

A 20 year old male general laborer was fatally injured after falling through the roof decking of a high school gym approximately 30'3". The victim's duties were clearing away scraps of material, tools and trash. The project was a roof replacement. The job for which Jr Roofing & Construction was hired was to replace the iso and PVC layers.

The roof of the gymnasium at Glencliff High School was originally installed in 1956 and was fully comprised of a cementitious wood fiber material colloquially known as "tectum". According to two employees with Metro Nashville Public Schools Facilities & Maintenance department, the gymnasium was originally constructed with tectum decking, a 3" layer of polyisocyanurate insulation (referred to as "iso"), and a thin layer of 60-mil polyvinyl chloride (PVC) membrane. The rest of the school was either metal or concrete decking. In 1977, the gymnasium was expanded to include metal decked edges on three sides, and the iso and PVC membrane layers were replaced. The iso and PVC layers were again replaced in 2001.

The Safety Manager for Jr Roofing & Construction LLC, the supervisor and the company owner typically conduct a visual inspection of the roof's exterior and interior prior to employees reporting to the jobsite to begin roofing work but were not given access to the inside of the building to conduct part of their routine pre-job inspection. The general contractor informed them that the roof had been deemed safe to work on and that Jr Roofing & Construction LLC employees were not allowed inside the building. The supervisor was not provided with any additional information about inspections or evaluations of the roof, nor did he inquire about those.

The site superintendent for the general contractor on the project was aware that the decking of the gymnasium roof had been identified as a potential hazard after work had begun on that section of the roof. The decking appeared as though it had absorbed a lot of moisture and that apparent water damage was visible before the iso and membrane layers were removed from the decking. When the damage was noted, it was flagged off and a site-wide formal stand-down was held using bilingual subcontractors to translate the issue into Spanish for the monolingual workers.

The general contractor stated in an interview that the underside of the roof was not evaluated prior to the job beginning and that it was not a typical part of their process to do a full underside evaluation. When he evaluates a roof prior to the job beginning, he typically looks at the height of parapet walls, presence of skylights, impalement hazards, electrical hazards, and access and egress to the building and the roof. The general contractor stated that other people had come out to perform safety evaluations of the underside of the roof of the building before crews moved to working in that new roofing section, but he did not know who did those evaluations and he had not received any information about the results of those inspections.

Several coworkers of the victim were on the roof at the same time on the day of the accident and none of those coworkers directly saw when he fell through the decking. One employee stated that he heard a sound like something breaking, and when he looked around, he saw the hole where the victim had previously been standing. The decking broke underneath the victim and he fell directly through to the gymnasium floor. The place where he had been working at the time had been an area where the iso and membrane layers had already been removed. New layers of the

iso and membrane had not been placed down in that spot yet when he fell; he was standing on only the tectum decking. The area had not been identified by either Jr Roofing & Construction or the general contractor as being an area requiring a personal fall arrest system, due to its distance from the edges of the roof and the visual appearance of the roof surface in that location. Fall protection in use at the time of the accident in the middle of the tectum-decked section of the gymnasium roof consisted of a safety monitor, employee of the general contractor and warning line system. Personal fall arrest systems were required on the metal-decked areas at the edges of the roof, the single tectum-decked edge of the roof, and the potentially water damaged area in the middle of the roof. (note - not the area where the victim fell through.) The victim was not wearing a fall protection harness at the time of his accident.

In conclusion, failure to ensure that the roof was structurally sound and able to support the weight of employees and materials necessary to perform the re-roofing job and failure to require the use of an adequate fall protection system such as a personal fall arrest system, even after having been made aware of potential structural issues with the tectum roof decking on the gymnasium, contributed to the accident resulting in the victim's death.

Citation(s) as Originally Issued

A complete inspection was conducted at the accident scene. Some of the items cited may not directly relate to the fatality.

Citation 1 Item 1 a **Type of Violation: Serious** **\$5400**

29 CFR 1926.501(a)(2): The employer did not determine if the walking/working surfaces on which its employees were to work had the strength and structural integrity to support employees safely:

In that employees were permitted to work on the roof of Glencliff High School when that roof's structural integrity and strength had not been determined.

Citation 1 Item 1 b **Type of Violation: Serious** **\$0**

29 CFR 1926.501(b)(10): Each employee engaged in roofing activities on low sloped roofs, with unprotected sides and edges 6 feet or more above lower levels was not protected from falling by guardrail systems, safety net systems, personal fall arrest systems, or a combination of warning line system and guard rail system, warning line system and safety net system, or warning line system and personal fall arrest system, or warning line system and safety monitoring system.

In that employees performing roofing work on the gymnasium of Glencliff High School were not adequately protected against falling through the roof decking.

Fall through a roof deck—Insp # 1703349 Jr. Roofing & Construction LLC



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