

Thanks for your help.
Ken

----- Original Message -----

From: Tom Tipps

To: Ken Hinshaw

Sent: Monday, January 30, 2012 10:44 AM

Subject: Point Pinos Lighthouse chimneys, KEIM Mineral Coatings

Dear Ken,

I appreciate your inquiry about using KEIM to protect the chimneys at Point Pinos. If I read your comments correctly, there are two brick chimneys with corbels that have some lime plaster which are presently coated with organic paint and you wish to repaint them without removing the organic paint. I am assuming the organic paint is resin or acrylic based—not oil based paint.

Please let me know if it is oil based.

I am mailing you a KEIM Spektrum color fold out so you can have a look at the KEIM color #9003 red oxide and the KEIM color #9010 dark red oxide to determine if either of these are the red color you are looking for. If they are not, we can match a red color that you may have in mind.

Within the KEIM Royalan silicate coating system we have three products that would be appropriate for recoating over the previously painted surfaces that won't fade and provide weather resistance and longevity as long as the old organic paint remains adhered to the brick or lime plaster surfaces. These products are KEIM Contact Plus, KEIM Royalan Grob, KEIM Royalan, and KEIM Royalan Dilution.

After cleaning and removing loose organic paint layers, KEIM Contact Plus is diluted about 10 percent with KEIM Royalan Dilution and applied by brush or roller to create a bridge between the organic paint and the Royalan silicate paint. Contact Plus also fills cracks up to one half millimeter wide and softens the hard edges of the remaining organic paint layers over the plaster/brick substrate so they visually disappear.

The next step is the application of the two coats of silicate Royalan paint. The base coat is Royalan Grob, a pigmented filling silicate paint coat that equalizes the Contact Plus coat. Dilute the Royalan Grob about 10 percent with KEIM Royalan Dilution and generously apply. The top coat is pigmented Royalan silicate paint and it is applied undiluted. I have attached the technical data and MSDS sheets for these products. All are harmless to the environment and people and have unmeasurable VOC's.

The application is by roller or brush. Allow a minimum 12 hours curing time between coats and paint in good weather. Surfaces must be rain and wind-free for the minimum 12 hours.

There is an excellent video on our website that demonstrates this application. Please review it at: <http://www.keim.com/ProductProgram/Video.aspx>

The product information appears below. Doing business with KEIM is very easy. Determine your product requirements and email them to me. Our office will return a quote with shipping cost for your review. If all appears correct, or if you need to change anything, you simply call our office with your payment and corrections if any.

I understand the chimneys do not represent a large square foot project so the minimum quantities may allow you to add a third coat of Royalan which should give you a thirty year life expectancy. Again, this is dependent on keeping the flashings and mortar in good condition so

the organically bound paints will remain bonded to the substrates.

Product Information

KEIM Contact Plus

KEIM Contact Plus is a silicate filling white primer containing glass fibers and high-grade fillers in balanced grain sizes and shapes. It is used to equalize textural differences on substrates, to optically blend together indifferent substrates or repair patches, to fill cracks 0.5 mm and smaller, and to bridge over well-adhering painted surfaces (but not oil based or plasto-elastomeric paints). Contact Plus comes in 5 kilogram and 25 kilogram containers. Over a perfect surface in ideal conditions, a 5 kg container will cover one coat over about 135 square feet and a 25 kg container will cover one coat over about 675 square feet. A 5 kg container costs \$96.40 plus shipping and a 25 kg container costs \$482 plus shipping. Contact Plus may be diluted as much as 10 percent with either KEIM Fixativ, Spezial Dilution, Soldalit Dilution, or Concretal Dilution (10 kg Contact Plus with 1 liter Dilution). It may be brushed, rolled, or airless sprayed with a 0.037 inch tip. Contact Plus must be overcoated with two coats of a KEIM silicate coating.

KEIM Royalan Dilution

KEIM Royalan Dilution is a silicate dilution used to dilute the base coat of Contact Plus and Royalan Grob. The base coat is diluted 10 percent with Royalan Dilution (10 kg Contact Plus or Royalan with 1 liter Royalan Dilution). Top coat of Royalan is applied undiluted. To determine product requirement, add total quantity of Contact Plus or Royalan Grob base coat and multiply by 10%. Royalan Dilution comes in 5 liter and 20 liter containers. A 5 liter container costs \$97.20 plus shipping and a 20 liter container costs \$388.80 plus shipping.

KEIM Royalan Grob

KEIM Royalan Grob is a silicate filling base coat that must be overcoated with a top coat of Royalan. The red oxide color is a pure pigmented concentrate. It comes in 5 kilogram and 25 kilogram containers. Over a perfect surface in ideal conditions, a 5 kg container will cover one coat over about 270 square feet and a 25 kg container will cover one coat over about 1346 square feet. In the 9004 red oxide, a 5 kg container costs \$110.10 plus shipping and a 25 kg container costs \$500.50 plus shipping. Royalan Grob may be brushed, rolled, or airless sprayed with a 0.027 to 0.031 inch tip.

KEIM Royalan

KEIM Royalan silicate paint is a two coat system comprising of one base coat and one top coat. The red oxide color is a pure pigmented concentrate. It comes in 5 kilogram and 25 kilogram containers. Over a perfect surface in ideal conditions, a 5 kg container will cover one coat over about 270 square feet and a 25 kg container will cover one coat over about 1346 square feet. In the 9004 red oxide, a 5 kg container costs \$110.10 plus shipping and a 25 kg container costs \$500.50 plus shipping. Royalan may be brushed, rolled, or airless sprayed with a 0.027 to 0.031 inch tip.

If you have an interest, the Piedras Blancas Lighthouse near Cambria (Hearst Castle) is in its final recoating stages where they are repainting the interior and exterior with KEIM. It will be stunning.

Please let me know if you have questions. Thank you.

Warm regards, tom

Tom Tipps, CSI, CDT
Sales Manager

KEIM Mineral Coatings of America, Inc.
10615 Texland Blvd # 600
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Technical Data Sheet

KEIM Contact-Plus



1. Product description

KEIM Contact-Plus is a highly filled, silicate-based priming coat ideal for renovation work (silicate emulsion paint according to DIN 18363, 2.4.1) containing glass fibers and high-grade fillers in balanced grain sizes and shapes.

2. Field of application

KEIM Contact-Plus is used as a bonding bridge between sound, existing organically bound coatings and subsequent coats of KEIM silicate emulsion paints if those old organically bound coatings cannot be stripped off due to e.g. environmental or other reasons. Old coatings not suitable for coating with KEIM Contact-Plus are plasto-elastic coatings or coatings susceptible to saponification (e.g. certain oil paints).

On mineral substrates or organically bound old coatings hairline cracks up to 0.5 mm in width are filled and differences in substrate texture are equalized.

3. Product properties

- Bonding bridge between an existing organic substrate and subsequent coats of KEIM silicate emulsion paints
- Closes cracks (up to max. 0.5 mm in width)
- Equalizes textures
- Non-film-forming
- UV-resistant
- Non-flammable

Material characteristics

- Specific weight: approx. 1.70 g/cm²
- Vapor diffusion resistance: $s_d = 0.02$ m
- Max. grain size: 0.5 mm

- pH-value: approx. 11.4

Color shade

White

4. Application instructions

Substrate preparation

The substrate must be sound, dry, clean and free of dust and grease. Any loose areas of existing organically bound coatings and dirt should be removed either mechanically or by water jetting. Use KEIM Spachtel, KEIM Concretal-Feinspachtel, KEIM Leichtpachtel, or KEIM UniversalPutz to make good any damaged areas. The existing coating must be completely removed wherever filler is to be applied.

Application

On non-absorbent substrates, apply KEIM Contact-Plus evenly by brush, always undiluted, using criss-cross strokes.

On absorbent substrates, the product may, if necessary, be diluted with up to 10% (25 kg with 2.5 l / 0.66 gal of dilution) of KEIM Fixativ, KEIM Spezial-Fixativ, KEIM Soldalit-Fixativ or KEIM Concretal-Fixativ.

KEIM Contact-Plus can also be applied by airless spraying (nozzle size 0.94 mm/ 0.037 in.).

Subsequent coats

KEIM Contact-Plus must always be overcoated with one or two subsequent coats of paint, for example with KEIM Granital, KEIM Soldalit or KEIM Concretal-W.

With light color shades (price group I), a single, undiluted, opaque finishing coat is generally sufficient.



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of America, Inc.

10615 Texland Boulevard, Suite 600
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www.keim.com Keim-info@keim.com

Darker color shades (price group II) require two subsequent coats, e.g.:

Intermediate coat: KEIM Granital diluted (max. 2 l / 0.5 gal of KEIM Spezial-Fixativ per 10 kg),

Finishing coat: KEIM Granital undiluted.

Application conditions

Ambient and substrate temperature $> + 5^{\circ}\text{C}$ (41 °F). Do not apply in direct sunlight or onto sun-heated substrates. Protect coated surfaces from direct sunlight, wind and rain during and after application.

Drying times

A drying time of at least 12 hours must be left between coats

Consumption

On a smooth, non-absorbent substrate for a filler coat: approx. 0.4 kg of KEIM Contact-Plus.

On a smooth, absorbent substrate: approx. 0.5 kg of KEIM Contact-Plus.

The stated consumption values are for guidance and depend on the nature of the substrate and the application method. Exact consumption values can only be determined by painting trial areas on the structure to be coated.

Cleaning of tools

Clean with plenty of water immediately after use.

5. Packaging

5 kg and 25 kg containers

6. Storage

Shelf life is approx. 12 months in a sealed container under cool, frost-free conditions.

7. Hazardous substances ordinance class

n/a

8. Transport hazard class

n/a

9. Disposal

EC Waste Code No. 08 01 12. Any residues must be emptied out of containers before recycling.

10. Safety instructions

The mineral binder has an alkaline action. Provide appropriate protection for surfaces which are not to be coated (e.g. glass, natural stone, ceramics etc.). Any splashes on surrounding surfaces or traffic areas must be rinsed off immediately with plenty of water. Protect the eyes and skin from splashes. Keep out of reach of children.

Product code: M-SK 01

The stated values and properties are the result of extensive development work and practical experience. Our recommendations for application, whether given verbally or in writing, are intended to provide assistance in the selection of our products and do not establish a contractual relationship. In particular, they do not release those purchasing and applying our products from the duty of establishing for themselves, with due care, the suitability of our products for the intended application. Standard building industry practices must be complied with. We retain the right to make modifications to improve the products or their application. This edition supersedes all earlier editions.



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me a list of the costs including shipping that we will need to cover this. Thank you Tom for your attention to our project.

Ken

----- Original Message -----

From: Tom Tipps
To: LowellNor@aol.com
Cc: Ken Hinshaw
Sent: Tuesday, January 31, 2012 3:54 PM
Subject: FW: Point Pinos Lighthouse chimneys, KEIM Mineral Coatings

Dear Lowell, I failed to copy you. My apologies, tom

From: Tom Tipps
Sent: Tuesday, January 31, 2012 4:53 PM
To: 'Ken Hinshaw'
Subject: RE: Point Pinos Lighthouse chimneys, KEIM Mineral Coatings

Dear Ken, thank you for the quick reply. The condition of the surfaces of the body of the lighthouse and oil house after cleaning will determine what KEIM silicate paint system to use. Perhaps you can send along some pictures of the project and the scope for the repairs/restoration?

Regarding the chimney paint, would it be possible to scrape off a sample about 1 inch by 1 inch and send it to our office for evaluation? If this is possible, please send it to our office in Charlotte, address is below. The sample should include the base coat and a photo of where it was removed before and after. These old lighthouse coatings can be a little difficult to identify.

I look forward to hearing more. Thank you.

Warm regards, tom

Tom Tipps, CSI, CDT
Sales Manager

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From: Ken Hinshaw [mailto:KenL@redshift.com]
Sent: Tuesday, January 31, 2012 4:38 PM
To: Tom Tipps
Cc: Lowell Northrop
Subject: Re: Point Pinos Lighthouse chimneys, KEIM Mineral Coatings

Tom: Thank you for all the information. I don't think I was as clear as I could have been in my first e-mail. Our present project is the chimneys and corbels, but I was hoping to find a product that could also be used when we remove the elastomeric paint from the body of the lighthouse itself as well as a oil house outbuilding. As far as the type of paint on the chimneys and the corbels: I'm not really sure whether it is oil or latex. Is there a

Ken Hinshaw

From: "Tom Tipps" <tom.tipps@keim.com>
To: "Ken Hinshaw" <KenL@redshift.com>
Sent: Thursday, February 09, 2012 3:33 AM
Subject: RE: Point Pinos Lighthouse chimneys, KEIM Mineral Coatings

Ken, two more questions: Does the new lime plaster have hairline cracks in the surface or are the surfaces crack-free? When do you want the paint to arrive?

I intend to send you KEIM Royalan, the standard for lighthouses, because we don't have to coat over previous paint layers. If we go over a previous organic paint coating then KEIM Soldalit must be used.

Please confirm the above. I assume we are shipping to the 747 Short Street address in Pacific Grove. If this is incorrect, please also send the shipping address. Thank you, tom

From: Ken Hinshaw [mailto:KenL@redshift.com]
Sent: Wednesday, February 08, 2012 7:30 PM
To: Tom Tipps
Subject: Re: Point Pinos Lighthouse chimneys, KEIM Mineral Coatings

Tom: The total is approx. 100 square ft. for the chimneys.
Ken

----- Original Message -----

From: Tom Tipps
To: Ken Hinshaw
Sent: Wednesday, February 08, 2012 8:40 AM
Subject: RE: Point Pinos Lighthouse chimneys, KEIM Mineral Coatings

Hi Ken,

We are sending the white sample for the oil house and the red sample to Germany for our laboratory to examine for compatibility to our silicate paint. The red sample displays the following: From the original brick surface there was a lime paint/wash applied, then three coats of an organic paint, then a slurry or skim coat of Portland cement followed with more organic paint. If the corbels are layered this way it will be important to remove the slurry coat and previous organic paint layers leaving the lime wash exposed. We are compatible with the lime wash/paint as it is a mineral—our silicate paint will bind it through to the brick.

For the chimneys, could you please let me know how much product you need or the square footage we are coating? I can then provide you with a quote for acceptance. Thank you, tom

From: Ken Hinshaw [mailto:KenL@redshift.com]
Sent: Wednesday, February 08, 2012 9:22 AM
To: Tom Tipps
Cc: Lowell Northrop
Subject: Re: Point Pinos Lighthouse chimneys, KEIM Mineral Coatings

Tom: The analysis of the paint samples I sent you will be very useful for the work we will be doing on the corbels in a month or so down the road. What I believe we could go ahead on now is ordering the paint products (in red oxide) for the chimneys which have been repointed and have a thin coat of new lime base plaster. Lowell has pointed out to me that there should not be any problems with compatibility. Would you give

test I can do. It may have top coats of more modern latex paint with exposed older oil base paint.
Can you give me some more info about this?
Thanks for your help.
Ken

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2/9/2012

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Tom Tipps, CSI, CDT

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2/9/2012

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10615 Texland Boulevard
 Suite 600
 Charlotte, NC 28273

Sales Order



(704) 588-4811 (Telephone)
 (704) 588-4991 (Fax)

not sure what this is?

Customer No.: POINT PINOS
 Order No.: 4977

Bill To: Point Pinos Lighthouse
 747 Short Street
 Pacific Grove, CA 93950

Ship To: Point Pinos Lighthouse
 Attn: Ken Hinshaw
 747 Short Street
 Pacific Grove, CA 93950
 (831) 375-0816

Date		Ship Via		F.O.B.		Terms	
02/08/12		FedEx Ground		Origin		Prepaid	
Purchase Order Number		Required Date		Sales Person		Project Name	
		02/08/12		Tom Tipps		Point Pinos LH	
Quantity			Item Number	Description	Unit Price	Amount	
Required	Shipped	B.O.					
1				Royalan Custom match brick red sample 2 brushouts	\$ 0.00	\$	0.00
1				Royalan Custom match white sample 2 brushouts	\$ 0.00	\$	0.00
Order total						\$	0.00

Thank You

NO REFUNDS OR ADJUSTMENTS: Please review all quantities, colors and products BEFORE you approve this order. Once the product has been made NO adjustments can be made to the quantities or colors ordered. Any product consumption quantities provided by employees of KEIM Mineral Coatings of America, Inc. are estimated quantities based upon information provided to them. Often estimates do not take into account all the turns, corners, surface textures, architectural features and other elements that can increase the product requirements. The consumption can also vary depending on the tools and methods of application. Consumption should be calculated by the applicator following a trial application of the products or can be observed from the first day of application to determine whether additional material is required to complete the work. Mixed or opened products cannot be returned. For additional return policies, instructions and fees contact KEIM Mineral Coatings of America, Inc.

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Attach: KEIM Royalan Brochure.pdf; Royalan-Grob (US) 01 2009.pdf; Contact Plus (US) 02 2009.pdf; Royalan (US) 01 2009.pdf; Royalan-Dilution (US) 01 2009.pdf; KEIM ROYALAN_v3_.pdf; KEIM CONTACT PLUS_v4_USA.pdf; KEIM ROYALAN DILUTION_V2_.pdf; KEIM ROYALAN GROB_v3_.pdf
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Product Information

KEIM Contact Plus

KEIM Contact Plus is a silicate filling white primer containing glass fibers and high-grade fillers in balanced grain sizes and shapes. It is used to equalize textural differences on substrates, to optically blend together indifferent substrates or repair patches, to fill cracks 0.5 mm and smaller, and to bridge over well-adhering painted surfaces (but not oil based or plasto-elastomeric paints). Contact Plus comes in 5 kilogram and 25 kilogram containers. Over a perfect surface in ideal conditions, a 5 kg container will cover one coat over about 135 square feet and a 25 kg container will cover one coat over about 675 square feet. A 5 kg container costs \$96.40 plus shipping and a 25 kg container costs \$482 plus shipping. Contact Plus may be diluted as much as 10 percent with either KEIM Fixativ, Spezial Dilution, Soldalit Dilution, or Concretal Dilution (10 kg Contact Plus with 1 liter Dilution). It may be brushed, rolled, or airless sprayed with a 0.037 inch tip. Contact Plus must be overcoated with two coats of a KEIM silicate coating.

KEIM Royalan Dilution

KEIM Royalan Dilution is a silicate dilution used to dilute the base coat of Contact Plus and Royalan Grob. The base coat is diluted 10 percent with Royalan Dilution (10 kg Contact Plus or Royalan with 1 liter Royalan Dilution). Top coat of Royalan is applied undiluted. To determine product requirement, add total quantity of Contact Plus or Royalan Grob base coat and multiply by 10%. Royalan Dilution comes in 5 liter and 20 liter containers. A 5 liter container costs \$97.20 plus shipping and a 20 liter container costs \$388.80 plus shipping.

KEIM Royalan Grob

KEIM Royalan Grob is a silicate filling base coat that must be overcoated with a top coat of Royalan. The red oxide color is a pure pigmented concentrate. It comes in 5 kilogram and 25 kilogram containers. Over a perfect surface in ideal conditions, a 5 kg container will cover one coat over about 270 square feet and a 25 kg container will cover one coat over about 1346 square feet. In the 9004 red oxide, a 5 kg container costs \$110.10 plus shipping and a 25 kg container costs \$500.50 plus shipping. Royalan Grob may be brushed, rolled, or airless sprayed with a 0.027 to 0.031 inch tip.

KEIM Royalan

KEIM Royalan silicate paint is a two coat system comprising of one base coat and one top coat. The red oxide color is a pure pigmented concentrate. It comes in 5 kilogram and 25 kilogram containers. Over a perfect surface in ideal conditions, a 5 kg container will cover one coat over about 270 square feet and a 25 kg container will cover one coat over about 1346 square feet. In the 9004 red oxide, a 5 kg container costs \$110.10 plus shipping and a 25 kg container costs \$500.50 plus shipping. Royalan may be brushed, rolled, or airless sprayed with a 0.027 to 0.031 inch tip.

If you have an interest, the Piedras Blancas Lighthouse near Cambria (Hearst Castle) is in its final recoating stages where they are repainting the interior and exterior with KEIM. It will be stunning.

Please let me know if you have questions. Thank you.

Warm regards, tom

Tom Tipps, CSI, CDT
Sales Manager

KEIM Mineral Coatings of America, Inc.

10615 Texland Blvd # 600
Charlotte, NC 28273-6201
office 704-588-4811 ext 201
cell 505-400-1257
email tom.tipps@keim.com
www.keim.com

Technical Data Sheet

KEIM Royalan®-Grob

Filled, silicate paint for base and intermediate coats



1. Product description

KEIM Royalan-Grob is a highly filled, silicate based priming paint for preliminary coats on difficult substrates in subtropical/tropical conditions. KEIM Royalan-Grob can be used in certain cases as a bridging coat on previously painted surfaces or to close non-moving hairline cracks up to 0.2 mm and equalize different textures.

The Royalan system forms a chemical bond with the mineral substrate offers water repellency, and high vapor permeability. KEIM Royalan-Grob is made using pure inorganic mineral fillers, lightfast inorganic pigments, additives, potassium silicate binder and glass fibers.

2. Field of application

KEIM Royalan-Grob serves as a primary and intermediate coat within the KEIM Royalan system. It can be used on all absorbent and mineral surfaces in combination with the products of the KEIM Royalan system.

KEIM Royalan-Grob should not be applied to large horizontal or slightly inclined areas.

3. Product properties

KEIM Royalan-Grob is non-fading and contains only absolutely lightfast inorganic pigments.

- Highly water vapor permeable
- Lightfast
- No solvents added
- Easy to overcoat
- Non-flammable
- Non-film-forming

- Mineral matt
- All components UV-resistant
- High resistance to weathering
- Resists industrial pollution and acid rain
- Resists extreme climatic conditions
- Water repellent
- Ease of application

Material characteristics

- Diffusion equivalent
air layer thickness: $s_d = 0.01 \text{ m}$ (1 coat)
- Water vapor
transmission rate: $V = 2.100 \text{ (g/m}^2\text{d)}$
(1 coat)
- Water vapor permeability 83 perms
- Density: $Q = 1.6/\text{cm}^3$
- Thermal Expansion: comparable to the mineral substrate to which it is applied.
- Flash point: non-flammable

Color Shades

White, colors upon request.

4. Application instructions

Substrate Preparation

The substrate must be sound, dry, absorbent, clean, dust- and grease-free. Loose and brittle parts, dirt, oily and greasy materials, moss, algae and other surface contaminants are to be entirely removed by suitable mechanical and/or chemical means. Old, film-forming coatings which may hinder the vapor diffusion and/or which are not well adhering should be removed with KEIM Bio Stripper (paint stripper) or by mechanical means. Well adhering organic old coatings that are not removed must be coated with KEIM Contact-Plus



KEIM MINERAL COATINGS

of America, Inc.

10615 Texland Boulevard, Suite 600
Charlotte, North Carolina 28273 USA
Toll Free: 866-906-5346
Tel: 704-588-4811 - Fax: 704-588-4991
www.keim.com Keim-info@keim.com

as bridging coat prior to subsequent applications of KEIM Royalan products.

Not suitable over old plasto-elastic coatings or coatings and substrates susceptible to saponification.

For strongly absorbent or sanding substrates a pretreatment with KEIM Royalan-Dilution, undiluted, is recommended. Possible sinter layers on new renders/stuccos/plasters must be removed with KEIM Lime Remover (Ätzflüssigkeit) according to product instructions. Also Render/Stucco/Plaster repairs must be treated with KEIM Lime Remover (Ätzflüssigkeit) according to the product instructions in the technical data sheet.

Before coating areas that are subject to strong weathering or environmental stress, pretreatment with KEIM Silan-100 or KEIM Silangrund is recommended for maximum weathering protection.

Application

KEIM Royalan-Grob may be applied by brush, roller or airless spraying (nozzle size 0.94 mm/0.037 in.). Application by brush is best for crack filling as it can be worked into all surfaces well. A minimum drying time of 12 hours between coats must be maintained.

Base coat

KEIM Royalan-Grob diluted with up to 20 % of KEIM Royalan-Dilution.

On surfaces of strong differences in structure and/or many hairline cracks (0.5 mm) a base coat of KEIM Contact-Plus should be made instead of KEIM Royalan-Grob.

Top coat

With KEIM Royalan, undiluted, or diluted with up to 5 % of KEIM Royalan-Dilution.

Working conditions

Air and surface temperature: > 5 °C (41 °F).

Do not apply under direct sun or on heated surfaces. Substrates should be protected during and after application from direct sun, wind and rain.

Drying times

A drying time of 12 hours minimum is to be respected between the different coats of KEIM Royalan, and / or KEIM Royalan-Grob and / or KEIM Contact-Plus. After a pretreatment with KEIM Silan-100 or KEIM Silangrund, the first coat should be applied after 4 hours.

Consumption per 1 m² (10.8 sq ft)

For a base or intermediate coat on a smooth surface: approx. 0.2 kg KEIM Royalan-Grob and 0.05 l (1.7 fl oz) KEIM Royalan-Dilution per coat.

These consumption figures are typical values and strongly depend upon the absorption and texture of the substrate as well as on the application procedure. Exact consumption ratios may only be defined by trial applications on the project.

Tools

Clean immediately after use with water.

Mixing with other products

In order to maintain the specific features of KEIM Royalan and the related system products, they may not be mixed with other products or additives nor may they be diluted with water.

5. Packaging

5 kg and 25 kg containers



6. Storage

Approx. 12 months, if kept cool, but frost free in tightly closed original unopened containers. Protect from heat and direct sunlight.

7. Hazardous substances ordinance class

- R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- S 26: Avoid release to environment. Refer to special instructions/safety data sheets.

8. Transport hazard class

n/a

9. Disposal

EC Waste code No. 08 01 11
Dispose of completely emptied containers in accordance with local, state and federal regulations.

10. Safety instructions

KEIM Royalan-Grob is alkaline. Cover areas which are not to be coated, especially glass, ceramics and natural stone. Any splashes on surrounding surfaces or traffic areas must be rinsed off immediately with plenty of water. Protect the eyes and skin from splashes of paint. Do not swallow. Keep out of reach of children.

Refer to the relevant safety data sheets.

This product is only intended for the sale to and the application by professional applicators. The application instructions as well as the labeling are to be adhered to. The recommendation values and characteristics stated are the result of intensive development work and practical experience. Our verbal and/or written recommendations regarding the use and application of our products are to assist in the choice of our products and are not the basis of a contractual and/or legal relationship. They do not release the purchaser and/or applicator from the obligation to verify the suitability of our products for the intended application with due diligence. The prevailing general rules of building technology are to be respected. KEIMFARBEN GmbH & Co. KG has adopted a policy of constant product development. Modifications serving the improvement of the product or its application are reserved. This edition supersedes all earlier editions.



MATERIAL SAFETY DATA SHEET

KEIM Royalan Grob



1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: KEIM Royalan Grob
CHEMICAL FAMILY: Aqueous solution of alkali silicate and additives
PRODUCT USE: Silicate primer coating

MANUFACTURER:

KEIM Mineral Coatings of America, Inc.
10615 Texland Boulevard, #600
Charlotte, NC 28273
Phone: 1-704-588-4811
Emergency Phone: only in US and Canada
1 800 535 5053 (INFOTRAC)

2. HAZARD IDENTIFICATION

POTENTIAL HEALTH EFFECTS: (Also see section 11)

EMERGENCY OVERVIEW: CAUTION: EYE IRRITANT. PROLONGED OR REPEATED CONTACT MAY CAUSE SKIN IRRITATION.

ROUTES OF ENTRY: Skin and eye contact.

Appearance: Pasty material various colors with a mild characteristic odor.

CARCINOGENICITY: See section 11.

NTP: Yes Quartz, IARC: Yes Quartz, group 1, Titanium dioxide, group 2B, OSHA: No
California Proposition 65: Yes (Crystalline silica)

Note: Carcinogen risk present only by inhalation of dust or mist.

This material is considered hazardous by the OSHA Hazard Communication Standard. (29CFR1910.1200)

MATERIAL SAFETY DATA SHEET

KEIM Royalan Grob



3. COMPOSITION/ INFORMATION ON INGREDIENTS

Component	CAS#	% By Wt.
Calcium carbonate	471-34-1	20 - 50
Kaolin, calcined	92704-41-1	5 - 10
Feldspar-group minerals	68476-25-5	2.5 - 5
Mica	12001-26-2	2 - 10
Quartz	14808-60-7	2 - 15
Titanium Dioxide	13463-67-7	2 - 5
Fluorite (CaF ₂)	14542-23-5	0.1 - 5
Pigments	Various	<10

4. FIRST AID MEASURES:

SKIN: Wash with soap or mild detergent and large amounts of water. Do not use solvents or thinners.

EYES: Hold eyes open and flush for at least 15 minutes with large amounts of water. Get immediate medical if irritation occurs.

INGESTION: Do not induce vomiting. Give two glasses of water to dilute stomach contents. Never give anything by mouth to an unconscious person. Get immediate medical attention.

INHALATION: Remove to fresh air, get medical attention

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Product is not flammable. Use extinguishing agent suitable for surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES: None.

6. ACCIDENTAL RELEASE MEASURES:

SPILL AND LEAK PROCEDURES: Collect into suitable containers.

MATERIAL SAFETY DATA SHEET

KEIM Royalan Grob

**7. HANDLING AND STORAGE**

STORAGE: Store in closed original containers. Protect from heat and exposure to direct sun. Protect from freezing.

HANDLING: Wear clothing, gloves and glasses to avoid contact with skin and eyes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS:

Component	CAS#	Exposure Limits
Kaolin, calcined	92704-41-1	2 mg/ m ³ TWA ACGIH
Mica	12001-26-2	3 mg/ m ³ TWA ACGIH
Quartz	14808-60-7	0.025 mg/ m ³ TWA ACGIH
Titanium Dioxide	13463-67-7	10 mg/ m ³ TWA ACGIH
Fluorite (CaF ₂)	14542-23-5	2 mg/ m ³ TWA ACGIH
Pigments	Various	See section 11

ENGINEERING CONTROLS: Use in a well ventilated area.

RESPIRATORY PROTECTION: Not required under normal conditions of use.

SKIN PROTECTION: Clothing and gloves suitable to avoid skin contact.
Use butyl rubber or nitrile rubber gloves and protective clothing.

EYE PROTECTION: Safety glasses with side shields.

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Value
Appearance	paste
Color	various
Flashpoint	n.a.
Viscosity* at 20°C	Not determined
Lower Explosion Limit	Not applicable
Upper Explosion Limit	Not applicable
Solubility in Water	miscible
pH	11-12

MATERIAL SAFETY DATA SHEET

KEIM Royalan Grob



10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

HAZARDOUS DECOMPOSITION PRODUCTS: None.

POLYMERIZATION: Will not occur.

INCOMPATIBILITIES: Strong acids and oxidizing agents.

11. TOXICOLOGICAL INFORMATION

Although ACGIH and OSHA exposure limits are established for certain ingredients (see section 8), this product is sold as a paste and, when used as intended, does not generate dust. Thus the product as such does not pose a hazard resulting from respiration of dust or particulates.

The International Agency for Research on Cancer (IARC) has concluded that crystalline silica inhaled in the form of quartz from occupational sources should be classified as carcinogenic to humans (Group 1)
Titanium dioxide - IARC classification is group 2B, possibly carcinogenic to humans based on animal studies. There is inadequate evidence in humans.
ACGIH A4 Not classifiable as a human carcinogen.

Depending on the color, various pigments are used that contain Iron oxide, chromium III, antimony, manganese and/or antimony ingredients. These materials can cause various serious health effects if their dusts are inhaled at concentrations above the permissible exposure limits.

12. ECOLOGICAL INFORMATION

Avoid contamination of ground water or waterways. Do not discharge into sewers.

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with Federal, State or Local regulations.

14. TRANSPORT INFORMATION

DOT SHIPPING NAME: Not regulated.

MATERIAL SAFETY DATA SHEET

KEIM Royalan Grob



15. REGULATORY INFORMATION

All components of this product are on the TSCA Inventory.

SARA Title III:

This product contains no toxic chemicals which are subject to the supplier notification requirements of Section 313 of the Superfund Amendments and Reauthorization Act (SARA/EPCRA) and the requirements of 40 CFR Part 372.

Note: Entries under this section cover only those regulations typically addressed in the MSDS generating process, such as, TSCA, and EPCRA/SARA Title III.

16. OTHER INFORMATION

HAZCOM LABEL: CAUTION EYE IRRITANT. PROLONGED OR REPEATED CONTACT MAY CAUSE SKIN IRRITATION.

rtk royalan grob(v3).doc

Version 3 includes changes to sections 3 and 8.

Version 2 includes changes to sections 2, 11 and Labeling.

This MSDS conforms to the American National Standard, ANSI Z400.1-2004.

To the best of our knowledge, the information contained in this MSDS is accurate.

It is intended to assist the user in his evaluation of the product's hazards, and safety precautions to be taken in its use. The data on this MSDS relate only to the specific material designated herein. We do not assume any liability for the use of, or reliance on this information, nor do we guarantee its accuracy or completeness.

Version 3:

November 12, 2007

Version 2:

August 22, 2007

Version 1:

August 5, 2007

KEIM ROYALAN GROB(v3).doc

From: "Ken Hinshaw" <KenL@redshift.com>
Subject: **Fw: Point Pinos Lighthouse chimneys, KEIM Mineral Coatings**
Date: January 31, 2012 7:34:07 AM PST
To: "Lowell Northrop" <LowellNor@aol.com>
▶ 9 Attachments, 2.4 MB

Lowell: if you have time, could you have a look at this info re. paint for the chimneys. I was trying to pick a product line that we could use not just for the chimneys, but for the corbels and eventually for the exposed granite.

I will call you later today after I get a chance to look over the info.

Ken

----- Original Message -----

From: Tom Tipps
To: Ken Hinshaw
Sent: Monday, January 30, 2012 10:44 AM
Subject: Point Pinos Lighthouse chimneys, KEIM Mineral Coatings

Dear Ken,

I appreciate your inquiry about using KEIM to protect the chimneys at Point Pinos. If I read your comments correctly, there are two brick chimneys with corbels that have some lime plaster which are presently coated with organic paint and you wish to repaint them without removing the organic paint. I am assuming the organic paint is resin or acrylic based—not oil based paint.

Please let me know if it is oil based.

I am mailing you a KEIM Spektrum color fold out so you can have a look at the KEIM color #9003 red oxide and the KEIM color #9010 dark red oxide to determine if either of these are the red color you are looking for. If they are not, we can match a red color that you may have in mind.

Within the KEIM Royalan silicate coating system we have three products that would be appropriate for recoating over the previously painted surfaces that won't fade and provide weather resistance and longevity as long as the old organic paint remains adhered to the brick or lime plaster surfaces. These products are KEIM Contact Plus, KEIM Royalan Grob, KEIM Royalan, and KEIM Royalan Dilution.

After cleaning and removing loose organic paint layers, KEIM Contact Plus is diluted about 10 percent with KEIM Royalan Dilution and applied by brush or roller to create a bridge between the organic paint and the Royalan silicate paint. Contact Plus also fills cracks up to one half millimeter wide and softens the hard edges of the remaining organic paint layers over the plaster/brick substrate so they visually disappear.

The next step is the application of the two coats of silicate Royalan paint. The base coat is Royalan Grob, a pigmented filling silicate paint coat that equalizes the Contact Plus coat. Dilute the Royalan Grob about 10 percent with KEIM Royalan Dilution and generously apply. The top coat is pigmented Royalan silicate paint and it is applied undiluted. I have attached the technical data and MSDS sheets for these products. All are harmless to the environment and people and have unmeasurable VOC's.

The application is by roller or brush. Allow a minimum 12 hours curing time between coats and paint in good weather. Surfaces must be rain and wind-free for the minimum 12 hours.

There is an excellent video on our website that demonstrates this application. Please review it at: <http://www.keim.com/ProductProgram/Video.aspx>

The product information appears below. Doing business with KEIM is very easy. Determine your product requirements and email them to me. Our office will return a quote with shipping cost for your review. If all appears correct, or if you need to change anything, you simply call our office with your payment and corrections if any.

I understand the chimneys do not represent a large square foot project so the minimum quantities may allow you to add a third coat of Royalan which should give you a thirty year life expectancy. Again, this is dependent on keeping the flashings and mortar in good condition so the organically bound paints will remain bonded to the substrates.

Product Information

KEIM Contact Plus

KEIM Contact Plus is a silicate filling **white primer** containing glass fibers and high-grade fillers in balanced grain sizes and shapes. It is used to equalize textural differences on substrates, to optically blend together indifferent substrates or repair patches, to fill cracks 0.5 mm and smaller, and to bridge over well-adhering painted surfaces (**but not oil based or plasto-elastomeric paints**). Contact Plus comes in 5 kilogram and 25 kilogram containers. Over a perfect surface in ideal conditions, a 5 kg container will cover one coat over about 135 square feet and a 25 kg container will cover one coat over about 675 square feet. A 5 kg container costs \$96.40 plus shipping and a 25 kg container costs \$482 plus shipping. Contact Plus may be diluted as much as 10 percent with either KEIM Fixativ, Spezial Dilution, Soldalit Dilution, or Concretal Dilution (10 kg Contact Plus with 1 liter Dilution). It may be brushed, rolled, or airless sprayed with a 0.037 inch tip. Contact Plus must be overcoated with two coats of a KEIM silicate coating.

KEIM Royalan Dilution

KEIM Royalan Dilution is a silicate **dilution** used to dilute the base coat of Contact Plus and Royalan Grob. The base coat is diluted 10 percent with Royalan Dilution (10 kg Contact Plus or Royalan with 1 liter Royalan Dilution). Top coat of Royalan is applied undiluted. To determine product requirement, add total quantity of Contact Plus or Royalan Grob base coat and multiply by 10%. Royalan Dilution comes in 5 liter and 20 liter containers. A 5 liter container costs \$97.20 plus shipping and a 20 liter container costs \$388.80 plus shipping.

KEIM Royalan Grob

KEIM Royalan Grob is a silicate filling **base coat** that must be overcoated with a top coat of Royalan. The red oxide color is a pure pigmented concentrate. It comes in 5 kilogram and 25 kilogram containers. Over a perfect surface in ideal conditions, a 5 kg container will cover one coat over about 270 square feet and a 25 kg container will cover one coat over about 1346 square feet. In the 9004 red oxide, a 5 kg container costs \$110.10 plus shipping and a 25 kg container costs \$500.50 plus shipping. Royalan Grob may be brushed, rolled, or airless sprayed with a 0.027 to 0.031 inch tip.

POINT PINOS LIGHTHOUSE

PRESERVATION PLAN.

SPECIFIC RECOMMENDATIONS FOR TREATMENT:

APPLICATION OF RECOMMENDED PRODUCTS:

MASONRY MATERIAL IN AND ON THE POINT PINOS LIGHTHOUSE:

CLEANING MASONRY SURFACES OF ACCUMULATED OLD COATINGS:

Refer to: Preservation Brief # 1: The Cleaning and Waterproof Coating of Masonry Buildings. Preservation Brief # 6: The Dangers of Abrasive Cleaning to Historic Buildings. Preservation Brief # 38: Removing Graffiti From Historic Masonry.

FOR SURFACES WHICH WILL NOT BE RECOATED:

Bi-carbonate of Soda Blasting: With special restrictions. Flare tip nozzle, low P.S.I. (less than 100); Nozzle must be kept at least 6" away from surface. Monitor workers with periodic unscheduled inspections to insure that protective measures are always adhered to. **(Note of Caution).** If Bi-Carbonate of Soda is used any migration of product will contaminate adjoining surfaces. Flushing all areas in contact with Bi-Carbonate residue with H₂O several times will be required. Conduct PH test on all areas cleaned with Soda and do random testing of all areas in close proximity. Any contaminated areas not thoroughly neutralized will not be able to hold coatings and all applied coatings will fail as soon as humid levels or other forms of moisture serve as a catalyst to re-activate the Soda.

The use of Bi-Carbonate of Soda is a very controllable removable process when properly used. It can selectively remove layers of coatings leaving underlying layers of lead based coatings intact for encapsulation. **All product, residue, and waste must be contained, collected, and disposed of according to state of California and Federal laws.**

Peel- Away: With Special restrictions. All adjoining areas should be masked to prevent contact with product. Product will absorb into porous surfaces and result in great difficulty in attempts to neutralize the residue of the product. Product residue will cause subsequent yellowing and /or failure of applied coatings. This is a fairly controllable removal process which due to its " blanket " application technique can contain lead based coatings for easier collection. **All product, residue, and waste must be contained, collected and disposed of according to State of California and Federal laws.**

Specific Recommendations /Application of Recommended Products: Page 1 of 8.

FOR SURFACES WHICH WILL BE RECOATED:

Sponge -Blasting: With special restrictions. Flare tip nozzle, low P.S.I. (less than 120). Nozzle must be no less than 6" from surface. This is a safe and highly effective means of removing accumulated coatings. It is labor intensive, uses complex equipment and expensive material. However, material can be re-used, does not contaminate adjoining areas, and does not require neutralization. With proper use, this is a very controlled removal process which can selectively remove layers of coatings leaving underlying layers of lead based coatings intact for encapsulation.

All product, residue, and waste must be contained, collected, and disposed of according to State of California and Federal laws.

Pressure Washing (Fresh water only): With special restrictions .Flare tip nozzle. Low P.S.I. under 100. Keep nozzle at least 6" away from surface. **All residue and waste must be contained, collected, and disposed of according to local, State of California and Federal Laws.**

COATINGS FOR EXTERIOR MASONRY SURFACES:

* For Surfaces intended to be or which have historically been coated.

Recommended Product.

Thoro Primer 1000

Thoro Sheen.

Two finish coats applied as per manufacturer's instructions. Perform Moisture meter test prior to any coatings. Range of test not to exceed 15. Closely monitor ambient temp and weather conditions. Keep daily coating activity log, recording specific weather conditions at time of applications and 24 hours thereafter.

Preparation: Refer to: Preservation Brief #1: The Cleaning and Waterproof Coating of Masonry Buildings. Preservation Brief # 2: Re-pointing Mortar Joints in Historic Brick Buildings.

Gentle hand scraping to remove loose debris, old coatings etc. Vacuum all areas prior to pressure washing and recoating. Gentle pressure washes all masonry surfaces with 10% chlorine and 90 % H2o. Low P.S.I. Not to exceed 120. Flare tip nozzle not closer than 6" to surface. Allow 36-hour dry time depending on humidity. Re- test moisture range with Delmhorst Contractors Moisture Meter. To establish moisture level at time of application. Record information on daily log.

Specific Recommendations /Application of Recommended Products: Page 2 of 8.

Areas of Application: Exterior masonry surfaces which have historically been coated. Finish coat colors to be based on coating color analysis and /or documentation of historic colors depicted during period of interpretation. (Some lighthouses have used numerous "day mark " colors during their history).

COATINGS FOR INTERIOR MASONRY SURFACES:

Recommended Product.

* For use on surfaces intended to be or which have historically been coated.

ACR 60

Thoro Coat.

** Do not use any textured coatings on surfaces which never had textured coatings.

Preparation: Refer to: Preservation Brief #1: The Cleaning and Waterproof Coating of Masonry Buildings: Preservation Brief # 2: Re-pointing Mortar Joints in Historic Brick Buildings , Preservation Brief # 6: Dangers of Abrasive Cleaning to Historic Buildings. Preservation Brief # 38: Removing Graffiti From Historic Masonry.

Areas of Application: Interior Surfaces which have historically been coated.

Two finish coats. First coat should be thinned by 25% volume with H₂O to insure mill thickness allows for absorption into porous surface. (Rather than be too thick and caking on surface). Second coat full product. Gentle pressure washes all masonry surfaces with 10 % chlorine 90% H₂O. Low P.S.I. Not to exceed 60. Flare tip nozzle no closer than 6" from surface. Allow 36 hours dry time depending on humidity. Use Delmhorst Contractors Moisture Meter to establish moisture level at time of application. Record information on daily log. Finish Coat color to be based on coating color analysis and or other documentation to establish colors used during period of interpretation. Interior colors used by U.S. Lighthouse Service were different than those used by United States Coast Guard which took over U.S. Lighthouses in 1939.

FILLING CRACKS ON MASONRY SURFACES:

Recommended product.

Thorolastic knife grade or Thorolastic Brush Grade depending on width and depth of crack. Best used on hairline/ superficial cracks. Structural cracks require different procedure. **Refer to: Preservation Brief # 2: Re-pointing Mortar Joints in Historic Brick Buildings.**

Specific Recommendations /Application of Recommended Products: Page 3 of 8.

KEIM Royalan

KEIM Royalan silicate paint is a **two coat system** comprising of one base coat and one top coat. The red oxide color is a pure pigmented concentrate. It comes in 5 kilogram and 25 kilogram containers. Over a perfect surface in ideal conditions, a 5 kg container will cover one coat over about 270 square feet and a 25 kg container will cover one coat over about 1346 square feet. In the 9004 red oxide, a 5 kg container costs \$110.10 plus shipping and a 25 kg container costs \$500.50 plus shipping. Royalan may be brushed, rolled, or airless sprayed with a 0.027 to 0.031 inch tip.

If you have an interest, the Piedras Blancas Lighthouse near Cambria (Hearst Castle) is in its final recoating stages where they are repainting the interior and exterior with KEIM. It will be stunning.

Please let me know if you have questions. Thank you.

Warm regards, tom

Tom Tipps, CSI, CDT
Sales Manager

KEIM Mineral Coatings of America, Inc.

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www.keim.com

-  [KEIM Royala...e.pdf \(1.9 MB\)](#)
-  [Royalan-Gro...pdf \(69.7 KB\)](#)
-  [Contact Plus...pdf \(59.5 KB\)](#)
-  [Royalan \(US\)...df \(72.3 KB\)](#)
-  [Royalan-Dilu...df \(57.6 KB\)](#)
-  [KEIM ROYAL...pdf \(27.6 KB\)](#)
-  [KEIM CONTA...pdf \(26.7 KB\)](#)
-  [KEIM ROYAL...pdf \(246 KB\)](#)
-  [KEIM ROYAL...pdf \(21.9 KB\)](#)