Circular Economy Hazards: Re-use, Re-purposed Materials and Unknowns Stats and Facts

FACTS

- **Re-Used Does Not Mean Risk-Free:** A material safely used in one application may carry residual chemical contamination, structural fatigue, or biological hazards in a new environment. The history of a material matters as much as its current appearance.
- **Unknown Substances Are Uncontrolled Hazards:** When workers handle reclaimed or repurposed materials without knowing their origin or chemical composition, they cannot select the right PPE or controls — because the hazard has not been identified.
- **Demolition Releases Legacy Hazards:** Tearing down older structures exposes workers to asbestos, lead, silica, and mercury that may not be visible or labeled. Repurposing materials from these structures without testing carries the same risk.
- **Electronic Waste Creates Chemical Exposure:** Recycled electronic components can contain lead, cadmium, mercury, and flame retardants. Workers dismantling e-waste without specific training face multi-substance exposure that standard SDS documentation may not cover.
- **Structural Integrity Cannot Be Assumed:** Repurposed beams, pipes, and fittings may have suffered stress, corrosion, or impact damage not visible on the surface. Using them beyond their actual capacity creates collapse and failure risks.

STATS

- The waste collection and recycling industry had a fatal injury rate of over 35 deaths per 100,000 workers in 2022 –

one of the highest rates across all industries — according to the Bureau of Labor Statistics.

- Waste and recycling workers in the U.S. experienced more than 5,000 nonfatal injuries requiring days away from work in 2023, many involving contact with hazardous materials, according to the Bureau of Labor Statistics.
- The occupational injury and illness rate for recyclable material collectors in the U.S. is 1.4 times higher than similar occupations and 3.6 times higher than the national average, according to BLS 2024 data.
- A 2023 study published in Environmental Research found construction workers top the list of job titles among people diagnosed with mesothelioma in the United States — a direct consequence of legacy asbestos exposure from demolition and salvage work.
- In March 2024, the U.S. EPA finalized a ban on chrysotile asbestos — the last form still in use in the U.S. — recognizing that demolition and repurposing workers continued to face exposure risk decades after asbestos was removed from new construction.