

# Excel Scaffolding Deployment

## Accelerated Site Technology Deployment Integrated Decontamination and Decommissioning Project

### Need

Scaffolding is a necessary tool in Decontamination and Decommissioning (D&D) for performing work in areas that cannot be reached by a person on the ground. Carpenters and laborers at the Idaho National Engineering and Environmental Laboratory (INEEL) currently use tube and clamp scaffolding, which is versatile and functional, but time-consuming and labor-intensive to erect. Easier-to-install scaffolding is needed to promote safety, accelerate schedules, and reduce costs of D&D work.

### Technology Description

The Automatic Locking Scaffold System manufactured by Excel Modular Scaffold and Leasing Corporation in Plymouth, Massachusetts, was designed for speedy assembly and disassembly and has proven to be an improvement over tube and clamp. Carpenters place vertical supports with cups 5 ¾ inches apart in adjustable square bases and attach horizontal bearers, which snap onto the cups by means of a spring-loaded, positive locking trigger mechanism. Excel scaffolding is leveled on the first layer only whereas tube and clamp scaffolding must be leveled at each layer. In order to build a working platform, Excel users lay planks across the horizontal bearers. These planks are similar to those used with conventional scaffolding, but they are narrower so Excel fits into smaller spaces.

Excel also manufactures ladders, trusses, swing gates, cantilevers, floor hatches, and other attachments that enhance safety by eliminating the dangers associated with climbing on scaffolding. In addition, Excel is the only scaffolding approved for fall protection anchorage.



### Benefits

- 40-45% reduction in number of necessary parts (based on Large-Scale Demonstration and Deployment Project)
- 60-70% reduction in labor costs and worker radiation/hazard exposure
- Minimal use of hand tools (socket and ratchet) reduces repetitive motion injury
- Ladders, swing gates, floor hatches, and other similar attachments prevent climbing on scaffolding, decreasing worker danger



### Status

Excel Modular Scaffolding has been used at the INEEL's Process Environmental Pilot Plant, Sewage Treatment Plant, and Security Training Facility. The carpenter who completed these deployments said Excel scaffolding was easier and faster to install than tube and clamp scaffolding. In some instances, the spacing of the cups makes the new scaffolding less versatile, and it is slightly more difficult to decontaminate after use in asbestos areas because fibers settle in the cups. However, despite these inconveniences, the Excel Automatic Locking Scaffold System has been well received on D&D projects and is preferred by personnel. In fact, the deployment at the Sewage Treatment Plant was carried out entirely by workers because they had seen the positive implications of using the new scaffolding at other locations. A cost benefit analysis based on the volume of scaffolding used and the costs calculated and documented in the Innovative Technology Summary Report shows that using Excel Scaffolding will save thousands of dollars.

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