

D.10 At Grade Pedestrian Crossings



Where at grade rail pedestrian crossing is required, in addition to adhering to Transport Canada regulations, approval must be obtained from Railway Corridors and System Safety at Metrolinx.

Table D-10: At Grade Pedestrian Crossings

Element	Design Requirement
Flangeway Gap	<ul style="list-style-type: none"> • The flangeway width may not be less than 65 mm and shall not exceed 75 mm • Extend rail seal and taper asphalt at least 254 mm beyond edge of crossing surface • Material: Use rubber rail seal to match the rail size and profile • Use 3048 mm lengths and specify a flangeway width of "2 ½ inches"
Crossing Width	<ul style="list-style-type: none"> • The total crossing width including the 254 mm tapered shaller of the crossing shall be a minimum of 3048 mm • The total crossing surface width, level from shaller to shaller, shall be a minimum of 2540 mm • The travelled or usable crossing surface width, which represents the minimum clearance distance for two wheel chairs to pass between the pavement marking lines, shall be no less than 1829 mm • The width of the approaching walkway, where there is one, shall be designed so that the crossing width shall extend a minimum of 500 mm beyond the shaller of the approaching walkway
Crossing Surface	<ul style="list-style-type: none"> • Material: Asphalt 150-200 mm HL3A to match top of rail • Geotextile to be placed directly on ties and ballast and must continue to top of rubber rail seal • Construction tolerance between crossing surface and top of rail—3mm • Grade between rails: match elevations of top of rail
Crossing Approach	<p>Material:</p> <ul style="list-style-type: none"> • Asphalt 200 mm HL3A (typical) • Subgrade: 150 mm granular "A" • Gradient (Accessibility Standard) • The gradient shall not exceed a ratio of 1:20 (5%) • A gradient exceeding 1:20 (5%) would require the approach to be designed as a ramp <p>In accordance with the Ontario Building Code, ramps can have a maximum gradient of 1:12 (8.3%).</p> <p>Furthermore, ramps require a handrail on both sides; therefore, this application would only be possible outside of the clearance envelope.</p>

Element	Design Requirement
	Crossing approach shall be detectable at the boundary between the platform and the crossing to identify a safe stopping location outside of the clearance envelope.
Crossing Location	<p>Where a train will not occupy the crossing during a regular Station stop the inside edge of the crossing shall be located no less than: 6 metres from the front of the facing cab-car.</p> <ul style="list-style-type: none"> • Fencing shall be installed to prevent pedestrians from crossing the tracks between a locomotive/cab-car and a designated level crossing • Rail joints shall not be located within the crossing
Guide Rails	<p>Guide rails are required for gate application only for the purposes of:</p> <ul style="list-style-type: none"> • Providing a means to close-off the counter weights and mechanism, thereby providing a protective barrier for pedestrians • Guiding pedestrians and closing off access to the corridor when the gates are down, i.e. the gate arm shall "slot" into the guide rails
Z-Barrier (Maze Barrier) (non-accessibility standard)	<p>Consider specific application depending on approach, e.g. not envisaged on platforms but may have a use on the parking side of the tracks where there is a large/lengthy approach and e.g. poor sightlines. The application would be used to slow down and control pedestrians so as to focus direction (sightlines) and attention to the crossing, or to force cyclists to dismount e.g. when using steps on approach.</p> <p>The following shall be considered for application only if required as per Transport Canada RTD-10 Technical Standards Manual:</p> <ul style="list-style-type: none"> • Flashing Lights and Bell: Only to be considered if maximum permissible train speed exceeds 60 mph • The maximum permissible train speed exceeds 15 mph and there are two or more tracks at the grade crossing where trains may be passing one another • Specification: Mechanical or electrical Bell<u>bell</u> as per AREMA <p>Gates:</p> <ul style="list-style-type: none"> • Only to be considered where grade crossing warning systems are installed and the maximum permissible train speed is 50 mph or more • There are two or more tracks where trains may be passing one another • When the sightlines along the railway right of way for a pedestrian stopped at the grade crossing are not at least equal to the minimum requirements as per RTD-10 Specification • Short arm gates as per AREMA <p>Active Warning Devices as above will require standard control equipment as per AREMA, e.g., solid state crossing controller, event recorder, track circuits, bungalow, batteries and chargers, etc. and installation shall conform to AREMA and RTD-10.</p>