

3D Printer Fire and Explosion Protection Challenges

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Abstract: Rapidly evolving technology and applications of additive manufacturing using 3D printers have created new challenges for fire protection engineers. In the case of 3D printers extruding polymer filaments, these challenges entail understanding how best to apply contemporary fire detection and suppression equipment and systems to achieve automatic detection and suppression within the printer. In the case of metal powder printers, these challenges involve understanding powder combustibility properties and how best to implement reliable inerting measures to prevent flash fires and explosions during powder processing and handling. This seminar will describe applicable fire scenarios for both types of printers and provide examples of appropriate fire and explosion protection measures for those scenarios.

Biography: Bob Zalosh is a Worcester Polytechnic Institute (WPI) Fire Protection Engineering Professor Emeritus, a SFPE Fellow, and runs a consulting organization entitled Firexplo. Bob's consulting activities have included conducting combustible dust hazard and risk assessments for a variety of industrial facilities. He has conducted numerous industrial fire and explosion incident investigations, and has advised OSHA and private clients on the development and review of settlement agreements resulting from citations issued after Combustible Dust National Emphasis Program inspections. He is a member of the NFPA Explosion Protection and Combustible Metals Technical Committees, and is serving on an NFPA 484 Task Group developing protection requirements for using combustible metal powders with 3D printers.