Flammable and Combustible Materials

PLM continues to support the consensus NFPA standards when evaluating the application of flammable or combustible materials. The National Fire Protection Association has long recognized the serious fire potential for the application of flammable and combustible materials. In response to the exposure, NFPA developed several standards specifically aimed at controlling this recognized hazard. The standards referred to are NFPA 30 Flammable and Combustible Liquids Code and NFPA 33 Standard for Spray Application Using Flammable or Combustible Materials.

There are several specific ways that Flammable and Combustible exposures can be controlled. The purpose of this bulletin is to outline engineering control strategies and techniques that PLM applies during field surveys. Several examples for the application of this guideline would include gluing, finishing, including spraying, rolling and coating operations.

The first and most common control method is to perform all applications of flammable and combustible liquids inside a UL listed spray booth. The booth should be provided with a powered ventilation system that confines or limits the escape of the material being sprayed, including vapors, mists, dusts, and residues that are produced by the spraying operation and conducts or directs these materials to an exhaust system.

All electrical wiring and equipment located within the spraying area should meet the National Electrical Code standard NFPA 70. This standard requires the installation of equipment that is suitable for installation in hazardous environments. The specific listing for the equipment should be Class I Division I for flammable vapors or Class II Division for 1 combustible vapors. The wiring and electrical equipment located within 20 feet of the spray application area should also be listed wiring equipment and devices.

The equipment that the standard refers to includes all wiring, light fixtures, motors, and electrically powered equipment.

The second strategy for controlling the hazards for application of flammable and combustible liquids is to perform all operations within a designated finishing room. The control methods for the construction of the room are similar to those of the spray booth. With the construction of a finishing room, all electrical wiring and devices are not located within the finishing room. The room walls and ceilings shall have a minimum fire resistive rating of one hour and may be of noncombustible or limited-combustible materials (masonry or two layers of "X" rated drywall screwed to metal studs). The lighting for the room is provided with remote lighting fixtures that are located behind tempered and wired glass panels. Exhaust ventilation is required for the room. The motor powering the exhaust system must be listed for Class I Division I for flammable vapors and Class I Division II for combustible vapors. The room should also be protected with self closing and latching 1 hour fire rated doors and the entrance way to

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the room should be provided with either a dike or floor drain at the door location/s that is capable of containing any spill that may occur within the room.

In addition, the heating system for the room should be of a remote configuration that removes the heat source from the room. Several types of heating systems that would apply include a remote boiler with a circulating hot water loop and a forced air system with the furnace burner located outside of the room.

When a Technical Services Consultant or a Field Marketing Representative surveys a business location that engages in the application of flammable or combustible liquids, NFPA 30 and 33 will be the source standards that will be referenced. If you need additional information regarding the application of the standards, please contact Randy Zellis, Assistant Vice President – Technical Services, at 1-800-752-1895, ext 9126 or via email at rzellis@plmins.com.