

B.10 Wheeling Channels

Key Principle

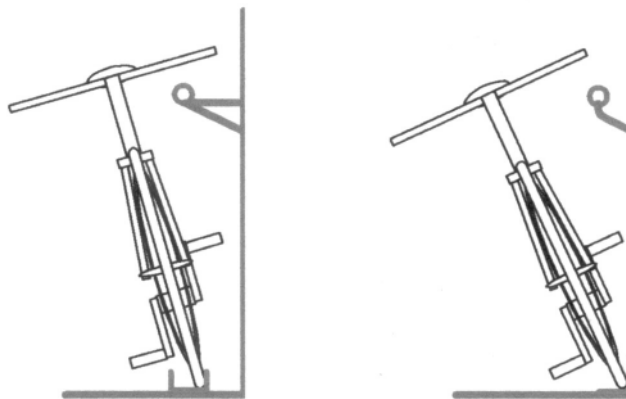
Stepped footbridges encountered along cycle routes should be fitted with suitable wheeling ramps.

Design Guidance

Wheeling ramps

Sometimes it is necessary for cyclists to use existing bridges or subways equipped only with steps. Wheeling ramps may be added to one or both sides of flights of steps using steel channel sections or by forming them in concrete. These ramps should not be located where pedestrians, particularly young children, the elderly and those whose mobility is impaired, would expect to put their feet. If this is unavoidable, it may be best to install a ramp on one side only.

Alternatively, it may be possible to overcome the problem by siting the channel closer to the wall or employing an L-section next to the wall. This arrangement is likely to be less attractive to cyclists as the bicycle will have to be held at an angle and may be difficult to hold if heavily laden.

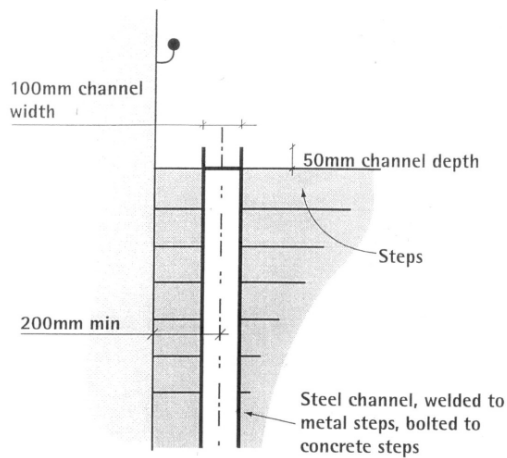


Source: Transport Management Solutions

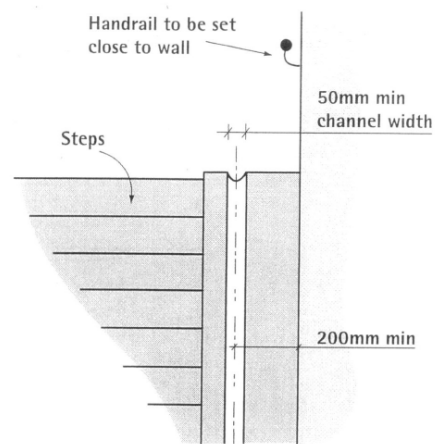
Where steel sections are used it is essential to provide a non-slip surface in order that the tyres of the bicycle may grip the ramp on the descent. Where the wheeling ramp is formed in concrete it may be preferable to fill in the gap between the channel and the edge of the step. The distance between the channel of the cycle ramp and the wall/banisters should be a minimum of 0.2m to ensure that the pedals do not clash with the wall/banisters. The width of the channel should be 100mm wide and 50mm deep.

Suggested profiles

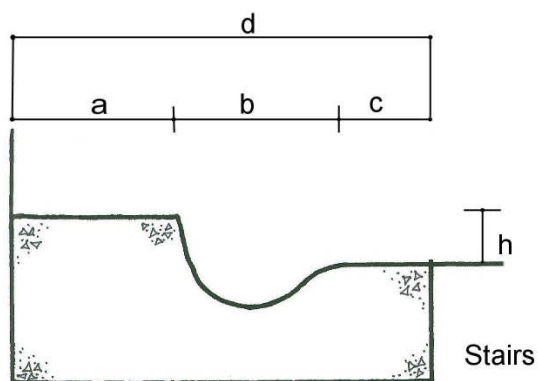
Steel channel



Concrete channel



Source: Sustrans



- a $\geq 200\text{mm}$
- b 80 - 120mm (concrete channel: preferred)
(100 with metal channel)
- c 30 - 50mm
- h 30mm
(40 with metal channel)

Based on: *Design manual for Bicycle Traffic CROW 2007**

* Note: this design may not comply with the requirements of the Disability Discrimination Act. If used on both sides of a stairway a convenient alternative route, such as a lift, should be identified to meet the needs of those whose mobility is impaired

Where possible, wheeling ramps should be provided on both sides of the steps. This is so that ascending and descending cyclists do not have to wait for each other, and because most cyclists prefer to push their bikes on their right side. No particular benefits have been identified by continuing channels across landings especially if they are sited close to the wall or banister.

There are situations where stairs turn through 90 degrees at a landing and it is not possible to see around the corner on the approach (eg stairs fixed around a concrete core). In such cases, a wheeling ramp should only be provided along the outside wall. This is to avoid the likelihood of a pedestrian using the inner handrail reaching the corner and tripping over the front wheel of a bike being wheeled in the opposite direction.

For new-build the gradient of the wheeling ramp should not exceed 50% which is the maximum recommended for stairs on a foot bridge. The handrail should be sited close to the wall but care needs to be taken to ensure that it does not clash with the handlebars of cyclists using the ramp. This also applies when fitting channels to an existing bridge. In addition, the handrail should not curl down to the ground at the beginning and end of a flight of steps so that handlebars, pedals and panniers do not catch in use (See also [C09 Gradients](#)).

References

[Inclusive Mobility A guide to Best Practise on Access to Pedestrian and Transport Infrastructure](#) DfT 2002

[Design manual for bicycle traffic](#) CROW 2007

[LTN 2/08 Cycle Infrastructure Design](#) DfT 2008

[Cycling by Design](#), Scottish Executive 1999

[TA 90/05 The Geometric Design of Pedestrian, Cycle and Equestrian Routes](#)
Design Manual for Roads and Bridges, Highways Agency 2002

[BD 29/04 Design Criteria for Footbridges](#) Design Manual for Roads and Bridges,
Highways Agency 2004

[Cycling England Gallery](#) pictorial examples

[London Cycling Design Standards – A guide to the design of a better cycling environment](#) (Sections 3.4, 3.5, and 3.6) TfL 2005

Lancashire - The Cyclists' County ([part 1](#), [part 2](#)) – creating pleasant road conditions Lancashire County Council, 2005

[CTC Benchmarking](#) – Best practice case studies

[National Cycle Network – Guidelines and Practical details](#), Issue 2 Sustrans 1997

Other references

[Cycle Friendly Infrastructure - Guidelines for Planning and Design](#) Bicycle Association et al 1996