



# Corridor Walls

eliminates scuff marks and reduces noise reverberation down long hallways



Natural  
Sisal  
Wallcovering



Product Information



# Gym Walls

prevents wall damage and absorbs noises from sporting and assembly activities

# Classroom Walls

improves voice acoustics and prevents wall damage from desks and chairs



International Concourse

# High Traffic Walls

resilient buffer for moving equipment and maintenance carts



## Sisal Wallcovering

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Brand: Design Materials'  
Product: No-Flame Sisal Wallcovering  
Construction: Woven, Boucle method  
Yarn: 100% natural sisal fibers  
Backing:None  
Pile Height: 1/4 "  
Minimum Weight: 5.5 oz per sq ft  
Roll Width: 13 ft  
Roll Length: 50 ft  
Fiber Flame retardant: natural borax  
Number of standard colorways: 12 (natural brown tones, blues, greens, grays, mauves)

## Sisal Adhesive

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Brand: #1-422  
Product: Sisal Adhesive  
Building Fire Code (BOCA, UBC, IBC): Required as system component with DMI sisal wallcovering

Container Size: 3.5 gal  
Application: Trowel-On with 3/16" x 5/32" V-notch or 1/4" x 1/4" for maximum application rate.  
Flammability: non-flammable, flame retardant additives  
Anti-Microbial additive: ASTM G-21rated 0 (no growth)  
VOC: rating of 0 (calculated)  
Description: solvent free, white latex based adhesive  
Base: synthetic acrylic polymer  
Solvent: water  
Open time: 20-30 minutes in climate controlled buildings  
Spread Rate: 60 sq ft gal (smooth surfaces)  
Shelf Life: 1 year  
Limitations: do not subject to temperatures below +10 degF. If frozen, warm to at least 70 degF and stir before using. For interior use only

# LEED Sustainable Projects

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## Contributing to LEED Credits

Rapidly Renewable  
Materials:Natural Sisal

Credit 6

Sisal wallcovering is woven 100% of natural sisal fiber. This fiber is extracted from leaves of the henequen and sisalana agave plant, which is grown for its annual harvest of fiber. Once the plant reaches maximum maturity and stop producing after 10 to12 years, new replacement plants grow to early maturity in 3 to 4 years.

Low-Emitting Materials:  
(wall)Carpet

Credit 4.3

Testing: Professional Testing Laboratory Inc., Dalton GA

Test Result: No evidence of exceeding industry guidelines for; total VOC level tolerances, 4 PC (phenelcyclohexene) level, formaldehyde level, styrene level.

100% natural fiber characteristic/natural borax fire retardant

Low-Emitting Materials:  
Adhesives

Credit 4.1

Does not exceed The South Coast Air Quality maximum for Propylene Glycol (used as a moistureizer). Rated at 32 grams per liter, standard maximum is 50 grams.

No other VOC ingredient is in the adhesive formula

## Test 1

Passes Full Scale **Room Corner Test** as established by NFPA (National Fire Protection Association) Life Safety Code. Carpet and carpet-like wall coverings (textiles, woven, nonwoven, napped, tufted, looped, or similar surface) for use in areas without automatic fire sprinklers.

Test meets requirement of National Building Codes: UBC 8-2 , BOCA 803.6 , IBC 803.5, SBCC

Testing: Southwest Research Institute, Department of Fire Technology, San Antonio Texas

Test Procedure: Wallcovering may be judged to perform satisfactorily when tested according to the fully-lined test procedure and meeting the following criteria: (1) Flames shall not spread to the ceiling during the 40-kw exposure (2) During the 150-kW exposure; flames shall not spread to the outer extremity of the sample on the 8 x 12-ft walls. Flashover shall not occur. Flashover shall be judged to have occurred when the heat flux at floor level exceeds 20 kW/m<sup>2</sup>, average upper level air temperatures exceed 1,100 degree F, or flames project out the door opening.

Test Findings: (1) The flames did not reach the ceiling during the 40-kW exposure (2) During the 150-kW exposure, flashover did not occur. The maximum average upper-level temperature was 858 degF, the maximum heat flux at floor level was 3.49 kW/m<sup>2</sup>. The flames did not project out the room door opening or to the outer extremities of the 8 x 12 ft walls.

**Test Conclusions: Based on the findings listed above, the 100% natural sisal fiber, flame retardant treated wallcovering without backing, identified as No-Flame Sisal Wallcovering, meets the acceptance criteria as specified for the fully-lined protocol , when tested adhered to unprimed 0.5 inch thick Type X gypsum wall-board with Sisal Adhesive #1-422.**

## Test 2

ASTM E84 Class A Flame Spread and Smoke Contribution. Standard test method for surface burning characteristics of building materials.

Testing: Commercial Testing Company, Dalton Georgia

**Test Conclusions: Flame Spread Index 20 , Smoke Density 0**

Sisal wall covering is resistant to scuffing marks and dirt prints caused by hand or shoe contact. Since it is non-static, natural fiber, dirt and dust are not attracted to it. The heavy texture makes it an undesirable writing surface for ballpoint pens. The durable resilient fiber does not tear or rip when furniture or carts are pushed into the wall.

Periodic vacuuming in some buildings may be required to remove dust buildup near air ducts. Clean in these areas as you would when vacuuming upholstery.

Sisal Guard fiber sealant can be spot applied in areas that are susceptible to constant oily hand contact. Examples of such areas are near furniture settings, doorway openings, electrical switch plate areas, elevators and its lobbies, and where people regularly lean against the wall.

The Sisal Guard will not discolor the sisal and can be used repetitively.

When wet mopping or shampooing the floor, keep water splashes off the sisal wall covering. Dirty water will leave a mark.

### Adhesive Removal:

DO NOT ATTEMPT TO WIPE OFF, DILUTED ADHESIVE WILL ABSORB INTO WALLCOVERING, LEAVING A STAIN.

Remove excess adhesive with flat blade tool without pressing into wallcovering-scrape dried adhesive 24 hours later

### Spot Removal

DO NOT SATURATE WITH WATER AND DETERGENT SOAP

Use Sisal Care fiber cleaner

or

Use a foam aerosol cleaner (dry cleaner) such as used on upholstery

A stiff bristle brush can be used with these cleaners without harming the wall covering

Scrape dried food spots with a dull knife, it will not harm the wall covering

### Stain Removal

Permanent stains caused by asphalt, paint, shoe polish, color chalk, cosmetics, oil-based markers

Dampen a clean white towel with a small amount of cleaning solvent to break down the stain. Blot up the stain working toward the center, dry the area quickly. Some stains may not be able to remove entirely.

Sisal Guard and Sisal Care are products available from Design Materials, Inc., Kansas City, 800-654-6451



ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber

**Final ASTM Rating: 8**

Testing: Environ Laboratories, Minneapolis Minnesota

Purpose: Testing to provide a basis of comparative performance results under controlled lab conditions.

VOC of Antimicrobial Additives:  
sisal wallcovering : no additives utilized  
sisal adhesive #1-422: 0 VOC

Comparisons:

Standard untreated gypsum wallboard and ceiling tile rating is 0 (heavy to disfigurement mold growth, When treated with antimicrobial additives, gypsum wallboard typical industry rating is 8

ASTM E1797-04 Standard Specification for Reinforced Liquid Coating Encapsulation Products for Leaded Paint in Buildings

Minimum performance requirement for interior lead paint encapsulant: 8

Abrasion Resistance of Wallcovering

ASTM F793-93 Standard Classification of Wallcovering by Durability Characteristics

This test covers the classification of wallcovering by durability characteristics, that is, according to its serviceability in use, recognizing that certain wallcovering is designed primarily for decorative effect, while other wallcovering is also designed to achieve a high degree of serviceability.

**ASTM Rating: Class 1, full commercial serviceability**

Tear Resistance of Cloth

ASTM D2261-96 Standard Test Method for Tearing Strength of Fabrics by the Tongue (Single Rip) Procedure (Constant-Rate-of-Extension Tensile Testing Machine)

This test method covers the measurement of the tearing strength of textile fabrics by the tongue (single rip) procedure using a recording constant rate-of-extension-type (CRE) tensile testing machine.

**ASTM Rating: warp 139 / fill 176**

ASTM C423-00 Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method

Testing: Riverbank Acoustical Laboratories, Geneva Illinois

Final Report: RAL A86-286

Test Mounting type B (direct to test surface). Used to determine minimum NRC rating of the sisal wall-covering.

**Results: NRC: .15**

Improved NRC ratings occur with actual installation of sisal wallcovering to gypsum wallboard, plywood, furred walls, acoustic panels

1) No MSDS for sisal wallcovering, product is 100% natural with no hazardous additives

2) MSDS Sisal Adhesive 1-422

Section 1-Product Identification

Manufacturing: Capitol Adhesives, Dalton GA

Telephone: 1-800-831-8381

Product Class: Latex based flooring adhesive

Product Identity: Sisal #1-422, No-Flame

Section II-Hazardous Components

None per OSHA regulation 29CFR1910.1200

None per SARA Title III section 313 and TSCA 40 CRF 372

Section III-Physical Data

Initial boiling point: 212 degF

Vapor pressure: same as water

Specific gravity: 1.37

Percent Volatiles: 25%

G/L VOC: 0 calculated

Section IV-Fire and Explosion Data

Flash point: N/A

Explosive limit: N/A

Extinguishing media: N/A

Unusual fire fighting procedure: None

Special fire fighting procedure: None

Section V-Health Hazard Data

Symptoms of over exposure:

Inhalation: None known

Eyes: Possibly mild irritation

Skin: None known

Ingestion: Possible G.I. blockage

First Aid: Skin-soap and water, Eyes-flush with water,

Inhalation-remove to fresh air if necessary

Section VI-Reactivity Data

Stability: Stable

Incompatibility: None

Hazardous Decomposition: None

Hazardous Polymerization: None

Conditions to Avoid: None Known

Section VII-Spill or Leak Procedures

Absorb and solidify with sawdust or vermiculite. Solidified materials accepted for landfill disposal in most locations.

Section VIII-Protective Equipment

No safety equipment required other than goggles

Section IX-Special Precautions

Protect from freezing

Keep out of reach of children



Recommended procedures also available on VHS tape

## Adhesive Recommendations

Use Sisal #1-422 Adhesive by Design Materials, Inc.

1. Sisal is a natural fiber that reacts to excess moisture in other types of wallcovering and multi-purpose adhesive by shrinking before the adhesive dries and sets, which is normally during the first 24 hours after the wallcovering has been applied to the wall.
2. Sisal #1-422 Adhesive contains fire retardant for passage of the NFPA test method, which is used by national commercial fire codes such as the Uniform Building Code.

Humidity levels effect the drying time of the adhesive

1. Airborne moisture causes the adhesive to dry slow and may cause the sisal wallcovering to shrink at the seams and edges. Avoid this condition by installing sisal wallcovering in climate control buildings or use mechanical fans at the point of installation to provide air movement. Keeping all doorways to the outside of the building closed is also recommended.

## Adhesive Application

1. For ease of troweling the low water content #1-422 Sisal Adhesive, apply adhesive to primed new walls or previously painted walls. On walls that have been stripped of old wallcovering, priming the old adhesive is not necessary.
2. Use a 3/16 th x 5/32 nd V-notched trowel. Check previously used trowels since the notch depth can be scraped flat with use.
3. Spread adhesive over the entire surface. Spots left uncovered with adhesive cause air pockets.
4. A good bond with the wallcovering can only occur when the wallcovering is pressed into the adhesive. An indicator of a good bond is that the back of the wallcovering leaves its imprint in the adhesive. Pull back a corner of the wallcovering after pressing the adhesive in place, if you see the trowel marks instead of the wallcovering imprint, then there should be more pressure placed on the wallcovering surface. A "good" imprint of the sisal shows the highs and lows of the ribbed texture, and not the trowel notches.
5. A hand held, hard rubber roller (#333) is the best tool for pressing the wallcovering into the adhesive. It has an extension handle that will leverage the right amount of pressure. Hand pressure and broad knife pressure are not good substitutes because of insufficient amount of pressure.
6. The wallcovering can be placed into the adhesive immediately after troweling. The maximum exposed time of spread adhesive is typically 25 minutes. This time may be longer with high humidity or shorter with dry and hot conditions. The surface of the adhesive will begin to "skin over" as the indicator of the maximum exposed time.

## Wallcovering Recommendations

Unbacked sisal wallcovering is reversible, there is not a specific front or back side

1. Hang the wallcovering in "panels" : Cut the wallcovering off the roll in increments that match the height the wallcovering will reach on the wall. Place these panels cuts side to side on the wall to make vertical seams. When installed in the panel method the ribs of the weaving will run horizontally on the wall. Aligning the ribs at the seams is not entirely possible because uneven natural fibers and yarn.

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2. The two sides of the wallcovering have a factory edge that needs to be trimmed off before the side to side seams are placed on the wall
3. The strength of sisal fiber requires the use of razor blades that hold their edge longer and are held in an easy to change knife. The only knife recommended is the offset handled carpet knife that holds rectangle-slotted blades. Replacement blades should be square corner and a tempered blue edge. Cutting and trimming sisal will quickly dull razor edges. As the razor edge loses its sharpness, snagging of the weaving occurs. When snags occur, seaming and edge trimming become unacceptable. It is typical to change the razor edge after 2-3 long cuts through sisal wallcovering, even with the recommended razor blades. Avoid the use of utility razor knives or wallpaper blades. A pair of scissors is recommended as a secondary cutting tool for trimming difficult to reach spots with the carpet razor knife.
4. The woven construction of the wallcovering makes a straight edge unnecessary. When cutting from side to side, follow the ribs of the material. When cutting across the ribs, follow a buried reed.
5. Seams are formed by butt seaming., do not attempt to double cut through sisal layers.

#### "Railroading" Wainscote Applications

The method of installing wallcovering in a continuous length is called railroading. The seamless application is perceived to be preferable to the method of installing side by side panels of wallcovering. In reality railroading has its own set of techniques that must be considered before this method is used.

Railroading requires the following procedures:

1. Length splitting of the 13ft wide factory rolls require a large cutting floor and additional labor expense.
2. The waste factor of railroading needs to be considered when splitting across the width of the 13ft wide rolls.
3. Avoid vertical seams when railroading because the seam edges will not close entirely due to natural fiber expanding
4. Avoid stretching the long lengths of sisal wallcovering by applying the material in the adhesive in increments. This prevents the wallcovering from pulling away from doorways and other termination when the stretch in the material relaxes. Maintain the straightness of the ribbed pattern so that outside corners can be wrapped without the ribs snaking around the corner.
5. Termination edges at the sides of door jambs and at inside corners will not close entirely due to natural fiber expanding. Finish moulding to cover the edges at termination points will tighten the appearance.
6. When railroading sisal wallcovering at heights taller than a short waincot, additional installers are required to control the weight and to avoid stretch marks in the weaving.

#### PANEL Application Procedures

1. When installing from the 13ft wide wallcovering panels, pull from the roll the increment needed to cover the height specification.
2. Cut the first panel across the width of the roll with the slotted razor knife or loop pile cutter. Follow the rib valley for a straight cut.
3. While the first cut panel is laying flat on the floor, trim the factory side edge off one side only

4. Roll up the first cut panel side to side, start rolling from the side that still has the factory edge. Keeping the trimmed side edge on the outside when rolling will prevent the weave from raveling.
5. Stand the rolled up panel against the wall and align the outside edge (the trimmed edge) approximately one inch over from where the edge will fall and place into the adhesive without rolling the surface. Unroll into the adhesive approximately one foot of wallcovering, then slide the panel over to close the one inch gap. Sliding to close the one inch gap will keep the weaving at the trimmed edge from raveling.
6. Begin to unroll the balance of the wallcovering panel into the adhesive. Use the carpet stair tool to press spots of the material into the adhesive so that the wallcovering will adhere to the wall. Make alignment adjustments when unrolling gradually. Press only enough material into the adhesive to keep the panel upright on the wall.
7. Once the entire width has been aligned, its time to roll the entire surface of the wallcovering with the hand held roller. Apply enough pressure over the entire surface to leave an imprint of the wallcovering in the adhesive instead of the imprint left after troweling.
8. Once the entire surface has been rolled into place, the wallcovering panel it is difficult to adjust its position on the wall.
9. The second factory side edge is trimmed off after the panel is set in place. Trim approximately ½ inch off, work from the ceiling down when trimming.
10. The next panel is now ready to be installed seamed side by side to the previously installed panel, repeating the same step by step procedures. Before starting the second panel, run a bead of seam bond approximately ¼ inch from the outside edge of the first panel. When placing the second panel onto the wall, lay the seam edge on top of the seam bond and slide over to the first panel.

#### Fitting Panels at corners

1. Wrap outside corners-do not cut. This wallcovering is a stiff material that can be folded and creased enough to fit tightly around corners.
2. Inside corners should be wrapped when possible when the panel width extends past the corner. Inside corners can also be used as a termination edge.

#### · Trimming at door jambs

1. When a panel meets the side of a metal or wood door jamb, extend the wallcovering approximately 3-4 inches past the outside edge of the jamb without pressing into the corner where the wall surface meets the jamb.
2. Cut through the wallcovering from the top of the jamb and follow the side of the jamb down as a blade guide. Do this cutting without pressing the wallcovering into the wall. Otherwise the edge will ravel as it is pushed past the metal door jamb.
3. Once the cut is completed along the side of the jamb, slide the wallcovering away from the jamb, approximately ¼ inch with the carpet knee kicker.
4. Once the edge is clear from making contact with the jamb, press the edge into the adhesive with the stair tool.
5. Once the edge has been pressed into the adhesive, slide the wallcovering to close the gap along the door jamb sides.

# Installation Tool List

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FOR LOCAL TOOL PURCHASES LOOK IN THE YELLOW PAGES UNDER CARPET INSTALLERS EQUIPMENT AND SUPPLIES

Extension Wall Roller  
Blue Slotted Blades (100 quantity) for razor knife  
Razor Knife  
Carpet Tucker (stair tool)  
3/16 x 5/32 Trowel- V notched  
Loop Pile Cutter  
Econo-Knee Kicker  
Aviation Snips  
Notched Spatula  
Applicator Bottle for seam bond  
Tool Box

## Warranty

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Our materials are guaranteed against visible manufacturing and material defects. Materials should be inspected before cutting and installing. Any defective material will be replaced free of charge if a claim of defect is received and the material in question is returned to DMI. This warranty is effective for up to 12 months from receiving. DMI will not be responsible for installation costs involved in any repair or replacement of material.

There are no wear or stain resistant warranties implied or expressed. Sisal wallcovering is a 100% natural fiber yarn and is not engineered to performance specifications. DMI does guarantee that all materials we ship, meets the performance qualities of DMI sisal wallcovering which is stated in the materials' specification. These are fire resistance, noise absorption, tearing resistance, abrasion resistance, mold & mildew growth resistance

The natural sisal fiber used in the manufacture of this product is not uniform in size resulting in slight weaving irregularities in the thickness of the pattern ribs and small skews to the linear pattern of the ribs. These are inherent because of variances in growing the natural fiber, and are not considered manufacturing defects.

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