

3" SlowStop IronFlex Horseshoe
IBC 1607.8.3 Testing
21-MAY-2021



Purpose:

To confirm conformance to International Building Codes and anchoring strength of the SlowStop 3" IronFlex Horseshoe when installed with anchors with an embedment less than 4".

Experiment Design:

Shortened Hilti KH-EZ anchors were used to simulate pull out resistance in 4" residential concrete slab. 5/8" Hilti KH-EZ anchors with a length of 4" were used to anchor the SlowStop 3" IronFlex Horseshoe in the concrete. The SS3Y-27-HS unit has a base plate thickness 1/2", causing each anchor to have a 3.5" embedment in the concrete.



Figure 1 – Anchor Length



Figure 2 – Pipe Height



Figure 3 – Horseshoe Rigging

A production SS3Y-27-HS SlowStop 3" IronFlex Horseshoe was installed in 3000-3500 psi 6" thick concrete. A strap was attached at the mid-point of the 3" horizontal pipe to connect the rigging to pull (in effect a push due to the connection point on the opposite side) the Horseshoe with 6,500 pounds of force using a lever chain hoist. An S type load cell was rigged in line with the pulling force in order to measure actual force.

Results:

The SS3Y-27-HS was held at approximately 6,500 pounds of force for 5 minutes. The resulting concrete after the test was left unmarred with no signs of spalling or cracking near the critical anchors of either of the 3" Pedestals.

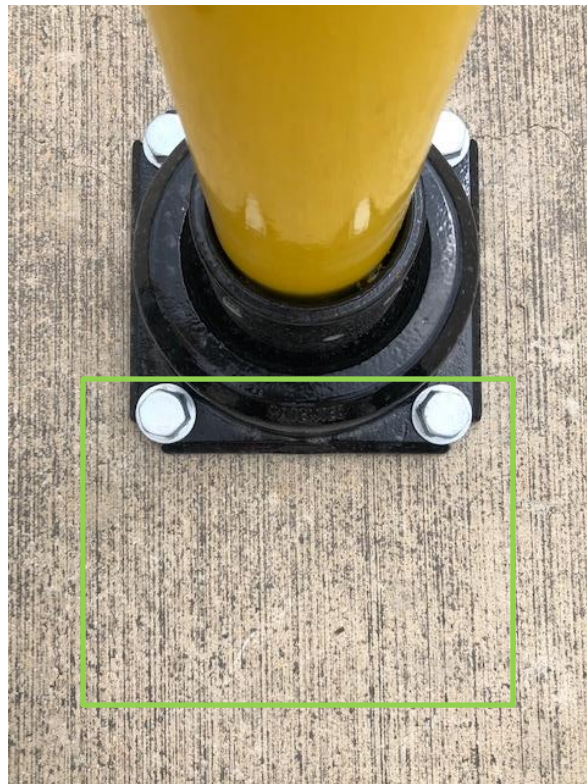


Figure 4 – Cement After Test

Conclusion:

Given the resulting data, it may be concluded that the SS3Y-27-HS is suitable to be used in residential slabs confirming conformance with IBC 1607.8.3 when the SlowStop 3" IronFlex Horseshoe is anchored properly in 4" thick residential concrete.

