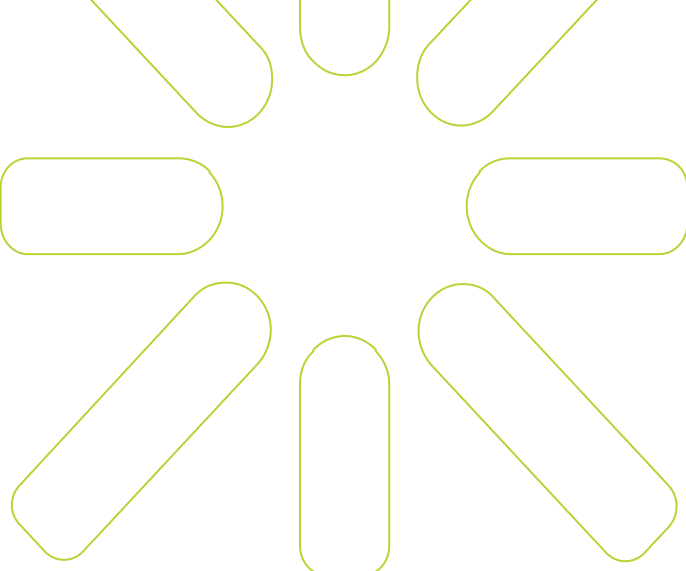


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## Graffiti: Addressing \$12 Billion Annual and Growing Problem

Technical Paper



Over the last three years, the damage from urban graffiti has grown significantly, and municipal authorities, local governments and private building owners face an increased urgency to address the problem. Data shows that the sooner graffiti can be removed, the less likely additional graffiti will occur in the same area.<sup>1,2</sup> As a result, many cities are passing regulations that dictate how quickly graffiti needs to be removed. As the damage by graffiti grows, removal regulations have intensified and spread.

These new graffiti regulations are proving to be challenging to facility managers, municipalities and building owners. Traditional methods to remove graffiti are expensive and time-consuming.

They typically involve harsh chemicals, sand-blasting and repainting metal surfaces. Fortunately, advancements in technology are setting a new standard for addressing graffiti quickly and cost-effectively on metal buildings and substrates such as rail and subway cars. Graffiti-resistant metal coatings paired with simple, environmentally-friendly cleaning solutions are setting a new standard. What follows is an overview and background about the growing graffiti problem as well as the most recent advances in mitigating the problem.

## What is Graffiti and Why It's Challenging

Graffiti is a broad term describing any type of undesirable marking, etching or painting that defaces public or private property. Graffiti-based vandalism is on the rise in the United States, costing an estimated \$12 billion in annual cleanup expenses. Although urban areas face the most issues, graffiti is found in all areas of the country and is not limited to gang activity.

Few graffiti offenders are caught and graffiti is not typically reported to the police, so the true scope of the problem is unknown. In some media outlets, graffiti is glamorized as a form of street art, which is contributing to its spread. The difference between graffiti and art is permission to create on a building or structure. When done without permission, marking a public or private property is illegal.

**Graffiti is typically under 6-square feet in size and falls into one of several categories:**

- **Gang graffiti:** used to convey threats of violence or mark territories.
- **Copycat gang graffiti:** mimics gang graffiti.
- **Tagger graffiti:** may be an individual marking many places with a "signature mark" ...to more complex art on the side of a building, bridge or other outdoor venue.
- **Conventional graffiti:** isolated and typically associated with "exuberant" youth.
- **Ideological graffiti:** conveying political messages or racial, religious or ethnic slurs.

Graffiti has a serious cumulative effect—one incident often attracts another. Graffiti can contribute to fear of gangs and neighborhood blight among the general public, translating to lost ridership on transit system, reduced retail sales and declining property value. Some estimates say commercial real estate value can drop between 25 to 30% if there is graffiti within two blocks of a building.



Graffiti is often associated with other public problems such as littering, loitering, public urination, shoplifting of materials used to make graffiti, gang violence and property destruction.

**Common Locations for Graffiti:** Graffiti perpetrators often choose a location adjacent to public spaces because they want a large viewing audience. They more typically choose a light-colored surface so the markings show up better. Common graffiti targets include:



- **Transit-Oriented Spaces:** Inner and outer sides of buses, trains, subways, transit stations, shelters, bridges, freeway overpasses, streets, sidewalks and parking garages.
- **Signage:** Traffic and freeway signs, and billboards.
- **Buildings:** Business and residence walls facing streets, garages, fences and sheds—large walls without windows and doors provide the perfect canvas for large-scale projects.
- **Parks:** Statues, monuments, park benches, vending machines and trees.

**Typical Mediums Used for Graffiti:** Battery acid used for etching is the most challenging substance to remove, followed by Sharpie brand permanent markers. Other common substances for marking include shoe polish, lipstick, pens, pencils, razors, glass cutters and glass-etching fluid. Spray paint is another common medium because perpetrators can work quickly while covering a large area.

Top Left: Marker, Top Right: Spray Paint, Bottom: Shoe Polish

## New Laws Governing Prompt Removal of Graffiti

According to data from Graffiti Hurts, a grassroots community education program, “Rapid removal of graffiti is an effective prevention tool. Data shows that removal within 24 to 48 hours results in a nearly zero rate of recurrence.<sup>1</sup> Most Keep America Beautiful affiliates credit the reduction in graffiti in their communities to rapid removal.”<sup>2</sup>

Because of the large uptick in graffiti and substantiated research on the importance of quick removal to thwart additional graffiti, many new laws have been passed. Strict regulation around removal timeframes is quickly becoming the norm. In some cities and jurisdictions, property owners have as little as 48 hours to remove the graffiti. Some graffiti regulations provide more time for removal, but often it is no more than seven days.

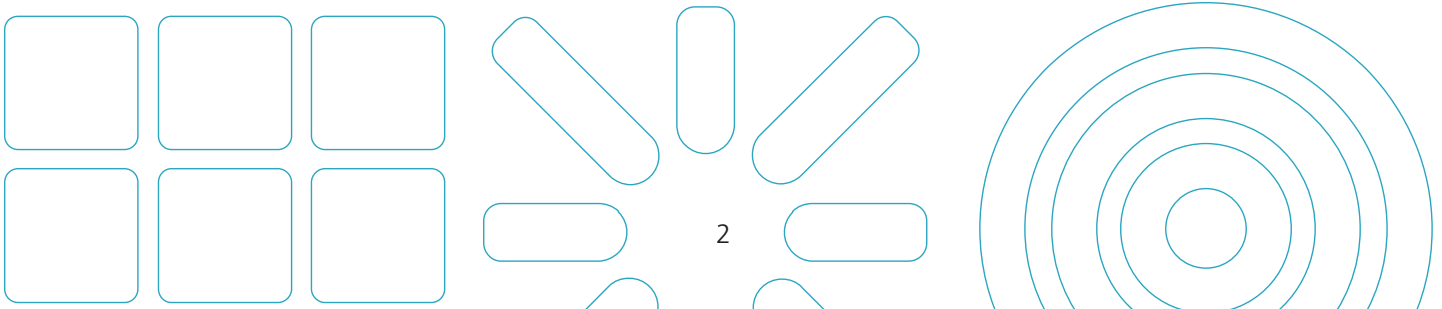
## Traditional Graffiti Removal

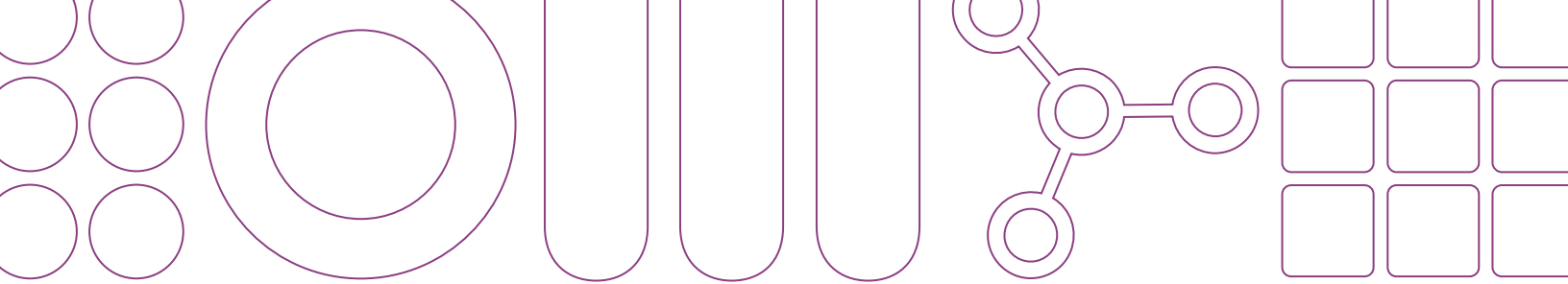
The typical processes to remove graffiti are complex, expensive and time-consuming:

1. **Spray Painting.** This is short-term solution covers the graffiti but leaves a fresh canvas for new perpetrators.
2. **Chemical Removers.** This removal type will often etch, mar or damage the surface and leave a halo (outline), flashing or shadow leaving the graffiti visible, but in a faded form. Strong solvents have to be used on concrete, but will damage a coated substrate like a metal building or railcar quickly, which then requires stripping of the coating and repainting for complete resolution.
3. **Pressure Washing.** Solvent added to water can be an effective approach depending on the graffiti medium used, but pressure washing can also wear down or damage the coating.
4. **Stripping Paint.** Using MEK or paint thinners, the graffiti painted on is stripped from the surface and then it is repainted.
5. **Sandblasting and Repainting.** Complete and effective removal often involves sandblasting the graffiti and repainting, which is a time-consuming and expensive, multi-day process.

## Types of Graffiti-Resistant Coatings

With the increasing problem of removing graffiti on buildings and structures, a number of coatings have been developed that claim graffiti resistance, making them easier to clean if graffiti occurs.





**Clear Top Coatings.** Three types of clear coatings can be used to protect from graffiti.

- **Sacrificial coating:** forms a clear barrier over the surface it is protecting. Graffiti is removed by pressure washing the surface, but the coating is also removed and must be reapplied. The coating is typical a polymer, which forms a weak bond with the substrate, which is why it washes off easily.
- **Semi-sacrificial coating:** acts as a sealer to protect the pores of the coating or surface of the wall. If the surface is vandalized, the markings are removed using a combination of solvent and pressure washer. Typically, these coatings need to be reapplied every other time the graffiti is removed.
- **Permanent clear coating:** provides a barrier so graffiti cannot adhere permanently to the coating. This type of coating can be made from polyurethanes, nano-particles, fluorinated hydrocarbons, or siloxanes and each one works a little differently but can be effective. A permanent clear coat can easily add 20% or more to the overall cost of the coating for a building. In addition, the solvent used to remove the graffiti can damage the clear coating.

**Graffiti-Resistance Coatings that meet ASTM D6578/D6578M Standard.** Many coatings manufacturers are making paints and coatings that they claim can resist common substances used in graffiti marking. However, it can be challenging to compare the claims made by manufacturers. That process is now easier through the ASTM D6578/D6578M Standard developed by ASTM International, one of the world's largest international standards developing organizations. This standardized method of evaluating anti-graffiti coatings allows owners to compare claims made by different manufacturers on the effectiveness of their graffiti-resistant coatings. It provides a set of conditions for measurement that include a defined set of markings removed by a defined set of cleaning agents. ASTM-tested mediums include spray paint, permanent marker, wax crayon, ball point ink, water-based ink markers.

### Rapid Adoption of ASTM D6578/D6578M Standard for Coatings in New Construction

Because graffiti is such a costly, large and growing problem, architects are quickly moving to specify ASTM D6578/D6578M compliant coatings to ensure graffiti-resistance on the building materials they select in new construction. Valspar, a global coating manufacturer, has taken the steps to ensure that all of their coil coatings are ASTM D6578/D6578M compliant.

## Graffiti Removal from Graffiti-Resistant Coil Coatings

With the right blend of coatings and removal products, building owners and maintenance managers can now remove graffiti themselves and be back in business in a matter of minutes versus days to weeks depending on the amount of graffiti. There is no damage to the coating as compared to traditional harsh chemicals used to remove graffiti, which can easily damage a painted surface or burn the graffiti marking into the surface of the coating.

### Valspar Graffiti-Resistant Coatings

Valspar has launched a unique approach to keeping buildings graffiti-free with an ASTM-compliant graffiti-resistant system that has been tested and approved for all Valspar Coil and Extrusion building products. Valspar has aligned with Graffiti Removal Services (GRS) to create this sustainable, cost-effective system. The robust properties of Valspar's coatings combined with the innovative cleaning system provided by GRS means that this solution not only applies to future projects, but to existing installations with Valspar coatings. Every coating in Valspar's product line is protected against the dangers of disfiguring damages from graffiti vandalism no matter which coating is specified for a building.



GRS's non-toxic products use a brush-on, wipe-off application with no dwell time to quickly and effectively remove graffiti without damaging the underlying Valspar coating. The water-soluble, biodegradable cleaning system is easy to use and gives maintenance professionals a powerful tool in the fight against graffiti. All GRS products are EPA and VOC compliant. These products are made from soluble alcohol, are biodegradable and can be rinsed off with water. They contain no phosphates, chlorinated hydrocarbons, Xylene or any other substance known to cause environmental or health destruction.

These removal agents are safe and effective. They do not damage the coating or gloss level. The combination of high-performance coatings and Graffiti Removal Services' tested and approved environmentally-safe cleaning system can save building, property and transit owners significant costs.

## CASE STUDY

### Brush-on/Wipe-off Cleaning With Graffiti Coatings

When your building is attacked by a graffiti vandal, you want the coating to be able to resist whatever is coming at it, including spray paint. Valspar's graffiti-resistant system provides a solution that can make graffiti removal easy and cost-effective.



BEFORE: Spray paint graffiti markings on surface coated with Valspar ASTM-compliant coating.



DURING: Easy brush-on/wipe-off cleaning application.



AFTER: This surface was cleaned with GRS non-toxic solution and in a few minutes, looked like new with no coating damage.

## CASE STUDY

### Portland Rail Car Cleaned in Two Hours and Back on Track

Dealing with graffiti on your installations can be messy, time-consuming, costly - and, often, ineffective. The simple brush-on/wipe-off method of Valspar's graffiti-resistant system provides a solution that is quick, environmentally safe, cost-effective and extremely effective.



BEFORE: In Portland, Oregon, a rail car was damaged with extensive graffiti markings that were done using spray paint.



DURING: Due to the size of the project the GRS solution was spray applied for easy application.



AFTER: Rather than take the rail car out of service for several days to strip and repaint, this rail car, was cleaned with the GRS non-toxic solution and back in service within two hours.

## Conclusion: Fighting Graffiti With New, More Cost-Effective Solutions

Graffiti is a significant and growing problem in cities across the U.S., costing more than \$12 billion annual in cleanup. The solution is complex, multi-faceted and requires excellent cooperation among cities, building owners, communities and manufacturers to combat the problem on multiple levels. For building, property and transit owners and managers, graffiti-resistant metal coatings paired with simple, environmentally-friendly cleaning solutions are setting a new standard for addressing graffiti quickly and cost-effectively.

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### SOURCES:

<sup>1</sup>Jay Beswick and Bernie Garrett, Graffiti Prevention Systems, data from over 1,500 sites in Los Angeles County from 1990-1991.

Source: [www.graffitihurts.org/prevention/tipsprevention.jsp](http://www.graffitihurts.org/prevention/tipsprevention.jsp)

<sup>2</sup>Survey of Keep America Beautiful affiliates conducted for Graffiti Hurts, 2000. Source: [www.graffitihurts.org/prevention/tipsprevention.jsp](http://www.graffitihurts.org/prevention/tipsprevention.jsp)

-Valspar Technical team and [www.valsparcoilextrusion.com/graffitiresistance](http://www.valsparcoilextrusion.com/graffitiresistance)

-Center for Problem-Oriented Policing: [www.popcenter.org/problems/graffiti/print/](http://www.popcenter.org/problems/graffiti/print/)

-ASTM International: [www.astm.org](http://www.astm.org)

-ASTM International: [www.astm.org/Standards/D6578.htm](http://www.astm.org/Standards/D6578.htm)

-Graffiti Hurts: [www.graffitihurts.org](http://www.graffitihurts.org)

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