

11 April 2016. It has been alleged in a recent public meeting that the new slide on the green does not meet the CPSC recommendations for slope. Such an allegation is a very serious matter, and should not be casually dismissed. If the allegation is correct, for instance, then there are potentially hundreds of slides installed around the country that would have to be recalled.

We present below our assessment of the CPSC recommendations and of the slide vendor's specifications designed to address them.

**In summary, our conclusions are:**

- The vendor's specifications meet the CPSC recommendations.
- The slide is being installed in accordance with the vendor's instructions.
- Therefore the slide will meet the CPSC recommendations for slope.

**Our assessment:**

The CPSC **Public Playground Safety Handbook** of 2008 addresses slopes of slides. Page 35 of the handbook, reproduced on the following page, contains "**Figure 20 Slide Slope**". Figure 20 specifies how to measure the slide height and horizontal distance in order to determine the average slope of the slide.

Section "**5.3.6.3.4 Straight slides**", starting on page 33, contains the slope specification for all slides. The relevant section is at the top of page 35, and reads as follows:

**"For preschool- and school-age children:"**

- "– The average incline of a slide chute should be no more than 30° (that is, the height to horizontal length ratio shown in Figure 20 does not exceed 0.577)."
- "– No section of the slide chute should have a slope greater than 50°."

Thus, there are two requirements, one for the maximum average slope and one for the maximum slope of any section of the slide.

The specification drawing for our 6 foot slide is reproduced on the last page. The lower figure contains two dashed reference guidelines for these two maximum angles. By referring to figure 20 of the CPSC guide, one can see that the actual average slope of the slide as designed is clearly less than the maximum average allowed. A line drawn from the bottom of the slide, where the maximum average slope reference line touches, to the top of the slide is clearly at a shallower angle than the reference line. Following the CPSC procedure, we calculate that the designed average slope is about 26 degrees.

The allegation included the statement that the slope of the steepest part of the slide had been measured at 36 degrees. A reading of 36 means that the actual value might be anywhere from 37 to 35 degrees. You can see on the specification drawing that the slope of the steepest part of the slide is designed to be 35 degrees. Our conclusion is that the reported angle measurement supports the claim that the slide is installed according to the instructions and constructed according to specification. In addition, the specified maximum slope in the drawing is clearly less than the 50 degree limit of the CPSC guideline.

Therefore, we are confident that the slide meets the CPSC guidelines for slide slope.

- For toddlers:
  - The average incline of a slide chute should be no more than  $24^\circ$  (that is, the height to horizontal length ratio shown in Figure 20 does not exceed 0.445).
  - No section of the slide chute should have a slope greater than  $30^\circ$ .
  - The slide chute should be between 8 and 12 inches wide.
- For preschool- and school-age children:
  - The average incline of a slide chute should be no more than  $30^\circ$  (that is, the height to horizontal length ratio shown in Figure 20 does not exceed 0.577).
  - No section of the slide chute should have a slope greater than  $50^\circ$ .

#### 5.3.6.3.5 Tube slides

- Tube slides should meet all the applicable recommendations for other slides (e.g., side height, slope, use zone at exit, etc.).
- Means, such as barriers or textured surfaces, should be provided to prevent sliding or climbing on the top (outside) of the tube.
- The minimum internal diameter of the tube should be no less than 23 inches.
- Supervisors should be aware of children using tube slides since the children are not always visible.

#### 5.3.6.4 Chute exit region

All slides should have an exit region to help children maintain their balance and facilitate a smooth transition from sitting to standing when exiting. The chute exit region should:

- Be between  $0$  and  $-4^\circ$  as measured from a plane parallel to the ground.
- Have edges that are rounded or curved to prevent lacerations or other injuries that could result from impact with a sharp or straight edge.
- For toddlers the chute exit region should:
  - Be between 7 and 10 inches long if any portion of the chute exceeds a  $24^\circ$  slope.
  - Be no more than 6 inches above the protective surfacing.
  - Have a transition from the sliding portion to the exit region with a radius of curvature of at least 18 inches.
- For preschool- and school-age the chute exit region should:
  - Be at least 11 inches long.
  - Be no more than 11 inches above the protective surfacing if the slide is no greater than 4 feet high.
  - Be at least 7 inches but not more than 15 inches above the protective surfacing if the slide is over 4 feet high.

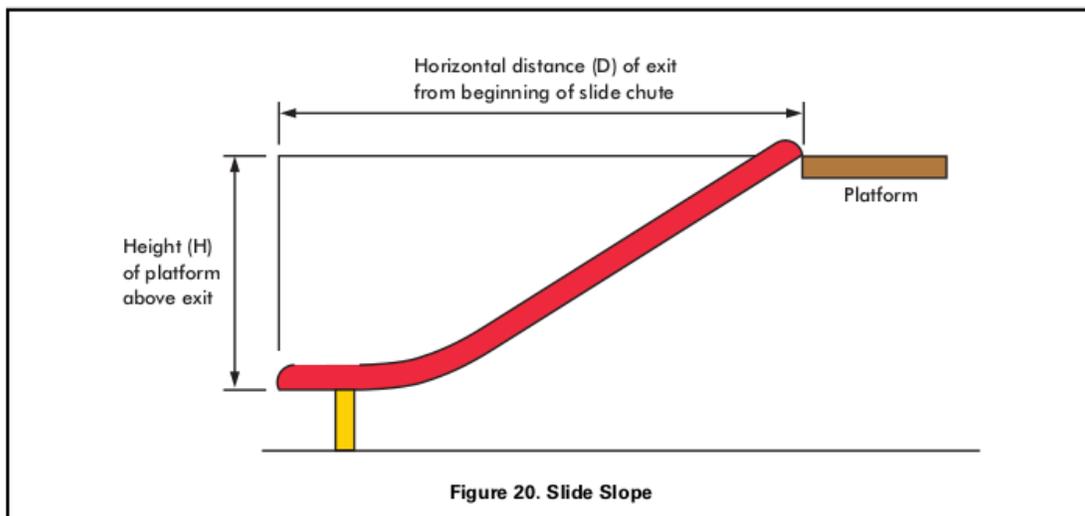
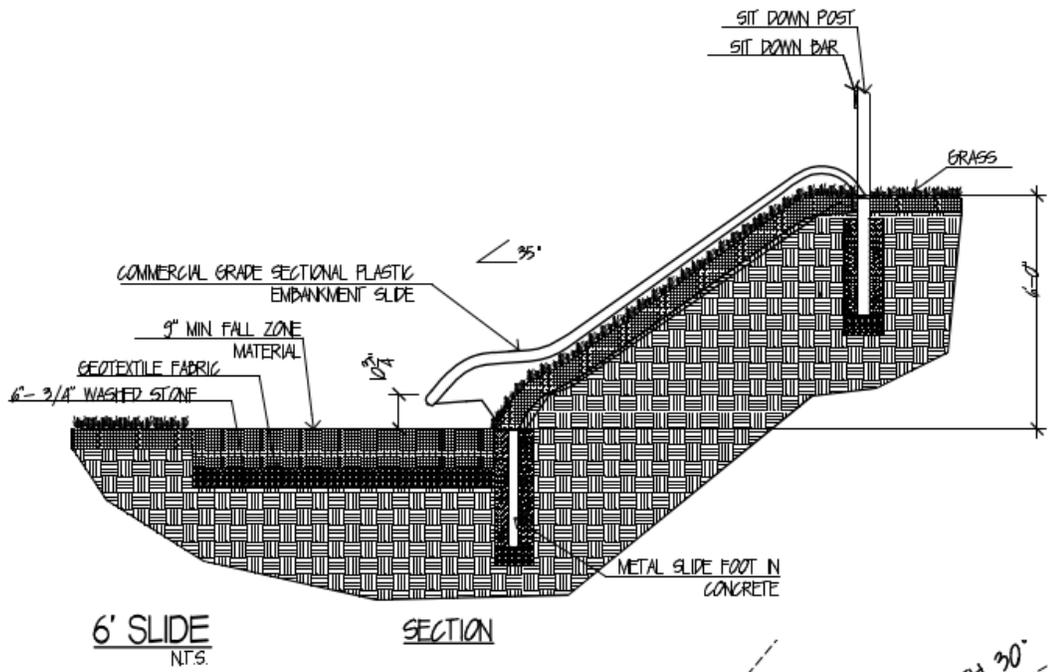
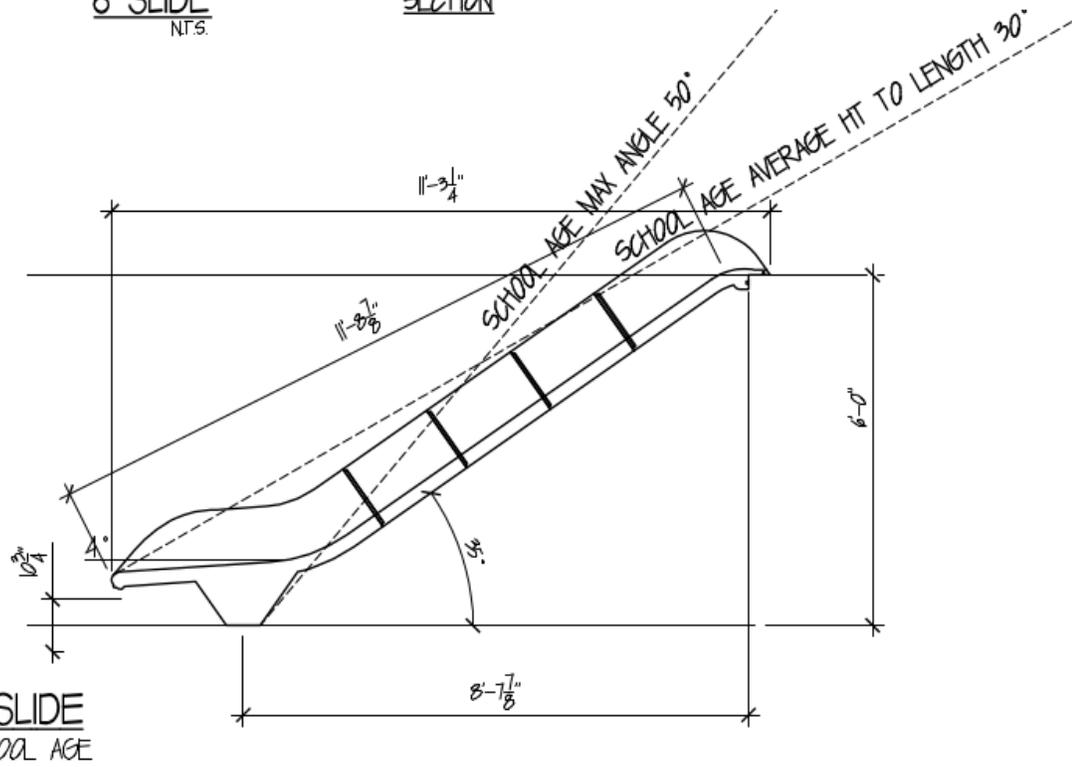


Figure 20. Slide Slope



**6' SLIDE**  
NTS. SECTION



**6' SLIDE**  
SCHOOL AGE



ITEM:  
**6' EMBANKMENT SLIDE**

DRAWN BY: JHM      REV: 10/11/14  
SCALE: AS NOTED      DATE: 8/11/11

SHEET TITLE:  
**D-1**