SAFETY DATA SHEET

Section 1. Identification	
Product Identifier:	**Interior Fiber-Cement (Medium Density)** –HardieBacker® cement board, HardieBacker® ¼" board, HardieBacker® 250 cement board, HardieBacker® EZ Grid® cement board, HardieBacker® 500 cement board, HardieFloor ™ Wet Area Solution
Manufacturer Name, Address and Phone Number:	James Hardie Building Products 231 S. LaSalle Street, Suite 2000 Chicago, IL 60604 1-800-942-7343 (1-800-9HARDIE)
Emergency Phone Number:	1-800-942-7343 (1-800-9HARDIE)
Recommended Use:	Interior Fiber-Cement (Medium Density) is used as an internal wall cladding and tile underlayment
Restrictions on Use:	None known
Section 2. Hazards Identification	
GHS Classification:	Carcinogenity, Category 1A Target Organ Systemic Toxicity Repeated Exposure, Category 1
GHS Label Element(s): Symbol	
Signal Word	DANGER
Hazard Statement(s)	May cause cancer if dust from product is inhaled Causes damage to lungs and respiratory system through prolonged or repeated inhalation of dust from product
Precautionary Statement(s)	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust from product. Wash hands and face thoroughly after handling. Use personal protective equipment as required. If exposed or concerned: Get medical advice. If shortness of breath or other health concerns develop after exposure to dust from the product, seek medical attention. Dispose of product in accordance with local, state and national regulations. If there are no applicable regulations, dispose of in a secure landfill, or in a way that will not expose others to dust.

Section 3. Composition / Information on Ingredients		
CAS#	Chemical Ingredient	%
14808-60-7	Crystalline Silica (Quartz)	15-45%
65997-15-1	Calcium Silicate (Hydrate)	35-65%
471-34-1	Calcium Carbonate	<30%

N/A	Calcium Aluminum Silicate (Hydrate)	<20%
9004-34-6	Cellulose	<15%
1333-86-4	Carbon Black	<1%
Section 4. First Aid Measures		
Inhalation	Acute effects – Dust may cause irritation of the nose, throat and airways, resulting in coughing and sneezing. Certain susceptible individuals may experience wheezing (spasms of the bronchial airways) upon inhaling dust during cutting, rebating, drilling, routing, sawing, crushing or otherwise abrading fiber cement, and when cleaning up, disposing of or moving the dust.	
	Chronic effects – Repeated or prolonged over exposures to crystalline silica can cause silicosis (scarring of the lung) and increases the risk of bronchitis, tuberculosis, lung cancer, renal disease, and scleroderma (a disease affecting the connective tissue of the skin, joints, blood vessels, and internal organs.) Some studies suggest that cigarette smoking increases the risk of silicosis, bronchitis and lung cancer in persons also exposed to crystalline silica.	
	Acute silicosis – A sub-chronic disease associated with acute, massive silica exposure, is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms include, but are not limited to, shortness of breath, cough, fever, weight loss and chest pain. Such exposure may cause pneumoconiosis and pulmonary fibrosis.	
	Required treatment – If inhalation of dust occurs, remove to fresh air. If shortness of breath or wheezing develops, seek medical attention.	
Skin	Dust may cause irritation of the skin from friction but cannot be absorbed through intact skin. If skin contact occurs, wash with mild soap and water. Contact physician if irritation persists or later develops.	
Eyes	Dust may irritate the eyes from mechanical abrasion causing watering or redness. If eye contact occurs, remove contact lenses (if applicable). Flush with running water or saline for at least 15 minutes. Seek medical attention if redness persists or if visual changes occur.	
Ingestion	Ingestion is unlikely under normal conditions of use, but swallowing the dust from the product may result in irritation or damage to the mouth and gastrointestinal tract due to alkalinity of dust. If ingestion occurs, dilute by drinking large amounts of water. Do not induce vomiting. Seek medical attention. If unconscious, loosen	

	tight clothing and lay the person on his/her left side. Give nothing by mouth to an individual who is not alert and conscious.
Section 5. Fire-Fighting Measures	
James Hardie® fiber-cement products are neither flammable nor explosive	
Suitable extinguishing techniques:	Appropriate extinguishing techniques for surrounding fire should be used.
Fire-fighting equipment:	Fire fighting personnel should wear normal protective equipment and positive self-contained breathing apparatus.
Special hazards arising from the substance or mixture:	James Hardie ® fiber-cement products are neither flammable nor explosive. Hazardous reactions will not occur under normal conditions. Fight fire with normal precautions from a reasonable distance.
Section 6. Accidental Release Measures	
Emergency procedures:	No special precautions are necessary in the event of an accidental release. The following precautions apply to spills or releases of dust generated during cutting, rebating, drilling, routing, sawing, crushing or otherwise abrading fiber cement.
Protective equipment:	Good housekeeping practices are necessary for cleaning up areas where spills or leaks have occurred. Take measures to either eliminate or minimize the creation of dust. Respirable dust and silica levels should be monitored regularly. Wherever possible, practices likely to generate dust should be controlled with engineering such as local exhaust ventilation, dust suppression through containment (e.g. wetting loose dust), enclosure, or covers. Use respiratory protection as described in Section 8.
Proper methods of containment and clean-up:	A fine water spray should be used to suppress dust when sweeping (dry sweeping should not be attempted). Vacuuming with an industrial vacuum cleaner outfitted with a high-efficiency particulate (HEPA) filter is preferred to sweeping. Dispose of product in accordance with local, state and national regulations. If there are no applicable regulations, dispose of in a secure landfill, or in a way that will not expose others to dust.
Section 7. Handling and Storage	
Precautions of safe handling and storage:	Fiber-cement boards in their intact state do not present a health hazard. The controls below apply to dust generated from the boards by cutting, rebating, drilling, routing, sawing, crushing or otherwise abrading fiber cement, and when cleaning up, disposing of or moving the dust. James Hardie® recommended best practices for handling fiber-

	cement: Keep exposure to dust as low as reasonably possible. Respirable crystalline silica limits are specified by OSHA and MSHA and identified in Section 8 of this MSDS. Exposure to respirable (fine) silica dust depends on a variety of factors, including activity rate (e.g. cutting rate), method of handling (e.g. electric shears), environmental conditions (e.g. weather conditions, workstation orientation) and control measures used. Wherever possible, practices likely to generate dust should be carried out in well ventilated areas (e.g. outside). The work practices and engineering controls set out in Section 8 should be followed to reduce silica exposures. Keep away from reactive products. Do not store near food, beverages or smoking materials. Avoid spilling and creating dust. Maintain appropriate dust controls during handling. Use appropriate respiratory protection during handling as described in Section 8.
Incompatibilities:	Hydrofluoric acid will dissolve silica and can generate silicon tetrafluoride, a corrosive gas. Contact with strong oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride or oxygen difluoride may cause fires and /or explosions. Furthermore, limestone is incompatible with acids and ammonium salts.

Section 8. Exposure Controls / Personal Protection

OSHA Permissible Exposure Standards (PEL): Exposures shall not exceed an 8-hour time weighted average (TWA) limit as stated in 29 CFR 1910.1000 Table Z-3 for mineral dusts, expressed in million particles per cubic feet (Mppcf) and/or milligrams per cubic meter (mg/m_3). The American Conference of Governmental Industrial Hygienists Threshold Limit Values (TLV are that organization's recommended exposure limits based on an 8-hour TWA.

	TLV mg/m^3	PEL Mppsf	PEL mg/m^3
Crystalline Silica (Quartz) (Respirable)	0.025 mg/m^3 —	250 %SiO + 5	10 mg/m^3 %SiO + 2
Quartz (Total Dust)	—	—	30 mg/m^3 %SiO + 2
Calcium Carbonate (Total Dust) (Respirable)	10 mg/m^3 —	— —	15 mg/m^3 5 mg/m^3
Calcium Silicate (Total Dust) (Respirable)	— —	— —	15 mg/m^3 5 mg/m^3
Nuisance Dust (Not Otherwise Specified) (Total Dust) (Respirable)	10 mg/m^3(inhalable) 3 mg/m^3	50 15	15 mg/m^3 5 mg/m^3
Cellulose (Total) (Respirable)	— —	— —	15 mg/m^3 5 mg/m^3
Carbon Black	3.5 mg/m^3	—	3.5 mg/m^3

Other limits recommended: The National Institute of Occupational Safety and Health (NIOSH) also has a

Recommended Exposure Limit (REL) of 0.05 mg/m^3 for respirable crystalline silica, based on a 10-hour time-weighted average.	
Engineering Controls	
Personal protection when handling products that may generate silica dust: (1) follow James Hardie ® instructions and best practices to reduce or limit the release of dust; (2) warn others in the area to avoid the dust; (3) when using mechanical saw or high-speed cutting tools, work outdoors and use dust collection equipment, and (4) if no other dust controls are available, wear a NIOSH-approved dust mask or respirator (e.g. N95 dust mask). During clean-up, use a well-maintained vacuum and filter appropriate for capturing fine (respirable) dust or use wet cleanup methods—never dry sweep.	
Cutting Outdoors	1. Position cutting station so that wind will blow dust away from user or others in working area and allow for ample dust dissipation 2. Use one of the following methods based on the required cutting rate and job-site conditions: BEST • Score and snap using carbide-tipped scoring knife or utility knife • Fiber-cement shears (electric or pneumatic) BETTER • Dust reducing circular saw equipped with Hardieblade ™ saw blade and HEPA vacuum extraction GOOD (for low to moderate cutting only) • Dust reducing circular saw with Hardieblade ™ saw blade
Cutting Indoors	• Cut only using score and snap method or with fiber-cement shears (manual, electric or pneumatic) • Position cutting station in well-ventilated area to allow for dust dissipation
Sanding / Rebating / Drilling / Other Machining	If sanding, rebating, drilling or other machining is necessary, you should always wear a NIOSH-approved dust mask or respirator (e.g. N-95) and warn others in the immediate area.
Clean-Up	During clean-up of dust and debris, NEVER dry sweep as it may excite silica dust particles into the user's breathing area. Instead, wet debris down with a fine mist to suppress dust during sweeping, or use a HEPA vacuum to collect particles.
Important Notes	1. For maximum protection (lowest respirable dust production), James Hardie ® recommends always using "Best"-level cutting methods where feasible 2. NEVER use a power saw indoors 3. NEVER use a circular saw blade that does not carry the

	Hardieblade ™ saw blade trademark 4. NEVER dry sweep – use wet suppression methods or HEPA vacuum 5. NEVER use a grinder or continuous rim diamond blade for cutting 6. ALWAYS follow tool manufacturer's safety recommendations

Personal Protective Equipment

- **Respiratory –** If respirators are selected, use and maintain in accordance with ANSI Standard (Z88.2) for particulate respirators. Select respirators based on the level of exposure to crystalline silica as measured by dust sampling. Use respirators that offer protection to the highest concentrations of crystalline silica if the actual concentrations are unknown. Put in place a respiratory protection and monitoring program that complies with MSHA or OSHA (e.g. 29CFR1910.134) standards, which include provisions for a user training program, respirator repair and cleaning, respirator fit-testing and other requirements. Comply with all other applicable federal and state laws.
- **Eye –** When cutting material, dust resistant safety goggles / glasses should be worn and used in compliance with ANSI Standard Z87.1 and applicable OSHA (e.g. 29CFR1910.133) standards.
- **Skin –** Loose comfortable clothing should be worn. Direct skin contact with dust and debris should be avoided by wearing long sleeved shirts and long trousers, a cap or hat, and gloves. Work clothes should be washed regularly.

Section 9. Physical and Chemical Properties	
Appearance and odor: Solid gray boards with varying dimensions according to product. Some product may have a surface coat of water-based acrylic paint or acrylic sealer	
Vapor Pressure: Not relevant	Flash Point: Not relevant
Specific Gravity: Not relevant	Autoignition Temperature: Not relevant
Flammability Limits: Not relevant	Volatility: Not relevant
Boiling Point: Not relevant	Solubility in water: Not relevant
Melting Point: Not relevant	Evaporation rate: Not applicable

Section 10. Stability and Reactivity	
Stability:	Crystalline silica and limestone are stable under ordinary conditions
Conditions to Avoid:	Excessive dust generation during storage and handling
Materials to Avoid:	Hydrofluoric acid will dissolve silica and can generate silicon tetrafluoride, a corrosive gas. Contact with strong oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride or oxygen difluoride may cause fires and /or explosions. Furthermore, limestone is incompatible with acids and ammonium salts.

Section 11. Toxicological Information	
Routes of exposure:	Fiber-cement is not toxic in its intact form. The following applies to dust that may be generated during cutting, rebating, drilling, routing, sawing, crushing or otherwise abrading fiber cement.
Related symptoms:	Repeated and prolonged overexposures to dust containing crystalline silica

	can cause silicosis (scarring of the lung) and increases the risk of bronchitis, tuberculosis, lung cancer, renal disease and scleroderma (a disease affecting the connective tissue of the skin, joints, blood vessels and internal organs). Some studies suggest that cigarette smoking increases the risk of silicosis, bronchitis, and lung cancer in persons also exposed to crystalline silica. Acute silicosis is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms include, but are not limited to: shortness of breath, cough, fever, weight loss and chest pain. Such exposure may cause pneumoconiosis and pulmonary fibrosis. The following relates to health effects of cellulose: Based on limited animal research, it is possible that repeated chronic inhalation exposure to cellulose fiber dust over time may lead to inflammation and scarring of the lung in humans. Precautions taken for crystalline silica dust will protect against cellulose. Medical conditions generally aggravated by exposure – Pulmonary function may be reduced by inhalation of respirable crystalline silica and / or cellulose. If lung scarring occurs, such scarring could aggravate other lung conditions such as asthma, emphysema, pneumonia or restrictive lung diseases. Lung scarring from crystalline silica may also increase risks to pulmonary tuberculosis. Smoking – some studies suggest that cigarette smoking increases the risk of occupational respiratory diseases, including silica-related respiratory diseases.
Acute and chronic effects:	• Acute toxicity – not classified • Skin corrosion / irritation – not classified • Serious eye damage / irritation – not classified • Respiratory or skin sensitization – not classified • Germ cell mutagenicity – not classified • Carcinogenity – may cause cancer if dust from product is inhaled • Specific target organ toxicity (repeated exposure) – causes damage to lungs and respiratory system through prolonged or repeated inhalation of dust from product
Carcinogenity:	California Proposition 65 Warning: This product contains chemicals known to the State of California to cause cancer International Agency for Research on Cancer (IARC): Crystalline silica inhaled in the forms of quartz or cristobalite from occupational sources is carcinogenic to humans Carbon black is possibly carcinogenic to humans

	The National Toxicology Program (NTP): NTP has concluded that respirable crystalline silica is a known human carcinogen LD50 (Silicon dioxide): Rat oral >22,500 mg / kg Mouse oral > 10,500 mg/kg
Section 12. Ecological Information	
There is a very limited amount of ecological data available on the effects of releases that may occur from this product being released into the environment. Clean up of the spilled product would not be expected to leave any hazardous material that could cause a significant adverse impact. There is a limited amount of ecological data available on crystalline silica, primarily because it is a naturally occurring mineral. An adequate representation of these data is beyond the scope of this document.	
Section 13. Disposal Considerations	
Dispose of material as inert, non-metallic mineral in conformance with local, state and federal regulations. Crystalline silica and limestone is not a RCRA hazardous waste.	
Section 14. Transport Information	
There are no special requirements for storage and transport	
UN No:	None allocated
Dangerous goods class:	None allocated
Hazchem code:	None allocated
Poisons schedule:	None allocated
Packing group:	Not applicable
Label:	Not a DOT hazardous material. Local regulations may apply
Section 15. Regulatory Information	
DOT hazard classification:	None
Placard requirement:	Not a DOT hazardous material. Local placarding regulations may apply
California Proposition 65:	**Warning: Airborne particles of respirable size of crystalline silica are known to the State of California to cause cancer.**
CERCLA hazardous substance (40CFR Part 302):	**Listed substance: No** **Unlisted substance: No** **Reportable quantity (RQ): None** **Characteristic(s): Not applicable** **RCRA waste number: Not applicable**
SARA. Title III. Sections 302 / 303 (40CFR part 355 – Emergency Planning and Notification):	**Extremely hazardous substance: No**
SARA. Title III. Section 311 / 312 (40CFR part 370 – Hazardous Chemical Reporting: Community Right-To-Know):	**Acute: Yes** **Chronic: Yes** **Fire: No** **Pressure: No** **Reactivity: No**

SARA. Title III. Section 313 (40CFR part 372 – Toxic Chemical Release Reporting: Community Right-To-Know	**Not a RCRA hazardous waste**
TSCA Inventory List:	**Yes**
TSCA 8(d):	**No**
Section 16. Other Information	
Prepared by Jeff Fry	**Issue Date: 06/01/15**

Read label before use

FIBER CEMENT

Contains:
Crystalline Silica (quartz) 10-30%
Calcium Silicate (hydrate) 10-60%
Cellulose fiber<10%]

DANGER

May cause cancer if dust from product is inhaled.
Causes damage to lungs and respiratory system through prolonged or repeated inhalation of dust from product.

Prevention	Response:	Storage:	Disposal:
Refer to the product Safety Data Sheet before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust from the product. Do not eat, drink or smoke when using this product. Wear personal protective equipment, as specified below.	Wash hands and face thoroughly after handling. If exposed or concerned: Get medical advice. If shortness of breath or other health concerns develop after exposure to dust from the product, seek medical attention.	Fiber cement is not a health hazard when handled or stored in its original, unaltered condition	Dispose of product in accordance with local, state and national regulations. If there are no applicable, regulations, dispose of in a secure landfill, or in a way that will not expose others to dust.

The hazard associated with fiber cement arises from the crystalline silica present in dust generated by activities such as cutting, rebating, drilling, routing, sawing, crushing, or otherwise abrading fiber cement, and when cleaning up, disposing of or moving dust. When doing any of these activities in a manner that generates dust: (1) follow James Hardie instructions and best practices to reduce or limit the release of dust; (2) warn others in the area to avoid dust; (3) work outdoors and use vacuum dust collection when using mechanical saws or other high speed cutting tools; (3) work outdoors and use appropriate vacuum dust collection when using mechanical saws or other high speed cutting tools and (4) wear a dust mask or respirator that meets applicable national regulations, as specified below.

During clean-up, use a well maintained vacuum and filter appropriate for capturing respirable fine dust or use wet cleanup methods - never dry sweep.

If using a dust mask or respirator, always use a NIOSH-approved dust mask or respirator (e.g., the N 95 dust mask).

WARNING: This product contains a chemical known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov/product.

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