Section 4188. Traffic Control Devices

4188.01 GENERAL REQUIREMENTS.

Meet the following material requirements for the type of traffic control devices specified.

4188.02 DRUMS.

Furnish reboundable drum channelizing devices made for use in traffic control zones. Submit drum type, manufacturer, model, and size to the Materials Engineer for approval. Ensure channelizing devices meet the requirements of the MUTCD, Part 6, Section 6F.67 and the following requirements:

A. Properties.

1. Drum body made from an impact resistant, flexible, and reboundable material that is highway orange meeting Federal Color Standards.

2. Material specifically formulated with ultraviolet stabilizers to provide satisfactory weatherability characteristics and resist fading.

3. Top of the body designed so that small signs can be securely affixed and stay attached upon impact.

B. Visibility.

1. Drums designed to allow a minimum of four horizontal, circumferential bands of 4 inch (100 mm) minimum width retroreflective sheeting.

2. The first (top) and third bands orange, and the second and fourth (bottom) bands white.

3. Nonreflectorized spaces between bands (if present) no wider than 2 inches (50 mm).

4. Retroreflective sheeting for the bands meeting the requirements of Article 4186.03 and recommended by the manufacturer for use on drums.

C. Stability.

1. Drums, when properly ballasted, are not to move, overturn, or separate due to air turbulence created by passing vehicles or moderate winds.

2. The ballast is to be of sand, recycled tire collar if applicable to the drum, or an Engineer approved material that will not present a hazard to motorists, workers, or pedestrians.

3. Apply the limitations specified in MUTCD Section 6F.67 for a drum weighted with ballast.

4. Anti-roll feature that prevents drums from rolling freely if overturned.

D. Acceptance.
Comply with Materials I.M. 488.02 for inspection and acceptance of reboundable traffic control drums.

4188.03 ORANGE MESH SAFETY FENCE.

A. Meet the following material requirements:

1. Height of 48 inches ± 2 inches (1.2 m ± 50 mm) and constructed of orange plastic mesh containing ultraviolet stabilizers to prevent degradation.

2. Remain flexible down to 0°F (-18°C).

3. Minimum tensile strength of 250 pounds per foot (3650 N/m) in the longitudinal direction and 150 pounds per foot (2190 N/m) in the vertical direction.

4. Maximum aperture opening of a nominal 4.5 square inches (290 mm^2).

5. Maximum porosity of 55% for the safety fence surface area.

6. Available in rolls of at least 50 feet (15 m) in length to minimize fence joints for an individual fence location.

B. Securely attach three horizontal nominal 1 inch (25 mm) bands of Type III or IV white retroreflective sheeting meeting the requirements of Article 4186.03 to the safety fence on the side facing traffic. Locate the bands at the mid-height and within 9 inches (225 mm) from the top and bottom of the fence fabric. Comply with Materials I.M. 488.03 for inspection and acceptance of orange mesh safety fence.

4188.04 42 INCH (1050 MM) CHANNELIZERS.

Furnish reboundable channelizing devices made for use in traffic control zones. Ensure channelizing devices meet the requirements of the MUTCD and the following requirements:

A. Properties.

1. Channelizer body is made from an impact resistant, flexible, and reboundable material that is highway orange meeting Federal Color Standards.

2. Material is specifically formulated with ultraviolet stabilizers to provide satisfactory weatherability characteristics and resist fading.

B. Visibility.

1. Minimum of two orange 6 inch (150 mm) bands of Type VII Iowa reflective sheeting and two white 6 inch (150 mm) bands of Type III or IV reflective sheeting.

2. Retroreflective sheeting for the bands meeting the requirements of Article 4186.03 and recommended by the manufacturer for use on drums.

3. The first (top) and third bands orange, and the second and fourth (bottom) bands white.

4. Nonreflective spaces between the bands no wider than 2 inches (50 mm).

C. Stability.

1. The channelizer, when properly ballasted, is not to move, overturn, or separate due to air turbulence created by passing vehicles or moderate winds.

2. The ballast is to be supplied by the manufacturer, is to weigh no less than 30 pounds (13.6 kg), and is not to present a hazard to motorists, workers, or pedestrians.

3. Anti-roll feature that prevents channelizers from rolling freely if overturned.

D. Acceptance.
Comply with Materials I.M. 488.04 for inspection and acceptance of channelizers.

4188.05 TEMPORARY LED FLOODLIGHTING LUMINAIRES.
Furnish luminaires made for portable, mobile self contained, floodlights for temporary traffic control zones. Luminaire shall have IES LM-79-08 report from qualified independent laboratory verifying luminaire performance, including the following requirements:

- L70 @ 25°C of 70,000 hours.
- LED color temperature of 4,000 cct - 5,000 cct.
- LED light engines meet dust and moisture rating of IP-66.
- Designed and tested to comply with ANSI C136.31 2001 for 100,000 cycles at 3G acceleration for normal and bridge applications.
- Surge protection for LED driver and electronics - category C high (20kV, 10kA).
- Totally enclosed glass refractor lenses with type IV distribution.
- IES glare control rating of "full cut off".
- Minimum initial output rating of 7,200 lumens.
- Meets State of Iowa Energy Code requirements for LED roadway lighting (66 lm/W).
- Photoelectric controlled for dusk to dawn operation.
- Comply with Materials I.M. 488.06 for inspection and acceptance of Temporary LED Floodlighting Luminaires.