DESIGN GUIDELINE 321723
PAVEMENT MARKINGS

Scope

This Design Guideline pertains to designing and specifying materials, surface preparation, and application of pavement markings for University of Michigan campus roads and parking lots.

Related Sections

U-M Design Guidelines
DG 321000 Walks, Roads and Parking Paving
DG 5.6 Parking Structures

Related Documents (latest versions)
AEC Design Deliverables
MDOT Standard Specifications for Construction
MDOT Pavement Marking Standards
Michigan Manual on Uniform Traffic Control Device (MMUTCD)
A Policy on Geometric Design of Highways and Streets (AASHTO)
City of Ann Arbor Standard Specifications, Division V

Summary

Provide road and surface parking lot pavement markings, shapes, spacing, and dimensions that conform to the MDOT Standard Specifications for Construction (MDOT Standard Specifications) Section 811, Permanent Pavement Markings, and Section 920, Permanent Pavement Marking Materials, unless noted herein or by the Design Manager. Removal of pavement markings shall conform to MDOT Standard Specifications Section 812.03.F, Pavement Marking Removal. Temporary pavement markings follow MDOT Standard Specifications Section 812.03.D.11, Temporary Pavement Markings. Parking structures pavement markings shall follow recommendations in Master Painters Institute (MPI) Architectural Painting Specification Manual applicable to substrates and paint systems.

All striping shall meet current Michigan Manual on Uniform Traffic Control Devices (MMUTCD) requirements.

Surface preparation and material application shall be per manufacturer's directions.

Permanent Pavement Markings

Roads

Centerline pavement markings are standard yellow 4-inch wide lines used to delineate the separation of traffic that is moving in opposite directions on an undivided roadway. The patterns used are per MDOT Standard Plans. Centerline markings are applied with sprayable thermoplastic.

Lane line pavement markings are white 4-inch wide lines used to delineate the separation of traffic moving in the same direction. The patterns used are per MDOT Standard Plans. Lane line markings are applied with sprayable thermoplastic.

Edgeline pavement markings delineate the right or left edge of a roadway and identify the extents of the pavement to be used for vehicular traffic. On one-way streets, the left edgeline is to be standard yellow. The right-hand edgeline should always be white. The line width should be 4-inch. Edgeline markings are applied with sprayable thermoplastic.

Special Markings (also called Transverse Markings) include shoulder markings, word and symbol markings, stop bars, crosswalk lines, yield lines, and others. White is the typical color for special markings. Confirm color with Campus Planning for newly introduced special markings. If multi-colored markings are required, use Preformed Thermoplastic. Consult Campus Planning during bike lane marking design and for new special markings.

Special markings are typically applied with retroreflective polyurea (min 20 mil binder thickness). If pavement is new, preformed thermoplastic or ribbon thermoplastic may be used. Consider recessing the special marking area in locations where the trapping of water, ice and debris is not a concern for pedestrians, bicycles and motorcycles. Follow MDOT Standard Specification Section 811 for preparation of surface for polyurea.

On-Street Parking markings are white 4-inch wide lines used to delineate parking stalls on a roadway. Waterborne, sprayable thermoplastic or thermoplastic material may be used. Refer to AASHTO on-street parking standards.

Surface Parking Lots

Parking area pavement markings are 4-inch wide markings that define parking stalls and buffers in a parking area. Two coats are to be used over new pavement. Check with the User (e.g. LTP, Student Life, Athletics, Michigan Medicine) on the marking color to be used for parking stalls and accessible parking stalls for a particular parking lot. Confirm whether accessible parking pavement marking symbols will be used in the ADA accessible stalls. Typically, LTP prefers only yellow markings and no ADA symbols within the ADA parking stalls. LTP prefers to use signage to delineate ADA parking. Typically, Michigan Medicine prefers blue markings as well as an ADA symbol in the ADA accessible stalls.

Parking area markings are applied with waterborne or sprayable thermoplastic paint and do not require retroreflectivity.

Parking Structures

Parking structure pavement markings are standard yellow 4-inch wide markings with no retroreflectivity that define parking stalls and buffers in a parking structure. Markings are applied in a 2-coat system with solvent-based chlorinated rubber or alkyd paint and shall conform to Master Painters Institute (MPI) Approved Products List #32 Traffic Marking Paint, Solvent Based.

Temporary Pavement Markings

Temporary markings may be required per the Engineer to temporarily mark finished pavement prior to the placement of permanent markings. For linear markings, offset temporary markings from the permanent location so that the permanent markings can be placed prior to removal of the temporary markings. Refer to MDOT Standard Specifications Section 812.03.D.11 for further detail on the appropriate use of removable markings (Type R) and non-removable markings (Type NR). Refer to the MDOT Qualified Products List.