

DESIGN STANDARDS

1. **GENERAL:** This section includes cleaning and touch-up painting of structural steel connections and miscellaneous metals, painting, and finishing of interior and exterior exposed items and surfaces throughout the Project, except as otherwise indicated. Surface preparation, priming, and coats of paint specified are in addition to shop-priming and surface treatment specified under other Sections of Work.
 - 1.1 Work also includes field painting of all bare and covered pipes and ducts exposed to view (including color coding), and of hangers, exposed steel and iron work, and primed metal surfaces of equipment installed under mechanical and electrical work, except as otherwise specified.
 - 1.2 "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate, or finish coats.
 - 1.2.1 "Substrate" as used herein means the surface to which paint is to be applied. In the case of existing previously painted surfaces, substrate means the surface to which the existing paint was applied.
2. Except where natural finish of material is specifically noted as a surface not to be painted, paint exposed surfaces whether or not colors are designated in "schedules." Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. If color or finish is not designated, Architect will select these from standard and custom colors or finishes available.
3. Following categories of work are not included as part of field applied painting finish work.
 - 3.1 **Pre-Finished Items:** Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items as (but not limited to) metal toilet enclosures, acoustic materials, architectural woodwork and casework, elevator equipment (excluding entrances), finished mechanical and electrical equipment including light fixtures, switchgear and distribution cabinets, and similar elements of the Work.
 - 3.2 **Concealed Surfaces:** Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and inaccessible areas such as foundation spaces, furred areas, pipe spaces, duct shafts, and elevator shafts.
 - 3.3 **Finished Metal Surfaces:** Unless otherwise indicated, metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze, and similar finished materials will not require finish painting.
 - 3.4 **Operating Parts:** Do not paint moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts, and sprinkler heads, unless otherwise specified.
 - 3.5 Do not paint over code-required labels, such as Underwriters Laboratories and Factory Mutual, or equipment identification, performance rating, name, or nomenclature plates.
4. Existing painted surfaces shall be tested to determine if lead is present. If present, require its removal using proper method.

5. General: Standard coating terms defined in ASTM D 16 apply to this Section.
 - 5.1 Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
 - 5.2 Eggshell refers to low-sheen finish with a gloss range between 5 and 20 when measured at a 60-degree meter.
 - 5.3 Satin refers to low-sheen finish with a gloss range between 15 and 35 when measured at a 60-degree meter.
 - 5.4 Semi-gloss refers to medium-sheen finish with a gloss range between 30 and 65 when measured at a 60-degree meter.
 - 5.5 Full gloss refers to high-sheen finish with a gloss range more than 65 when measured at a 60-degree meter.
6. Delivery and Storage: Deliver materials to Project Site in original, new, and unopened containers bearing manufacturer's name, label, and manufacturer's product information.
7. Acceptable Finishes:
 - 7.1 The only acceptable finishes for new applications are semi-gloss and eggshell, depending on the type of surface, unless otherwise approved by the University's Project Manager.
8. Acceptable Colors: All color selections shall be approved by the University's Project Manager. Avoid the use of dark or bright colors on exterior surfaces and other surfaces exposed to ultraviolet light.
9. All paint color selections shall be verified through a two step review process. The contractor shall first submit small scale samples of each paint selection. Once a selection is approved and prior to the scheduled date for paint installation, the contractor shall complete field samples as described below for verification and approval.
 - 9.1 For wall surfaces, provide at least a 100 sf sample section of wall in an area with final light fixtures installed.
 - 9.2 For small area and other painted items, provide a field sample as designated by the Architect.

PRODUCT STANDARDS

1. All standard paint or coating products shall be selected from Pratt and Lambert – Prohide Gold line of products. Rice University maintenance works through Murphy Brothers Bissonnet Paint, 2412 Bissonnet, Houston, Texas 77005, who maintains a record of the University's standard colors (713-529-3485).
2. Contractor shall be required to submit to the Architect a bill of materials for all paint purchased for their work on each project.
3. Color Pigments: Pure, non-fading applicable types to suit substrates and service indicated.

4. EXTERIOR PAINT SYSTEMS:

- 4.1 The term "exterior" shall refer to non-conditioned spaces.
- 4.2 Select high durability paint systems such as alkyd or polyurethane for exterior paint applications.
- 4.3 All exterior paint systems shall be a minimum of one (1) coat primer and two (2) finish coats.

5. INTERIOR PAINT SYSTEMS:

- 5.1 The term "interior" shall refer to conditioned spaces.
- 5.2 Select durable and cleanable paint systems for all interior paint applications including Latex, Alkyd, and others meeting the other requirements of these standards.
- 5.3 Unless otherwise approved by the University's Project Manager, use only paint systems classified as "Low VOC" or "No VOC."
- 5.4 All interior paint systems shall be a minimum of one (1) coat primer and two (2) finish coats.

PERFORMANCE STANDARDS

1. SURFACE PREPARATION:

- 1.1 Perform preparation and cleaning procedures in compliance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.
 - 1.1.1 Provide barrier coats over incompatible primers or remove and re-prime as required. Notify Architect in writing of any anticipated problems in using the specified coating systems with substrates primed by others.
 - 1.1.2 Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.
 - 1.1.3 Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly painted surfaces.
 - 1.1.4 Seal water stains, ballpoint ink, felt tip marker, pencil marks, and other surface contamination which may bleed through paint, with white shellac or other similar sealer.
 - 1.1.5 Mask surfaces not required to be painted.
- 1.2 Prepare cementitious surfaces of concrete, concrete block, and cement plaster to be painted by removing efflorescence, chalk, dust, dirt, grease, oils, and by roughening as required to remove glaze.
 - 1.2.1 Clean concrete floor surfaces scheduled to be painted with a commercial solution of muriatic acid, or other etching cleaner. Flush floor with clean water to neutralize acid, and allow drying before painting.

- 1.2.2 Determine alkalinity and moisture content of surfaces to be painted by performing appropriate tests. If surfaces are found to be sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application of paint. Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.
 - 1.3 Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer, before application of priming coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler. Sandpaper smooth when dried.
 - 1.3.1 Prime, stain, or seal wood required to be job-painted immediately upon delivery to Job: Prime edges, ends, faces, undersides, and backsides of such wood, including cabinets, counters, cases, paneling.
 - 1.3.2 When transparent finish is required, use spar varnish for back priming.
 - 1.3.3 Back prime paneling on interior partitions only where masonry, plaster, or other wet wall construction occurs on backside.
 - 1.3.4 Seal tops, bottoms, and cut-outs of unprimed wood doors with a heavy coat of varnish or equivalent sealer immediately upon delivery to Job.
 - 1.4 Clean ferrous surfaces, which are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale, and other foreign substances by solvent or mechanical cleaning.
 - 1.4.1 Touch up shop applied prime coats wherever damaged or bare, where required by other Sections of these Specifications. Clean and touch up with same type of shop primer.
 - 1.5 Clean galvanized surfaces free of oil and surface contaminant with non-petroleum based solvent.
2. APPLICATION:
- 2.1 Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
 - 2.1.1 Provide finish coats which are compatible with prime paints used.
 - 2.1.2 Apply additional coats when undercoats, stains, or other conditions show through final coat of paint, until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
 - 2.1.3 Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only before final installation of equipment.
 - 2.1.4 Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.
 - 2.1.5 Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
 - 2.1.6 Finish exterior doors on tops, bottoms, and side edges same as exterior faces, unless otherwise indicated.
 - 2.1.7 Sand lightly between each succeeding enamel or varnish coat.
 - 2.1.8 Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted,

unless otherwise indicated.

- 2.2 Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
 - 2.2.1 Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
- 2.3 Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.
- 2.4 Completely cover substrate to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be accepted.

End of Division 9 – Finishes - Painting