

Standard Guidelines for Product Review
TRAFFIC DELINEATORS – TYPE 4 Alt 2;
Section 00840.10
September 23, 2009

00840.10 – TRAFFIC DELINEATORS – TYPE 4 Alt 2

We use five types of Delineators.

- Type 1 are flat, metal and designed to be driven into the ground.
- Type 1U are flat, metal, utility grade and designed to be driven into the ground.
- Type 2 are flat and designed to be driven into the ground.
- Type 3 are round and designed to be driven into the ground.
- Type 4 Alt - 1 are flat and designed to be mounted on guard rail posts.
- **Type 4 Alt - 2 are flat, metal and designed to be mounted on guard rail posts.**
- Type 5 are barrier markers, designed to be mounted on top of concrete barrier.

To submit a Type 4 Alt 2 Delineator for review:

- Submit a completed [Preliminary Information Form for Product Evaluation](#).
- Submit samples, shop drawings, brochures, pictures, Independent test reports, and other documentation sufficient for us to be able to determine that your product meets our specifications and is suitable for the application.
- Submit a "Self-Certification" for indicating compliance with NCHRP 350 Category 1. It is your responsibility to determine if your product is crash-worthy. To determine this crashworthiness, you should use crash tests and or an engineering analysis.

Ensure that your installations will comply with TM 570 of the [ODOT Standard Drawing](#),
http://www.oregon.gov/ODOT/HWY/ENGSERVICES/traffic_drawings.shtml#Traffic_500_Pavement_Marking

Specifications:

Fabricate the support member from hot-rolled steel sections meeting either of the requirements given in the following table:

METAL PROPERTIES

| Grade | Minimum Yield Strength, psi | Minimum Ultimate Strength, psi |
|--------------------------------------------------------|------------------------------------|---------------------------------------|
| Hot-rolled carbon steel - min. carbon content 0.32% | 40,000 | 70,000 |
| Hot-rolled rail steel ¹ | 50,000 | 80,000 |

¹ Note: As defined in U.S. Department of Commerce Commercial Standard CS 150-48, rail steel products shall be rolled from standard tee-section steel rails. No other materials, such as those known by the terms "re-rolled", "rail steel equivalent", and "rail steel quality", shall be substituted.

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The support posts shall be of channel section and of the nominal dimensions and weight per foot shown on ODOT Standard Drawing TM 570, subject to the manufacturer's tolerances in dimensions, and a tolerance in weight of 3.5% in any one shipment and 5% under for any one post, and a tolerance in length of 1 inch under and 2 inches over. The members shall be straight and free of sharp corners and rough or burred edges or surfaces.

Multiple Punching - Support posts with holes in addition to those called for on the plans will be acceptable provided that the critical net width of the section measured on the frontal plane projection of the post is not less than 2 1/2 inches.

Galvanize support posts after fabrication in conformance with the requirements of AASHTO M 111 (ASTM A 123).

Reflective Sheeting - Retro-reflective sheeting shall meet the following as tested in accordance with ASTM D4956:

| Entrance Angle | Observation Angle | Coefficient of Retroreflection (cd/lx•m ²) | |
|----------------|-------------------|--------------------------------------------------------|--------|
| | | White | Yellow |
| -4° | 0.2° | 250 | 170 |
| +30° | 0.2° | 150 | 100 |

Mount the reflective sheeting on the posts as detailed on the plans by an approved positive means which has adequate strength to prevent loss of the reflective material during the life of the post.

Submit documentation to:

Oregon DOT
Mike Dunning
800 Airport Road SE
Salem OR 97301-4798
503-986-3059

<http://www.oregon.gov/ODOT/HWY/CONSTRUCTION/QPL/QPIndex.shtml>