

**DPWH STANDARD SPECIFICATION FOR
ITEM 618 - REFLECTORIZED THERMOPLASTIC RUMBLE STRIPS**

618.1 Description

618.1.1 Scope

This Item shall consist of furnishing and applying reflectORIZED thermoplastic rumble strips on the surface of the pavement in accordance with this Specification and at the locations shown on the Plans, or as required by the Engineer.

618.1.2 Uses of ReflectORIZED Thermoplastic Rumble Strips

ReflectORIZED thermoplastic rumble strips shall be bonded to typical asphalt or concrete surfaces to provide the following traffic controls:

- a. Warn/alert drivers of upcoming roadway condition such as intersections, sharp horizontal curves, narrow bridge approaches, toll plazas/gates, and tunnels.
- b. Use as complementary/enhancement to advance warning signs such as the Stop Ahead or the various Curve signs.
- c. Use to prevent/lessen the effect of drowsiness during long drive, inattention and highway hypnosis.

618.2 Material Requirements

618.2.1 ReflectORIZED Thermoplastic Pavement Material and Glass Beads (Pre-Mix)

Both materials shall conform to their respective requirements of Section 612.2, Materials requirements, Item 612 – Reflective Thermoplastic Stripping Materials (Solid Form).

618.3 General Requirements

618.3.1 Design

618.3.1.1 General

ReflectORIZED thermoplastic rumble strips shall have the following dimension:

Height	:	4.0 mm to 13 mm
Width	:	50 mm to 100 mm
Spacing	:	200 mm to 500 mm

As much as possible, placement of reflectORIZED thermoplastic rumble strips shall be limited to rural locations and shall not be installed near residential areas because of the noise it can generate. It should not be placed through pedestrian crossings or on bicycle routes.

The recommended length of road section where reflectorized thermoplastic rumble strips are to be installed shall be from 20 m to 30 m depending on the advisory speed limit of the road section.

The color of reflectorized thermoplastic rumble strips shall be either white or yellow.

Reflectorized thermoplastic rumble strips placed in the travelled way should not be overused. If used at too many locations, reflectorized thermoplastic rumble strips may lose their ability to gain the motorist's attention.

618.3.1.2 Pattern

The Contractor shall lay out a reflectorized thermoplastic rumble strips test pattern prior to the start of construction for approval by the Engineer. Pattern shall be balanced to provide adequate warning to drivers without being so severe that they startle drivers or upset motorcycles.

The pattern of reflectorized thermoplastic rumble strips shall finish within 50 m of any hazard it is associated with.

618.3.2 Composition

It shall conform to the requirements of Subsection 612.3.1, Composition, Item 612 – Reflective Thermoplastic Stripping Materials (Solid Form).

618.3.3 Qualitative

It shall conform to the requirements of Subsection 612.3.2, Qualitative, Item 612 – Reflective Thermoplastic Stripping Materials (Solid Form).

618.4 Application Properties

It shall conform to the applicable requirements of Section 612.4, Application Properties, Item 612 – Reflective Thermoplastic Stripping Materials (Solid Form).

Reflectorized thermoplastic rumble strips shall be placed transverse to motor vehicle traffic movement. It shall not adversely affect overall pavement skid resistance under wet or dry conditions and shall not be placed on sharp horizontal or vertical curves. It shall not be applied over deteriorating existing reflectorized thermoplastic rumble strips or pavement surface.

A sign warning the drivers of the onset of reflectorized thermoplastic rumble strips may be placed in advanced of rumble strips installation.

618.5 Sampling

It shall conform to the requirements of Section 612.5, Sampling, Item 612 – Reflective Thermoplastic Stripping Materials (Solid Form).

618.6 Testing

It shall conform to the requirements of Section 612.6, Testing, Item 612 – Reflective Thermoplastic Stripping Materials (Solid Form).

618.7 Packing and Marking

It shall conform to the requirements of Section 612.7, Packing and Marking, Item 612 – Reflective Thermoplastic Stripping Materials (Solid Form).

618.8 Method of Measurement

The area to be paid for under this Item shall be the number of square meters (m²) of reflectorized thermoplastic rumble strips applied and accepted.

618.9 Basis of Payment

Payment shall constitute full compensation for furnishing and application of reflectorized thermoplastic rumble strips including all labor, equipment, tools and incidentals necessary to complete the Item.

Payment will be made under:

Pay Item Number	Description	Unit of Measurement
618	Reflectorized Thermoplastic Rumble Strips	Square meter (m ²)

References:

1. DPWH Standard Specifications for Highways, Bridges and Airport, Volume II, 2004 Edition
2. Standard Specifications for Construction of Road and Bridges on Federal Highway Projects (FP-03, Metric Units), Federal Highway Administration, U. S. Department of Transportation
3. American Society for Testing and Materials (ASTM)
4. American Association of State Highways and Transportation Officials (AASHTO)
5. Wikipedia Encyclopedia
6. Thomas Grinding, Inc. Internet Webpage
7. Road Signs and Pavement Markings Manual, DPWH-Planning
8. Manual on Uniform Traffic Control Devices for Street and Highways, 2003 Edition, Federal Highway Administration, U.S. Department of Transportation

9. National Cooperative Highway Research Program (NCHRP) Report 476, Transportation Research Board of the National Academies, Washington, D.C., U.S.A.
10. Rumble Strips and Stripes, Federal Highway Administration Internet Webpage
11. Transverse Rumble Strips – Engineering Policy Guide, Internet Webpage
12. Transverse Rumble Strips – Transportation Research Synthesis (August 2007), Minnesota Department of Transportation
13. Section 614 - Rumble Strips (Grinding), Colorado Department of Transportation Internet Webpage