



DEPARTMENT OF THE NAVY

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From: Commander, Naval Facilities Engineering Command

Subj: INTERIM TECHNICAL GUIDANCE (ITG 2017-02) - SELECTION OF RETROREFLECTIVE BEADS FOR AIRFIELD PAVEMENT MARKINGS

Ref: (a) 2016 National Defense Authorization Act, Subtitle F, Section 2851


1. Purpose. To establish engineering policy and technical guidance on the selection of retroreflective beads for airfield pavement markings.
2. Policy. Each installation must complete an installation-specific life cycle cost analysis to determine cost effectiveness of Type I and Type III retroreflective beads used in airfield markings for new contract solicitations. Unified Facilities Guide Specification (UFGS) 32 17 23, *Pavement Markings*, has been revised to allow the use of either Type I or III glass beads.
3. Background. Glass beads are used to reflectorize pavement markings. Historically, Type I beads have been specified on Navy airfields. The beads are applied in accordance with UFGS 32 17 23.00 20, *Pavement Markings*. Both Type I and Type III glass beads are technically acceptable for use on airfield markings. The Type I and Type III beads must meet the requirements of Federal Specification TT- B- 1325C, Type I, Low Index of Refraction, Gradation A, (Coarse, Drop-on) or Type III, High Index of Refraction. The FY16 National Defense Authorization Act (NDAA), Subtitle F, Section 2851 sets the requirement for the cost analysis and states:

The Secretary of Defense shall require such modifications of Unified Facilities Guide Specifications for pavement markings (UFGS 32 17 23.00 20 Pavement Markings, UFGS 32 17 24.00 10 Pavement Markings), Air Force Engineering Technical Letter ETL 97-18 (Guide Specification for Airfield and Roadway Marking), and any other Department of Defense guidance on airfield pavement markings as may be necessary to permit the use of Type III category of retro-reflective beads to reflectorize airfield markings. The Secretary shall develop appropriate policy to ensure that the determination of the category of retro-reflective beads used on an airfield is determined on an installation-by-installation basis, taking into consideration local conditions and the life-cycle maintenance costs of the pavement markings.

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4. Technical Guidance. When completing airfield markings by in-house forces or by contract, a life cycle cost analysis (LCCA) must be completed to determine which type of retro-reflective bead will be used. When comparing installation costs by contract, the most accurate method is to obtain current contractor pricing for the same scope of restriping with Type I or Type III glass beads as separately priced contract line item numbers (CLINs). If this cannot be done, the reasons must be documented. Historic information, no older than 24 months, on the price of Type I and Type III installed bead striping, can be used with clear documentation of source, reasons why this data is considered valid, and any other pertinent information. If the restriping is to be completed in-house, the analysis must account for the material costs of Type I or Type III beads as a component of the overall work cost. An installed cost estimate should be completed for the entire striping scope with each bead type and then used in the life cycle cost analysis. Local conditions and maintenance activities will be considered in the evaluation of life expectancy of an installed reflective stripe. Historic patterns of restriping, rubber removal, expected paint life by type of paint, striping location, pavement material, stripe color, snow removal or other maintenance activities should all be considered as components of the expected cost and life of the striping. No technical or physical characteristics (i.e. durability, size, sustainability) of the Type I or Type III glass beads should be considered in the cost analysis.

6. Point of Contact. For clarification or additional information related to this subject, please contact Mr. Joe Woliver, P.E., DSN 262-4350, Comm (757) 322-4350, or e-mail joseph.woliver@navy.mil.


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