

technical memorandum



road safety hardware series

Lapping of Semi-Rigid Guardrail

TM-2002

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Purpose

To advise on the recommended practice for the lapping of Semi-Rigid barrier systems (W-Beam and Thrie-Beam).

Background

A Semi-Rigid barrier system comprising W-Beam or Thrie-Beam steel guardrail on timber or steel posts is structurally connected at the overlap of the guardrail section ends. The guardrail must be joined in accordance with the manufacturer's instructions. Generally this will be by the use of eight (W-Beam) or twelve (Thrie-Beam) M16 Grade 8.8MPa strength splice bolts with the mushroom head on the traffic side, and hex nuts without washers on the reverse.

Recommended practice

The standard practice is to lap the guardrail in the direction of travel of the adjacent traffic. In this most common situation, the upstream section overlays the downstream section as shown in Figure 1 opposite. This is done to minimize potential vehicle snagging on the end of a section should the guardrail pocket under impact.

End terminal treatment

The above practice is over ridden by specific guardrail end treatment installation requirements. For example, in an installation where an energy absorbing end terminal is used in a trailing location, the guardrail **must be lapped as though it were installed in a leading end location.** In this situation, the trailing guardrail overlays the upstream guardrail end.

Incorrect lapping will cause the end terminal to lock up and fail when impacted by opposing traffic.

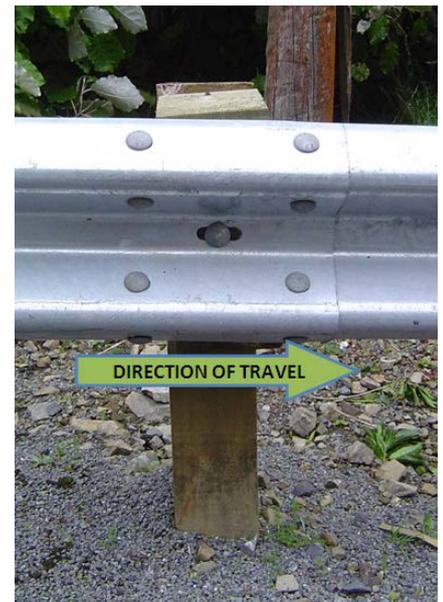


Figure 1 Standard Rail Lapping

This trailing end terminal lapping applies to the specified length of the terminal and includes the first splice joint beyond the specified terminal length, as shown in Figure 2 below. Refer to the suppliers' installation guidelines for the specific terminal installation details and lengths.

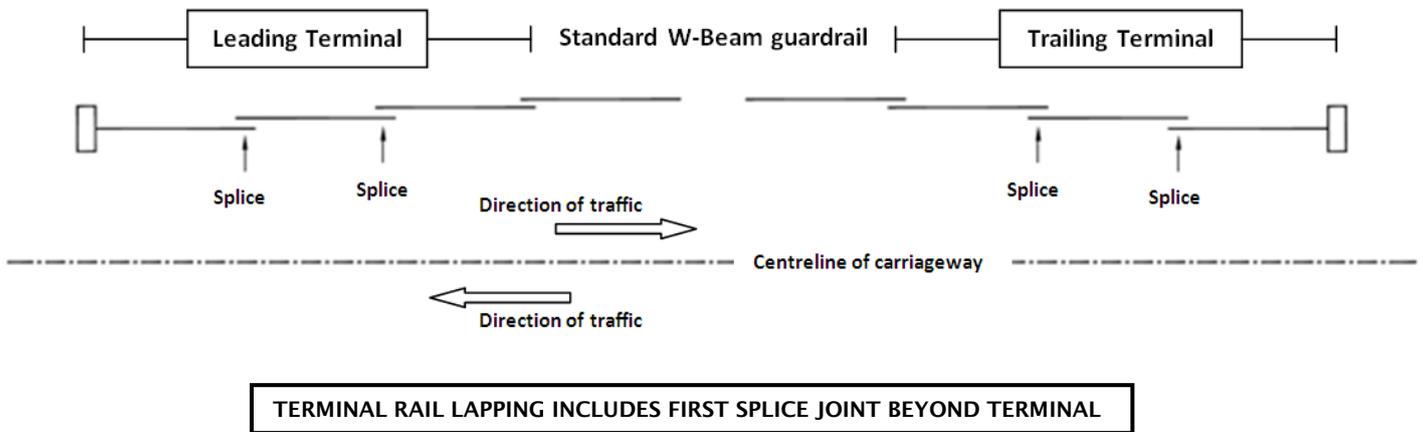


Figure 2 Lapping of semi-rigid guardrail (W-Beam or Thrie-Beam)

Endorsed by: National Manager Traffic & Safety