



Spray Finishing Plan Review

Building Permit Guide

Clark County Department of Development Services

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EFFECTIVE DATE: PENDING

GENERAL INFORMATION

This guide is intended to clarify the minimum Clark County Development Services submittal requirements to obtain applicable permits for all spray finishing operations involving the:

- Application of flammable or combustible paint, varnish, lacquer, stain, resins, or other flammable or combustible liquid applied as spray by compressed air, airless or hydraulic atomization, steam, electrostatic or other methods or means in continuous or intermittent processes;
- Dip tank operations in which articles or materials are passed through contents of tanks, vats, or containers of flammable or combustible liquids, including coating, finishing, treatment, and similar processes;
- The application of combustible powders by powder spray guns, electrostatic powder spray guns, fluidized beds, or electrostatic fluidized beds; and
- The application of dual-component coatings of Class I or Class II liquids when applied by brush or roller in quantities exceeding 1-gallon (4L).

Such operations must obtain all applicable Clark County Development Services and Clark County Fire Department permits. Additional applications and permits from other Clark County entities may further be required. All spray finishing operations performed inside of a building shall be conducted in an approved spray booth, spraying area, or spraying room approved for such use.

Note: Non-applicability: This guide does not apply to spray finishing utilizing flammable or combustible liquids which do not sustain combustion, including liquids that have no fire point when tested in accordance with ASTM D 92 and liquids with a flashpoint greater than 95oF (35oC) in a water-miscible solution or dispersion with a water and inert (noncombustible) solids content of more than 80 percent by weight.

Due to the wide-ranging and diverse applications represented by Spray Finishing, this guide is intended only to offer basic information and guidance and does not intend to represent a complete review or determination of all Clark County requirements, laws, and ordinances governing this subject.

Note: CCFD HAS NOT REVIEWED THIS DOCUMENT YET.

Note: ICC TO PUBLISH A 2009 FLAMMABLE FINISHES APPLICATION GUIDELINE DUE MID AUGUST 2010.

Update: ICC NOW IDENTIFIES GUIDELINE WON'T BE AVAILABLE UNTIL SEPTEMBER 2010.

PART I APPLICANT'S RESPONSIBILITY

Applicants are responsible for submitting **complete** applications with architectural, structural, mechanical, plumbing, electrical, fire protection, and all other pertinent information to demonstrate compliance. It is the responsibility of the owner and design professional to ensure that a diligent design and the application of code requirements are accomplished.

**PART II
PREREQUISITES** A hazardous material inventory list identifying the type and quantity of all hazardous materials planned along with their respective Material Safety Data Sheet (MSDS) sheets for materials including solvents, paints, treatments, powder coating materials, and similar hazardous materials shall be provided as part of the submittal process.

**PART III
APPLICABLE
CODES** Currently adopted version of the following:

- International Building Code (IBC) with Southern Nevada Code Amendments.
- Uniform Mechanical Code (UMC) with Southern Nevada Code Amendments.
- National Electrical Code (NEC) with Southern Nevada Code Amendments.
- International Fire Code (IFC) with Southern Nevada Code Amendments.
- NFPA 30, *Flammable and Combustible Liquids Code*.
- NFPA 33, *Spray Application Using Flammable or Combustible Materials*.
- NFPA 34, *Dipping and Coating Processes Using Flammable or Combustible Liquids*.
- NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids*.

Clark County Development Services Policy and Procedure BP-PP-075, Paint Spray Booths.

**PART IV
SUBMITTAL
PACKAGE** At the time of permit application, three (3) complete sets of plans, drawn to an indicated scale, must be submitted for review and approval. All plans shall be stamped, sealed, and signed by a Nevada registered design professional practicing in the area of their expertise.

**PART V
PLAN
CONTENTS** Submitted design package shall include, but is not limited to, the following information:

Architectural Plans:

- Business name, property address, floor and/or suite number and name of business.
- Site plans depicting location of building or tenant space, property lines, building footprint, location of mechanical unit(s), and easements (Include dimension from mechanical units to all property lines and structures).
- Location of the space/ area under consideration.
- The name and anticipated use of each room.
- Elevation, plan, reflected ceiling and section details as necessary to thoroughly depict the proposed arrangement.
- Show parapet or screening methods for both ground-related and rooftop units (Rooftop screening must be architecturally compatible with the building if the equipment extends above the roofline).
- Designate the use of building or tenant space and occupancy groups.
- Specify type of construction of the building, location of all fire walls, occupancy separations, etc.
- The type and location of all spray booths, dust-producing equipment, and exhaust systems including their adjacent operations associated with the systems.
- Presence and required separations from other incompatible processes such as hot work (welding and cutting), open flames, and similar.

Mechanical Plans:

- Manufacturer's information fully describing the use and characteristics of all spray finishing operations, paint booth(s), paint mixing rooms, and powder preparation rooms including their specific application equipment proposed for use in the project.
- Complete system design calculations to include minimum airflows and velocities to be provided throughout all locations of the dust collection/ exhaust systems.
- Equipment layout over the floor plan including their size, gauge, etc. of ducts and outlets.

**PART V
(CONTINUED)
PLAN
CONTENTS**

- Provisions for required make up air.
 - A system flow diagram.
 - Specifications for exhaust and dust collection systems, fans, filter media, and associated equipment.
 - The type of heating and/ or drying systems proposed to be used.
 - Type of ventilation, exhaust, or collection system.
 - The type of control and interlock systems between spraying finishing, coating, drying, and similar systems with the ventilation system.
 - Dimension distances from proposed exhaust outlet to supply ducts, windows, doors, and property lines.
- Electrical Plans:
- Symbol schedule of all symbols and abbreviations used.
 - One-line drawing of the complete electrical system showing system voltage, phase configuration, conductor sizes/ types, etc.
 - Electrical and static grounding and bonding details.
 - Lighting and power floor plans including fixture types, receptacles, switches, outlets, etc. (identify if new, existing, relocated, etc.)
 - NEMA enclosure type.
 - Identification of any hazardous or classified electrical areas by Electrical Code type.

**PART VI
OTHER
INFORMATION**

The following provides specific interpretations necessary for the design and review of the applicable project documents but do not represent or identify all applicable requirements. Note that when conflicts between applicable code requirements arise, the most restrictive requirements of the International Building Code (IBC) with Southern Nevada Code Amendments and the International Fire Code (IFC) with Southern Nevada Code Amendments shall apply:

- The entire building shall be provided with an automatic sprinkler system per the 2010 Building Administrative Code of Clark County Section 22.02.170 (N)(4). The automatic sprinkler system shall be further extended into all spray booths, spray areas, spray rooms, plenums, exhaust ducts, filter boxes, mixing, and similar areas as required by IBC and IFC requirements.
- The maximum amount of hazardous materials allowed for storage and use shall not exceed the amounts identified in the building and fire codes. If these amounts are exceeded, the overall occupancy will be defined as a Group H, Division 2 (H-2) occupancy.
- Spray finishing operations conducted within buildings used for Group A (assembly), Group E (educational), Group I (institutional), or Group R (residential) shall be located in a spray room(s) protected with an approved automatic sprinkler system and separated vertically and horizontally from other areas by at least a minimum 1-hour fire barrier in accordance with the IBC. In other occupancies, spray finishing shall be conducted in a spray room, spraying area, or spray booth that are compliant to IBC and IFC requirements. Compliant spray rooms or booths further include pre-engineered/ pre-manufactured rooms or booths listed or approved by a nationally recognized testing laboratory for the applicable hazards.
- Code compliant spray rooms, spraying areas, and spray booths enclosing spray finishing operations that use flammable or combustible liquids are not in of themselves, code defined as representing Group H occupancies.
- Liquid paint mixing and storage areas are defined as representing Group H, Division 3 occupancies. Mixing rooms larger than 500-square feet shall be located on an outside wall. Powder preparation room(s) is defined as representing Group H, Division 2 occupancies.
- Powder coating and similar operations can generate sufficient quantities of finely divided dust particles that meet the code definition of "Combustible Dusts" and if suspended in air and ignited, could result in rapid burning or potential detonation. As such, any building or portion of a building or area having a combustible dust hazard is defined as a Group H, Division 2 occupancy without code exception or modification.

**PART VI
(CONTINUED)
OTHER
INFORMATION**

- Combustible dust producing operations require special dust collection, ventilation, mechanical, electrical, and other such systems specifically listed and approved for the unique hazards represented by this type of operation.
- At no time shall spray applied finishes, powders, or similar operations be applied outside of the listed spray booth or spray room. In addition, the following statement must be placed on the plans and posted within the painting area: "Spray applied finishes shall not be used outside of approved spray booth or spray room".
- Electrical wiring and equipment for spray finishing operations using flammable or combustible liquids and in combustible dust areas shall be designed in accordance with IBC, IFC, the National Electrical Code (NEC), and other applicable codes, standards, and regulations as adopted or amended by Clark County.
- The mechanical ventilation and exhaust systems shall comply with applicable IBC, IFC, UMC, and other requirements as adopted and amended by Clark County.
- Each spray booth/spray room shall have an independent exhaust duct system discharging to the outside. Air exhausted from spray finishing operations shall not be re-circulated back into the building.
- A fire department inspection clearance is required before a Certificate of Occupancy will be issued.

Approved By:

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REVISION HISTORY:

Review/Approval Date	Revised Date