



PS Access Solutions™

The Ins And Outs Of Industry

Experts Agree: *Horizontal Grab Features Help To Prevent Falls From Ladders*

Falls from elevation continue to be a leading cause of death for those who work with ladders, whether they work in construction, manufacturing or any other industry where height can be an occupational hazard.

As a result, significant research has been done on the subject of ladder safety and specifically on the topic of vertical versus horizontal handholds. Researchers and workplace experts – including those from OSHA itself – agree that the benefits of adding horizontal grab features to ladders and around hatches far outweigh the costs.

THREE-POINT CONTROL MUST REPLACE THREE-POINT CONTACT



Climbing a ladder using three-point contact (left) and three-point control (right)

Research has shown that we use ladders and hatches in one of two ways. The first is known as three-point contact, in which we seek out three points of support without specified body parts connecting to specified ladder or hatch features. An example of this is a user holding onto vertical components of a ladder rather than the rungs. The result is very little stability and almost certain sliding in the event of a fall.

Three-point control gives the user stability thanks to three horizontal points of contact. On a ladder, this can be accomplished using horizontal rungs, providing what experts call a “power grip” (Barnett & Poczynok, 2000). A power grip has a 75% to 94% larger breakaway force than when gripping a vertical rail (Young, Woolley, Ashton-Miller, et al., 2012). This becomes particularly important on the step-through portion at the top of a fixed ladder or roof hatch. Here, more specialized solutions are required:



- **GrabSafe®** increases stability by providing horizontal grab bars to the step-through portion of your fixed ladder. Large grab rungs provide three-point control even with gloved hands.



- **HatchGrip®** provides ladder extensions that extend beyond the hatch. These horizontal rungs offer three-point control when exiting and entering a roof hatch.

Contact PS Access Solutions to give your workers improved safety when using ladders and roof hatches.

Sources: Barnett, R.L. & Poczynok, P.J. (2000). Ladder rung vs. siderail hand grip strategies. *Triodyne Safety Brief*, 16(4), 1-15; Young, J.G., Woolley, C.B. & Armstrong, T.J. (2012). Effect of handhold orientation, size and wearing gloves on the ability to hang on. Presentation at the International Conference on Fall Protection and Prevention, Morgantown, WV, USA.

OSHA regulations: 29 CFR 1926 Subpart M (1926.500-503 and appendices); 29 CFR 1926 Subpart X (1926.1050-1053 and appendices); 29 CFR 1926 Subpart L (1926.450-454 and appendices)