



Excerpt from Mushroom Style Plastic Rebar Covers Used For Impalement Protection - OSHA Standards Interpretation and Compliance Letter 05/29/1997

"Tests designed by California OSHA were conducted that entailed dropping sand-filled canvas bags onto rebar protected by standard mushroom caps. Weights of the bags ranged from 140 to 160 pounds, and the bags were dropped from three, five and seven feet. The mushroom caps provided absolutely NO protection."

"Manufacturers of the mushroom caps agree that those caps were designed to provide SCRATCH PROTECTION ONLY and were never intended to prevent impalement, even at grade."

"Considering the serious nature of the hazard, the standard mushroom-style plastic rebar caps should not be used for protection against impalement. Protective devices capable of withstanding at least 250 pounds dropped from a height of ten feet should be used. Although there are no 'approved' mushroom caps on the market, steel reinforced covers and wooden troughs are available, and have been approved by California OSHA and recognized by the California AGC to meet the design criteria."

Bear in mind that, where possible, fall protection is still the best solution. A fall from 10 feet or more on to a wooden trough or steel reinforced cap, even if it doesn't result in impalement, is still likely to produce serious injury.



Rebar Safety:

Is there a minimum size requirement for impalement protection caps used to guard rebar?

Answer: OSHA standards do not specify a minimum diameter for caps used to eliminate impalement hazards. The cap must be large enough to dissipate the forces of impact to prevent impalement from a reasonably foreseeable fall distance.¹ It should be noted that the use of impalement protection caps is but one method of protection; covers or wooden troughs can be another means of meeting the guarding requirement. Note that in our [August 3, 1999, letter to Paul Resler](#), we stated:

. . . we would consider protective devices (covers or wooden troughs) for rebar that are capable of withstanding at least 250 pounds dropped from a height of 10 feet to be adequate to meet the §1926.701(b) rebar requirements.

CONSTRUCTION SAFETY HAZARD ALERT MUSHROOM STYLE REBAR

CAPS Mushroom Style Rebar Caps

OSHA requires that contractors protect employees from impalement hazards from exposed rebar. A widely use technology for covering rebar has been the plastic "mushroom caps" that are often orange in color. Recent tests by California OSHA have determined that these provide no impalement protection from falls as low as 3 feet. Therefore, OSHA no longer considers these plastic caps to meet the "guarded" requirement found in 1926.701(b). This prohibition includes their use even in areas where the fall hazard involves a fall from the same level, such as a trip and fall on level ground where rebar is exposed.

OSHA notes that although they do not provide approvals on any products, they do note that manufactured steel reinforced caps and wooden troughs are commercially available which will meet the test criteria of a 250 pound weight dropped from a distance of 10 feet without break through by the rebar. OSHA has also indicated that the manufacturers of these plastic mushroom caps agree that they are not designed to prevent impalement but merely provide scratch protection.

Contractors are advised to replace these caps with protective covers such as wooden troughs or other mechanisms, which will withstand the 250-pound/10 foot drop test, as OSHA will begin enforcing the prohibition on the use of the mushroom caps immediately.

If you have questions about this or any other construction safety or health related issue, please don't hesitate to contact us