



2026 FINISHING EQUIPMENT BUYER'S GUIDE

How to Plan, Specify & Purchase the Right Finishing System

Paint Booths • Powder Systems • Ovens • Blast Booths • Air Makeup Units • Mixing & Storage Rooms • Complete Finishing Systems

A practical planning guide for owners, engineers, production managers, facility teams and purchasing professionals.

Start Here. Finish Here.



How to Use This Guide

A finishing-equipment project is rarely just a booth purchase. The equipment must fit the product, production rate, coating process, building, utilities, exhaust path, code requirements and long-term operating goals. This guide is designed to help you ask the right questions before a purchase order is issued.

IMPORTANT This guide is educational and is not a substitute for project-specific engineering, permit review, fire-protection design, electrical design or approval by the Authority Having Jurisdiction (AHJ). Requirements vary by application and location.

The best time to solve project problems is before equipment is built.

Early coordination can prevent common surprises such as insufficient ceiling height, a duct route that conflicts with structure, an undersized electrical service, inadequate gas capacity, a pit that does not match the equipment, or a fire-alarm tie-in discovered late in the project.

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1. Start With the Process, Not the Booth

The right system starts with understanding what happens to the part from the moment it enters the finishing area until it leaves. A booth that fits the largest part may still be the wrong solution if it cannot support the required throughput, coating specification, cure schedule or material-handling method.

Define these items first

- What are you coating? Record the maximum part length, width, height and weight.
- What coating will be applied? Liquid paint, primer/topcoat, powder, plural-component material, waterborne coating or another process may drive different equipment requirements.
- How many parts must be completed per shift, day or week?
- How will parts move? Forklift, cart, crane, monorail, conveyor, rail, drive-through or manual handling?
- What finish quality is required? Cosmetic Class-A style work and heavy industrial corrosion protection may have very different environmental needs.
- What surface preparation is required before coating?
- Does the coating manufacturer specify temperature, relative humidity, flash time or cure schedule?
- Is future production growth expected?

BUYER TIP Design around the production process you need three to five years from now, not only today's volume. A system that immediately becomes a bottleneck is rarely the least expensive option long-term.



2. Choosing the Right Liquid Paint Booth

Liquid spray booths are commonly selected by airflow pattern. Each style can be effective when it is correctly sized and matched to the application.

Booth Style	Typical Airflow	Advantages	Considerations
Crossdraft	Front to rear	Simple, economical, flexible	Uses shop/replacement air across the part; finish quality depends heavily on air cleanliness and layout.
Semi-Downdraft	Ceiling/front supply toward rear exhaust	Improved control around the work zone without a pit	Air changes direction through the booth; layout must be evaluated around the product.
Side Downdraft	Ceiling supply down and outward to low side exhaust	Good finish environment; no floor pit required	Side exhaust plenums increase outside booth width.
Full Downdraft	Ceiling supply straight down to floor/pit exhaust	Excellent contaminant control and finish environment	Usually requires a pit, raised basement or engineered floor/exhaust arrangement.
Open Face / Industrial	Room air enters open face and moves to exhaust wall	Excellent for many industrial parts and lower-complexity applications	Does not provide the same enclosed, pressurized environment as a closed booth.

COMMON MISTAKE Choosing booth style only by purchase price. Airflow pattern affects building layout, ductwork, installation cost, energy use, finish quality and material handling.



3. Booth Sizing & Facility Fit

Internal dimensions

Internal dimensions must provide enough room for the largest product plus safe operator movement, spray-gun distance, access around the part and any carts, stands, lifts, conveyors or automated equipment. Do not size from the product envelope alone.

External dimensions

External dimensions can be significantly larger than the nominal working area. Exhaust plenums, intake plenums, door hardware, light fixtures, control panels, AMUs and service clearances all consume space.

Measure the building - not just the floor

- Clear ceiling height and roof structure
- Columns, beams, mezzanines and cranes
- Overhead doors and traffic aisles
- Sprinkler piping and building HVAC
- Electrical panels and required working clearances
- Gas piping and compressed-air routes
- Possible exhaust-stack and roof-penetration locations
- Outdoor space for AMUs, chillers or dust collectors
- Floor thickness and pit feasibility

BUYER TIP A scaled facility layout early in the project can save weeks of redesign. For larger systems, include the equipment, service zones, duct routes, utilities and material flow on the same drawing.



4. Airflow, CFM & Filtration

Airflow is one of the most important design variables in finishing equipment. The required airflow depends on booth configuration, opening size, process, coating, applicable codes and the manufacturer's engineered design. CFM should not be selected by a simple 'bigger is better' rule.

Why airflow matters

- Carries overspray away from the operator and product
- Maintains the intended airflow direction through the booth
- Supports containment at booth openings
- Influences finish cleanliness and transfer environment
- Determines exhaust-fan, duct and replacement-air requirements
- Directly affects heating, cooling and operating cost

Filtration

A typical liquid finishing system may use intake filtration to clean incoming air and exhaust filtration to capture overspray before discharge. Higher-efficiency or multi-stage filtration may be required for certain applications. Filter loading increases resistance, so the system should include a practical method to identify dirty filters and maintain design airflow.

PRO TIP Ask how the system will tell operators when filters need service. Differential-pressure indication or staged dirty-filter alarms are far more useful than relying on a calendar alone.



5. Negative vs. Positive Pressure

Negative-pressure systems

When an exhaust fan removes more air from a booth or building than is mechanically replaced, the space operates under negative pressure. Replacement air then enters through doors, cracks, louvers and other openings. This can pull dust into the finishing area, make exterior doors harder to open and increase the load on the building HVAC system.

Positive or balanced booth systems

A dedicated air makeup unit can supply filtered replacement air directly to the booth. Properly designed systems can maintain the desired booth balance and reduce the amount of conditioned building air being exhausted.

BUYER TIP The goal is controlled air balance - not simply maximum positive pressure. Supply and exhaust must be commissioned together for the intended operating mode.



6. Air Makeup Units & Climate Control

Air Makeup Units (AMUs) replace exhausted air and can provide filtration, heating, cooling, humidity control and pressure management. PaintBooth.com supplies systems ranging from basic replacement-air equipment to highly specialized temperature- and humidity-controlled systems.

Common AMU applications

- Pressurized paint-booth replacement air
- Heated spray and cure modes
- Building 'dump air' replacement using discharge heads
- Variable-air-volume / demand-air systems that respond to changing exhaust loads
- Direct-fired, indirect-fired, electric or hot-water heating
- DX, chilled-water or evaporative cooling
- Temperature and relative-humidity controlled finishing environments
- Retrofit replacement of existing AMUs

Temperature & humidity control

High-specification coatings may require the part and spray environment to remain within a defined temperature and relative-humidity window. Aerospace, defense and other demanding applications can require cooling, dehumidification, reheat and coordinated controls in addition to heating.

Controls

Modern systems can incorporate VFDs, PLCs, touchscreen HMI interfaces, pressure control, temperature control, alarms and communication with building or process systems. PaintBooth.com has standardized many current systems around touchscreen HMI control for clearer operation and troubleshooting.

QUESTIONS TO ASK What CFM is required? What outdoor design conditions must the unit handle? What discharge temperature/RH is required? Is the unit indoor or outdoor? Is recirculation allowed? What utilities are available? How will supply and exhaust be interlocked?



7. Powder Coating Systems

Powder coating requires a different approach from liquid finishing. Booth selection depends on production volume, color-change expectations, reclaim strategy, part handling and the amount of powder that must be contained and collected.

Common powder-booth configurations

- Cartridge batch booths for small- to mid-size batch operations
- Pass-through booths for parts moving through the coating zone
- Spray-to-waste systems where reclaim is not the priority
- Reclaim systems for operations where recovered powder can be economically reused
- Lab or development booths for smaller applications

Plan the entire powder process

The booth is only one component. A complete powder operation may also require pretreatment or blasting, dry-off, clean compressed air, powder delivery equipment, a cure oven, conveyor or part transport, controls and adequate cooling/unload space.

COMMON MISTAKE Buying a powder booth before defining color-change frequency and reclaim expectations. Those two decisions can significantly affect collector design, housekeeping, labor and operating cost.



8. Dry-Off, Cure & Process Ovens

Ovens must be designed around the process, not simply around a target air temperature. Part mass, coating chemistry, cure schedule, load pattern, door openings, conveyor penetrations and production rate all influence oven size and heat input.

Common oven applications

- Powder cure ovens
- Liquid-coating cure or bake cycles
- Dry-off ovens after washing
- Batch ovens
- Conveyorized process ovens
- Gas-fired or electric systems
- Custom ovens with roll-up, bi-fold, sliding or conveyor openings

Time at temperature matters

Many coating specifications are based on the part reaching and remaining at a required temperature, not merely the oven air reaching its setpoint. Heavy parts may require significant time to come to temperature. Confirm the coating manufacturer's cure requirements and expected load before finalizing the oven.

BUYER TIP For process ovens, provide the supplier with part material, maximum part weight, parts per load or line rate, starting temperature, required part temperature and required time at temperature.



9. Blast Booths & Surface Preparation

A high-quality finish starts with a properly prepared surface. Blast booths provide a controlled environment for abrasive cleaning and profiling before liquid paint or powder coating.

Major blast-system decisions

- Booth size and operator access
- Abrasive type and expected consumption
- Dust-collector sizing and location
- Recovery method: sweep-in, shovel-in, auger, H-pit or full-floor recovery
- Whether abrasive will be reclaimed and reused
- Compressed-air demand
- Material handling and door configuration
- Wear protection and maintenance access

PaintBooth.com offers customizable blast booths, dust collectors and recovery systems. Reclaim systems can substantially reduce abrasive consumption when the media and process are suitable for reuse.

BUYER TIP Do not size the compressor from the blast booth dimensions. Size the compressed-air system from the actual nozzle count, nozzle size, operating pressure, duty cycle and simultaneous plant demand.



10. Paint Mixing, Storage & Hazardous Material Enclosures

Paint mixing and storage areas require careful coordination of ventilation, electrical equipment, fire protection, storage quantities and local code requirements. Purpose-built rooms can provide a controlled location for mixing and storing coatings and related materials.

Items to define

- Will the room be used for mixing, storage, or both?
- What materials and maximum quantities will be present?
- Is a fire-rated enclosure required?
- What ventilation and exhaust route will be used?
- Where will shelving, mixing benches and equipment be located?
- What electrical classification applies?
- How will spill control and housekeeping be handled?

CODE CONSIDERATION Do not assume a 'paint room' automatically satisfies every requirement for hazardous-material storage. The permitted use, quantities and local AHJ requirements must be reviewed for the actual project.



11. Compressed Air

Finishing quality depends on more than airflow through the booth. Clean, dry and correctly sized compressed air is critical for spray equipment, powder application, blasting and many automated finishing processes.

A complete compressed-air review should include

- Required SCFM at each point of use
- Operating pressure and pressure drop
- Simultaneous demand and future expansion
- Compressor type and duty cycle
- Receiver/storage capacity
- Drying and moisture removal
- Oil and particulate filtration
- Distribution-piping size and layout

PaintBooth.com offers compressed-air solutions including rotary-vane compressors, aluminum air piping and air-drying systems, with layout and sizing support for finishing applications.



12. Complete Finishing Systems & Production Flow

For many industrial projects, the correct purchase is not a single booth - it is an integrated finishing system. PaintBooth.com designs and supplies systems from load to unload, including equipment layout and integration.

A typical system may include

1. Load / part preparation
2. Blast booth or washer
3. Dry-off oven
4. Prime booth or powder booth
5. Flash-off area where applicable
6. Topcoat booth or additional coating stage
7. Cure oven
8. Cool-down / unload
9. Conveyor, monorail, carts or other material handling
10. AMUs, compressed air, controls and support equipment

PRODUCTION TIP Find the bottleneck before buying equipment. A faster booth does not increase output if the oven, washer, conveyor or load/unload operation cannot keep up.



13. Installation: What the Equipment Price Does Not Include

One of the biggest budgeting mistakes is comparing the equipment purchase price to the total installed project cost. Installation can involve several trades and building modifications that are separate from the booth itself.

Potential project costs

- Freight and delivery
- Rigging, unloading and equipment storage
- Mechanical assembly
- Exhaust ductwork and stacks
- Roof curbs, penetrations, flashing and roofing
- Concrete, pits, housekeeping pads and structural work
- Electrical power and field wiring
- Gas piping and regulators
- Compressed-air piping
- Fire suppression
- Building fire-alarm tie-ins
- Permits, plan review and inspections
- PE-stamped drawings where required
- Controls integration
- Startup, balancing and commissioning
- Travel, lifts, cranes and special site access

PaintBooth.com can support equipment-only projects or provide broader installation coordination, including mechanical installation and, when included in the project scope, coordination of concrete, roofing, electrical, fire suppression and permitting.

COMMON MISTAKE Assuming 'turnkey' means the same thing from every vendor. Require a written scope matrix showing exactly who owns each trade and deliverable.



14. Permitting, Codes & AHJ Coordination

Finishing systems are subject to multiple codes and local requirements. NFPA 33 is commonly relevant to spray application using flammable or combustible materials, while NFPA 86 is commonly relevant to ovens and furnaces. Electrical, mechanical, fuel-gas, fire, building and environmental requirements may also apply.

The AHJ matters

The Authority Having Jurisdiction - often the fire marshal, building department, mechanical reviewer or other local authority - has the final say on permit and inspection requirements for the project. Requirements can differ between jurisdictions and facilities.

Coordinate early

- Equipment listing requirements
- Permit drawing requirements
- Professional-engineer sealing requirements
- Fire-suppression type and design responsibility
- Building fire-alarm interface
- Electrical hazardous-location requirements
- Exhaust discharge and stack requirements
- Gas train and combustion-air requirements
- Environmental or air-permit requirements
- Required clearances, egress and access

CODE CONSIDERATION A supplier can help identify common requirements, but project approval belongs to the AHJ and the licensed professionals responsible for the applicable building systems.



15. Utilities & Building Coordination

Before equipment is released for production, verify that the facility can support it.

Utility / Building Item	Information Needed	Why It Matters
Electrical	Voltage, phase, frequency, available amperage, panel location	Fans, heaters, ovens, compressors and controls may require substantial power.
Natural Gas / LP	Available pressure, meter/regulator capacity, pipe route	Heating equipment must receive required pressure and flow at full fire.
Compressed Air	Pressure, SCFM, dew point, piping size	Critical for spray equipment, powder systems and blasting.
Structure	Roof height, loading, columns, slab and pit conditions	Equipment, duct, AMUs and collectors must physically fit and be supported.
Roof / Exterior	Roof type, height, nearby structures, equipment locations	Affects stacks, curbs, weatherproofing, crane access and service.
Drain / Water	Flow, temperature, chemistry and drainage where applicable	Important for washers and pretreatment systems.



16. Controls, Automation & System Integration

Controls should make the system easier to operate, diagnose and maintain. Modern finishing systems may use PLCs, touchscreen HMIs, VFDs, pressure sensors, temperature controls, filter alarms and interlocks between multiple pieces of equipment.

Useful control features

- Touchscreen HMI with clear operating modes
- Spray / cure / cool-down sequences where applicable
- VFD control for fan balancing or variable airflow
- Dirty-filter indication and alarm
- Airflow-proving switches
- High-temperature limits and burner safeties
- Door and process interlocks
- Alarm history and troubleshooting screens
- Remote status or BMS/DDC communication where required
- Coordinated emergency-stop and fire-suppression interfaces

BUYER TIP Ask for a controls narrative before fabrication on complex projects. It is much easier to agree on operating modes and interlocks on paper than after startup.



17. Equipment Price vs. Total Project Cost

The lowest booth price is not always the lowest project cost. A quote can appear inexpensive because major components or field work have been excluded.

Evaluate four cost categories

11. Equipment acquisition - booth, oven, AMU, collector, controls and accessories.
12. Project installation - freight, assembly, trades, permits, engineering and startup.
13. Operating cost - gas, electricity, compressed air, filters, powder/media loss and labor.
14. Lifecycle cost - maintenance access, replacement parts, downtime, reliability and future expansion.

A COMMON MISTAKE is Comparing Multiple proposals by the number at the bottom without normalizing scope. One supplier may include ductwork, controls and startup while another excludes them. There may also be differences in booth structural components, Light Fixtures and quantities.



18. How to Compare Quotes

Create a side-by-side scope comparison. At minimum, compare the following:

- Inside and outside equipment dimensions
- Airflow / CFM and fan configuration
- Filter type and quantity
- Lighting quantity, type and access
- Door configuration and openings
- AMU type, heat input, temperature rise and control method
- Cooling / humidity-control capacity where applicable
- Control panel listing and HMI/PLC/VFD features
- Exhaust ductwork and stack scope
- Freight and unloading responsibility
- Installation scope and exclusions
- Permit drawings and engineering
- Fire suppression and alarm interface
- Startup, balancing and training
- Warranty and replacement-parts support
- Estimated lead time and what starts the lead-time clock

BUYER TIP Ask every bidder to identify exclusions in writing. The exclusions page is often more important than the equipment description.



19. Questions to Ask Any Finishing-Equipment Supplier

15. How did you determine the recommended booth or system size?
16. What airflow and pressure relationship is the system designed to maintain?
17. What codes and equipment listings are being used as the design basis?
18. What is included in the equipment price, and what is specifically excluded?
19. Who is responsible for ductwork, roofing, electrical, gas, compressed air, concrete and fire suppression?
20. Will permit drawings be provided? Are PE-stamped drawings available if required?
21. How will the equipment fit into my building and production flow?
22. What replacement air is required?
23. How is the system balanced and commissioned?
24. What operating modes are included in the controls?
25. What maintenance access is required around the equipment?
26. What filters, belts and other consumables will I need?
27. Who supports the equipment after installation?
28. Can the system be expanded or modified if production grows?
29. What information could change the quoted price before release to production?



20. Project Planning Checklist

- ☐ Largest part dimensions and weight confirmed
- ☐ Production rate / shift schedule confirmed
- ☐ Coating and process data sheets collected
- ☐ Required finish quality defined
- ☐ Material-handling method defined
- ☐ Building plan / dimensions available
- ☐ Ceiling and roof heights confirmed
- ☐ Column and crane locations confirmed
- ☐ Exhaust route identified
- ☐ AMU / outdoor equipment location identified
- ☐ Electrical service confirmed
- ☐ Gas capacity and pressure confirmed
- ☐ Compressed-air capacity confirmed
- ☐ Fire suppression responsibility assigned
- ☐ Fire-alarm tie-in responsibility assigned
- ☐ Permit / AHJ requirements reviewed
- ☐ Concrete / pit requirements coordinated
- ☐ Roofing responsibility assigned
- ☐ Freight / unloading / rigging responsibility assigned
- ☐ Installation scope matrix completed
- ☐ Startup / balancing / training included
- ☐ Future expansion considered



21. Information to Gather Before Requesting a Quote

The more complete the information, the more accurate the proposal and project schedule can be.

Application

- What are you coating or processing?
- Maximum part size and weight
- Parts per hour / shift / day
- Liquid paint or powder type and manufacturer
- Number of colors and expected color changes
- Surface-preparation method
- Required cure / dry schedule
- Required temperature and humidity range, if any

Facility

- Project address and installation environment
- Building dimensions or CAD/PDF plan
- Clear height and roof height
- Photos of proposed equipment area
- Electrical voltage / phase / frequency
- Natural-gas or LP availability and pressure
- Compressed-air capacity
- Indoor and outdoor equipment-space restrictions

Project

- Desired equipment delivery date
- Desired production/startup date
- Equipment-only or installed project
- Known permit or engineering requirements
- Preferred controls / plant integration
- Any customer specifications, bid documents or approved manufacturer requirements



22. Why PaintBooth.com

PaintBooth.com supports projects ranging from standard equipment to highly customized finishing systems. Current capabilities include liquid paint booths, powder coating booths and ovens, air makeup systems, temperature- and humidity-controlled systems, blast booths and recovery equipment, mixing and storage rooms, compressed-air solutions, washers, conveyors and complete finishing-system integration.

For larger or more complex projects, the team can support system layout, CAD coordination, engineering services, project management, mechanical and electrical installation coordination, commissioning and other project needs based on the agreed scope.

A better buying process

30. Define the process and production goal.
31. Collect facility and utility information.
32. Develop the equipment and system concept.
33. Review scope, layout, code considerations and installation responsibilities.
34. Finalize engineering and approvals.
35. Manufacture and coordinate site readiness.
36. Install, start up, balance and train.
37. Maintain the system and plan for future growth.

READY TO START? Send PaintBooth.com your part information, production goals, facility layout and project requirements. The earlier the team is involved, the easier it is to coordinate the finishing system with the rest of the facility.

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