Specification for Wheel Refinishing System

The following specification shall meet the minimum requirements described below, unless otherwise noted, for a Wheel Refinishing System to be delivered and installed at Pennsylvania State Correctional Institution-Forest. The system shall support compliance with recommended practices set forth by the Technology & Maintenance Council for the American Trucking Association (TMC/ATA). The total system shall fit into an area no larger than 29'2" x 35'7" (1038 sqft) with an additional area measuring 20'8" x 16' (330 sqft).

Conveyor System

- Manual overhead monorail handling system not to exceed 80 inches in overall height
- Movement shall allow for single coat and double coat process
- Load rating maximum 250 lbs/5 ft
- Shall the ability to handle ten (10) wheels per hour
- Four (4) position trolley and hook assembly with a minimum rating of 150 lbs per load
- Shall include a pneumatic inverted cylinder lift hoist to position wheel in monorail at start of process
- Automatic pneumatic indexer from the entrance to the exit of the curing oven
- Electric wheel handling hoist at end of monorail

Vertical Wheel Lift

- Pneumatically operated
- Single wheel lift
- Shall handle wheel rim sizes from 16.5" to 24.5"
- Shall have the ability to handle ten (10) wheels per hour

Media Shot Blaster

- Dual centrifugal wheel configuration powered by two (2) electric motors with HP that shall support TMC/ATA media and coating requirements
- Shall include operator interface control panel with the minimum following functions
    1. Initial Cycle Set-up
    2. Automated Operation Cycle
    3. Emergency Stop
    4. Manual Override
- Maximum single wheel capacity with the ability to handle ten (10) wheels per hour
- Shall include prep/inspection table
- Shall handle paint prep media to support no more than a maximum thickness coating of 3.5 mil for the mounting area of the wheel (tire and fastener) at the final stage of the product (post oven cure)
- Shall interface with the Dust Collection System
- Shall output fine dust to the Dust Collector (per cloth/air ratio described under dust collector specs)
- Separated shot particles and debris shall be collected by a retaining vessel (to be provided)
- Shall be certified UL 508A short circuit current rating
- Electrical components shall conform to UL specifications

Dust Collector

- Shall be an electrical powered, cartridge style dust collection system, with automatic pulse cleaning, and a 2:1 (2 to 1) cloth to air ratio
- Shall interface with the media shot blaster via appropriate sealed galvanized steel duct work
- Dust fines shall be collected from filters into a 55-gallon collection vessel with a removable lid (to be provided)
- Filters shall have a minimum MERV 15 rating per ASHRAE 52.2.2007
- Shall include filter with the system along with a one-year supply of filters
- Electrical panel and components shall be UL compliant
- Shall include a sparkless exhaust fan system in compliance with AMCA, EISA
- Shall include a pressure differential gage

Powder Coating Spray Guns

- Shall be an electrical, handheld, manual unit with a box feed system
- Two (2) units shall be provided. One unit for powder top coating and one unit for powder primer.
- Shall have ability of providing a minimum 80% application efficiency
- Shall interface with the spray booth
- Shall be FM certified for Class II materials

Powder Coating Spray Booth

- Shall be designed so that it accommodates a wheel for coating within the face of the booth. **The booth shall not allow for human entry.**
- Shall be self-contained via an appropriate canopy and tray/raised flooring to prevent over spraying. Spraying shall be contained within the confines of the booth.
- Canopy shall be a fire-retardant type 1 PVC material, or equal
- Tray/raised flooring shall be a minimum 18 gauge 304 Stainless Steel
- Shall have two (2) cannister primary filters rated at 1000 cfm per filter
- Shall have two (2) HEPA final/secondary filters rated at 1700 cfm per filter
- Booth shall be electric powered with a minimum 90 psi air input
- Shall interface with the spray guns
- Shall conform to the following certifications to code
    1. NFPA 33 Standards for spray applications using flammable or combustible materials
    2. UL 508A labeled on control panel
    3. SCCR short circuit current rating of 5kA
    4. FM approved

Curing Oven

- Shall be an electric powered, infrared, flow-through system with the ability to cure ten (10) wheels per hour
- Heaters shall be infrared emitters capable of providing energy sufficient to cure coating on commercial truck wheels per curing specifications of powder
- Shall be a minimum 350,000 BTUs
- Exhaust air flow and thermal over temperature shall be properly sized to process powder coated wheels
- Exhaust system shall include properly sized blower motor to exterior vent
- Shall conform to the following certifications to code
    1. UL labeled cabinet and controls
    2. UL 508A SCCR short circuit current rating
    3. Oven and exhaust NFPA 70

Inspection Equipment

- One (1) hand-held non-contact digital infrared thermometer
- One (1) digital mil thickness gage
- One (1) TMC guide for “out-of-service conditions for wheels and rims”
- Three (3) each pre-blast, post-blast, and post-cure out of service posters

Training

- Shall be on-site, at completion of installation, to include eight (8) hrs of hands-on instruction
- Shall be videotaped by the awarded supplier and supplied to Correctional Industries

Manuals

- Shall include operation and maintenance manuals for all equipment

Warranty

- Manufacturer’s and Supplier’s standard warranty shall apply

Power Requirements

- Electrical requirements and availability for equipment is 480volt, 3 phase, and 208volt, 3 phase

Installation/Delivery

- SCI Forest shall provide
  1. The electrical subpanel
  2. All electrical connections to equipment disconnects
  3. Necessary earth grounding requirements
  4. Necessary air drops to equipment
  5. Ventilation ductwork between the dust collector and the shot blaster
  6. Exhaust ductwork from the curing oven
  7. Necessary skilled tradesmen for appropriate connections and shall work jointly with awarded supplier's installation personnel
  8. Personnel and moving equipment required to unload and set finishing system components in place

Safety/Certifications

- In addition to certifications listed in above equipment requirements, all applicable safety codes shall apply, to include, but not limited to OSHA, NFPA, FM, and UL