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CIRCULAR TO PROFESSIONAL INSTITUTIONS

Who should know

Building owners, Developers, Architects, Engineers, Transport/ Traffic Consultants and Builders.

INAUGURAL PUBLICATION OF LTA'S '*QUICK GUIDE SERIES FOR DEVELOPMENT RELATED PROPOSALS*'

1. Industry professionals preparing plans to seek clearances for street works, vehicle parking and rail & road structural protection proposals, currently have access to various resource publications. These include LTA's Code of Practice, Standards & Specification, Guidelines, as well as Forms & Checklists. These publications contain essential information regarding the acceptable design and workmanship standards and guide industry on the submission processes to LTA.
2. With an aim to reach out to more QPs to broaden and consolidate understanding of LTA's building plan regulations and processes, LTA will be launching the 'Quick Guide Series for Development Related Proposals', which focusses on street works, vehicle parking and rail & road structural protection proposals. The guides complement the existing resource publications and facilitate a deeper understanding of specific issues in an engaging format. Industry professionals may also benefit from understanding the principles and rationale behind specific requirements, and reviewing examples of good practices and common mistakes.
3. The topics to be featured in 'Quick Guide Series for Development Related Proposals' guides are carefully curated based on LTA's observations of prevailing trends. In our inaugural publication, we will focus on 'Inclusive streets: Designing Tactile Tiles for Safe Travel'. Subsequent publications will be released periodically. The publications are made available at LTA's corporate website, under [Industry & Innovations](#) > [Industry Matters](#) > [Development & Construction resources](#).

4. We sincerely hope that you find the guides useful, and we look forward to more engagement with the industry. We would appreciate it if you could convey the contents of this circular to relevant members of your respective organisations. If you have any queries, or suggestions on what you would like to see in future guides, please do not hesitate to reach out to us at lta-dbc_registry@lta.gov.sg.
5. Thank you

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Objectives of tactile indicators

The use of tactile indicators plays an important role in building inclusive streets for visually impaired pedestrians. The correct placement of tactile indicators for various situations paves the way for safe travel for the visually impaired pedestrians. Conversely, incorrect placement of tactile indicators can lead to hazardous situations. This quick guide helps Architects, Engineers and Builders to identify the correct placement of tactile indicators for various situations. There are also illustrations of common errors to be avoided.

Tactile indicators are required where footpaths intersect with driveways of developments and at-grade pedestrian crossings to guide the visually impaired pedestrians to cross these locations safely. Tactile indicators act as landmarks providing crucial information to its users and its application must be targeted. Widespread ad hoc application of tactile indicators will confuse the users, and compromise the effectiveness of the specific cue being provided. Thus, tactile indicators are not required where footpaths meet driveways to landed developments as the multiple accesses along these roads and the limited frontage of these developments diminish the benefit of installing tactile indicators. All other development types shall provide tactile indicators.

**For information on tactile indicators within buildings, please refer to BCA's Code on Barrier Free Accessibility.*

Positioning tactile indicators correctly

Follow these steps to correctly position the tactile indicators:

1. Determine whether the footpath is intersecting the driveway/road on a **straight, skewed or curved** portion of the driveway/road.

Straight

- 1 To help in the placement of the tactile indicators, you may draw an imaginary line offset by 300 mm from the edge of the driveway/road.
- 2 Place 2 rows of tactile indicators touching this imaginary line as shown in Figure 1.
- 3 Ensure that the width of the tactile indicators covers the entire width of the crossing area.

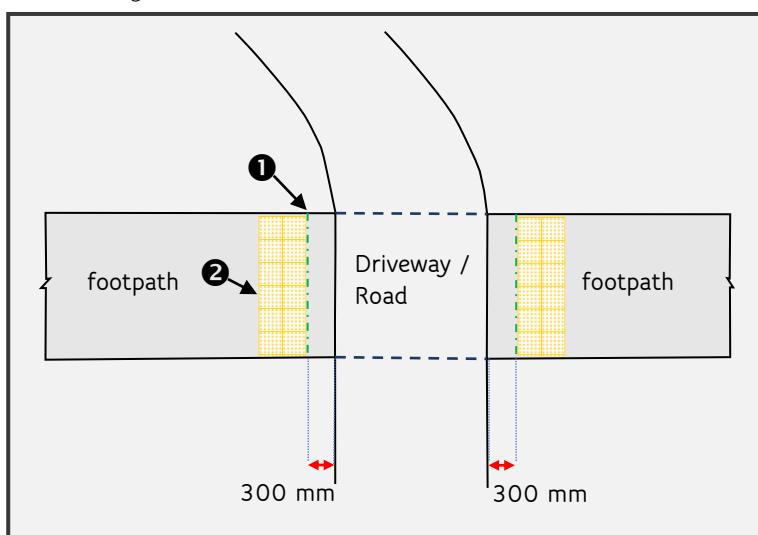


Figure 1 - Straight Driveway / Road

Skewed/Curved

- 1 Determine the intersecting point of the footpath and the driveway/road
- 2 Draw a perpendicular line from this intersection point towards the other edge of the footpath
- 3 Measure the base of this triangle.
 - If the distance is less than 600 mm, place a straight set of tactile indicators as shown in Figure 2.
 - If the distance is more than 600 mm, place a staggered set of tactile indicators as shown in Figure 3.
- 4 To help in the placement of the tactile indicators, you may draw an imaginary line offset by 300 mm from the edge of the carriageway. Ensure that the top/bottom corner of the tactile indicators touch this imaginary line.
- 5 Ensure that the width of the tactile indicators covers the entire width of the crossing area.
- 6 As a last check, draw an imaginary line from one set of tactile indicators to the opposite set. Ensure that the imaginary lines lead to the safe crossing area footpath, between the dotted lines of the pedestrian crossing etc)

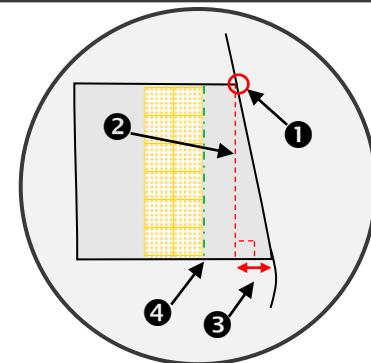
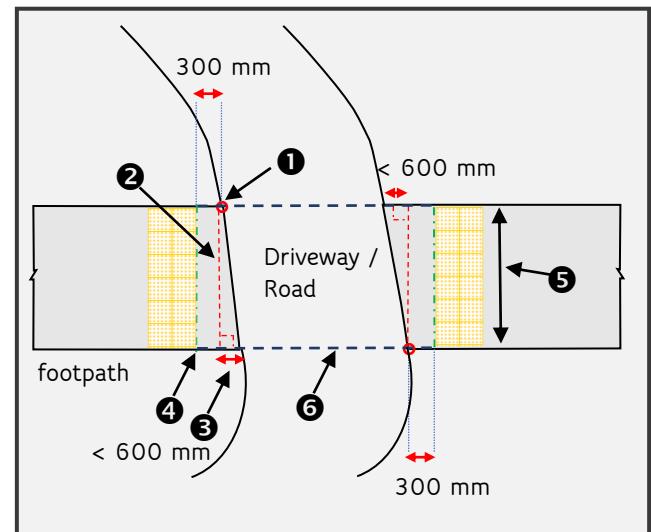


Figure 2 - Skewed Driveway / Road

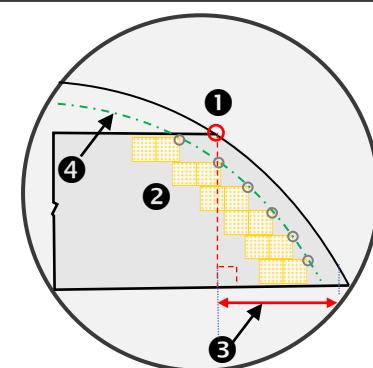
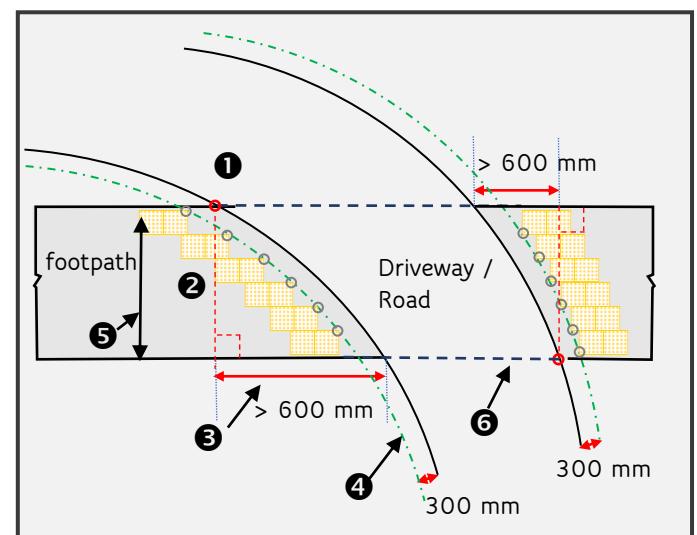


Figure 3 - Curved Driveway / Road

Placing tactile indicators on a relatively flat area

Tactile indicators should be laid on flat area where the gradient of footpath is not steeper than 1 in 40. Any ramp should start at least 1m from the edge of carriageway (indicated as ❶ figure below). This allows the user on wheelchair or elderly persons to wait safely without being rolled over or slip whilst waiting to cross the road.

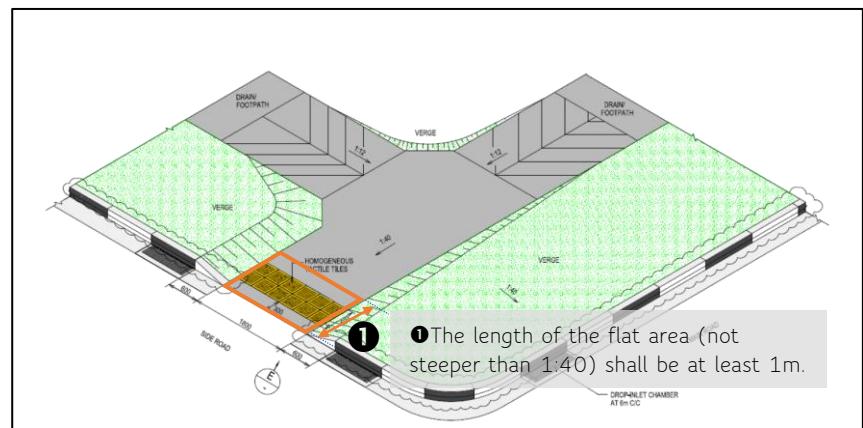
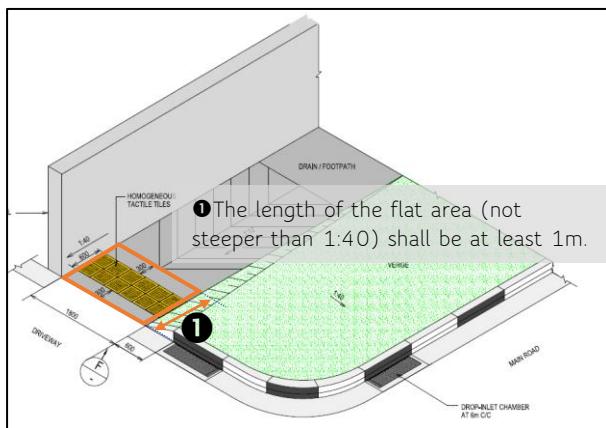


Figure 4 - Tactile indicators should be laid on flat area

❌ Common mistakes to avoid when installing tactile indicators

1 The purpose of a divider is to allow a 2-stage crossing for wider driveways. If a divider is proposed, there should be 2 sets of tactile indicators (each set consisting of 2 rows of tactile indicators) with a minimum interval of not less than 1200mm between them to avoid confusion to the visually impaired pedestrians. If the minimum interval is not achievable, the tactile indicators should not be provided. Consequently, the width of the driveway needs to be reduced to the minimum for safe crossing.

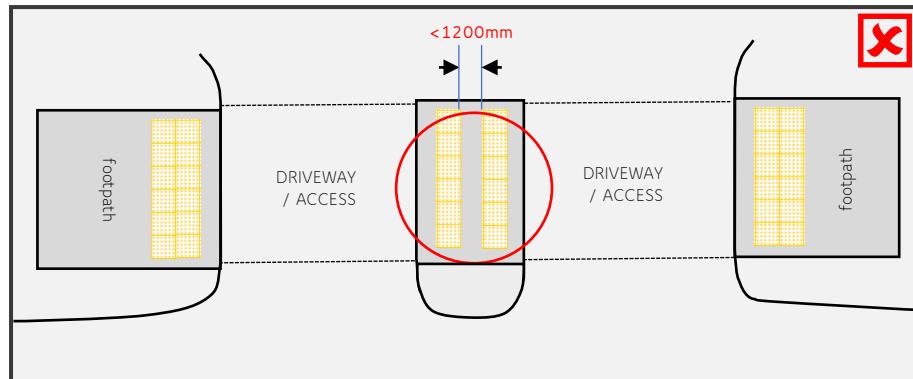


Figure 4.1A - Inadequate interval between tactile indicators may confuse the visually impaired pedestrians

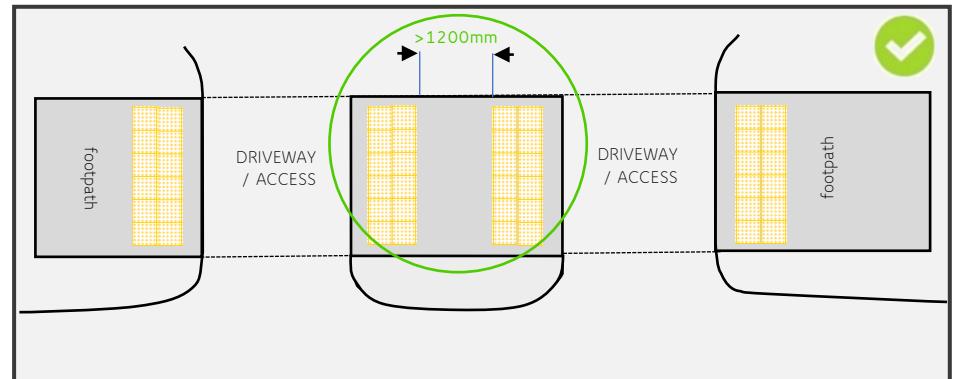


Figure 4.1B - Correct arrangement with adequate interval between sets of tactile indicators

2 The tactile indicators (600mm wide) should be aligned with each other as incorrect positioning of indicators leads the visually impaired pedestrians in the wrong direction

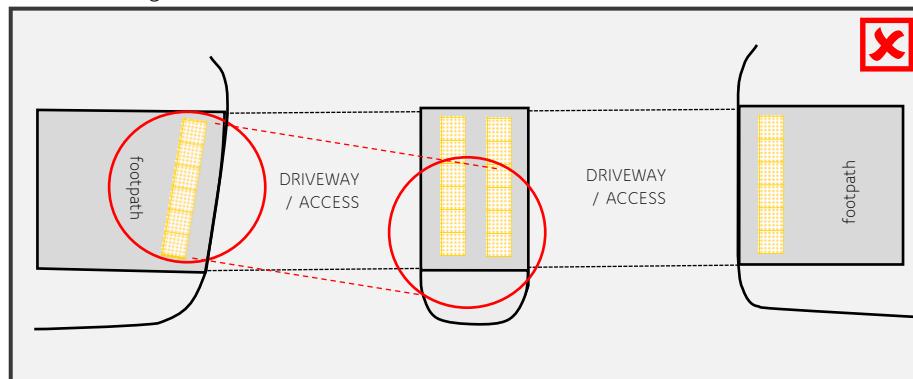


Figure 4.2A - Incorrect alignment may confuse the visually impaired pedestrians

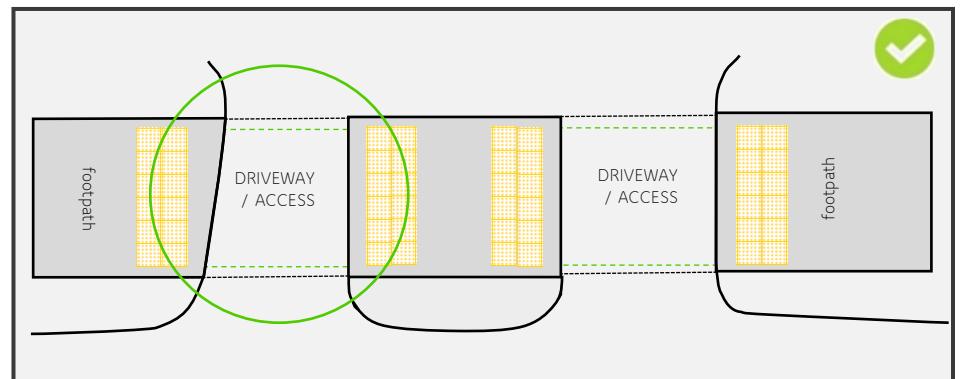


Figure 4.2B - Correctly aligned tactile indicators

3 The tactile indicators (600mm wide) shall be installed in a set to indicate the start and end point of a crossing. Incorrect provision of the tactile indicators delivers the wrong message to the visually impaired pedestrians.

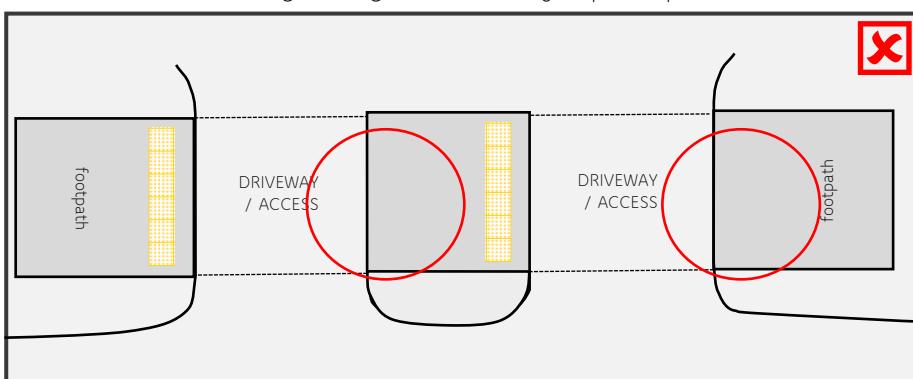


Figure 4.3A - Incomplete tactile arrangement - ending tactile sets missing

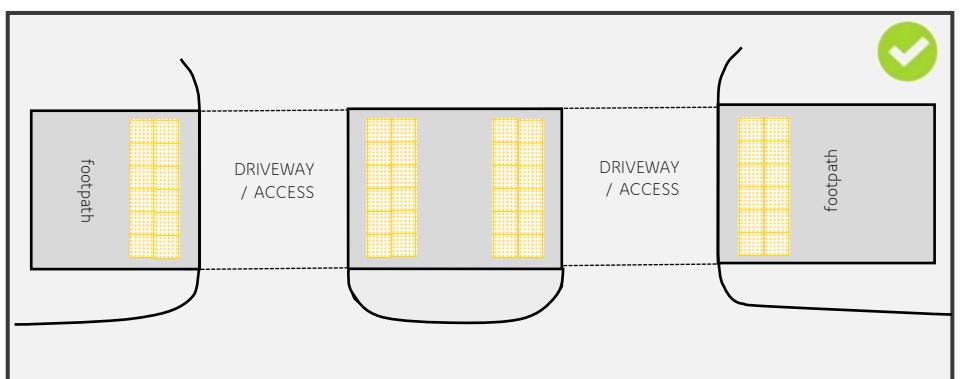


Figure 4.3B - Correct arrangement with starting and ending tactile sets