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Vibration Damping Materials and Underbody Coatings

RATIONALE

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1. Scope

1.1 Description of Material—The materials classified under this specification are:

- a. Mastic vibration damping materials used to reduce the sound emanating from metal panels.
- b. Mastic underbody coatings used to give protection and some vibration damping to motor vehicle underbodies, fenders, and other parts.

1.2 Numbering System

1.2.1 PREFIXES—The prefix "D" is used to indicate a cut back vibration damping material and the prefix "U" is used to indicate a cut back underbody coating material. Should a water emulsion be desired, the prefix should be followed by the letter "E." Should a solvent-water emulsion be desired, the prefix should be followed by the letter "F."

1.2.2 TYPES—The materials are further divided into types, based on the decay rate in decibels per second (dB/s) at 21 °C, and classes, based on the percentage of solids contained in the material.

Types and classes are as follows in Tables 1A and 1B:

TABLE 1A—NOMINAL DECAY RATE, dB/s

Type	Nominal Decay Rate, dB/s
5	5
10	10
15	15
20	20
25	25
30	30

TABLE 1B—NOMINAL SOLIDS CONTENT, %⁽¹⁾

Class	Nominal Solids Content, %
60	60
65	65
70	70
75	75
85	85
90	90

1. This table will be expanded as additional data is submitted and confirmed.

1.3 Example of the Use of Numbers—A cut back underbody coating having a decay rate of 5 dB/s and a solids content of 65% would be designated by the number U-565. An emulsion body damping material of medium decay rate and maximum solids content would be numbered DE-1090. Any combination of type and class could be used to suit the needs of the application.

2. References

2.1 Applicable Publications—The following publications form a part of this specification to the extent specified herein.

2.1.1 ASTM PUBLICATIONS—Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM D 93—Test Methods for Flash Point by Pensky-Martens Closed Tester

ASTM D 217—Test Method for Cone Penetration of Lubricating Grease

3. Physical Properties

3.1 Test Specifications—For testing procedures, see 4.1.

3.1.1 VIBRATION DAMPING MATERIAL—The material shall have a decay rate as shown in Table 2.

TABLE 2—MINIMUM DECAY RATE⁽¹⁾

Type	Min Decay Rate, dB/s 21 °C	Min Decay Rate, dB/s −18 °C	Min Decay Rate, dB/s 38 °C
5	5	2	2
10	10	4	4
15	15	4	4
20	20	5	5
25	25	—	—
30	30	—	—

1. This table will be expanded as additional data is submitted and confirmed.