

Understanding Paint Defects, Premature Failure, and Maintenance Repainting

Repainting after a coating failure is time intensive and expensive. There are a wide variety of factors that can lead to a coatings failure, before you start repainting, determine the cause of the failure to prevent further problems down the road.

Paint defects or failures fall into three main categories:

- **Visual or Cosmetic Defects:** These are primarily appearance-related issues, often stemming from improper application. While they might not compromise asset protection, they do impact aesthetics and may require earlier maintenance repainting.
- **Normal Wear and Tear:** Caused by common environmental factors like sunlight and weathering, these defects can lead to significant film failure if not addressed on a regular maintenance schedule. Addressing wear and tear promptly with maintenance repainting can save the asset from more expensive failures if left untreated.
- **Physical Failures:** These are coating film integrity failures that cease to protect the substrate and lead to substrate damage. These failures could be caused by damage by the environment, unplanned use that affects the physical or protective properties of the paint, or other external factors that require mandatory (and prompt!) maintenance repainting.

Once you know the cause of the defect or failure, follow these ten steps to provide a thorough framework for successful and longer-lasting maintenance repainting:

- Make a **cursory inspection** of the surface and decide on necessary repairs.
- Evaluate the condition of the surfaces using **defects & failures identifiers** .
- Assess the **degree of substrate degradation** (DSD) level.
- Determine the **interior or exterior system option** based on the identified defects. For example, it may require epoxy, alkyd, high-performance acrylic, or another system.
- Review the **surface preparation best practices** for the DSD level and type of defect or failure identified.
- Choose the **repainting system, grade, and products** best suited for the DSD level.
- Facilitate a **proper specification** , regardless of the size or type of repaint project.
- Ensure **quality standards** by referring to recognized guides, such as the Master Painter's Institute Manual.
- Conduct the project under strict **quality assurance** with an appropriate Quality Assurance Program.
- Perform **regular inspections and preventive maintenance** to ensure long-term protection.

Through preventative maintenance and regular inspection schedules, painting and repainting projects can achieve a longer lifespan!

To find out more about repainting best practices and any of the information found here, check out the [MPI Maintenance Repainting Manual](#).

Professional Tip

MPI standards identify five DSD levels to quantify how badly the substrate or coating has deteriorated. These range from DSD-0, which is essentially "sound" and there is no apparent damage to the surface, to DSD-4, which is an "unsound" surface. With DSD-4, the substrate will need repair or replacement before an appropriate coating can be applied.