ITEM 11607.9980 M - SOUND ABSORPTIVE COATING FOR NOISE BARRIERS

DESCRIPTION

Under this item, the Contractor shall install sound absorptive coatings attached to or cat integral with the noise barrier panels at the locations shown in the Contract Drawings or ordered by the Engineer.

MATERIALS

The Contractor shall submit to the Engineer for approval a certification from the manufacturer of the sound absorptive coating stating that the material selected for use meets the specification requirements contained herein. The certification shall include supporting test data and shall be submitted a minimum of 3 weeks before the material is intended to be used.

The material for the sound absorptive coating shall meet the following requirements:

(1) Sound Transmission Loss. The Contractor shall submit to the Engineer an independent testing laboratory report which shows that the sound transmission loss of the coating, when tested in accordance with ASTM Standard E90 achieves a minimum Transmission Loss of 20 dB at every frequency tested.

(2) Noise Reduction Coefficient (NCR). The noise barrier coating shall be tested in accordance with ASTM C 423, mounting type A (sample laid directly against the test surface) per ASTM E795 to determine the NRC of the panel. The Contractor shall submit to the Engineer an independent testing laboratory report which shows that the coating has a minimum noise reduction coefficient (NCR) of 0.90.

(3) Salt scaling resistance. Testing for resistance to deicing chemicals shall be performed in accordance with ASTM Standard C 672 “Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals”. After 59 cycles of freezing and thawing in a minimum of 3% solution of sodium chloride, the sound absorptive coating shall not exhibit excessive deterioration in the form of cracks, spalls, disintegration or other objectionable features.

(4) Resistance to Rapid Freezing and Thawing. Testing for rapid freeze-than resistance of the sound absorbing material shall be in accordance with ASTM Standard C 666, “Resistance of Concrete to Rapid Freezing and Thawing”. The Contractor shall submit a test report from an independent testing laboratory which indicates that the sound absorbing material exhibits no significant deterioration when subjected to 250 cycle of freezing and thawing under ASTM Standard C 666 procedure A “Rapid Freezing and Thawing in Water”. The medium for testing shall be a solution of not less than 3% concentration of sodium chloride.

(5) Resistance to Damage. Material used in panels and sound materials shall be resistant to damage caused by insects, rodents and vandals.

(6) Flame Spread and Smoke Density Developed. The sound barrier coating shall be tested in accordance with ASTM E 84 for flame spread and smoke density developed. The contractor shall submit to the Engineer an independent laboratory test report which shows that the sound barrier materials exhibit a Flame Spread Index of 10 or less and a Smoke

Density Developed Value of 10 or less.

(7) Coating shall have an integral color matching that of the noise barrier.

(8) Textures\patterns as specified for the noise walls on the drawings shall be incorporated into the sound absorptive layer.

(9) The sound absorptive coating shall be applied where indicated on the contract plans. If the coating is cast integral with the panel, a minimum 1" concrete cover must be provided on the reinforcement.

(10) If an attachment, the coating shall be attached to the noise wall panels by stainless steel hardware and anchors. The weight of the sound absorptive attachment panel and hardware shall be no greater than 48.8 kg per square meter. The attachment hardware system and method shall be such that the areas of anchorage have equal or greater durability and strength than the rest of the panels.

(11) Shop Drawings must be approved by the Engineer and a sample post and sound absorptive coated panel with integral color, surface texture and fractured fin staining must be approved by the Engineer prior to the start of casting of the noise barrier sections which will receive sound absorptive coating.

(12) All elements of the sound absorptive coating shall receive the same physical appearance reviews and require the same approvals as the noise barrier. The Contractor must submit certifications from the fabricator that all panel delivered meet the requirements of this specification.

CONSTRUCTION DETAILS

Extreme care should be exercised so that the sound absorptive coating is not damaged during shipment or erection. If damaged prior to final acceptance the sound absorptive material shall be repaired in manner recommended by the manufacturer and approved by the Engineer.

Attachment panels shall have lifting hardware or special slings or harnesses must be provided to prevent damaged to the panels during erection.

METHOD OF MEASUREMENT

The Sound Absorptive Coating for Noise Barrier will be measured as the number of square meters of the front face of the sound absorptive panel measured between the limits shown on the plans, or ordered by the Engineer.

BASIS OF PAYMENT

The unit price bid per square meter shall include the cost of all materials, equipment and labor, fabrication, transportation, erection, providing integral color, hardware, reinforcement if necessary, testing, repair, sample panels and all else required to complete the work.