No Outlet

No Outlet! This is the wording on many road signs in the southeast. The sign might well read Dead End in other parts of the country. The sign indicates the road does not provide access to other streets or roads. If you traverse down a dead end street at some point you will have to make a ‘U’ turn and come back to the intersection with the sign. A dead end corridor is much like a dead end street, in that it intersects a main corridor, restricts movement, and has no other outlet to other corridors or exits.

There is nothing wrong with a moderate length dead end corridor. The potential problem occurs during an emergency, when quick egress is vital for survival. A wrong turn down a dead end corridor will prolong the egress time. An individual must reach the end of the dead end corridor, recognize its has no outlet, make that U turn, and retrace their path back to the main corridor. While this would more likely occur with an individual not familiar with the building layout, it can easily happen to a long time building occupant. In a smoke filled, darkened corridor, heart pumping, adrenalin flowing emergency its easy to become disorientated.

The egress delay may only be seconds, for a healthy adult within an environment that allows him to walk upright. Given a smoke filled corridor and the same healthy adult on his hands and knees, the delay becomes much greater. Thus, the building codes limit the length of a dead end corridor to reduce the potential increase in egress time. A normal adult traveling at 250 feet per minute would traverse the 40 foot round trip in a 20 foot dead end corridor in 10 seconds, or 24 seconds for a round trip in a 50 foot dead end corridor. It will take substantially longer on his hands and knees to traverse the same distances. Assuming 100 feet of travel per minute these times become 24 seconds and 60 seconds. Adding this to the egress times to traverse the allowable travel distances, could greatly increase the overall egress times.

So what is a corridor? A corridor is defined as an enclosed route that defines and provides a path to an exit. As a street defines the paths for cars, a corridor defines the path of egress for individuals. The enclosure of the egress path is by walls or fixed furniture over 6 feet in height. The concept of a dead end corridor only applies where access to multiple means of egress is required, and a portion of the corridor system provides only one direction to access an exit. The dead end concept does not apply to a room, series of intervening rooms, or small suites, as these spaces are not considered corridors. Corridors serving an area, floor, or building where only a single means of egress is required are not considered dead ends. (See Figure No 1)

A dead end corridor is typically limited to 20 feet in length with a few exceptions. Dead ends may be up to 50 foot in length for a sprinkled business, factory or industrial facility, or in facilities that restrict individual liberties (i.e. jails, prisons, detention centers). The reasoning is that a sprinkler system will increase the safe time to evacuate, by providing an earlier alarm, and reducing the fire growth and the products of combustion.
Dead ends may be greater than either the 20 or 50 feet when the dead end length is less than 2.5 times the minimum corridor width of the section under consideration. A 10 foot wide corridor may have a dead end of 25 feet while a mall or airport with a 30 foot wide concourse may have a dead end of up to 75 feet. The wide egress path is more like a large room than a typical corridor. The wide egress path is not restricting the egress path to a narrow enclosed corridor. The existing building codes allow dead end corridors up to 35 feet in length regardless of occupancy or fire protection features. Existing, newly constructed or extended dead ends up to 50 feet are allowed if the building is sprinklered throughout or provided with an automatic fire alarm, except for assembly or hazardous occupancies. Existing unaltered corridors may be up to 70 feet in length when the building is sprinklered throughout, except for assembly and hazardous occupancies.

A common path, like a dead end corridor, is an egress path that provides only one direction or route to access an exit. The common path terminates at the point where two separate routes to two separate exits exists. A dead end, by definition, is a common path providing only one route to a point where two separate egress routes are available. Dead ends add to the potential for an excessive common path of travel. A room or space with a single door onto a dead end corridor will have a common path equal to the travel distance within the room plus the travel distance in the corridor to an area where two separate egress routes are available. (See Figure No. 2)

Egress out of an enclosed corridor that leads through one or more rooms to a second exit, does not eliminate the dead end corridor condition. This arrangement is not acceptable as the egress route is not easy recognizable, room doors are typically closed and in many cases are lockable, and doors tend to swing against the egress route. (See Figure No. 2). A fire rated corridor is required to continue uninterrupted, except for lobbies and vestibules, to an exit (exterior door, enclosed exit stair, etc). Thus egress out of a fire rated corridor back through rooms or spaces is clearly prohibited. This is similar to the dead end street. We may be able to drive across a lawn to get to another road or street, assuming the owner hasn’t put up fencing, trees, scrubs, etc. and the terrain is negotiable. Egressing out of a dead end corridor into an intervening room(s) to get to a second exit is not an acceptable route. A non-rated enclosed corridor need not continue uninterrupted to an exit, however an egress path must continue to an exit. (See Figure No. 3).

Excessive dead end corridors can be reduced in many cases by a set of doors. By segmenting the end portion off into a room or suite of rooms needing only one means of egress, the dead end is measured from the doors back to the main corridor where two directions are available. (See Figure No. 1). These doors are not required to be closed or on hold open devices by the building codes unless they are part of a fire rated wall assembly (corridor, occupancy, etc) or a non-rated incidental use enclosure. In some cases the segmented section can be considered an intervening room or space to get to the main egress corridor.

A posted dead end street is easily identifiable, as is a classic dead end corridor. It’s when the plans get complex that it becomes more involved, with several issues to consider. Is it a required enclosed egress pathway? Is it serving as one means of egress from spaces where two means of egress are required? Is it open to a main corridor where access to two means of egress is required? Does the corridor need to be fire rated? Is the dead end length in excess of the code limits?