Interior Plaster Failure and Preventive Measures

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Texston plaster is a popular decorative finish known for its durability, aesthetic appeal, and natural material qualities. However, both in interior and moisture-prone areas, several factors can lead to plaster failure. Understanding these causes and implementing appropriate preventive measures will help ensure a long-lasting, beautiful finish.

Note: Texston products are decorative coatings designed for use on properly prepared and stable surfaces. While offering excellent adhesion, color retention, scratch resistance, and moisture resistance, they are not waterproof systems or structural components.

Common Causes of Plaster Failure

Delamination

- **Moisture Content in Substrate:** Applying plaster over drywall or other substrates with moisture content above 12% can compromise adhesion.
- **Surface Contaminants:** Dust or debris on the wall surface can prevent proper bonding between primer and plaster. If peeling plaster shows primer adhered to its backside, dust was likely present during priming.
- **Moisture Intrusion (Interior & Wet Areas):** Water that penetrates from behind the surface—due to leaks, poor ventilation, or unsealed edges—can break bond layers and cause blistering or detachment.
- **Sealer Misuse or Misunderstanding:** Even sealed plaster remains vapor-permeable. Improper assumptions about water resistance may lead to finish deterioration in humid or wet environments.

Cracks and Crazing in Fresh Plaster

- **Rapid Drying:** Exposure to air conditioning vents, heat ducts, or drafts during application can dry the plaster too quickly and result in surface cracking or crazing.
- **Excessive Thickness:** Over-applying plaster in a single pass can cause bubbling and fissures.

Cracks in Dry Plaster

- **Thermal Changes:** Repeated heating and cooling cycles, especially near windows or exterior walls, can cause expansion and contraction, leading to cracking.

- **Structural Movement:** Building settlement or structural shifts can transfer stress to plaster surfaces.
- **Vibrations:** High vibrations from adjacent machinery or construction can trigger cracking in unsupported areas.
- **Improper Framing or Board Installation:**
  - Unsecured or misaligned wallboards.
  - Seams that are not staggered or fully filled.
  - Inadequate curing of drywall compound before plastering.
- **Premature Application:** Applying plaster before the structure carries 90% of its dead load can lead to failure.

Moisture Damage in Wet Interiors or Humid Zones

- **Poor Ventilation:** In bathrooms or steam rooms, lack of airflow prevents evaporation and encourages moisture buildup behind the finish.
- **Trapped Water:** Shower niches or ledges that retain pooled water can cause discoloration, staining, or decay of plaster.
- **Incorrect Maintenance:** Using high-pressure sprayers or harsh cleaners in wet zones can degrade surface integrity over time.

Preventive Measures

Surface Preparation

- Ensure drywall or substrate moisture is within **5–12%**.
- Apply **TexPrep primer** one day before or the same day as plastering to prevent dust accumulation.
- Remove all dust and debris before priming or coating.
- Perform a water absorption test in wet areas or where sealers may have been applied. If the surface does not darken with water, light sanding may be necessary.

Structural Considerations

- Confirm the structure has carried **90% of its dead load** prior to applying plaster.
- Wood sheathing should have a **¼" gap at edges and ends** to allow for expansion.
- Wood framing moisture content should be **below 19%**.
- **Metal framing** is preferred due to lower thermal movement.
- Add **horizontal bracing or blocking** between studs to prevent flexing and cracking.

Crack Reduction Systems

- For larger spans or critical areas, embed **4.5 oz., 6 oz., or 10 oz. alkali-resistant mesh** in the first coat of plaster or use **Ortex acrylic modified cement basecoat** as a crack reduction layer.

- Secure wallboards thoroughly, especially at edges and corners.
- Use **paper tape**, not mesh tape, for seams. If mesh is used, it should be embedded with hot mud.
- Install boards in a **staggered layout** with well-filled and dry joints.

Environmental & Moisture Control

- In wet areas, ensure **good ventilation** is maintained at all times.
- **Wipe down** surfaces prone to moisture accumulation (especially ledges, shelves, and shower corners).
- Avoid **bath-mats, towels, or cushions** leaning against plaster surfaces in humid rooms.
- Do not use **steam cleaners or high-pressure washers** on plastered walls.
- Reapply **sealers or wax coatings** periodically, as directed by Texston, to help reduce water absorption.
- Monitor and remove **hard water deposits** to prevent permanent etching.

Control Joints

- Install control joints at:
    - Wall spans exceeding **30 feet**
    - Ceiling spans exceeding **50 feet**
    - **Door jambs and corners** of rectangular layouts
- If control joints are not desired, implement all of the above precautions carefully to reduce crack risk.

By understanding these causes and applying the comprehensive set of preventive strategies outlined above, you can ensure a resilient and visually stunning plaster finish—whether in standard interiors, high-humidity zones, or transitional indoor/outdoor environments.