

UBC Social, Ecological Economic Development Studies (SEEDS) Student Reports

Sustainable Paint

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November 18, 2009

1.0 ABSTRACT

The new Student Union Building (SUB), scheduled to be completed in 2014, bring about many changes and upgrades to the University of British Columbia (UBC) campus. In compliance with UBC's sustainability policies, this paper evaluates sustainable paints according to its triple-bottom-line comparison based on social, economic and environmental issues. The challenge is to categorically compare these headings and objectively recommend a sustainable paint to the Alma Mater Society (AMS) in hopes that it can contribute to the well being for every occupant of the new SUB. The three interior paints studied include: Horizon Interior zero VOC paint, Bioshield solvent free wall paint, and the Interior Latex paint from Rona as the baseline paint.

Environmentally and socially speaking, the Horizon and the Bioshield paints release significantly less VOC than a conventional paint without the Green Seal, Green Wise or Eco Logo. The Zero VOC paints release below 0.1 grams per liter, and use more natural ingredients than their synthetic counterparts. Judging from the ingredients used, the production process could not have been as toxic for natural paints. The paints shared common disposal storage methods involving drying or hardening for disposal and clear labeling and proper sealing for storage. It is worth noting that conventional paint like RONA paint has existing reuse and recycling programs where as a sustainable paint company does not have the capacity to do so. In terms of cost, the Rona paint was slightly cheaper than the Zero VOC paints at \$32.99 per gallon. But factors like durability, coatings, and spread coverage were also considered, and showed that the Zero VOC paint can be cost competitive in terms of cost per square feet coverage.

After due considerations, Horizon Interior Zero VOC Sustainable Paint was evaluated to be the best given its low cost and strong certifications. It is highly recommended that the AMS adopt this paint for its cost-effectiveness and low odor over the other paints based on the aforementioned triple-bottom-line assessment.

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2.0 INTRODUCTION

The new SUB will require paint in some areas of the building and the old SUB will be renovated and will also require repainting. One of the goals for the new SUB and renovating the old SUB will be sustainability, so we have decided to focus on three different types of interior paints that could possibly be used for the project. The first paint, Interior Latex Paint RONA, is a typical interior latex paint that is commonly used. The second paint, Bioshield Solvent Free Wall Paint, is a natural paint. Natural paints are paints which are made from organic material such as plant oils, natural minerals or milk protein. The last paint, Horizon Interior Zero VOC Sustainable Paint, is a paint that is marketed as sustainable and is used where health and air quality are high priority. The “Interior Latex Paint RONA” will be used as a baseline paint to compare against the more sustainable paints to see what the tradeoffs are when selecting a sustainable paint instead of a common paint. Each type of paint will be scrutinized using the triple bottom line approach and a recommendation for which paint to use for the new and old SUB will be given in the Evaluation section.

3.0 GLOSSARY

Eco Logo – A certification given to products which meet a certain environmental standard set by that organization.

Green Wise – A certification given to paints which have been tested and meet environmentally determined performance standards established by Coatings Research Group Incorporated ISO-accredited facility. (CRGI 2008, About)

Threshold Limit Value, Time Weighted Average (TLV- TWA) – The maximum acceptable amount of exposure allowed during an eight hour work period around certain chemicals or substances.

Volatile Organic Compounds (VOCs) – Vapors that are released from solids or liquids that contain organic compounds that may affect air quality and health. Generally measured in grams per liter, a lower number is ideal. Some possible side effects from exposure to VOC’s are eye and upper respiratory irritation, nasal congestion, headache, and dizziness

Zero VOC Paint – Paint which contains less than 0.1 gram per litre of VOCs.

4.0 SOCIAL IMPLICATIONS

In considering the social implications of each of the paints being considered, a few main factors will be considered. Firstly, where available, the production location will be stated, as well as the conditions typical of that region. While exact factory conditions would be the ideal data to consider, a company would not readily admit or display any poor conditions. The second main social aspect considered will be the health effects, be it in harmful chemicals, VOC levels, or strong odors which many people are sensitive to.

4.1 RONA INTERIOR LATEX PAINT

This paint is actually produced by Sico, for which Rona is a retailer, and is manufactured in North America. With fair stringent regulations on working conditions, and unionized benefits, it is reasonable to assume the paint is manufactured under very humane conditions. Since the Eco Logo is absent from this product, the product must have VOC levels above 150 grams per liter, which may cause eye irritation, headache or similar problems. Latex paint typically also has fewer odors than traditional oil based paints, though exact values were not supplied by the producer. Also, latex paint is water based and is considered non-toxic though ingestion may not be recommended.

4.2 BIOSHIELD SOLVENT FREE WALL PAINT

Similar to the previous paint, the Bioshield Solvent Free Wall Paint is produced within North America, and thus the conditions of the workers are considered humane. The MSDS for Bioshield matte paint attached in the Appendix shows that the paint has little in terms of hazard cautions other than direct ingestion. Clearly, Zero VOC paints are favourable for painters and occupants of the rooms to which the paint are applied. For the painters, they can enjoy easy application from lack of paint drips and splashes, as well as reduced exposure. Although the paint is Zero VOC, since the TLV- TWA is unknown, ventilation during painting is still highly recommended. Low-odour release is also a positive feature for both painters and the occupants of the vicinity. Once the paint dries, occupants will also enjoy the decreased long term exposure from paint evaporates. The carnauba wax keeps the wall anti-static, that is to say, it repels fine dust particles, allowing the painted wall to look more aesthetic longer than conventional synthetic paint, as well as reduce the amount of dust collected on wall surfaces which is preferable for those with a dust sensitivity. Since the ingredients are mostly non-toxic and naturally produced, there should be little social concerns in the life cycle of the paint from production to disposal.

Table 1 below shows the ingredients and the corresponding health risk associated with these ingredients.

TABLE 1 - BIOSHIELD PAINT INGREDIENTS AND ASSOCIATED HEALTH CONCERNS

Ingredient	Comment and Known Health Concerns
Water	Not a health concern
Chalk	Calcium Carbonate, not a health concern
Talcum(asbestos free)	With Asbestos, it is known to cause lung, skin and ovarian cancer, non-asbestos talc are recognized as safe ingredient.
Titanium Dioxide Pigment	Common ingredient for any paint. Used as white pigment. It has been known to be carcinogenic, but no exposure limit was ever set.
Carnauba Wax	Wax off palm leaves, mainly ester and fatty acid (not hazardous)
Polyphosphate	Water softener used for water-based paints
Cellulose	An organic compound with no known health risks. Used in many industrial applications for water soluble adhesives.
Soy Standoil	Another natural product.
Sodium Hydroxide	Strong base; its use in industries are limitless.
Food-Grade Preservative	A synthetic ingredient. Respiratory and health risks, but generally inconclusive. Needed to keep the organic paint from spoiling.

4.3 HORIZON INTERIOR ZERO VOC SUSTAINABLE PAINT

Horizon Interior paints are manufactured by Rodda Paint which has been producing paints in the Pacific Northwest since the 1930s. Again these working conditions are expected to be humane to comply with national regulations. For health effects, once the paint is dry it is completely non-toxic, though it is not as favorable in liquid form. Though the liquid is still non-toxic, it may cause irritation, nausea, etc. if ingested (See Appendix for MSDS). The harmful ingredients listed on the MSDS include many of the same ingredients as the Bioshield Paint, such as Titanium Dioxide and Sodium Hydroxide, and though the other ingredients are not natural, they are not hazardous. A major health benefit to this paint, however, is the degree of odors within the product and released during application – low odor. Similar to the Bioshield paint, ventilation is still recommended, though the product is marketed with no offensive odors (See Product Specifications in the Appendix). A last social benefit comes with the stain resistant finish, which provides a more lasting aesthetic, resulting in fewer touch-ups and a more lasting color.

5.0 FINANCIAL IMPLICATIONS

The new SUB is still in the early design phase so the amount of painting required is still not known. To estimate the possible cost we will look at the cost of a 3.78 liter (1 gallon) bucket of paint and consider how often we would need to repaint instead of trying to estimate the surface area that requires paint for the new SUB.

5.1 RONA INTERIOR LATEX PAINT

The cost of a single gallon of this paint is \$32.99. This paint has an estimated coverage rate of 12 square meters (130 square feet) per liter, which leads to \$2.749 dollars per square meter of coverage. Interior latex paint is designed for low traffic areas, however many areas of the new and old SUB have high levels of foot traffic. Under ideal conditions, latex paint should last 10 to 15 years. If this paint were to be used, the life expectancy of a single coat of paint will be much lower than for the ideal case which will require more touch ups and repainting. There is also a bit of preparation work that needs to be done before applying latex paint. Latex paint adheres best to a clean surface, while this may not affect painting for the new SUB, the old SUB will require the walls to be cleaned which will require additional labor.

5.2 BIOSHIELD SOLVENT FREE WALL PAINT

The cost of Bioshield paint is \$42 per gallon of satin paint and \$34 per gallon of matte paint. This pricing is considerably more than conventional paint prices but there are other advantages to Bioshield paint other than the environmental and social benefits. First of all, Bioshield paint only needs 2 or 3 coats and does not need extra primer. This paint can be “used on dry wall, plaster, brick and concrete. It can even be used on top of existing flat paint” (EHC, 2009). The first coat can be used as the primer and after 24 hours, a second and occasionally third coat can complete an evenly covered paint job. Each gallon of the paint can cover about 300 to 400 square feet (32.52 square meters) per coat depending on the surface and temperature conditions. This works out to be about \$2.923 per square meter, which is not too bad, considering its inherent benefits. Secondly, the naturally produced soy oil and the carnauba wax enhance the durability of the paint, allowing for longer periods before repainted, though no exact number for comparison was given.

5.3 HORIZON INTERIOR ZERO VOC SUSTAINABLE PAINT

Each gallon of the Horizon Interior paint regularly costs \$39.99, though web discounts and sales exist. From the product data sheet in the Appendix, Rodda reports a spread rate or coverage rate of 400 ft/gallon. This leads to a cost of \$1.076 per square meter, which is the lowest of all three paints. The other extreme advantage comes with the product's warranty, guaranteeing a 25 year lifecycle. Considering the 70 year plan for the new SUB, only two repainting cycles would need to be performed, again decreasing the cost. Unlike the RONA paint, though, the manufacturer has not indicated the strength of the paint in a high traffic area, and the touch-ups which may or may not need to be performed. A major setback to this otherwise very economic paint is its need for a primer, which would double the cost of the complete paint job to \$2.152 per square meter.

6.0 ENVIRONMENTAL IMPLICATIONS

In considering paint's environmental implications, production and the chemicals included therein, disposal and additional required chemicals to apply and clean the paint were considered.

6.1 RONA INTERIOR LATEX PAINT

Since latex paints are non-toxic, they can be disposed of by drying/hardening any remaining amount of paint and taken out with regular garbage (rules and regulations vary between municipalities). Also, as an alternative to disposing unused latex paint, there are recycling programs that let people send in unused paint which is then resold or given to others that may want to use it. Any tools used to apply the paint can be cleaned with water and soap as well, special chemicals are not required. Though this initially speaks to a minimal environmental impact, the production and manufacture of the paint is not disclosed by the producer. Latex paints are primarily created with a water solvent, which is much less hazardous and impactful than the toxic, flammable, and environmentally hazardous alternatives used in other paints. However, because this paint doesn't bear an environmental seal of any kind, it is evident that there are a number of chemicals used in its production

6.2 BIOSHIELD SOLVENT FREE WALL PAINT

Needless to say, Bioshield paint was considered because they are certified by various third-party agencies for their Zero VOC emissions. A Zero VOC paint must satisfy the requirement of less than 0.1 gram per litre VOC, which means at the most Bioshield paint would have 0.1 gram per litre, much lower than the legislated VOC intake recommendation. For most paints, colorants are the main cause of VOCs. To counter this restriction, and to provide more options to their customers, Bioshield claims to use ultra-low VOC, non-toxic water-borne tints that contains only 1 gram of VOC per litre tint. The tints can be bought separately, and applied to the white paint later for minimum VOC release. While the water-borne colorant is effective, most of the colours are relatively pale compared to conventional paints. Fortunately, for a student oriented building like the new SUB, light colours are probably a good choice to reduce the energy of the building through increased light reflection. For disposal it can similarly be let dry and taken out with standard refuse. Lastly, no indication was given by the suppliers as to how the product should best be applied, using chemical thinner or not, nor were recommendations given for cleanup afterwards.

6.3 HORIZON INTERIOR ZERO VOC SUSTAINABLE PAINT

One of the highlights to this “Sustainable Paint” is its Green Wise certification. This certification indicates that in addition to meeting VOC requirements, it also does not contain the chemicals indicated by the Coatings Research Group Incorporated as hazardous to humans or our environment. Some of these chemicals are as follows: methylene chloride, 1,1,1 trichloroethane, benzene, toluene, ethyl benzene, vinyl chloride, naphthalene, 1,2 dichlorobenzene, di (2-ethylhexyl) phthalate, butyl benzyl phthalate (CRGI 2009, Performance). This alone lends a great degree of credence to the claim of a sustainable paint, and to further exceed the minimum specification by additionally incorporating a Zero VOC rating is exceptional. Disposal is again not a problem, and if let dry becomes an inert, non-toxic solid that can be disposed of with regular waste. Cleaning can be completed with standard soap and water, and no thinner is ever recommended with the paint. With all of these combined, Horizon Interior appears to have a very minimal environmental impact when compared to regular paints.

7.0 CROSS COMPARISON

In this section the three paints, RONA Interior Latex Paint, Bioshield Solvent Free Wall Paint, and Horizon Interior Zero VOC Sustainable Paint will be compared, with highlights listed for social, economic and environmental implications, and ranked against each other in each category.

TABLE 2 - CROSS COMPARISON

	RONA Interior Latex Wall Paint	Bioshield Solvent Free Wall Paint	Horizon Interior Zero VOC Sustainable Paint
Social	- Humane manufacturing conditions - Water solvent	- Humane manufacturing conditions - No solvent - Zero VOC - Low odor - Dust repelling - Minimal hazardous ingredients	- Humane manufacturing conditions - Water solvent - Zero VOC - Low odor - Stain repelling - Minimal hazardous ingredients
	3	1	2
Economic	- \$2.794 / m ² - < 10 year lifecycle	- \$2.923 / m ² - Unknown lifecycle	- \$2.152 / m ² - >25 year lifecycle
	2	3	1
Environmental	- Clean disposal - Water solvent - Harmful chemical additives - Soap and water washable - Recycling and reuse program	- Clean disposal - Zero VOC - Low tinting - Natural ingredients	- Clean disposal - Zero VOC - Green Wise certified - Safe ingredients - Soap and water washable
	3	2	1
Overall Rank	3	2	1

8.0 CONCLUSION

Overall it appears that the most sustainable paint by the factors identified above is the Horizon Interior Zero VOC Sustainable Paint, for its Green Wise certification, its Zero VOC and low odor, and it's comparatively low cost. It is important to remember, however, that these comparisons did not take into account production energy or chemical, or transportation distances for further carbon emissions. If this data is made available in the future, it would be important to re-weigh the ranks against the new data to see if the paint still remains the most sustainable option.

9.0 REFERENCES

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APPENDIX

Bioshield Solvent Free Wall Paint #180 MSDS

Horizon Satin – White Base MSDS

Horizon Satin Product Specifications

Interior Acrylic Latex Paint – Pearl Finish – Super Latex Technical Data

BioShield Solvent Free Wall Paint #180

Material Safety Data Sheet in accordance with 91/155/EEC

Issued: 01.10.03

1 Section**Chemical Product and Company Identification**

MSDS Name: **Solvent Free Wall Paint**

Product Group : Surface Treatment inside

Catalog Numbers : **180 & 171**

Synonyms : Solvent Free Wall Paint #18, 19, 171, 172, 173, 180, 181,182, 183

Company Identification : Eco Design Co.
3215 Rufina Street
Santa Fe, NM 87507
Phone : +1-(505) 438-3448
Fax : +1-(505) 438-0199
e-mail: info@ bioshiieldpaint.com

2 Section**Composition, Information on Ingredients**

Dispersion of chalk and other mineral fillers, and inorganic pigments in a watery solution

Hazardous Ingredients: None**3 Section****Hazards Possibilities**

Does not require a hazard warning label, but the normal safety precautions for handling of chemicals must be observed

Appearance: .**Labelling:** None**Eye:****Skin:****Ingestion:****Inhalation:** .**Chronic:**

BioShield Solvent Free Wall Paint #180

Material Safety Data Sheet in accordance with 91/155/EEC

Issued: 01.10.03

4 Section**First Aid Measures****General Information:** None**Eye :** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.**Skin:** Flush skin with plenty of soap and water for at least 15 minutes while removing clothing and shoes. Wash clothing before reuse.**Ingestion:** Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water..**Inhalation:** None**Notes to Physician:** Treat symptomatically and supportively.**5 Section****Fire Fighting Measures****General Information:** Product is non-combustible non-flammable.**Extinguishing Media:** None**6 Section****Accidental Release Measures****General Remarks:** Forms slippery layers with water**Methods for Cleaning up / Taking up :**

Vacuum up spilled product. Rinse away rest with plenty of water.

Environmental Precautions:

Do not allow to enter drains or waterways Dry up leftover contents and remove with household garbage.

Additional Remarks :

BioShield Solvent Free Wall Paint #180

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7 Section**Handling and Storage:** Keep in a dry, cool environment. DO NOT FREEZE.**Hints on safe handling :** Open and handle containers with care.**Storage Conditions:** Keep dry and above 0°C.**8 Section****Exposure Controls, Personal Protection****Exposure Limits:** N/A**Personal Protective Equipment:****Eye:** Use safety glasses when spraying.**Skin:** Wear appropriate protective gloves to prevent skin exposure.**Clothing:** Wear appropriate protective clothing to prevent skin exposure.**Respirators:** Provide adequate ventilation during application and drying time.**9 Section****Physical and Chemical Properties**

Appearance:	Viscous Liquid Emulsion	
Physical State:	Liquid	
Odor:	none	
pH:	N/A	
Vapor Pressure:	n.a.	DIN 51 562
Vapor Density:	n.a.	
Evaporation Rate:	n.a.	
Viscosity:	n.a.	DIN 52 211
Boiling Point/Range:	n.a.	DIN 51 751/51, DIN 52 211
Freezing / Melting Point:	n.a.	
Autoignition Temperature:	n.a.	
Flash Point:	NO	DIN 51 755/51 758
NFPA Rating:	not published	
Exposure Limits, Lower:	n.a.	
Upper:	n.a.	
Decomposition Temperature:	n.a.	
Solubility:		
Specific Gravity/Density:		DIN 51 757

BioShield Solvent Free Wall Paint #180

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10 Section**Stability and Reactivity****Conditions to avoid:** None reported**Incompatibilities with Other Material:** None**Hazardous Decomposition Products:** None**Hazardous Polymerization:** None**11 Section****Toxicological Information****Acute Toxicity:** None reported**Carcinogenicity:** None reported**Sensitization:** None reported**Other Studies:****Experiences made in Practice:** No negative results reported**Additional Remarks:****12 Section****Ecological Information****General Remarks:** Because of its consistency the product cannot be dispersed in the environment. Adverse ecological effects are therefore unlikely on the basis of current knowledge.**13 Section****Disposal Considerations****Product:** In accordance with the necessary technical regulations, may be dumped, when solidified, with household waste, after consultation with site operator and with the responsible authority.**Packagings:** Completely emptied packagings can be given for recycling.**RCRA P-Series:** none listed**RCRA U-Series:** none listed

BioShield Solvent Free Wall Paint #180

Material Safety Data Sheet in accordance with 91/155/EEC

Issued: 01.10.03

14 Section**Transport Information****Labeling:** No dangerous goods, no labelling necessary**US DOT****UN-No. :** N/A**Hazard Class:** N/A**Packing Group:** N/A**Canadian TDG:** N/A**IMDG + GGVSee:** N/A**Class:** N/A**Packing Group :** N/A**Page :** N/A**IATA :****Class :****Page :****German Regulations:****ADR/GGVS, RID/GGVE:****Kemmler-No.:** N/A.**EMAC** N/A**GGSV:** N/A**Klasse:** N/A**Ziffer :** N/A**Anhang B.8:** N/A**Gefahrzettel:** N/A.**15 Section****Regulatory Information****European / international regulations**

European Labeling in Accordance with EC Directives:

The product **does not** require a hazard warning label in accordance with EC directives/the relevant national laws.

Although this product does not require a hazard warning label, we recommend that the safety advice should be observed.

Risk Phrases: R 41, Risk of serious damage to eyes**Safety Phrases:** S 2, Keep out of the reach of children**WGK (Water/Danger Protection):****Exposure Limits:**

BioShield Solvent Free Wall Paint #180

Material Safety Data Sheet in accordance with 91/155/EEC

Issued: 01.10.03

16 Section**Additional Information**

This Information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damage of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

Material Safety Data Sheet

Last Update: 02/18/09

HORIZON SATIN - WHITE BASE
523501

Manufacturer:
RODDA PAINT COMPANY
6123 N MARINE DRIVE
PORTLAND, OR 97203

Emergency Phone:
(800) 424-9300

Name of preparer:
Rick Barnard
Information Phone:
(503) 521-4300

HEALTH

FLAMMABILITY

REACTIVITY

PERSONAL PROTECTION

Hazardous Ingredients / SARA III Information

Reportable Components	CAS Number	Vapor Pressure mm Hg @ Temp	Weight Percent
+ TITANIUM DIOXIDE	13463-67-7		10 - 20
PEL (OSHA) : 15 mg/m3, TOTAL DUST, 8 HR TWA			
TLV (ACGIH): 10 mg/m3, TOTAL DUST, 8 HR TWA			

N/A

This product is believed not to contain toxic materials subject to the reporting requirements of Section 313 of Title III and of 40 CFR 372.

+ Indicates material(s) listed as a NTP, IARC, or OSHA carcinogen.

This product may contain small amounts of materials known to the State of California to cause cancer and reproductive harm.

This product is believed not to contain materials listed in Section 112(b) of the Clean Air Act.

Physical / Chemical Characteristics

Boiling Range: N/A	Coating VOC: 0.00 lb/gl
Vapor Density: Heavier than air.	Material VOC: 0.00 lb/gl
Solubility in Water: Complete.	Specific Gravity: 1.34
Appearance and Odor: Color/tinted liquid, low odor.	Evaporation Rate: Slower than Butyl Acetate.

Fire and Explosion Hazard Data

Flash Point: N/A
Method Used: N/A

Flashable Limits in air by volume:
Upper: N/A Lower: N/A

Extinguishing Media: CO2, dry chemical, foam, or water fog.

Special Firefighting Procedures:

For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment. Self-contained breathing apparatus with a full facepiece operated in pressure-demand or other positive pressure mode to protect against the hazardous effects of normal products of combustion or oxygen deficiency.

Unusual Fire and Explosion Hazards:

Product may spatter if temperature of liquid exceeds the boiling point of water. If solids ignite, toxic and irritating gases can be emitted. Thermal decomposition of this product will produce carbon monoxide and carbon dioxide gases.

Reactivity Data

Stability: Stable

Hazardous Polymerization: Will not occur

Conditions to Avoid:

Excessive temperatures, poor ventilation, and corrosive atmospheres. Avoid all heat sparks and sources of ignition.

Incompatibility (Materials to Avoid):

Strong oxidizing agents (Nitric Acid, Permanganates, MEK Peroxide, Etc.).

Hazardous Decomposition or Byproducts:

Normal combustion forms carbon dioxide and water vapor; incomplete combustion can produce carbon monoxide.

Health Hazard Data

Inhalation - Health Risks and Symptoms of Exposure:

Use only with adequate ventilation. If adequate ventilation is not possible, such as in a closed room or other situations where air flow is minimal or nonexistent, see section VIII for information regarding respiratory protection. Do not breathe dust or spray mist. Ensure fresh air entry during application and drying. For spray application, sanding, abrading, and dust cleanup, wear an appropriate properly fitted respirator (NIOSH/MSHA TC21C approved). Follow respirator manufacturer's directions for respirator use. If affected, remove to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Get medical attention.

Skin and Eye Contact - Health Risks and Symptoms of Exposure:

Exposure may cause drying of the skin with mild irritation. Symptoms may include: redness, burning sensation, drying and cracking. Exposure with material may cause moderate eye irritation. Symptoms may include: tearing, redness, and stinging sensation. Corneal involvement or visual impairment is not expected to occur.

Skin Absorption - Health Risks and Symptoms of Exposure:

Prolonged exposure limit may result in the absorption of harmful amounts of material.

Ingestion - Health Risks and Symptoms of Exposure:

Excessive breathing of vapors can cause nasal and respiratory irritation, dizziness, weakness, fatigue, nausea, headache, possible unconsciousness, and even asphyxiation. Can cause gastrointestinal irritation, nausea, vomiting, and diarrhea. Aspiration of material into lungs and cause chemical pneumonitis which can be fatal.

Health Hazards (Acute and Chronic):

Not considered a carcinogen by IARC, NTP or OSHA.

Health Hazards of Previous Coatings:

WARNING! If you scrape, sand, or remove old paint, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH-approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information hotline at 1-800-424-LEAD or log on to www.epa.gov/lead.

Carcinogenicity: NTP Carcinogen: No IARC Monographs: Yes OSHA Regulated: N/A

This material is not listed as a human carcinogen.

Medical Conditions Generally Aggravated by Exposure: None known. Emergency and First Aid Procedures: SKIN- Wash exposed area with soap and water. EYES- Flush with large amounts of water.

Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled:

Persons not wearing protective equipment should be excluded from area of spill until clean-up had been completed. Stop spill at source, dike area of spill to prevent spreading, pump liquid to salvage tank. Remaining liquid may be taken up on sand, clay, earth, floor absorbent, or other absorbent material and shoveled into containers. Prevent run-off sewers, streams, or other bodies of water.

Waste Disposal Method:

Destroy by liquid incineration. Material collected on absorbent material may be deposited in an approved landfill in accordance with local, state, and federal regulations.

Precautions to be Taken in Handling and Storing:

Store in a cool, dry area. Keep away from heat, sparks, and open flame. Keep containers closed when not in use. Use only with adequate ventilation.

Other Precautions:

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in this data sheet must be observed. READ AND OBSERVE ALL PRECAUTIONS ON LABEL!

Control Measures

Respiratory Protection:

If TLV of the product or any component is exceeded, a NIOSH/MESA jointly approved self-contained breathing apparatus with a full face piece operated in pressure demand or other positive pressure mode is advised; however, OSHA regulations also permit other NIOSH/MESA respirators under specified conditions. (See your safety equipment supplier).

Ventilation:

Provide sufficient mechanical and/or local exhaust to maintain exposure below TLV(s).

Protective Gloves:

Wear resistant gloves such as: BUNA-N

Eye Protection:

Chemical splash goggles in compliance with OSHA regulations are advised, unless full facepiece respirator is worn.

Other Protective Clothing or Equipment:

To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

Work / Hygienic Practices:

Wash hands thoroughly after handling this product.

Disclaimer

This information provided as a resource only. It should not be taken as a warranty or representation for which Rodda Paint Co. assumes legal responsibility. The information contained is believed to be accurate and compiled from sources believed to be reliable, it is the responsibility of the user to investigate and verify its validity. The user assumes all responsibility of using and handling the product in accordance with applicable federal, state, and local regulations.

Product Data Sheet

Description AN INTERIOR PIGMENTED COPOLYMER LATEX EMULSION PAINT, low odor & solvent free

523501x White
523502x Midtone
523503x Deeptone
523504x Neutral

This product manufactured to meet all requirements of LEED-NC credit EQ4.2 low emitting materials - paints & coatings



Basic Use Horizon Interior Satin provides a durable, low odor / low VOC finish for interior walls and woodwork that is easy to apply. Horizon can be used without typical complaints in occupied areas because of very low odor during application, dries quickly and leaves you with a stain resistant finish.

Colors tintable white to black

Properties

VOC gr/L	0.00	Volume Solids ±2%	38.00	Odor	No offensive
VOC lbs/G	0.00	Weight Solids ±2%	53.00	Thinning	None recommended
MPI #	144	Spread Rate	400.0	Weight	11.10
Gloss 60°	8-12	Wet Film Thickness	4 mils	Viscosity	98 - 102 Krebs Units
Sheen 85°	25-35	Dry Film Thickness	1.5 mils	Resistance	Good
Tinting Type	universal	Toxic Properties	Non-toxic as dry film	Cleanup	warm soapy water
Local Harvest	33-45%	Light Reflectance	white 90%, less on colors	Packaging	single & five gallons
pH		Pigment Solids		Flash Point	
HAP Content		Pigment Volume		H ² O Vapor	

Dry Times

At 77° Fahrenheit and 50% Relative Humidity.

Dry To Touch	½ hour	Dry To Sand		Tack Free	
Dry To Recoat	2 hours	Dry To Topcoat		Dry To Hard	

Prep & Prime

Concrete Block New: Use [501901 Smooth Block Filler](#)
Masonry Use [503501 Horizon Primer Sealer](#)
Wallboard Prime with [503501 Horizon Primer Sealer](#)
Wood New Interior: Prime with [502001x Unique II 100% Acrylic Enamel Undercoater](#).

Application

Brush No thinning recommended. Use a nylon/polyester brush is recommended.
Roller / Pad No thinning is recommended. Use 3/8" to 3/4" nap synthetic roller cover.-No thinning is recommended. Use a synthetic pad.
Airless Spray No thinning is recommended. Recommend pressure 2000 to 2500 psi, using .015" to .021" tip orifice.
HVLP Reduce up to one pint with water per gallon. Accuspray 24K.
Conventional Spray Reduce up to one pint per gallon with water. Recommended air pressure 40-60 psi; fluid pressure 20 psi; tip size .0042" to .0045" with matching cap.

Corporate: 6107 N Marine Drive Portland, Oregon 97203 - Rodda Paint Co. - Regional: 3838 4th Avenue South Seattle, Washington 98134

Disclaimer - All technical advice, recommendations and services regarding this product are rendered by the Seller gratis. They are based on technical data which the Seller believes to be reliable and are intended for use by persons having skill and know-how, at their discretion and risk. Seller assumes no responsibility for results obtained or damages incurred from this product use by Buyer whether as recommended herein or otherwise. Such recommendations, technical advice or services are not to be taken as a license to operate under or suggest infringement of any patent.

Last Modification Date: 11/9/2009 - Please contact us at 800.452.2315 for additional information or questions



TECHNICAL DATA

TD-1367

PRODUCT NAME

PRODUCT NO.

INTERIOR ACRYLIC LATEX PAINT – PEARL FINISH – SUPER LATEX.

176-XXX

DESCRIPTION

Interior latex finish suitable for walls, woodworks and doors of any room of the house.
Subdued reflection when viewed straight on and semi-gloss when viewed at a grazing angle.

INTENDED USES

Interior.
New or maintenance work.
Primed materials: gypsum or fibre wallboards, wood, plaster, metal, concrete, concrete blocks, acoustical tiles, wallpaper.
Walls, woodworks, doors, cabinets.
Any room in the house, institutions, schools, hospitals, commercial and public buildings.

ADVANTAGES

Ultra washable and long-lasting.
High viscosity and ultra hiding.
Ready for use and easy to apply.
Non-spattering.
Dries rapidly with a minimum of odour.
Excellent resistance to washing, scrubbing and yellowing.
Complete range of colours.
Soft, smooth, glare-free finish.
Ecological product containing neither lead nor mercury and featuring the Canadian Environmental ECOLOGO as approved by the Canadian Standard Association (CSA).

SURFACE PREPARATION

PROPER SURFACE PREPARATION IS IMPORTANT PARTICULARLY IN KITCHENS AND BATHROOMS.
The surface must be dry, clean and free from dust, oil, grease, soap, wax, mildew, rust, loose paint, etc.
Before painting, wash the surface well with a concentrated solution of trisodium phosphate (T.S.P.) POLYPREP 771-137. Rinse well with clear water.
Mildew: Wash with bleach water. (1:3 bleach water: water)
Glossy surfaces: Sand lightly.
Bare wood: Seal knots and sap streaks with transparent shellac POLYPREP 205-112 or white-pigmented POLYPREP 2 (145-022).
Loose paint: Scrape, then sand. Prime bare spots with recommended primer. Repair cracks and loose joints.
Rust: Remove with CORROSTOP ULTRA 635-104 metal conditioner and rust remover.

TD-1367

TECHNICAL GUIDE

VISCOSITY:	Ready for use.	COLOURS:	Titanium white 176-510, natural white 176-501, medium base 176-502, neutral base 176-503, yellow base 176-504 and red base 176-505.
FLASH POINT:	Non-flammable.	TINTING:	Can be tinted to Sico 4000 colour system.
GLOSS (60°):	22 to 30%	COMPOSITION:	Modified acrylic latex (binder), titanium dioxide and inert extenders (pigments), water (volatile matter), surfactants (agents) and others.
REFLECTS (85°):	60 to 70%	STORAGE:	Keep between 4°C (40°F) and 26°C (80°F) in a safe and well-ventilated place.
DRYING TIME:	2 to 4 hours.		
RECOATING:	4 to 6 hours. Vary according to temperature and relative humidity.		Avoid freezing.
SPREADING RATE:	11 to 13 square metres (120 to 140 sq. ft.) per litre depending on porosity and texture of the surface.	THINNER/ CLEANER:	Water.
SIZES:	18.9 litres for 176-501. 3.78 litres and 946 ml for all products.	APPLICATION TOOLS:	Brush, roller or spray gun. Preferably a roller for large surfaces and a synthetic bristle (nylon/polyester) brush for cutting in and trim.
SPECIFICATIONS:	None.		Wash tools in warm soapy water immediately after use.

RECOMMENDED PRIMER

Bare wood: Apply one coat of alkyd primer SICO CLASSIC 180-110 or latex 170-125.

Gypsum board, dry new plaster, concrete and concrete blocks: Apply one coat of latex primer CLASSIC 170-125.

Previously painted surfaces and plaster repairs: Apply one coat of alkyd primer CLASSIC 180-110 or latex 170-125.

Old plaster: Apply one coat of alkyd primer SICO CLASSIC 180-110.

Ferrous metal: Apply one coat of CORROSTOP ULTRA anti-corrosion primer 635-260 or 635-785.

APPLICATION

Ready for use. No thinning required.

Stir thoroughly before using. Apply generously and evenly.

Provide adequate ventilation during application and drying.

Allow to dry completely before recoating.

Two finishing coats give a better durability and appearance.

Application temperature: Minimum 10°C (50°F), maximum 32°C (90°F).

Washing instructions: Allow to dry fourteen (14) days before washing. Soil and most household stains can be removed using a soft cloth or sponge and a concentrated solution of trisodium phosphate (T.S.P.) POLYPREP 771-137.

RESTRICTIONS

Do not use for exterior work.

Do not use on floors.

SAFETY PRECAUTIONS

Do not swallow. Do not get in eyes or on skin. Wear safety glasses.

FIRST AID TREATMENT: If swallowed, call a Poison Control Centre or doctor immediately. If in eyes or on skin, rinse well with water.

Keep out of reach of children.

Paint disposal: Contact your municipality about proper paint disposal procedure.