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## DESIGN MEMORANDUM

To: Distribution

From: Joseph A. Pavao Jr., P.E.,  
Acting Chief Engineer

Date: 5/25/2023

RE: Stair Construction Materials and Design

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This design memorandum is intended to standardize and clarify the MBTA's indoor and outdoor stair construction material types and methodologies.

Design Consultants shall design to standards as prescribed by Code. MBTA Standards shall apply only where Code does not address a topic or the MBTA requires a standard above and beyond Code. The more stringent shall always apply.

### **APPLICABILITY**

For the purposes of the design and construction of stairs, typical implementations shall utilize Aluminum interlocking treads and kick plates, as defined in the design directive for Walkways, Ramps and Stairs. Treads are to be supported by a full angle between the stringers such that the structural support for the stair is not dependent on the aluminum tread and that the tread shall function as a wear surface only. Attachment of the angles to the stringers, and stringers to supports as well as other structural connections relating to the stairs shall be designed and implemented in such a way so as to allow for inspection following construction, e.g. there are no obscured connections. To support future inspections and verification of the stair's capacity in the distant future designer are to take note that access panels may be required where fireproofing/rating may be needed. All connections between dissimilar materials are to be separated by a polyurethane or similar material pad. All Structural members are to be hot dip galvanized steel, minimum G-90. While painted galvanized steel is preferred for stringer materials and tread support angles paint shall not substitute for a urethane pad or similar separation between dissimilar materials alone.