Chief, Traffic Engineering
and Operations Division

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