## TYPE I \& II HANDRAILS

## 2019 CALIFORNIA RESIDENTIAL CODE R311.7.8.5

## TYPE I HANDRAILS



For SI: 1 inch $=25.4 \mathrm{~mm}$.
Figure R311.7.8.3(1)
TYPE 1 HANDRAIL
Type I: Handrails with a circular cross section shall have an outside diameter of at least $1 \frac{1}{4}$ inches ( 32 mm .) and not greater than 2 inches ( 51 mm ). If the handrail is not circular, it shall have a perimeter dimension of at least 4 inches ( 102 mm ) and not greater than $61 / 4$ inches ( 160 mm ) with a maximum cross section of dimension of $21 / 4$ inches ( 57 mm ). Edges shall have a minimum radius of $0.01 \mathrm{inch}(0.25 \mathrm{~mm})$.

## TYPE II HANDRAILS



Dimensional properties of Type II handrails

Research has shown that Type II handrails have graspabitity that is essentially equal to or greater than the graspability of handrails meeting the long-accepted and codified shape and size defined as Type 1 .

Type II: Handrails with a perimeter greater than $61 / 2$ inches ( 160 mm ) shall have a graspable finger recess area on both sides of the profile. The finger recess shall begin within $3 / 4$ inch ( 19 mm ) measured vertically from the tallest portion of the profile and have a depth of at least $5 / 16$ inch $(8 \mathrm{~mm})$ within $7 / 8$ inch $(22 \mathrm{~mm})$ below the widest portion of the profile. This required depth shall continue for at least $3 / 8$ inch $(10 \mathrm{~mm})$ to a level that is not less than $13 / 4$ inches $(45 \mathrm{~mm})$ below the tallest portion of the profile. The minimum width of the handrail above the recess shall be $1 \frac{1}{4}$ inches ( 32 mm ) to a maximum of $23 / 4$ inches ( 70 mm ).

Discussion and Commentary: The key features of the graspability of Type II handrails are graspable finger recess on both sides of the handrail. These recesses allow users to firmly grip a properly proportioned grasping surface on the top of the handrail, ensuring that the user can tightly retain a grip on the handrail for all forces that are associated with attempts to arrest a fall.

