

## **PCA P14**

# **Levels of Surface Preparation for Repainting and Maintenance Projects Receiving Architectural Coatings**

## **1. Scope**

- 1.1 The purpose of this Standard is to identify and describe various levels of preparation for repainting or refinishing previously painted/finished surfaces to achieve a properly painted surface, unless specified otherwise in the contract documents.
- 1.2 This Standard identifies common pre-existing conditions in surfaces and surrounding areas and the impact on the final quality of appearance and acceptability of a repaint or maintenance project.
- 1.3 This Standard clarifies the definition of a properly painted surface when referring to repainting and maintenance projects.

## **2. Significance and Use**

- 2.1 The level of surface preparation performed can determine the appearance of a finish painted surface. Therefore, the level of surface preparation selected should be done considering both appearance and cost.
- 2.2 This Standard identifies and defines four levels of surface preparation.
- 2.3 This Standard identifies criteria when restoration and resurfacing are performed.
- 2.4 This Standard identifies typical pre-existing conditions in coatings and substrates and describes how they can impact the adhesion, durability, appearance and cost of the finish painted surface.
- 2.5 This Standard identifies common pre-existing conditions in surrounding work areas which impact final appearance and acceptability of the project.

## **3. Definitions and Trade Terms**

- 3.1 Definitions and Trade Terms see P9.

## **4. Reference Documents and Standards**

- 4.1 Reference Documents and Standards see P9.

## 5. Standard Specification

5.1 The MPI Repaint Manual describes the condition of various paintable surfaces and substrates and rates them in order of degree of surface degradation (DSD) as follows:

- DSD-0 Sound Surface
- DSD-1 Slightly Deteriorated Surface
- DSD-2 Moderately Deteriorated Surface
- DSD-3 Severely Deteriorated Surface
- DSD-4 Substrate Damage

The MPI Repaint Manual further describes various repaint surface preparation techniques labeled RSP 1 through RSP 13 that may be appropriate depending upon the condition of the surfaces to be painted.

5.2 This Standard recognizes that project specifications detailing the type and extent of surface preparation to be performed shall take precedence over other considerations.

5.3 This Standard recommends that specifications be modeled after the MPI Maintenance Repainting Manual.

5.4 Levels of Surface Preparation

5.4.1 Level 1: Basic: This surface preparation level requires basic cleanliness of surfaces to ensure the adhesion of new finishes to the surfaces to which they are applied with less concern for the adhesion of existing paint coats and quality of appearance of the finished surfaces. Preparation shall include the removal of surface dust, dirt, obvious loose paint and other surface contaminants by washing, light power washing or pressure washing (MPI RSP-5), hand cleaning (MPI RSP Painting 1) including the use of a duster brush or broom, and mildew treatment (MPI RSP-9). This level of preparation should ensure that subsequently applied coats of paint will adhere to existing paint coats. This level of surface preparation does not warrant that previously applied paint coats are well adhered to each other or are well adhered to the substrate. Under this level of preparation no alteration of the existing surface profile shall be attained. It is recommended that tests should be performed on exterior surfaces in accordance with ASTM D 4214 Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films. This level of surface preparation is normally recommended only on surfaces rated DSD-0 or DSD-1.

- 5.4.2** Level 2: Standard: This surface preparation level requires basic cleanliness of surface to ensure the adhesion of new finishes to the surfaces to which they are applied as well as the examination of existing coatings to assess their adhesion. With this level of surface preparation, good adhesion and longevity of finish is of primary concern and appearance of secondary concern. This level of surface preparation includes that described in Level 1 plus other procedures necessary to create a sound surface for repainting including solvent cleaning (MPI-RSP-2), basic patching/filling, caulking, light sanding/abrading, and “feather edge” sanding. Under this level of surface preparation, it is recommended that adhesion by tape tests be performed in general accordance with ASTM Standard D3359 or its equivalent, Permacel P99 tape, to assess the adhesion of previously applied paints. It is recommended that at least three tests be performed at randomly selected locations where it is apparent that different paint systems have been previously applied. When poor results are obtained (ratings of 0 or 1), at isolated locations, then more aggressive surface preparation methods including power tool cleaning (MPI RSP-4), high pressure washing and hydro blasting (MPI RSP-5), chemical stripping (MPI RSP-6) and abrasive blasting (MPI RSP-7) may be recommended at these isolated locations. If it is determined that the poor adhesion of existing coatings is not isolated, but is widespread, then restoration/resurfacing is required. It should be recognized that many factors may affect the adhesion of the entire coating system that is applied including the properties of the coatings selected, their permeability, etc. Therefore, while the performance of adhesion tests provides some indication of the adhesion of existing coatings, they may not predict the overall adhesion of the total coating system after new coats have been applied. Under this level of preparation the surface profile is not altered unless due to the removal of unsound previously applied paint, and that only obvious existing defects causing abrupt surface profile differences exceeding 1/8 inch or 125 mils will be corrected. This level of surface preparation is normally recommended only on surfaces rated DSD-0, DSD-1 or DSD-2.

- 5.4.3** Level 3: Superior: This surface preparation level incorporates the requirements of Levels 1 and 2 with added emphasis on the quality of appearance of finish painted surfaces. This level of surface preparation includes filling, patching, taping cracks in drywall and properly dealing with nail pops, approximate matches to existing textures, and thorough sanding to minimize existing runs, sags, brush/roller marks, and the surface profile of cracked and peeling areas, and other existing surface defects. Under this level of preparation, the general surface profile is retained but defects causing abrupt surface profile differences exceeding 1/16 inch or 62.5 mils will be corrected. This level of surface preparation is normally recommended only on surfaces rated DSD-0, DSD-1 or DSD-2.
- 5.4.4** Level 4: Supreme: This surface preparation level incorporates the requirements of Levels 1, 2 and 3 with even more emphasis on the quality of appearance of finish painted surfaces. Under this level of surface preparation, all necessary preparation techniques will be employed to improve the quality of appearance except restoration/resurfacing. Thorough filling and sanding will be accomplished to eliminate defects causing abrupt surface profile differences exceeding 1/32 inch or 31 mils. This level of surface preparation is normally recommended only on surfaces rated DSD-0, DSD-1 or DSD-2.
- 5.5** Restoration/Resurfacing: This degree of surface preparation is required when existing conditions indicate that the surfaces are severely deteriorated (DSD-3) or there is substrate damage (DSD-4). Existing coatings may be completely, or nearly completely removed (for example stripping to repaint rather than stripping to stain). Abrasion, chemical removers or applied heat may be employed in order to remove a failed coating and/or to expose a failing substrate. Substrates may have to be completely replaced, repaired or resurfaced.
- 5.6** Inspection and Acceptance: Unless otherwise clearly defined in the contract documents, the criteria for acceptance of finish painted surfaces shall be that of a properly painted surface as defined by PCA Standard P1. However, it should be understood that when applied to this Standard for repaint and maintenance painting, the defects listed above are not allowed in the newly applied coats applied by the Painting Contractor, but depending on the level of preparation selected, may still be visible from previously applied existing coatings. When Level 4 is selected as the level of surface preparation required, then the criteria for inspection and acceptance may include smoothness to “touch and feel” on interior handrails, doors and easily accessible trim.

- 5.7 The Painting Contractor shall be responsible to provide adequate protection of existing surfaces from misplaced paint being applied, but unless specifically indicated in the project specifications or contract, is not responsible for pre-existing conditions.
- 5.8 Contract documents may require different levels of preparation on different surfaces, for example, Level 4 on doors and trim and Level 2 on walls.
- 5.9 Contract documents not specifically stating the level of preparation to be attained will be assumed to imply Level 2.

## 6. Comments

- 6.1 This Standard establishes and describes levels of surface preparation on repainting and maintenance projects.
- 6.2 This Standard defines a protocol for the inspection and acceptance of finish painted surfaces on repaint and maintenance projects.
- 6.3 This Standard defines pre-existing conditions that are beyond the responsibility of the Painting Contractor.
- 6.4 Existing coatings and substrates may contain materials such as lead and other RCRA (Resource Conservation and Recovery Act) metals, mold, asbestos, and PCBs (Polychlorinated Biphenyls'). Though abatement of those materials may not be required, any and all EPA, OSHA, state, governmental, and local regulations regarding environmental, health and disposal requirements must be considered and followed.
- 6.5 This Standard clarifies areas of responsibility. Improved communication reduces misunderstandings.
- 6.6 This Standard is a nationally recognized consensus document for the painting and coating industry's work practices.

## 7. Disclaimer of Liability

- 7.1 PCA does not warrant or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any of the information contained herein.