

## ADA Webinar 1 – Questions and Answers

The questions submitted during the webinar follow with answers that our speakers have provided.

1. This is an excellent webinar. It should be required for all designers.

AND

The video about perpendicular grade breaks was very powerful. Will that be available as well?

Thank you. Here is a link to the recording if you would like to share with others, including the video:

<https://cptechcenter.org/webinars-and-videos/>

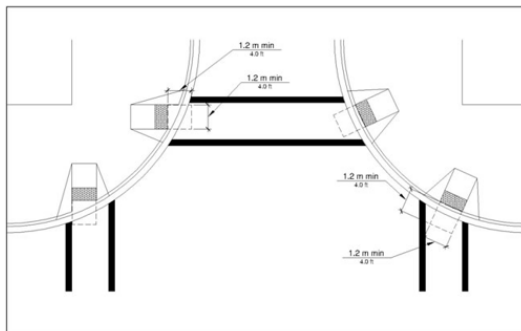
Are both receiving ramps necessary in the picture or could pedestrians be directed to one side and then cross the main street in single crossing location?

For an official answer, this would be a question to ask the Access Board. As the guidance is written, our interpretation is that both ramps are required.

2. Are ramps that point to the middle of the intersection acceptable? This has been expressed as a concern for site-impaired individuals.

Where possible, best design practices will align the ramp run with the street crossing. However, as this is not always possible, PROWAG does allow for ramps to be installed at different points along the curb radius, see PROWAG picture below:

Figure R304.5.5 Clear Space



3. Are the domes supposed to be in line with the crossing so the wheel chair lines up?

From PROWAG:

**Advisory R305.2.1 Perpendicular Curb Ramps.** Detectable warning surfaces are intended to provide a tactile equivalent underfoot of the visible curb line. If detectable warning surfaces are placed too far from the curb line because of a large curb radius, the location may compromise effective crossing. Detectable warning surfaces should not be placed on paving or expansion joints. The rows of truncated domes in detectable warning surfaces should be aligned perpendicular to the grade break between the ramp run and the street so pedestrians who use wheelchairs can “track” between the domes. Where detectable warning surfaces are provided on a surface with a slope that is less than 5 percent, dome orientation is less critical.

Please see section R305 ‘Detectable Warning Surfaces’ for a full understanding:

<https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines/chapter-r3-technical-requirements>

4. Are there any situations where you would reinforce a multi-use trail or sidewalk?

If you have the funding available, I could see using reinforcement to alleviate the future potential for slabs vaulting around vegetation. This would aid in minimizing potential long-term elevation differentials.

5. Are truncated dome warning devices required?

From PROWAG:

### **R208 Detectable Warning Surfaces**

**R208.1 Where Required.** Detectable warning surfaces complying with R305 shall be provided at the following locations on pedestrian access routes and at transit stops:

Curb ramps and blended transitions at pedestrian street crossings;

Pedestrian refuge islands;

Pedestrian at-grade rail crossings not located within a street or highway;

Boarding platforms at transit stops for buses and rail vehicles where the edges of the boarding platform are not protected by screens or guards; and

Boarding and alighting areas at sidewalk or street level transit stops for rail vehicles where the side of the boarding and alighting areas facing the rail vehicles is not protected by screens or guards.

6. At signalized intersections with raised medians and exclusive right turn lanes, what are the requirements for cross slope from the sidewalk across the right turn lane and through the island to the mainline crosswalks?

We have received guidance from the ACCESS Board, who conferred with FHWA, that at signalized intersections, where all other movements are afforded the 5% cross slope allowance for the pedestrian street crossing cross slope, the free right turn lane can hold the same 5% cross slope as well.

7. Can you explain the "15" rule again?

Because the Pedestrian Access Routes (PAR) are alongside the roadways, PROWAG allows our circulation paths (sidewalks) to follow the general grade of the road. Because of that, ramps will often exceed the 8.333% maximum when we are climbing grades. The guidance below helps us address those situations.

From PROWAG:

**R302.5 Grade.** Except as provided in R302.5.1, where pedestrian access routes are contained within a street or highway right-of-way, the grade of pedestrian access routes shall not exceed the general grade established for the adjacent street or highway. Where pedestrian access routes are not contained within a street or highway right-of-way, the grade of pedestrian access routes shall be 5 percent maximum.

**R304.2.2 Running Slope.** The running slope of the curb ramp shall cut through or shall be built up to the curb at right angles or shall meet the gutter grade break at right angles where the curb is curved. The running slope of the curb ramp shall be 5 percent minimum and 8.3 percent maximum but shall not require the ramp length to exceed 4.5 m (15.0 ft).

Do truncated domes have to extend full width on a MUP?

Yes, with the same allowance for a 2" border if needed.

8. Have you encountered a situation where the sidewalk is owned/maintained by a different entity than the roadway (e.g. state road & a city sidewalk), and how was that handled?

I can only speak for the St Louis area, but in general, this situation tends to occur somewhat frequently. We experience it most often at intersections where jurisdiction (R/W maintenance responsibilities) change hands. When this occurs, coordination happens between the two agencies during scoping & design. Ultimately, what is typically agreed upon is that the resurfacing agency upgrades the curb ramps and median ramps/cut-throughs within the scope of their project.

In the situation that I believe you are referring to, where one agency owns maintenance of the road, and another owns maintenance of the sidewalk, the resurfacing agency, at a minimum, would be required to upgrade the curb ramps during their project, as they are altering the usability of the facility with their project.

9. How can we comply with retrofitting an existing road overlaying it and adding new sidewalks when ROW is minimum; how to transition between driveways and sidewalks for open road section as opposed to curb and gutter?

We are not sure we are following the question(s). We will attempt to answer them, to the best of our understanding:

- The ADA does not require that we add ‘new sidewalks’ where sidewalks currently do not exist. The ADA does require that if we have existing sidewalks, or have chosen to add new sidewalks, those facilities need to be accessible.
- Regarding transitioning between driveways and sidewalks (with or without curb and gutter), we still follow the same guidance offered in PROWAG for ramps and blended transitions to compliantly connect sidewalks to driveways, approaches, or street intersections:
  - <https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines/chapter-r3-technical-requirements>
- Sometimes it will be necessary to buy ROW to bring an existing facility into compliance.

10. If there is a sidewalk that is 10' wide from building to back of curb, does the entire width need to be ADA compliant or just a minimum width within that area?

From PROWAG:

**R302.3 Continuous Width.** Except as provided in R302.3.1, the continuous clear width of pedestrian access routes shall be 1.2 m (4.0 ft) minimum, exclusive of the width of the curb.

**Advisory R302.3 Continuous Width.** The continuous clear width requirements in R302.3 apply to sidewalks and other pedestrian circulation paths, pedestrian street crossings and at-grade rail crossings, and pedestrian overpasses and underpasses and similar structures (see R302.2). Clear width requirements are contained in R304.5.1 for curb ramps and blended transitions, and in R407.4 for ramps. Where sidewalks are wider than 1.2 m (4.0 ft), only a portion of the sidewalk is required to comply with the requirements in R302.3 through R302.7. Additional maneuvering space should be provided at turns or changes in direction, transit stops, recesses and alcoves, building entrances, and along curved or angled routes, particularly where the grade exceeds 5 percent. R210 prohibits street furniture and other objects from reducing the minimum clear width of pedestrian access routes.

**R302.3.1 Medians and Pedestrian Refuge Islands.** The clear width of pedestrian access routes within medians and pedestrian refuge islands shall be 1.5 m (5.0 ft) minimum.

11. If there is existing sidewalk with cross slope over 2%, am I safe to inform the builder he is allowed one transition slab to go from non-compliance to a compliant cross-slope of 2%? (Because the builder on a given lot is not responsible for that existing non-compliant cross-sloping sidewalk).

Wherever new facilities are added, they are required to be compliant with the rules for 'New Construction'. Beyond that, we connect to the unaltered facility by using a transition segment. Generally this can be accomplished in a single five foot long slab of sidewalk, from PROWAG:

**R202.3.2 Transitional Segments.** Transitional segments of pedestrian access routes shall connect to existing unaltered segments of pedestrian circulation paths and shall comply with R302 to the extent practicable.

12. In Kentucky, entrances are not required to have tactile strips if they are 24' wide or less according to DOT entrance standards. Is this good practice, especially in urban areas where the pedestrian path is often given grade precedent over vehicular traffic?

Detectable warning strips should not be installed at residential drive approaches "nor at commercial drive approaches that do not have stop or yield control devices".

Beyond that, PROWAG says the following about where they are required (regardless of road width):

### **R208 Detectable Warning Surfaces**

**R208.1 Where Required.** Detectable warning surfaces complying with R305 shall be provided at the following locations on pedestrian access routes and at transit stops:

Curb ramps and blended transitions at pedestrian street crossings;

Pedestrian refuge islands;

Pedestrian at-grade rail crossings not located within a street or highway;

Boarding platforms at transit stops for buses and rail vehicles where the edges of the boarding platform are not protected by screens or guards; and

Boarding and alighting areas at sidewalk or street level transit stops for rail vehicles where the side of the boarding and alighting areas facing the rail vehicles is not protected by screens or guards.

13. In PROWAG it states that grade breaks are not allowed in DWS. Why is this?

We can only offer an opinion as to 'why'.

Trying to negotiate a grade change and potentially going over the tactile domes in mid climb could create accessibility challenges for some users. When domes are installed on the ramp (beyond the lower grade break), domes are in alignment with the ramp grade, thus allowing wheels align and go in between the tactile domes prior to starting the climb.

14. In the video, if you table the driveway crossings to minimize "sidewalk" cross slope, drainage would be blocked by steeper apron. Would you place pipe and pave over it?

The drive approaches crossed in the video would not have presented drainage issues had they been tabled. With that said, drainage is a constant consideration when reconstructing a compliant pedestrian access route, and should water be prohibited from flowing (typically in flat areas), sometimes a slotted drain is a good solution for catching and moving water.

15. Is an asphalt sidewalk acceptable when resurfacing a road?

PROWAG requires that the surface of pedestrian access routes be firm, stable, and slip resistant. With that said, PROWAG also requires the cross slope to be 2% maximum throughout the life of the facility. It has been our experience in the Midwest that flexible pavements have a higher propensity of falling out of cross slope compliance.

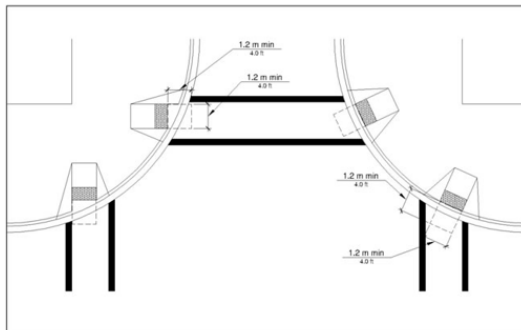
16. Is it necessary to install "passing zones" on 4' sidewalks if there are driveways along the route that can serve as passing zones?

When building a 4' sidewalk, PROWAG requires a 5' 'clear space' for passing every 200 feet. The maximum cross slope for that clear space is 2%. Thus, if the driveways have a cross slope of 2% or less, they would be adequate for passing space requirements.

17. It seems odd not to use directional ramps that send the pedestrian directly to the next curb ramp. These ramps that are angled directly into the center of an intersection seem like they would be a major hazard to the vision impaired.

We certainly want to install them directionally when we can. Unfortunately, the nature of the built-up ROW sometimes makes that very difficult. In this picture from PROWAG, we prefer to install the ramps on the left when able:

Figure R304.5.5 Clear Space



18. Question about the mention of 5% maximum slope allowance on turning spaces. PROWAG states that the maximum running slope of the turning space is 2%. The running slope (slope in direction of pedestrian travel) of a turning space is both directions. NYSDOT and FHWA NY Div. have both interpreted this a maximum slope of turning space is 2% in either direction, regardless of location. Curious where the 5% max. slope interpretation came from.

From PROWAG:

**R302.6.1 Pedestrian Street Crossings Without Yield or Stop Control.** Where pedestrian access routes are contained within pedestrian street crossings without yield or stop control, the cross slope of the pedestrian access route shall be 5 percent maximum.

**R304.5.3 Cross Slope.** The cross slope of curb ramps, blended transitions, and turning spaces shall be 2 percent maximum. At pedestrian street crossings without yield or stop control and at midblock pedestrian street crossings, the cross slope shall be permitted to equal the street or highway grade.

*PROWAG was written in somewhat of a 'if – then' methodology. Typically PROWAG will state what the 'maximum' allowances are (as your example notes), and later on, inform the reader of where exceptions to the 'maximum' can be used.*

*So, in R302.6.1 the street grade (at the crosswalk) is capped at 5% maximum for intersections without stop or yield control, and then in the 'Common Requirements' section for Ramps, R304.5.3 allows for all the adjoining elements of the PAR's cross slope to equal the highway grade (which include Turning Spaces). As you mentioned, the running slope and cross slope are a little ambiguous at 'Turning Spaces' as one PAR's running slope is the other directions cross slope. Since your road will be tabled to a maximum of 5% cross slope someday, installing the connecting PAR to those grades/cross slopes now will allow them to stay when the road is tabled to 5% maximum later. Using the 5% maximum allowance will also help greatly with moving stormwater efficiently, which benefits all users.*

19. Question about where domes should be placed when using blended transitions. We use them on uncurbed roadways with or without berms. Looking for guidance.

From PROWAG:

**R305.2.3 Blended Transitions.** On blended transitions, detectable warning surfaces shall be placed at the back of curb. Where raised pedestrian street crossings, depressed corners, or other level pedestrian street crossings are provided, detectable warning surfaces shall be placed at the flush transition between the street and the sidewalk.

20. Situation: A curb ramp meets a street intersection radius with pedestrian crossing perpendicular to vehicular traffic flow. Intersection does not have stop/yield control and slopes at 5%. The lowest corner of the detectable warning is against the back of curb. Since the bottom edge of the detectable warning only slopes uphill (parallel to

the road) at 2% max., compared to the 5% road, and the crown in the road falls back toward the curb ramp at 2%, this creates a valley at the base of the detectable warning (the special shaping area slopes away from the street). Is this the correct way to construct the ramp in this situation?

You may need to send a graphic to ICPA and have them forward for further understanding. As I read the situation, we shouldn't be in a 'V' situation where we hold water as it sounds like this location is at an intersection where the ramp, blended transition, turning space, etc is allowed to have a cross slope equal to the 5% grade of the road – by utilizing this allowance, we eliminate the ponding. We want to carry that cross slope through the entire curb ramp and transition back to 2% in the sidewalk behind the curb ramp – that should eliminate ponding. See the answer to question 20.

21. What about the extensive need for storm sewers in every block and inlets at every intersection with table tops? Extraordinary expense.

Tabling crosswalks does not generally create a large stormwater issue, as the road grades usually have sufficient fall to keep water moving. Where the topography flattens out, moving water is a greater challenge, but in these locations, we usually don't require 'tabling' because the grades are already compliant.

In the example where the entire intersection was tabled, yes, a well thought out plan would be required for stormwater management.

22. What has the performance of colored or stamped concrete been especially in northern states that plow snow and experience freeze/thaw frequently?

Tinting and stamped concrete is quite common in freeze-thaw states, with no mention of adverse performance being noted. Tinting and/or stamping are common practice in Missouri, Iowa, Wisconsin, and Minnesota for round-a-bout aprons, great streets projects, and streetscape projects.

23. What if the existing roadway has a street grade of 8% and the scope of the project does not include rebuilding the street? Would the cross-slope of the ramp be able to match the street grade? That's the issue I see frequently, sidewalk projects don't include the scope to rebuild the intersection in order to provide the 5% max crossing through the lanes.

When doing alteration projects, DOJ and FHWA have shared the requirements that agencies must upgrade the curb ramps to 'New Construction' standards, which at intersections is either 2% maximum or 5% maximum, depending on if it is stop or yield controlled. The way we connect to the excessive cross slope of the cross walk is by installing a Transitional Segment, per PROWAG:



**R202.3.2 Transitional Segments.** Transitional segments of pedestrian access routes shall connect to existing unaltered segments of pedestrian circulation paths and shall comply with R302 to the extent practicable.

24. What is the allowable slope diagonal across a turning space? Even 1.5% x 1.5% along the sides of a 5' x 5' square results in >2% slope diagonally.

There are no max/min requirements for diagonal slopes. Inspections should be based on running slope and cross slope, those are the only measurements that impact travel.

25. When are handrails required as noted in R407.8?

AND

When do you have to put rails against ramps?

The key thing to understand is that R407.8 is specific to 'Sidewalk Ramps' not 'Curb Ramps'. Sidewalk Ramps occur 'outside' of the ROW. When PAR grades enter ramp condition (5% and 8.333%) and have a rise greater than 6 inches, outside of the public ROW, handrails are required.

26. When retrofitting a curb ramp but not conducting any major reconstruction of the roadway, what recommendations do you have for making everything compliant?

PROWAG guides us to install a transitional segment in these retrofitting projects. A transitional segment will connect the front and back of our compliantly installed ramp. Much like the slab of sidewalk on the back end of the ramp that transitions a compliant cross slope to the noncompliant existing sidewalk slope, so too will we have to transition a section in the street. See picture below:



27. When you talk about "cross slope", are you meaning the cross slope of the roadway, from centerline to curb, or the cross slope of the pedestrian path (parallel with the direction of vehicular traffic)?

In the context of this presentation, when I discuss cross slope, I am always referring to the cross slope of the PAR. When we are in a street crossing, it's important to understand that the cross slope of the PAR in a street crossing is the grade of the road at said crossing.

As your question is written, the cross slope of the 'Roadway' actually is the 'Grade' of the PAR. The two are perpendicular to one another.

28. Where are the markings?

Can you clarify the question please?

29. Why can I use 5% max cross slopes at traffic lights? You said it's because of safety, but can you elaborate on that?

As roads tend to follow the natural terrain, which at times can be steep, tabling intersections at these free flow locations would cause unsafe conditions for the drivers (bottoming out front and back bumpers).

From PROWAG:

**R302.6.1 Pedestrian Street Crossings Without Yield or Stop Control.** Where pedestrian access routes are contained within pedestrian street crossings without yield or stop control, the cross slope of the pedestrian access route shall be 5 percent maximum.

**Advisory R302.6.1 Pedestrian Street Crossings Without Yield or Stop Control.** Pedestrian street crossings without yield or stop control are crossings where there is no yield or stop sign, or where there is a traffic signal that is designed for the green phase. At pedestrian street crossings without yield or stop control, vehicles can proceed through the intersection without slowing or stopping. Where pedestrian access routes are contained within pedestrian street crossings with yield or stop control, the cross slope of the pedestrian access route must be 2 percent maximum (see R302.6). At pedestrian street crossings with yield or stop control, vehicles slow or stop before proceeding through the intersection.

30. Why can't they make a better wheel chair that will handle more issues?

There are many different kinds of wheel chairs in production today, and more importantly, many different needs that we are addressing with designing and constructing accessibility.

31. With raised intersections, we have heard that the visually impaired have difficulty defining the crossing location or if they have entered the roadway when the pavement

is flush between the sidewalk and the roadway. Have you heard of any design features to improve the situation for the visually impaired?

Well, we certainly need to be installing Tactile Warning systems at the flush connection of the road and the sidewalk. This informs the visually impaired that they are entering or exiting a street, from PROWAG:

**R305.2.3 Blended Transitions.** On blended transitions, detectable warning surfaces shall be placed at the back of curb. Where raised pedestrian street crossings, depressed corners, or other level pedestrian street crossings are provided, detectable warning surfaces shall be placed at the flush transition between the street and the sidewalk.

32. With the raised intersection video, did anyone reach out to emergency services (fire, police, ambulance) to get their input? Does the raised intersection interfere with their travel through the intersection during an emergency situation?

You can reach out to the public works department in the City of Indianapolis to find out how they communicate their projects.

For reference, the intersection is at Delaware Street and E. South Street, Indianapolis, Indiana.

33. Would appreciate some links to good resources for this subject. Anything that can be shared with colleagues?

Here is the link to the United States Access Board Website – this is where PROWAG 2011 can be found:

<https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines>

34. Do requirements for developing transition plans apply to all municipalities regardless of size or population?

Here is a link that should answer your question:

[https://www.fhwa.dot.gov/indiv/docs/ada\\_transition\\_plans\\_report.pdf](https://www.fhwa.dot.gov/indiv/docs/ada_transition_plans_report.pdf)

35. My small town had done 30 inch asphalt paths which don't appear to meet ADA but they claim they are paths thus not sidewalks and therefore not under ADA rules. Is this correct?

Pathways designed and installed for pedestrian use must meet ADA compliance. What we make useable for some, we are required to make accessible for all.

36. When two streets intersect and one is about 6.5% stop condition and the other is 4% no stop condition, it is hard to keep drainage down the sidewalk into the street and try to maintain adequate cross slopes. Is there ever a time when we have to let water flow into the sidewalk landing area?

Depending on what style of ramp we are trying to install, can have varying degrees of difficulty in getting water to move efficiently. It is rare in my experience, but occasionally water will enter the lower landing/turning space/clear space area. What is important is that it ultimately does drain, even if it is a slow drain. Where we are allowed up to 5% in both cross slope and running slope, drainage is rarely an issue. When we are limited to 2% in either direction, we must make sure that our 2% is draining towards the road, to assure water will ultimately leave our curb ramp.

37. You didn't mention Blended Transitions. Do you have any information on this type of ramp?

Small point of clarification, Blended Transitions (BT) are not actually ramps as their grades less than 5%, and Ramps are grades of 5% - 8.333%. BT's are discussed in PROWAG in multiple sections:

<https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines/chapter-r3-technical-requirements>