

Development/distribution of new technology to prevent fall accidents at construction sites

OSHRI develops 'Advanced Safety Guardrail for System Scaffolding' and transfers the technology to SMEs

#1. September, 2021: One worker disassembling the steel pipe scaffolding at the remodeling construction site was killed by a fall accident;

#2. August, 2021: One worker disassembling the system scaffolding at the new commercial construction site was killed by a fall accident;

□ The Occupational Safety and Health Research Institute (OSHRI; Director General: Eun-A Kim) of the KOSHA developed the “Horizontal Advanced Safety Guardrail Coupled with Auxiliary Vertical Members (the “Advanced Safety Guardrail” hereinafter)” dedicated to system scaffolding allowing the installation of safety guardrail first in order to address problems during installation and removal of scaffoldings at construction sites.

○ With conventional scaffoldings* currently used at construction sites, the work plates are installed first and followed by installation of safety guardrails during its installation, and the safety guardrails are disassembled first during its removal, which leads to frequent fall accidents from the short end of work plates.

* Scaffolding is a temporary structure assembled and installed adjacent to construction structures, such as buildings, and used as pathways or work plates for construction works.

□ In fact, based on the analysis of serious accidents occurred in the construction industry between 2016 and 2018 (for 3 years), a total of 99 fatalities were recorded from fall accidents off the system scaffolding.

○ For major causes, the ‘inadequate installation of safety guardrail’ accounted for 69.8% (69 deaths), and analysis on the types of works showed that ‘installation/removal works of scaffolding’ was responsible for 27.3% (27 deaths).

□ The Advanced Safety Guardrail ensures safe operations with safety guardrail installed even during installation/removal of scaffoldings as it applies the technology capable of installing safety guardrails at the short end of upper work plates from the lower work plates in advance.

□ The OSHRI developed this technology and applied for patent (October, 2020), and also completed the transfer of the technology to small-and-medium enterprises in Korea.




○ In the first half of this year, it was found adequate to the performance standards based on the simulator experiment conducted in accordance with the test methods on assembly-type safety guardrails under the ‘public announcement of safety certification for protective device*.’

* Public Announcement No. 2021-22 of the Ministry of Employment and Labor

○ Based on the above, the Advanced Safety Guardrail of the recipient company of the transferred technology from the

KOSHA recently acquired the safety certification (assembly-type safety guardrail) and is about to be introduced to the market.

- “I will make sure the Advanced Safety Guardrail of the system scaffolding to be distributed throughout industrial sites in order to fundamentally prevent fatal fall accidents during scaffolding works,” Eun-A Kim, the Director General of the OSHRI under the KOSHA, said. “The OSHRI will continue engaging in commercialization studies required to prevent fatal accidents at industrial sites in the future,” Kim added.

		
<p><Step 1></p> <p>Install auxiliary vertical members (#1) to vertical members of system scaffoldings</p>	<p><Step 2></p> <p>Couple horizontal advanced safety guardrail with the auxiliary vertical member (#1)</p>	<p><Step 3></p> <p>Couple auxiliary vertical members (#2) with the horizontal advanced safety guardrail and install to the scaffoldings</p>