

Handrail Design: Extensions



Handrail extensions are typically required in commercial construction. The purpose of a handrail extension is to provide additional assistance in the transition between the handrail and a level surface. (Image A - small “P” extensions returning to the post on a ramp). The image on the left shows a 42” commercial guardrail system with a 36” grabrail and extension. The image below and right shows a typical 36” residential railing system.

There are a number of ways to design handrail extensions. They can return to the post, they can terminate on the landing, they can return to the wall or they can continue on to the next stair run.



Examples of how these transitions in the railing system can add beauty to the surrounding environment can be found in the photos in this document.

Figure A. shows handrail installed on a ramp with the extensions extending 12” beyond the nosing of the last stair.

Ornamental railing is a form of guardrail. These project photos will illustrate that ornamental railing is fabricated not only to protect, but to add beauty to the environment in which they are installed.



The image above is of the grand staircase in the Data 1 Building in Fremont, WA. The visual impact that custom stainless railing adds to the public spaces within the building's interior is clearly evident. Designed by Weber Thompson and built by Pennon Construction, Data 1 has received numerous design awards. The architect specified AGS' Rainier Cable Rail System for the grand staircase, the balconies and roof top deck (image below).

Figure B. illustrates a hand rail extension that terminates on the landing, extending 1 tread width past the nosing on the last tread.

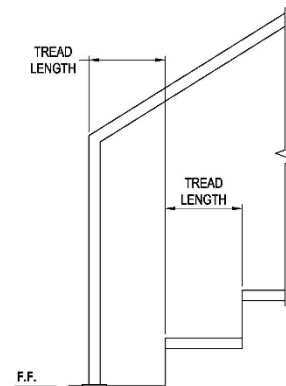
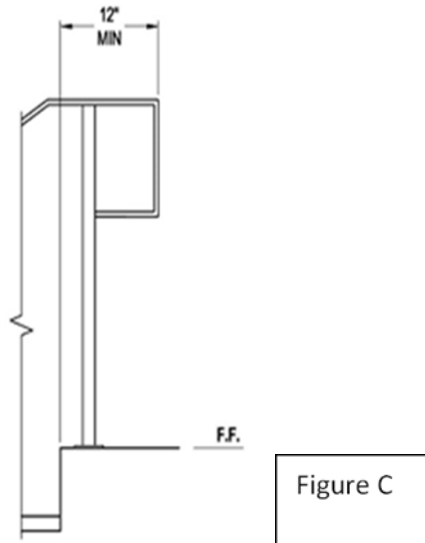


Figure B

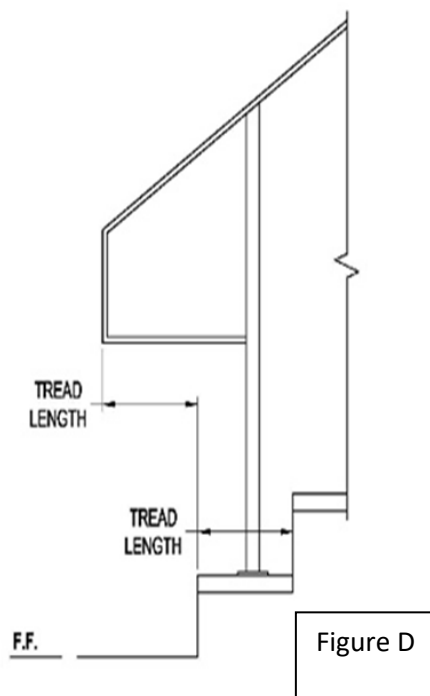


The requirement for Handrails and Extensions comes from the American with Disabilities Act (ADA), the International Building Code (IBC) and most local building codes. When designing guardrailing, handrails and extensions, keep in mind the follow:

- The upper handrail extension on stairs should extend a minimum of 12" beyond the nosing. (Figure A)

- The bottom handrail extension on stairs should run parallel to the slope of the stair and extend the length of 1 tread width beyond the last rise nosing. (Figure B)

- Handrail extensions on ramps should extend horizontally above the landing for 12 inches minimum beyond the top and bottom of the ramp runs.



- Handrail extensions shall return to a wall, guard, or the landing surface or continue to another stair run. (Image right – large "P" extension returning to the post)

Figure A - Small "P" upper extension on ramp, returning to the post

Figure B – Floor terminated handrail extension extends 1-tread length past last riser nosing

Figure C – Small "P" extension extends 12" past last riser nosing and terminates on post at top of the stair

Figure D – Large "P" extension extends 1 tread length beyond last riser nosing on bottom of stair and returns to the post.



Handrail Extension Returning to the Post - Manhattan Honda - Railing by AGS Stainless

In this photo the top rail and the handrail feature a graceful curve that welcomes visitors to; “come on up”!



Handrail Extension Returning to the Post - Poly Prep Country Day School - Railing by AGS Stainless

Notice, that an intermediate railing is positioned between the railing between the top rail and hand rail on both sides of the stairs, there is an intermediary railing.



Poly Prep Country Day School - Railing by AGS Stainless



Handrail Extension Returning to the Floor - Data 1 Building - Railing by AGS Stainless. Photo Weber Thompson

This picture shows a floor terminated handrail that is connected to the railing system by a post mounted hand rail bracket. One of the advantages on using stainless steel cable as railing infill is how well it opens up the view of the surrounding area.



Handrail extension extending 12" past last riser nosing and returning to the wall -Western Polymer HQ –
Architect: Chris Morlan Architects



Notice the handrail continuing to the next stair run instead of terminating on these intermediate landings.

AGS Stainless Olympus Horizontal Bar Railing System





Handrail extension extending the length of 1 tread and returning to the post. Pictured is AGS Stainless' Olympus Horizontal Bar Railing System.

AGS Stainless Professional Design Resources: <https://agsstainless.com/professionals/>

AGS Stainless Technical Drawings: <https://agsstainless.com/specifications/>

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Residential single family home where a separate handrail in addition to the top rail is not required by building code – Sustainable 9 Design + Build. Photo SpaceCrafting.

About AGS Stainless

Fabricated 100% Off-Site, Custom-Made, All-Stainless Steel Railing Systems.

Why demand prefabrication for your custom rails?

Because whether you chose cable, glass or bar infill - having the railing system built 100% offsite reduces product cost, improves product quality and dramatically shortens installation time.

For more information, visit AGSstainless.com, watch this 1-minute video "[Why AGS](#)" or call us at (888) 842-9492.