

Paints, Stains and Coatings



Homeowner
Protection Office



Paint peeling from a metal flashing: Good quality factory-finished metals would have better endurance than this site-painted metal flashing.

To make sure your building does not fall into disrepair you have to know what types of paint and coating protection your home has, why it must be maintained, how to maintain it, how often to maintain it, who to call, and have a written plan to maintain the surfaces that protect your home's appearance and condition. Often, it is realized that a maintenance plan is needed for paints, stains and coatings when it is too late and damage has already occurred. The purpose of this bulletin is to draw attention to maintenance issues and provide basic information to help prevent avoidable and expensive problems.

Note: This bulletin discusses the maintenance of paints, stains and coatings related to the exterior surfaces of the building envelope. It does not cover maintenance or re-painting for home interiors.

What are paints, stains and coatings and where are they applied?

There are many different types of paints, stains and coatings used to cover the various surfaces of the

building envelope. Have you ever noticed how a building shows its age? A new building looks clean, the exterior isn't faded, the wood trim is in perfect shape, metal parts are not rusted or scratched, and it even smells new. As the new appearance disappears, so does the protection provided by paints, stains and coatings.

building envelope. Paints, stains and coatings improve the visual appearance of the building, protect the underlying surface (wood, metal, concrete, stucco or plastic) from the damaging effects of the sun, wind and rain. They also help prevent decay and corrosion from occurring.

The appropriate product must be used for each application or you will not get the protection the building needs to keep looking new and in good physical condition.

The table on the following page lists different types of paints, stains and coatings and where they are commonly applied.

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Maintaining your building envelope

This publication is one in a series of bulletins designed to provide practical information on the maintenance of the building envelope of multi-unit residential buildings including townhouses, low and high-rise residential buildings.



What is a building envelope?

The building envelope includes all parts of the building (assemblies, components and materials) that are intended to separate the interior space of the building from the exterior climatic conditions. It includes, for example, the foundation, exterior walls, windows, exterior doors, balconies, decks and the roof.

Who should read this bulletin?

Anyone who lives in or looks after a multi-unit residential building should read this bulletin including residents/unit owners, strata councils, housing co-ops, maintenance managers, property managers or building owners. Proper maintenance of the building envelope can help prevent damage and avoid costly repairs in the future.



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Paint, Stain or Coating	Where Applied
Asphaltic paints and dampproofing	Brick, concrete foundations, iron and steel in covered areas for water resistance
Concrete floor paints	Interior or protected concrete floors
Clear finishes	When the natural beauty of wood or other product is not hidden
Enamel (oil based) paint	Siding, wood and metal trim
Latex	Siding, wood trim, stucco
Powder coating	Metal balcony railings, door parts, gutters, metal flashing
Rust inhibitor paints	Steel components
Stains	Wood or other product where appearance is not hidden
Waterproofing	Where water pressure will build up against the surface
Water repellent	Where water must not be absorbed or seep through
Ultra-violet inhibitor paint	Where a clear finish is used, especially outdoors



This wood siding has suffered irreparable, permanent damage that cannot be corrected by further paint or stain application. This could have been prevented through proper maintenance.

Why must paints, stains and coatings be maintained?

Paints, stains and coatings don't last forever and must be maintained and restored when they have deteriorated due to exposure to the sun, rain, hot and cold temperatures, bird activity, people-inflicted damage and other destructive forces.

An aging and neglected building typically displays many reasons why you should maintain paints, stains and coatings in a timely fashion. These reasons include:

Appearance: The colours are faded and not consistent due to exposure to the ultra-violet rays of the sun. Flakes and blisters can occur making the building even less appealing.

Wetting and drying of the building parts: Wood that is not protected by paint or stain swells and shrinks, resulting in cracking and possibly water entry further into the wall.

Damage to the siding and trim: When wood becomes thoroughly weathered, it loses its strength and flexibility resulting in irreparable cracks. When wetness is sustained, wood will decay.

Corrosion: When not protected, steel components will corrode (steel flakes and is rust coloured), lose strength and their new appearance.

If re-painting or re-staining of wood is left too long, permanent damage can

occur. At that point, the application of paints, stains and coatings will not address the damage done.

When steel corrodes, some of its shape and strength is permanently lost. Some building components parts such as flashings, screws, nails and bolts cannot afford to lose their strength.

What maintenance must be performed?

You should notify the maintenance manager if you believe there is a maintenance problem with the paints, stains or coatings. Your maintenance manager should keep a log of inspections and complaints as well as a history of maintenance work. Maintenance and re-painting concerns should be acted on promptly due to the potential to damage underlying materials if neglected.

The exterior finish of the building should be checked annually by a qualified painter for blisters, loose paint, thin or worn paint coatings, scratches or punctures that permit water to be absorbed into the porous components and lead to damage.

If there are any unusual maintenance issues or you have any doubts as to the proper approach to specific requirements for your building, you should obtain proper professional advice from a building envelope consultant.

It is important to select a professional applicator with a good track record



Some coatings such as this acrylic stucco coating over tar-based damp-proofing are incompatible, resulting in a cosmetic detraction instead of providing protection.



on other buildings with the same cladding (wood siding or stucco, for example) as your own.

How often is re-painting, re-staining or re-coating necessary?

The wood siding or trim on most residential buildings should be re-painted every five to seven years, for the average building with average weather exposure, or even sooner if problems become apparent.

Some areas of the building may require painting more frequently than others. For example, in the south-west of British Columbia it is common for the predominant wind-driven rainstorms to attack buildings from the south and east. Sun exposure also has the greatest effect on these sides, so it is likely that they will require re-painting more often than the north or perhaps west sides. Hence, “one-size-fits-all” advice on how often to re-paint may not be appropriate for your building.

Stucco, fibre-cement siding, metal and plastic sidings can also be painted. These materials are less absorbent and typically less vulnerable to problems than wood once their paint or coating has been depleted by the elements. They, therefore, require less regular re-painting to maintain their durability and resistance to weather. Manufacturer’s recommended maintenance information should be kept on hand. If the manufacturer’s advice is not followed, there is a good chance that the war-

As a general rule you should re-paint or re-apply a coating when the previous application is just beginning to show signs of deterioration, before it loses its ability to protect the component.

ranty on the product would be void if a problem should arise. Fibre-cement siding companies have quite specific advice on when and how often their product should be painted and what type of paint to use. Applying latex paint to certain metals can promote corrosion rather than prevent it. For these reasons, maintenance of paints, stains and coatings must consider product compatibility information supplied by the manufacturer.

As a general rule you should re-paint or re-apply a coating when the previous application is just beginning to show signs of deterioration, before it loses its ability to protect the component.

Separate from the annual review of the paint, the condition of the underlying components, like the wood, should be checked every three to four years.

The table below provides some basic information about what to look for when deciding when to paint next. Note that in addition to reviewing the condition of the paint, stain or coating, it is also important to review the condition of the underlying materials, like wood. There is no point in re-coating



Proper cleaning and renewal of acrylic stucco colour coatings can be required to maintain an acceptable appearance in unprotected areas.

a material that is already damaged.

Who should be called for service?

Unfortunately, the value of painting qualifications is often under-estimated.

If your building’s exterior needs re-painting or re-coating, it is in a vulnerable state and perhaps already deteriorating. It is worth getting the best advice and service available to give it the protection it needs. An experienced painting contractor, building envelope consultant or member of Master Painters and Decorators Association has the knowledge and expertise to determine:

- if painting or re-coating is required now, or when it will be required
- what sort of preparation is required
- what sort of paint is used and how it is applied
- roughly how much the project will cost, and
- which surfaces should be painted and which require cleaning only.

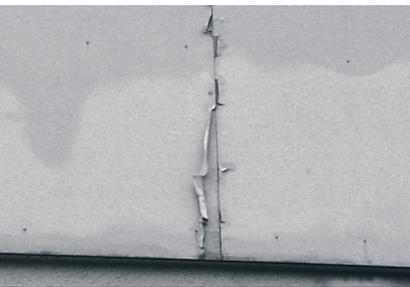
What is the process?

Re-painting your building should be done by a professional contractor. The following is a description of the painting process and what to expect.

Year	What to Look for
The first year (or two) after painting or new construction	Painting or coating deficiencies: poorly-applied areas that don’t hide the painted component, cracked paint, blistered paint from being applied to wet material, poor detailing, overspray, etc.
Years three to five	Colour fading, chalking of the surface, loose paint areas, damage. Look for patterns in the weathering. In other words, start planning for a partial re-painting (in more sun exposed areas) or general re-painting. Also check the condition of the underlying components, like wood.
Years five to seven	If the building hasn’t been repainted yet, it is defying the odds. At minimum a close critical look by a professional would probably determine that the building exterior is ready for its ounce of prevention.
Seven years or more past the previous painting	Soft spots in the wood, cracks or blisters in the paint, extreme fading. Any of these would require preparation and re-painting. Repair of damaged areas may be necessary. Stucco, fibre-cement siding, metal and plastic sidings may likely require re-painting by year 10.

Preparation

Repainting requires preparation. The type of preparation required depends on the condition of the original paint and the material itself. In the case of paints and stains, an ounce of prevention is worth much more than a pound of cure. If paint is still relatively new (three to five years), in most cases it can be lightly sanded or wire-brushed and a fresh coat of paint applied over the old. This is only true if the original paint is well bonded to the wood or metal in which it was applied and if the wood or metal is still dry and in good condition.



Coatings will not remain adhered if water is permitted to absorb into the material it is intended to protect and is possibly peeling as shown in the above photo.

If water has saturated the painted material, it is likely that the paint has loosened. If this is the case, the wood must be stripped, permitted to dry and may even have to be replaced if it is damaged. The situation with rusted steel is similar. Rust flakes will lift the paint off of the steel surface, requiring removal of the old paint and rust prior to repainting.

Seasonal considerations

It is wise to schedule a major repainting project in the late spring or early autumn when temperatures are not expected to be extreme. Paints and coatings are temperature-sensitive when being applied. Check the manufacturer's directions for application temperature because they vary. For example, most water-based or latex paints should not be applied when it is cold (below about 7 degrees Celsius) because it will not harden. They should also not be applied when it is too hot (above 35 degrees) with low humidity because the paint could dry out to a powder before it can cure to form the protective film desired.

Special considerations: Components

Some parts of your home may have been coated in a factory and may require removal and re-coating in a factory with special processes not available to the homeowner or average paint contractor. Examples include metal doors, railings, some flashing metal and fixtures.

Moving and sliding components like window sash perimeters, weather seals, etc. should not be painted. The paint will most likely be damaged on first use or their operation will be restricted in some way.

Action plan tips

- Budget and tentatively plan to re-paint or re-stain wooden materials every five to seven years (seven to 10 years

for stucco, fibre-cement siding, metal or plastic siding), subject to detection of problems that arise sooner. The plan should be scheduled with those designated to perform the service, and the building's maintenance manual should be followed, if it exists.

- Contact an experienced painting contractor, building envelope consultant or member of Master Painters and Decorators Association to get the best advice and service available on painting or re-coating your building.
- Annually, a qualified painter should check the entire exterior for blisters, loose paint, thin or worn paint coatings, scratches or punctures that permit water to be absorbed into the porous components, or fading and chalking (erosion) of the surface.
- Select a professional applicator with a good track record on other buildings with the same cladding (wood siding or stucco, for example) as your own.

For more Information

The manufacturer's information is crucial in maintaining paints, stains and coatings. Other sources of information will increase your understanding of paints, stains and coatings.

Other Technical References:

1. "Construction Materials Types, Uses and Applications", 2nd Edition, Caleb Hornbostel
2. "Construction Materials, Methods and Techniques", William P. Spence
3. "The Master Painters Institute Painting Specification Manual"
4. CMHC "Best Practice Guide for Wood-Frame Envelopes in the Coastal Climate of British Columbia"
5. Your building's maintenance manual

Acknowledgements

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Contact



PO Box 11132 Royal Centre
2270 - 1055 W Georgia Street
Vancouver, BC V6E 3P3

Phone: 604 646 7050
Toll-Free: 1 800 407 7757
Fax: 604 646 7051

Website: www.hpo.bc.ca
Email: hpo@hpo.bc.ca