

Appelgren Construction Ltd; Cuyahoga Falls

Intervention key words: Scaffolding

Industry: Construction, masonry

Risk factor(s): Manual handling – lifting/carrying; manual handling – pushing/pulling, high hand force – pinching/gripping

Situation: Appelgren Ltd. provides commercial and industrial masonry services throughout northeast Ohio. Appelgren used a manually cranked self-contained adjustable scaffold. This scaffold had a 16-foot planking for the work and material loading zones.

Cranking the scaffold with materials loaded was exhausting for employees. The company reported injuries of pinched fingers, strained wrists and elbows. While employees cranked the scaffold up or down, the planking tended to shift causing uneven surfaces. This created trip hazards. In extreme cases, the planking could move off the scaffold frame. Maintaining guardrails and toe-boards during these adjustments was a constant challenge. Employees accessed the scaffold by extension ladders, which also needed constant re-adjustment every time employees raised or lowered the scaffold.

Solution: Appelgren purchased a new scaffolding system consisting of fully automated, self-climbing hydraulic platform scaffolding and extension components. The scaffold moves up and down with the push of a lever. This allows employees to work at an optimum height that significantly reduces the risk of musculoskeletal disorders. The company replaced the wood planking by a single 24-foot by 7-foot solid steel platform. This smooth and continuous working surface eliminates the tripping hazards from the uneven planking. It also eliminates the risk of the planks falling off the scaffold frame. Guardrails and toe-boards are an integrated part of the system, which keeps them in place at all times. The platform tower has a climbing ladder, eliminating the need for extension ladders. An enclosed step off platform provides a safe access area. The new scaffolding system takes less time to erect, less time to adjust and requires less labor. It improved not only safety, but also has increased productivity and quality of work.

Appelgren purchased self-climbing hydraulic platform scaffolding and extension components. The total cost of the intervention was \$167,000. SafetyGRANT\$ provided \$40,000 in assistance to offset the costs.

Results

- The incident rate (standardized per 200,000 hours worked) decreased from five the two years prior to the intervention to zero the two years following, a 100-percent improvement.
- Appelgren reported a 15-percent increase in productivity during the first year following the intervention. This productivity increase remained constant in subsequent years.
- Labor costs decreased by approximately \$7,200 per week for a total of savings of \$86,000 between July 2004 and July 2005.
- Appelgren reports lower employee turnover rate as a result of this intervention.
- According to the employer, "Working at a perfect working height all day increased the welfare of Appelgren's employees and improved their day to day attitude towards an otherwise hard and physically demanding job."

Cost related data

Company Investment	\$126,812
SafetyGRANT\$	\$ 40,000
Total Intervention cost	\$166,812
Labor cost reduction over 24 months	\$172,800
Reduced injury costs (two previous claims)	\$ 17,625
Total savings	\$190,425

The payback period of intervention based on cost savings is approximately 18.5 months.