

THE FACULTY OF CONSERVATION AND RESTORATION OF WORKS OF
ART (FCRWA)
JAN MATEJKO ACADEMY OF FINE ARTS IN CRACOW

**EXPERT OPINION CONCERNING APPLICATION OF
KTX 05 COATING
ON SURFACES OF HISTORIC BUILDINGS
IN ORDER TO PROTECT THEM AGAINST GRAFFITI.**

Opinion ordered by the manufacturer:
PHSC Systemy czyszczące Sp. Z o.o. ul. Starołęcka 18, 61-361 Poznań

The present opinion is valid for five years from the issue date or until KTX 05 change in composition.

Opinion issued by:
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Preface

Although modern construction chemicals have been very commonly and beneficially used for conservation and preservation of historic buildings, their application is obviously connected with the following serious threats:

1. The outer appearance of the object may be altered because of other agents than the traditionally used materials, mainly due to introduction of plastics.
2. Relatively low durability of modern materials in comparison with mineral ones.
3. Difficulty in their removal.

The above problems are accompanied by psychological aspects – “modernity” is usually associated with high quality and durability, which often results in unjustified use of new materials deprived of such qualities. This is why every use of new materials should be preceded by a thorough evaluation of their actual applicability in a particular situation and the final decision concerning their application should be made by the conservation expert accountable for the given work.

Additionally, it must be remembered that contrary to modern buildings, historic constructions are rather unique in terms of construction norms, which means that usually they do not conform to these norms at all. This is why a successfully applied preparation in one case may become harmful in another, even if the cases are superficially similar. This is why it is impossible to issue approvals or licences – instead, we issue opinions which point to potential applications and their possible limitations. This is also the reason why the Institute of Conservation Chemistry of the FCRWA has produced a classification of materials and methods suggested for use in historic objects, thus enabling their preliminary conservation assessment.

The classification enlists the following classes:

Class I – the preparation is suitable for use in any historic object.

Class II – the preparation is suitable for use in any historic object with exception of the specially protected parts.

Class III – the preparation is suitable for conservation in any object of historic character with the exception of the specially protected parts.

Class IV – the preparation is suitable for conservation of objects which possess historic features with the exception of parts of historic character and specially protected parts.

Class V – the preparation is unsuitable for conservation of historic objects.

1. Introduction

The subject of the opinion is KTX 05, manufactured by PHSC Systemy Czystzące Sp. Z o.o. ul. Starołęcka 18 61-361 Poznań, intended for protecting wall surfaces against graffiti. More precisely, it is designed for facilitation of graffiti removal. The preparation is produced in the form of aqueous dispersion of modified montan waxes with the addition of acrylic dispersion, dispersants and germicides.

KTX 05 creates an easily removable, hydrophobic film on the protected surface, which makes it impossible for graffiti paint to penetrate the material underneath. The anti-graffiti coating can be easily removed with hot water, steam, or a suitable solvent (e.g. KT 09, also produced by PHSC). The preparation is a sacrificial one, which means that after removing the paintings it has to be re-applied.

The opinion has been issued on the basis of the data submitted by the manufacturer and experiments conducted with the use of the tested sample material.

2. Description of KTX 05 properties

The submitted KTX preparation is a milky liquid, without a specific odour. It can be easily applied onto the protected surfaces by means of simple painting tools. On evaporation of the solvent – water – it forms a hydrophobic film on the surface of the material which does not absorb water droplets. Graffiti spray paint, when applied onto thus protected surface, was easily removed by means of hot water and a hard brush.

In order to check the preparation's properties, four experiments were conducted:

KTX 05 was applied with a paintbrush onto:

1. contemporary smooth-surfaced brick
2. old brick with uneven surface, typical for historic buildings

3. stone panels – sandstone with naturally aged surface
4. smooth cement-lime plaster

After drying and seasoning of the coatings for three weeks, a layer of black automobile spray paint was applied onto it and after a further week's seasoning an attempt at removing the painting was made. Producer's instructions were followed, although the pressure was lower and the water temperature was 100° C; additionally, a stiff paintbrush was used.

No high pressure cleaning device was used because in the case of weaker substrates (limestone plasters, structurally impaired materials) this method can damage aforementioned surfaces. With durable substrates, this high-pressure method is suitable for all types of substrate textures.

The conducted experiments have proven KTX 05 to:

- Be effective on even, smooth and non-absorptive surfaces (new brick, smooth cement-lime plaster)
- Pose certain problems in graffiti removal from porous and uneven surfaces (old brick, sandstone) because in order to clean all the paint residue from bumps and cracks on the surface additional mechanical action was needed. Cleaning was much easier if the protective coating layer was thicker.
- Deepen the colour of the protected surface slightly – as indicated by the manufacturer – and in the case of darker colours or if there are more coating layers, a visible film appears on the surface.

3. Conclusion

The evaluated product for protection of construction surfaces against graffiti paintings is perfectly suitable for smooth and relatively non-absorptive surfaces. On porous and uneven materials a thicker coating and mechanical operation during removal is needed. Moreover, it may affect, albeit to a small extent, the outer appearance of the material. It also has to be stressed that the tested preparation hinders water-vapour permeability of the protected material as well as inhibits evaporation of liquid water which leaks out of the interior of the building while protecting it against splashwater from the outside. Furthermore, KTX 05 penetrates deep into porous materials and remains irremovable except for the near-surface layers. After numerous applications (e.g. in places which are especially popular among graffiti painters) the coating develops a permanent impregnation.

From the conservation point of view, KTX 05 may be treated as complementary agent, suitable for places which are significantly exposed to graffiti. It should also be applied onto surfaces which are stable in terms of salt and humidity content as well as in technical terms. On weaker substrates low-pressure methods should be used.

KTX 05 can be used in a limited scope on surfaces which are of high historic value and beauty and require special attention of conservators because it may temporarily change the surface's outer appearance and water-humidity parameters. Despite these constraints, depending on the construction object, KTX may be classified as either **class II or III**.

Final decision as for its application on historic buildings should be taken after consulting and receiving permission from conservation authorities.

Paweł Karaszkiewicz PhD

Cracow 01.06.2006.