



**Tom Cooper**  
**Principal, Environmental Design & Research**  
**Kaiser Permanente**

# **Kaiser Permanente Materials**

## **Assessment: Case Study - Fabric**

# Kaiser Permanente's Facility Portfolio

## Space Portfolio

- **60 + million square feet of real estate**
- **1,020 medical and administrative buildings including:**
  - **>500 ambulatory care facilities**
  - **34 acute care hospitals**

## Capital Plan

- **\$24 Billion in facility investments over 10 years**
- **130 ambulatory care projects**
- **27 hospital projects**
- **6,000 net new beds**
- **4 radiology centers**



# Commitment to Sustainability

## **George Halvorson**

"Our mission is and always has been to improve the health of the communities we serve, and that includes an emphasis on environmental stewardship. What's good for our environment is going to be good for our members, our staff, and the community as a whole."

## **Jay Crosson, MD**

"As physicians, we think the Hippocratic Oath says it all: 'Above all, do no harm' - that credo applies to the environment as well as to our patients."

# Why Sustainability?

- Alignment with corporate mission: improve the health of the communities we serve
- Industry practices generate waste, pollution and consume natural resources
- Recognized link between building design and health outcomes
- Impact of building materials on indoor air quality and environmental health

# Values

Precautionary Principle: We've taken the conservative approach that when there is credible evidence linking a material we're using to an environmental/public health issue, we should strive to replace it with safer alternatives.

# Kaiser Permanente Environmentally Preferable Purchasing Policy (EPP):

## **Avoid:**

- **Persistent Bioaccumulative Toxic compounds (PBTs)**
- **Heavy metals, perfluorochemicals (PFCs)**
- **Carcinogens, mutagens and reproductive toxic chemicals**
- **Halogenated flame retardants (HFRs)**
- **Phthalates**
- **Polyvinyl chloride (PVC)**

## **Promote products that:**

- **Do not adversely affect indoor air quality**
- **Have high post consumer recycled content**
- **Are readily recycled, reprocessed and/or reused**
- **Do not contain or contain reduced amounts of toxins**

# Market Transformation: Carpet

## C&A ethos carpet

- High recycled content backing >96%
- Backing made from reclaimed film used in laminated safety glass
- Exceeds performance of earlier carpets
  - Costs the same as earlier PVC backed carpet
- Carpet removed from our site is recycled



Photos © C&A Floor coverings

# Market Transformation: Wall Protection

## Acrovyn 3000 – Wall Protection



# KP's Fabric Alliance



## Goals and Deliverables:

- Take a broad view of fabric - look beyond performance and economic criteria - incorporate environment, human health, and corporate social responsibility issues
- Analyze the current manufacturing practices and trends of KP's Fabric Alliance
- Establish a sustainable fabric strategy for KP
- Drive market change if necessary



# General Approach



- **Establish Criteria: asked about key issues such as:**
  - Whether products contain chemicals of concern
  - Corporate leadership - does the company have an environmental policy and/or vision, what is the company doing in terms of research and development around environmental and human health issues
  - Recycled content of products
- Educate the Content Expert Panel - get everyone invested in the goals of KP's EPP
- Survey manufacturers: require disclosure about chemical contents, policies and practices, supply chain, etc.
- Evaluate, compare, and assess products
- Create an RFI/P with required document support for claims
- Formal contract negotiation - putting buying power behind materials assessment

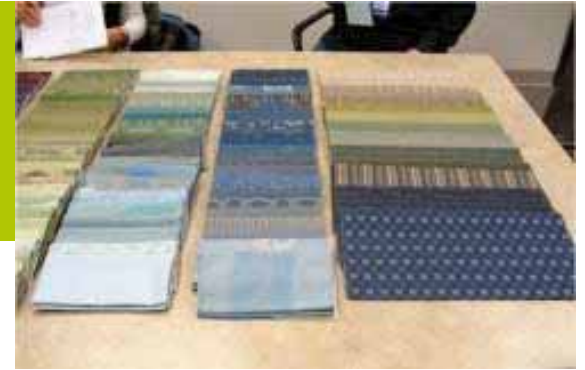
# Outreach to Manufacturers



## Survey:

- **Most companies offered recycled content products, although limited**
- **Most companies offered limited products free of some of the chemicals KP had targeted for elimination (e.g., PVC, HFRs)**
- **Corporate commitment toward environmental issues varied - ranged from “making money” to significant commitments to bring to market products that consider impacts on environment and human health**
- **Required documentation and full disclosure**

# Assessing Products



## **Review:**

- Evaluated products by family of textiles to focus on key toxicants, indoor air quality issues, and percent of recycled content
- Reported to the CEP

## **Manufacturer Presentations:**

- Vendors presented on environmental and sustainability of their products
- Responded to questions about corporate responsibility, supply chain accountability, research and development

# Important Lessons from the Process



## Lessons:

- **Could compare products and companies across human health, environment, and corporate social responsibility**
- **Allowed KP to identify the leaders, discover where there were places KP could push the market**
  - **Rewarded textile manufacturers pursuing less toxic materials**
  - **Discovered some of the largest manufacturers have not committed to sustainable practices**
  - **Educated manufacturers who believed that environmental responsibility is limited to “recycled content”**
  - **Flexibility for considering small companies that may be innovative**

# More Value Added



- **Education and involvement of everyone at the table was critical to success of the project**
- **Having a context and framework (Pharos and KP's Environmentally Preferable Purchasing Policy and Antimicrobial Statement) was pivotal in establishing goals and ideals**
- **Materials assessment allowed KP to leverage its purchasing power to drive more sustainable fabrics and practices into the marketplace**

# Benefits of Pharos

- **Expedite research process**
- **Transparency**
- **Focus resources on KP specific needs and requirements**
- **Allow larger community access to same data**
- **Increase purchasing power beyond KP**



# The Pharos Project

Tom Lent and Julie Silas  
Healthy Building Network

GGHC/H2E Teleconference  
November 2, 2007





How do you ensure the building materials you source for health care organizations are safe for patients, staff, and the environment?





BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT



the  
collaborative  
for high  
performance  
schools



- Healthy Building Network
- University of Tennessee's  
Center for Clean Products
- Cascadia Green Building  
Council



# Principles

- Right to Know
- Life Cycle Thinking
- Precautionary Principle
- Define the Ideal
- Manufacturer Responsibility
- Transparency
- Open Source Democratic Tools
- Coalition and Consensus Building
- Accessible Presentation
- Optimism

# Ideal Product Goals

Products measured in 16 categories:

- Health and Pollution
- Resources
- Social and Community



## Health and Pollution:

- IAQ/User Exposure
- High Hazard Toxics
- Global Warming
- Air Quality
- Water Quality





## Health and Pollution:

- IAQ/User Exposure →
- High Hazard Toxics
- Global Warming →
- Air Quality
- Water Quality

Eliminate content and emissions that may directly endanger the health of occupants of the building and those in its vicinity.

Eliminate release of gases that contribute to global warming or stratospheric ozone depletion.





## Resources:

- Renewable Materials
- Embodied Energy
- Renewable Energy
- Solid Waste
- Habitat Restoration





## Resources:

- **Renewable Materials** → Derive product from refurbished or recycled materials, or bio-based materials harvested in an ecologically sustainable manner.
- **Embodied Energy**
- **Renewable Energy** → Utilize or produce energy through sustainable sources
- **Solid Waste**
- **Habitat Restoration**





## Social and Community:

- Occupational Safety
- Consumer Safety
- Fairness and Equity
- Community Contributions
- Corporate Leadership





## Social and Community:

- Occupational Safety
- Consumer Safety
- Fairness and Equity →
- Community Contributions
- Corporate Leadership

Provide fair compensation and non- exploitative conditions with equal and equitable opportunities for all workers

Provide transparency and leadership in reporting and improving corporate impact on environment, health & social justice.



## Sustainable Material Consumption

### Manufacturing With the Right Stuff

This category evaluates and rewards the use of reused and recycled materials and of bio-based materials that are harvested in an ecologically sustainable manner. It also rewards products that minimize the use of materials through design for appropriate fit and for dematerialization through design.

Indicators:

[Return to category index \(previous page\)](#)

1) Renewable content - Product: indicates the specific percentages of the product that fall into each of the following categories. If recycled content is not specified by type, assume all material is post-industrial.

Recycled: Post Consumer:  %  
 Post-industrial:  %

Bio-based: Agricultural products  
 Certified organic:  % if yes [Select Certification](#)  
 Non certified organic:  %  
 Offset sustainable:  % if yes [Select Certificate](#)  
 Offset GMO free:  % if yes [Select Certificate](#)  
 Other bio-based agricultural:  %

Bio-based: Forest products  
 FSC certified:  %  
 Other bio-based forest:  % [Select Certification](#)  
 Rapidly renewable:  %

Is any of the wood content that is not FSC certified also on the list of woods that may be harvested from rainforest or other endangered habitats or otherwise illegally logged?  Yes  No

Other:  % (not recycled and not bio-based wood or agricultural products - should sum to 100%)

2) Recycled Content - Packaging: indicate the percentage of packaging materials made from recycled content (if no information on package, assume no recycled content in packaging)

Recycled packaging content:  %

3) Design for Environment- Does the product exhibit leadership within its product class as a result of advanced product design in any of the following categories? Please indicate each category for which this product qualifies:

- Design for Appropriate Fit - product is appropriately designed and manufactured for the expected use profile and reasonable duration of a product serving its particular function
- Design for Dematerialization - material usage in product is minimized through advanced product design resulting in best-in-class technology compared to other similar products in class
- Design for Efficient Installation - product is designed to use innovative or best-in-class methods that minimize materials required during use or installation.
- Design for Efficient Packaging - packaging is designed to efficiently protect and label product while minimizing the overall amount of material resulting in less material intensive packaging.

[Submit](#)

**Sustainable Material Consumption Help**

[Intro](#)  
[100%](#)  
[Optimal Product](#)  
 Definition of terms  
 Why we care  
 Charts and Graphs

- [Woods to Avoid](#)



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Sustainable Material Consumption Help

[Intent](#)  
[Ideal](#)  
[Optimal Product](#)  
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 Charts and Graphs  
 • [Woods to Avoid](#)

Certification programs  
(GreenGuard, FloorScore, etc)

UTenn  
Center for Clean  
Products

Manufacturers  
&  
Users

# Pharos

product library



[Product Library Index](#)



[LarryHBN's Library](#)



[LarryHBN's Profile](#)



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[Feedback](#)

## Sustainable Material Consumption

### Manufacturing With the Right Stuff

This category evaluates and rewards the use of reused and recycled materials and of bio-based materials that are harvested in an ecologically sustainable manner. It also rewards products that minimize the use of materials through design for appropriate fit and for dematerialization through design.

#### Indicators:

Based on Pharos Project criteria, the recommended rating for Test Product in Sustainable Material Consumption is: **5**

If after reviewing the score and criteria found below, you may choose to override the Pharos suggestion.

To keep Pharos suggested score:

To override Pharos suggested score:

#### Help

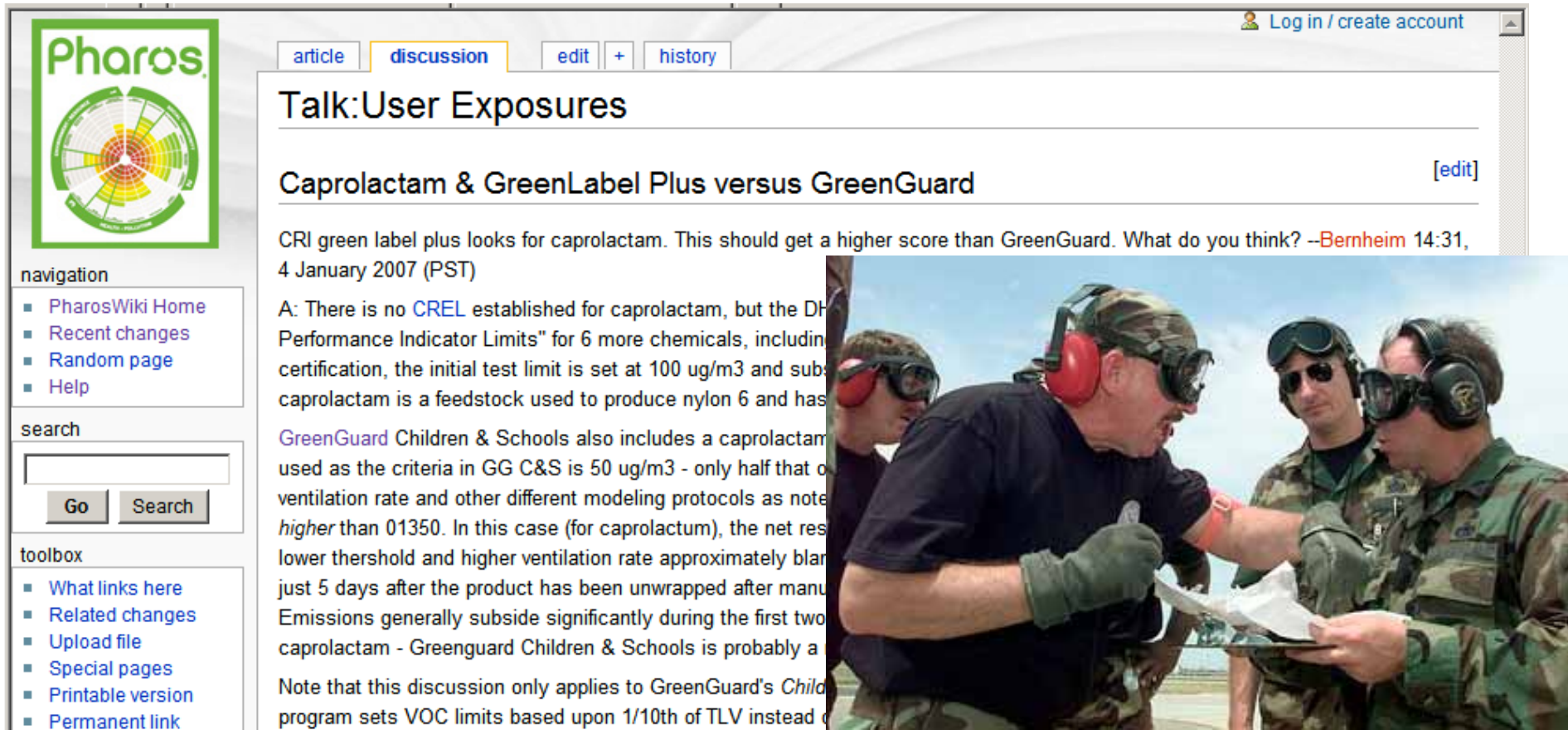
[Intent](#)  
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Score	Criteria
10	All feedstock is post consumer recycled content or obtained from certified sustainably harvested biomaterials and product is designed efficiently.
9	Design for environment points needed to exceed 8 — Recycled &/or bio-based content (=100% and 1 pt) or (>80% and 2 pts).
8	Recycled &/or bio-based content =100% or (>60% and 2 pts) or (>80% and 1 pt).
7	Recycled &/or bio-based content >=80% or (>40% and 2 pts) or (>60% and 1 pt).
6	Recycled &/or bio-based content >=60% or (>30% and 2 pts) or (>40% and 1 pt).
5	Recycled &/or bio-based content >=40% or (>20% and 2 pts) or (>30% and 1 pt).
4	Recycled &/or bio-based content >=30% or (>10% and 2 pts) or (>20% and 1 pt).
3	Recycled &/or bio-based content >=20% or (>0 and 2 pts) or (>10% and 1 pt).
2	Recycled &/or bio-based content >=10% or 2 Design points or combination.
1	Recycled &/or bio-based content >0 or 1 Design point.

## Who do you trust?

- User opinion
- Manufacturers claim
- Industry average
- Third party verification

## ...as Forum



Pharos

article discussion edit + history

### Talk:User Exposures

#### Caprolactam & GreenLabel Plus versus GreenGuard [\[edit\]](#)


CRI green label plus looks for caprolactam. This should get a higher score than GreenGuard. What do you think? --Bernheim 14:31, 4 January 2007 (PST)

A: There is no CREL established for caprolactam, but the DP "Performance Indicator Limits" for 6 more chemicals, including certification, the initial test limit is set at 100 ug/m3 and sub caprolactam is a feedstock used to produce nylon 6 and has

GreenGuard Children & Schools also includes a caprolactam used as the criteria in GG C&S is 50 ug/m3 - only half that of ventilation rate and other different modeling protocols as noted higher than 01350. In this case (for caprolactam), the net result is a lower threshold and higher ventilation rate approximately blank just 5 days after the product has been unwrapped after manu

Emissions generally subside significantly during the first two caprolactam - Greenguard Children & Schools is probably a

Note that this discussion only applies to GreenGuard's Child program sets VOC limits based upon 1/10th of TLV instead of



Engage in the discussion  
help shape the framework

# Pharos

Signaling The Future of  
Material Selection

ABOUT PHAROS

ANALYSIS FRAMEWORK

GETTING INVOLVED

FINDING PRODUCTS

REGISTER

Username:

password:

[forgot username or password?](#)

The future of material selection has arrived with the introduction of Pharos V1.0. Every day, architects, designers, and material specifiers make decisions about building materials – seeking materials that are best for our health and the environment. The Pharos Project helps by delivering abundant, organized and source-transparent data that enables you to make the right decisions.

[->LEARN MORE](#)

UPDATES

There are now 497 products rated in the Pharos system. <  
[Talk about LEED®; give us your opinion.](#)

LATEST PRODUCT ADDED <



SAMPLE CARPET #1  
Sample Flooring Systems Inc.  
09 68 13 - Tile Carpeting

V.1

- ABOUT PHAROS
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- FINDING PRODUCTS
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- BROWSE BY CATEGORY
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<b>DIVISION 05 - METALS</b>		
05 00 00 - Metals		
05 10 00 - Structural Metal Framing		
05 20 00 - Metal Joists		
05 30 00 - Metal Decking	05 31 00 - Steel Decking	05 31 13 - Steel Floor Decking
05 40 00 - Cold-Formed Metal Framing	05 33 00 - Aluminum Decking	05 31 23 - Steel Roof Decking
05 50 00 - Metal Fabrications	05 34 00 - Acoustical Metal Decking	05 31 33 - Steel Form Decking
05 70 00 - Decorative Metal	05 35 00 - Raceway Decking Assemblies	
<b>DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES</b>		
06 00 00 - Wood, Plastics, and Composites		
06 10 00 - Rough Carpentry		
06 20 00 - Finish Carpentry		
06 40 00 - Architectural Woodwork		
06 50 00 - Structural Plastics		
06 60 00 - Plastic Fabrications		
06 70 00 - Structural Composites		
06 80 00 - Composite Fabrications		
<b>DIVISION 07 - THERMAL AND MOISTURE PROTECTION</b>		
07 00 00 - Thermal and Moisture Protection		
07 20 00 - Thermal Protection		
07 30 00 - Steep Slope Roofing		
07 40 00 - Roofing and Siding Panels		
07 50 00 - Membrane Roofing		
07 60 00 - Flashing and Sheet Metal		
07 70 00 - Roof and Wall Specialties and Accessories		
07 80 00 - Fire and Smoke Protection		
07 90 00 - Joint Protection		
<b>DIVISION 09 - FINISHES</b>		

**Browse by: CSI category, product category, Brand/Manufacturer, Material, LEED Credit**

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PRODUCTS FOUND IN 09 68 16 -- Sheet Carpeting

VIEW ALL  COMPARE SELECTED  COMPARE ALL

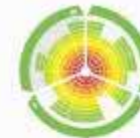
Sample Carpet #1  
Sample Manufacturer

COMPARE



Sample Carpet #2  
Sample Manufacturer

COMPARE



Sample Carpet #3  
Sample Manufacturer

COMPARE



Sample Carpet #4  
Sample Manufacturer

COMPARE



Sample Carpet #5  
Sample Manufacturer

COMPARE



FILTER

Pharos Rating

IAQ : <1 10>

Toxic : <1 10>

GWarm : <1 10>

AirQu : <1 10>

H2OQU : <1 10>

Occup : <1 10>

Cnmr : <1 10>

Equity : <1 10>

Ldrshp : <1 10>

Cmnty : <1 10>

Hbtat : <1 10>

RnwEn : <1 10>

Waste : <1 10>

Mtrl : <1 10>

EmH2O : <1 10>

EmEn : <1 10>

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PRODUCTS FOUND IN 09 68 16 -- Sheet Carpeting

Sample Product #1  
Sample Manufacturer #1

IAQ	Toxic	GWrm	AirQu	H2OQu	RnEn	EmEn	EmH2O	Waste	Mtrl	Hbtat	Occup	Cnamr	Equty	Cmnty	Ldrshp
2	2	5	2	2	6	8	1	3	5	2	8	8	6	5	5

Sample Product #2  
Sample Manufacturer #2

IAQ	Toxic	GWrm	AirQu	H2OQu	RnEn	EmEn	EmH2O	Waste	Mtrl	Hbtat	Occup	Cnamr	Equty	Cmnty	Ldrshp
5	4	9	6	2	9	2	1	8	5	2	4	6	2	1	5

Sample Product #3  
Sample Manufacturer #3

IAQ	Toxic	GWrm	AirQu	H2OQu	RnEn	EmEn	EmH2O	Waste	Mtrl	Hbtat	Occup	Cnamr	Equty	Cmnty	Ldrshp
2	2	5	2	2	6	8	1	3	5	2	8	8	6	5	5

Sample Product #4  
Sample Manufacturer #4

IAQ	Toxic	GWrm	AirQu	H2OQu	RnEn	EmEn	EmH2O	Waste	Mtrl	Hbtat	Occup	Cnamr	Equty	Cmnty	Ldrshp
5	4	9	6	2	9	2	1	8	5	2	4	6	2	1	5

FILTER

Pharos Rating:

IAQ : <1 10>

Toxic : <1 10>

GWarm : <1 10>

AirQu : <1 10>

H2OQU : <1 10>

Occup : <1 10>

Cnamr : <1 10>

Equity : <1 10>

Ldrshp : <1 10>

Cmnty : <1 10>

Hbtat : <1 10>

RnwEn : <1 10>

Waste : <1 10>

Mtrl : <1 10>

EmH2O : <1 10>

EmEn : <1 10>

## Compare: Product category, type of product, Pharos scoring, data quality

FUNCTIONAL UNIT : 1 square foot

Sample Flooring  
12056 West Road, Dalton, GA 20202  
(800) 555 6500  
sample.com | info@sample.com

**Occupational Health and Safety (Occup)**  
Pharos Score: 8  
Data Confidence: 60%  
Company has a program in place that proactively identifies and implements engineering and design measures to prevent hazardous exposures to workers.

DATA CONFIDENCE

IAQ :	50%	(more info)
Toxic :	20%	(more info)
GWarm :	N/A	
AirQu :	N/A	
H2OQU :	40%	(more info)
Occup :	60%	(more info)
Cnsmr :	20%	(more info)
Equity :	50%	(more info)
Ldrshp :	50%	(more info)
Cmnty :	20%	(more info)
Hbtat :	N/A	
RnwEn :	N/A	
Waste :	40%	(more info)
Mtrl :	60%	(more info)
EmH2O :	20%	(more info)
EmEn :	50%	(more info)

User opinions available from:

Marcus T. - Architect



## Product Results: Graphic, data confidence, Roll-over explanation



## Printable and searchable labels

Use in: Product libraries, client meetings, manufacturer conversations



## Additional attributes:

### Free:

- No charge to user
- Will not take money from manufacturers

### Manufacturer Involvement:

- Product Queue
- Outreach to Manufacturers

Expectations:

Release slated for mid-2008

Pre-loaded with more than 500  
products:

- Interior flooring and finishes
- Health Care

# Register for news and updates about Pharos



[www.pharosproject.net](http://www.pharosproject.net)