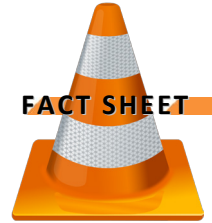


Longitudinal Channelizing Devices in Work Zones

FACT SHEET



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Commonly known as Longitudinal Channelizing Devices (LCD), these units are used to delineate or channelize vehicles and pedestrians. LCDs help address work zone safety by preventing pedestrians and vehicles from entering work areas. Use of LCDs is beneficial at major decision points such as lane closures, exit ramps, driveways, and crossovers. These devices may be used instead of a tapered line of cones, drums, or barricades and also to define a travel path. Typical applications of LCDs include defining travel paths for pedestrians and conforming to Americans with Disabilities Act (ADA) requirements.

LCDs were first introduced in the 2003 edition of the Manual on Uniform Traffic Control Devices (MUTCD) as Longitudinal Channelizing Barricades. In the 2009 version of the MUTCD, LCDs are described as lightweight, deformable devices that can be connected together to delineate or channelize vehicles or pedestrians. The American Association of State Highway and Transportation Officials (AASHTO) Roadside Design Guide describes this type of barrier as “longitudinal barriers of



Source: FHWA NCHRP Report 350

segmented, polyethylene plastic shells (with a steel framework for NCHRP ^[1] Test Level 3), designed for use with a ballast, that have been successfully crash tested using NCHRP 350 requirements.” ^[2] Ballast may be filled with water or sand.

LCDs provide channelization with no gaps,

prohibiting motorists from driving between individual devices. Examples of longitudinal channelizing devices include the Model 2001/2001M manufactured by the Yodock Wall Company, the RB1-1000 manufactured by Rhino Barriers, and the Triton Barrier TL-2 manufactured by Energy Absorption Systems, Inc.; all of which are water filled barriers meeting NCHRP 350 performance requirements.

What Are Its Primary Benefits?

LCDs help in separating traffic from the work area and can enhance both motorist and construction crew safety. LCDs can also be used to create a physical separation between travel lanes or between accessible pedestrian routes and motorized traffic when temporary pedestrian routes are used to facilitate sidewalk closures.

Additionally, these devices improve traffic flow by alerting motorists to construction activity ahead and giving them ample time to react to travel patterns changes. These devices are used extensively in work zones to warn drivers of work activities on or near the traveled way, to protect workers in the area, and to guide drivers and pedestrians safely through and around the work zone.



Source: American Traffic Safety Services Association



Source: <http://www.yodock.com>



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[1] National Cooperative Highway Research Program (NCHRP)

[2] <http://www.atssa.com/galleries/default-file/WZ%20Positive%20Protection%20Toolbox%20LL%20-%20FINAL.pdf>

These devices provide more path guidance information, especially in continuous line applications, by preventing drivers and pedestrians from going between devices and entering the work zone. LCDs are more resistant to getting knocked over, and thus, may require less maintenance. Their larger size may command more respect from drivers, thereby reducing incidents of being struck. Benefits also include all weather durability and crush resistance. LCDs are lightweight, deformable devices that are highly visible, have good target value and can be linked together. Empty barrier sections can be placed by hand without the need for any heavy lifting equipment, thus permitting its use where heavy equipment may be impractical or impossible.

Where Is It Applicable?

LCDs can be considered where:

- Cones, drums, and barricades are inappropriate and continuous separation is needed.
- It is necessary to provide a continuous path for separation of motorized traffic and workers where speed limits prior to construction are 40 mph or less.
- Travel paths for pedestrians are required to meet Americans with Disabilities Act (ADA) requirements.
- Travel path is immediately adjacent to the active work area.
- There is a need to prevent or restrict motorists' access through the work zone.
- Road closures require mitigation for extremely hazardous high angle impacts (in place of concrete barriers).
- Work activities impact sidewalks and/or other pedestrian facilities.
- The design of the temporary pedestrian facility does not otherwise include accessibility features consistent with the existing pedestrian facility.

Considerations While Using LCDs

- Vehicles can be expected to penetrate completely through LCDs that have no internal or external steel rails.
- Water filled LCDs, when impacted, may create a hazardous situation in the work zone, especially in cold temperatures if it forms ice on the pavement.
- The means to dispose the ballast water when the barrier is removed should be considered as some locations may require that the water is pumped out and transported offsite, thus adding to the time and cost to remove the barrier.
- In colder regions, environmentally friendly antifreeze can be used to keep the water from freezing inside the LCDs.
- Environmental guidelines and restrictions should be adhered to when draining water.
- If used for pedestrian control, LCDs shall be interlocked with no gaps.
- If used to channelize vehicular traffic at night, LCDs should be supplemented with retroreflective material or delineation for improved nighttime visibility.
- LCDs are not intended as a replacement for concrete barriers, but to provide continuous delineation through a work zone.
- Because each construction project differs, the selection, application, and location of these devices should be determined on a project-by-project basis.



Source: <http://www.yodock.com>



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