RESTORATION GUIDE

EXTERIOR WALLS

TREMCO

Construction Products Group

Restore Your Building with Confidence

With proper system review and remediation strategies, building owners, facility managers, and contractors can effectively restore a building's appearance and performance. The Restoration Guide, created by building envelope and technical specialists from the Tremco Construction Products Group (CPG) companies, offers expert advice on how to address the most common challenges that occur as structures age.

Executing the best practices found in this document will help ensure the maximum life of your project. Each section also includes links to relevant product web pages, application instructions, and other complementary resources. For additional details or project-specific questions, please reach out to a Tremco CPG representative.

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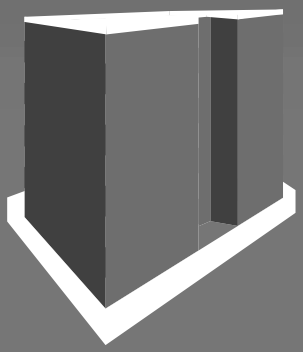


EXTERIOR WALLS

Stains, Microbacteria, and Efflorescence
Blistering
Hairline Cracks in Façade Walls
Finish Degradation
UV Fading
Impact Damage

STAINS, MICROBACTERIA, AND EFFLORESCENCE

DESCRIPTION

Over the life of a building, dirt will accumulate on the exterior building envelope. Lack of ongoing maintenance and cleaning can lead to stains, microbacteria growth, efflorescence, and other causes of unsightly facades.

Buildings in warm and humid climates can accumulate moisture and dirt on the surface, creating the perfect environment for growth of mold and mildew. This organic growth can appear on many surfaces, including stucco, wood siding, concrete, and EIFS, but can be easily addressed.

Efflorescence is a crystalline salt deposit that may develop on masonry, EIFS, and coatings applied over stucco, precast and other cementitious substrates. The chemical makeup of these deposits can also result in the fading of acrylic paints and coatings.

Common Causes:

- Damp and/or humid climates create the environment for mold and mildew growth.
- Elevations do not receive enough direct sunlight to evaporate surface moisture.
- The surface was exposed to moisture during the curing process preventing it from drying out properly.
- Application did not follow industry guidelines, manufacturer mixing instructions, and/or climate-specific conditions.

REPAIR METHODS AND STEPS:

Review the surface in question to determine the source of the issue and appropriate repair methods. For general cleaning, reference the DS498: DryvitCARE EIFS Repair Guide[3]. For microbacteria growth, proceed to **Method A**. And for light efflorescence, utilize **Method B**.

BLISTERING

DESCRIPTION

Blisters in a textured finish or wall coating typically appear as bulges proud of the finish surface. It is not unusual to see bubbles form during some environmental conditions and later disappear as a weather cycle develops.

Common Causes:

- Finish was applied over an improperly prepared or moisture-laden substrate.

REPAIR METHOD AND STEPS:

Identify the area(s) in need of repair and perform adhesion testing to verify the integrity of the substrate. Depending on how widespread the issue is, determine if a small patch repair is acceptable or if a larger portion of the textured finish or coating should be replaced.

1. Using a sharp blade, cut around the perimeter of the blister and remove all loose finish material from the affected area. For larger areas, you can also use a brush or scraper to remove loose material to the nearest architectural break point or expansion joint.
2. Examine the surface to ensure that it is dry, clean and free from any contaminants that may inhibit adhesion. For full substrate cleaning instructions, see DS498: DryvitCARE EIFS Repair guide[3].
3. Reapply the surface lamina, including base coat, if needed, and finish, according to the manufacturer's installation instructions.

HAIRLINE CRACKS IN FAÇADE WALLS

DESCRIPTION

Stress cracks - hairline or greater - in a coating or cladding can present as visible, often nonlinear separation within the façade material. These surface conditions can be caused either by application failure or structural issues. If you suspect structural issues, often diagnosed by cracks larger than 1/8 in. (3 mm) in width, contact a structural engineer for guidance on next steps.

Hairline cracks from normal building movement can be problematic and should be handled in a timely fashion to minimize potential moisture issues within the assembly.

Common Causes:

- Lack of sufficient control or expansion joints.
- Cementitious base coat was applied thicker than specified.
- Insulation foam boards were improperly installed.

REPAIR METHOD AND STEPS:

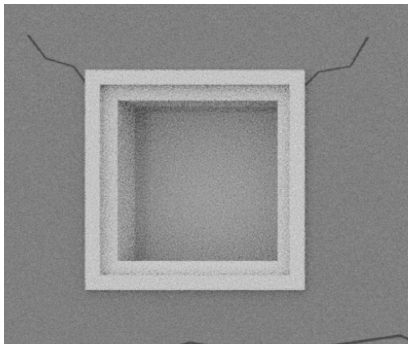
Review your structure to understand the scope of cracks. Refer to the instructions below for repairing smaller hairline cracks. Larger cracks may require a structural engineer to diagnose the underlying cause and outline an appropriate repair. Contact a Tremco CPG representative with further questions or for project specific review.

1. Clean the area so there is no dust or debris.
2. Use a flexible, compatible sealant, such as Tremco's Dymonic 100[4], to infill the crack. Allow to cure fully.
3. Install a coating, such as Dryvit's Demandit Advantage[5], over top of the crack, per manufacturer's installation instructions to match the color of the surrounding coating.

COMMON TYPES OF CRACKS AND CAUSES:

1. **Corner of penetrations**

    a. EPS boards must be "picture framed" around corners of windows, doors, and other penetrations. They should be reinforced with mesh and base coat per manufacturer's installation instructions and industry guidelines to avoid stress cracks. Foam joints should not be located within 6 in. (15 cm) of a corner.

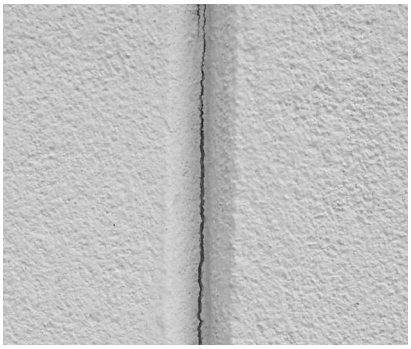


2. **Vertical crack in v-groove**

    a. If joints between the EPS insulation boards line up with joints in the sheathing, it creates an overall weak point in the system.

    b. A cut in the mesh of the v-groove during installation.

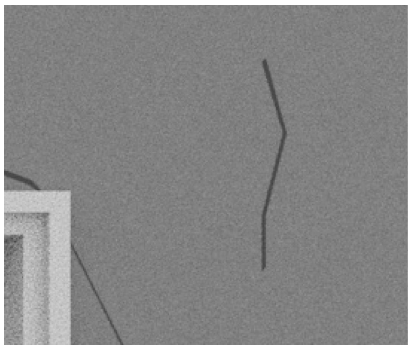
    c. Fracture in EPS insulation board if it is applied below the ¾ in. (19 mm) industry standard thickness.



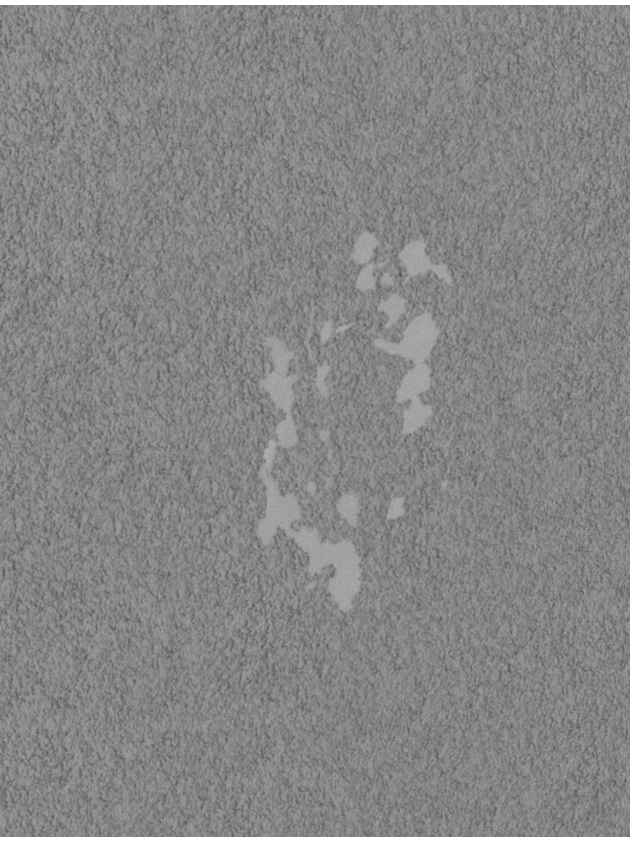
3. **Seemingly random vertical crack in the middle of the wall**

    a. If gaps in the EPS insulation boards greater than 1/16 in. (2 mm) are not filled with insulation material, base coat will fill into those areas and can cause cracking from the materials' different movement capabilities.

    b. Unanticipated building movement.



FINISH DEGRADATION



DESCRIPTION

Degradation of acrylic finishes on the exterior of a building can be identified by the thinning of the finish coat, which exposes the aggregate and/or underlying basecoat.

Common Causes:

- Extended exposure to UV or extreme weather.
- Building maintenance was neglected.

REPAIR METHODS AND STEPS:

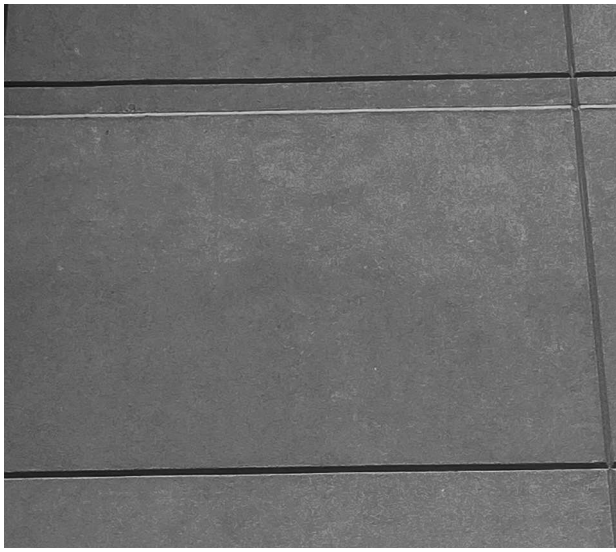
If the identified degradation has resulted in a loss of both texture and color, you will need to reapply the texture coat and color as shown below.

1. Remove loose material mechanically via a brush or scraper to reveal a sound substrate.
2. Examine the surface to ensure that it is dry, clean and free from any contaminants that may inhibit adhesion. For full substrate cleaning instructions, see DS498: DryvitCARE EIFS Repair Guide[3].
3. Apply a non-cementitious acrylic base coat, such as Dryvit's NCB[8], between architectural break points, according to manufacturer's installation instructions to provide a smooth, level surface.
4. Apply a new textured finish coat to match the existing finish per manufacturer's installation instructions. To restore a specialty finish, such as metal, brick, stone, or woodgrain, contact your local Tremco CPG representative.

UV FADING

DESCRIPTION

Pigments in acrylic coatings and textured finishes can fade over time from extended UV exposure. Bold and darker colors, such as reds and blues, tend to show more visible fading. UV fading can occur on numerous surfaces, including stucco, wood siding, concrete, and EIFS. Proper product selection and application is also critical. Choosing a high-quality colorant, such as Dryvit's Stratatone[9], and a high-quality coating will provide better UV protection.



Common Causes:

- The surface has not received proper maintenance.
- Low quality paints have been used.
- The coating was applied too thin and not in accordance with the manufacturer's recommended mil-thickness.

REPAIR METHOD AND STEPS:

1. Clean the surface for recoating, and remove any loose and bond-inhibiting materials, such as dirt, oil, or tough stains. For full substrate cleaning instructions, see DS498 DryvitCARE EIFS Repair Guide[3]. Allow the substrate to dry.
2. Reapply a coating according to the manufacturer's installation instructions. Consult with a Tremco CPG representative for recommendations on proper product selection to achieve desired performance and aesthetics. For smaller areas, use a high-quality acrylic coating, such as Dryvit's Demandit Advantage[5]. For whole building recoats, a hydrophobic coating, such as Dryvit's HDP[6], may be better suited.

IMPACT DAMAGE

DESCRIPTION

Unintentional impact to a building is an unfortunate occurrence that can cause varying degrees of damage. Areas of the facade where pedestrians can come into close contact will require the application of heavy impact meshes for more robust protection. Lack of the proper heavier meshes will translate to impact damage when subjected to abuse from landscaping activities, vandalism, severe hail, etc.

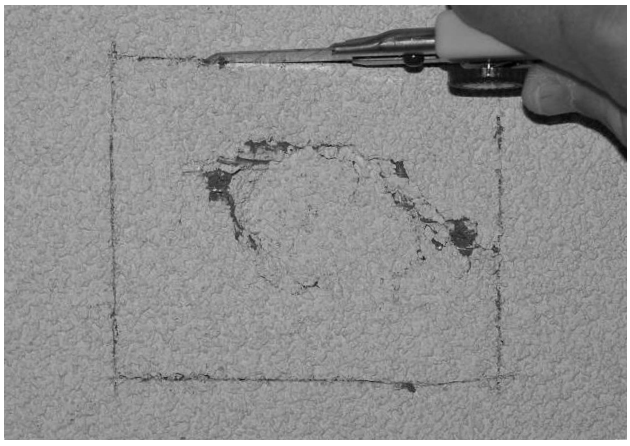
Common Causes:

- Lack of the proper reinforcing mesh in the lamina.

REPAIR METHOD AND STEPS:

For aesthetic purposes and continuity, repair between architectural break points, such as control joints, expansion joints, or inside/outside corners. For additional repair options and instructions for smaller patches, refer to DS498 DryvitCare EIFS Repair Guide.[3]

1. Neatly cut out an area slightly larger than the damaged area down to the substrate with a sharp utility knife.
2. Replace the EPS foam with a new piece cut to the same size. The fit should be tight without any gaps between the new and existing EPS. If needed, sliver in pieces to fill any remaining gaps.
3. A new lamina can now be applied with the appropriate weight mesh, referencing the manufacturer's application instructions. Apply new noncementitious basecoat, such as Dryvit's NCB[8], and mesh within the designated architectural break points. Apply the new finish coat with texture and color to match the existing cladding following manufacturer's installation instructions.



ADDITIONAL INFORMATION

NOTES:

It is strongly recommended that you consult with your local codes and the cladding manufacturer for proper cleaning products and instructions. Testing the cleaning compound on a small and isolated area of the actual finish surface is always advised prior to commencing on a large scale.

ADDITIONAL INFORMATION:

1. ReVyvit Stucco Repair Guide
2. DS152 Cleaning and Recoating
3. DS498 DryvitCARE EIFS Repair Procedures
4. Tremco Dymonic® 100
5. Dryvit Demandit® Advantage
6. Dryvit HDP™ Water-Repellent Coating
7. Dryvit Weatherlastic® Smooth
8. Dryvit NCB™ - Noncementitious Base Coat
9. Dryvit StratoTone High Performance Colorants

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