

SDDOT MASH Implementation for Temporary Work Zone Devices

This document covers the South Dakota Department of Transportation (SDDOT) MASH implementation plan for temporary work zone devices. This includes defining what SDDOT will consider the normal service life for the various categories of temporary work zone devices. The categories and timelines contained in this document will be reviewed periodically. The SDDOT will determine if certain dates need to be extended.

The sunset date specified in the AASHTO-FHWA Joint Implementation Agreement for MASH for the use of NCHRP 350-compliant roadside hardware devices on new construction and full reconstruction projects on National Highway System (NHS) facilities occurred on December 31, 2019. However, because of the limited number of MASH 2016-compliant devices available in several device categories, existing MASH 2016-compliant devices may not provide the functionality needed by a state transportation agency.

After December 31, 2019, states will use MASH 2016-compliant devices on new construction and full reconstruction NHS projects. However, states may specify MASH 2009-compliant or NCHRP 350-compliant devices when:

- a. a MASH 2016-compliant device does not exist to address the situation; or
- b. a MASH 2016-compliant device exists but does not meet the state's needs given project or regional conditions; or
- c. the state is awaiting completion of MASH-2016 testing for a specific device, in which case the state must document the plan for testing the device that will be used on future projects in lieu of the specified NCHRP 350 device; or
- d. the device is a temporary work zone device that has been in use prior to December 31, 2019 and is still within its normal service life.

States must maintain documentation of non-MASH-2016-compliant devices used and the basis for use. When sole-sourcing MASH-compliant devices, States must comply with Federal and State procurement requirements.

Categories of Devices

For ease of reference, SDDOT will define temporary work zone devices by category or type of device. The category definitions below are based on the categories used under NCHRP 350. The exception to this is Truck or Trailer Mounted Attenuators (TMAs). TMAs are in a separate category than the other Category 4 devices because MASH crash testing was developed specifically for these devices and there are TMAs that currently meet MASH-16.

Category 1: Category 1 includes small and lightweight channelizing and delineating devices. These devices include cones, tubular markers, flexible delineator posts, and plastic drums without warning lights attached.

Category 1 devices may be manufacturer-certified as MASH-compliant if there are no attachments to the device. If there are attachments, crash testing and/or evaluation to

MASH criteria is required. Warning lights on drums, for example, would require crash testing.

Category 2: Category 2 includes barricades, portable sign supports, and Category 1 devices with attachments.

Category 2 devices require MASH crash testing.

Category 3: Category 3 includes temporary barrier, fixed location sign supports, and crash cushions.

Category 3 devices require MASH crash testing.

There are currently MASH-16 compliant crash cushions that have received an FHWA eligibility letter and are listed on FHWA's website.

Category 4: Category 4 devices include portable or trailer-mounted devices such as arrow boards, temporary traffic control signals, area lighting, and portable changeable message signs.

Category 4 devices continue to be analyzed for potential to be crashworthy. There are no Category 4 devices that are currently MASH-compliant. Until there are MASH-compliant Category 4 devices available, Category 4 devices will be positioned and operated in as safe a manner as practical. Category 4 devices should be delineated or shielded when in use and removed from the clear zone as soon as practicable when they are no longer needed.

TMA's: TMA's are truck- or trailer-mounted attenuators.

TMA's are required to meet MASH crash testing.

Normal Service Life for Temporary Work Zone Devices

SDDOT defines the normal service lives for temporary work zone devices as follows:

Category 1 devices manufactured on or before December 31, 2019 that have not been manufacturer-certified as MASH-compliant may continue to be used until December 31, 2022. [5-year service life]

Category 2 devices manufactured on or before December 31, 2019, and successfully tested to NCHRP Report 350 or the 2009 edition of MASH, may continue to be used until December 31, 2024. [7-year service life]

Category 3 devices manufactured on or before December 31, 2019, and successfully tested to NCHRP Report 350 or the 2009 edition of MASH, may continue to be used until December 31, 2029. [10-year service life]

TMA's manufactured on or before December 31, 2019, and successfully tested to NCHRP Report 350 or the 2009 edition of MASH, may continue to be used until December 31, 2029. [10-year service life]

MASH Compliant Devices

When the SDDOT approves a temporary work zone device as MASH crashworthy, it will be placed on an Approved Products List. For a device to be accepted as MASH compliant by the SDDOT, an SDDOT Product Evaluation Request will need to be submitted. The procedure, forms, and pertinent information regarding this can be found on the Approved Products page of the SDDOT Website (<https://dot.sd.gov/doing-business/certification-accreditation/approved-products>).

Modifications to MASH-Compliant Devices

Non-significant modifications of MASH-compliant devices that have a positive or inconsequential effect on safety performance may continue to be considered MASH-compliant. The SDDOT is tasked with determining what constitutes “non-significant” modifications.

Modifications to MASH-compliant devices will be submitted to the SDDOT for review. The SDDOT Operations Traffic Engineer and a panel of other technical experts in the department will review each temporary work zone device modification on a case-by-case basis to determine if modifications are significant or non-significant.

Non-significant modifications will be approved as MASH-compliant. Significant modifications will require further MASH crash testing and evaluation.

SDDOT Contact

If you have any questions regarding this document or the SDDOT procedures for MASH approvals for temporary work zone devices, please contact:

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