DANE COUNTY DEPARTMENT of PUBLIC WORKS, HIGHWAY and TRANSPORTATION

County Executive
Kathleen M. Falk

1919 Alliant Energy Center Way ◆ Madison, Wisconsin 53713
Phone: (608) 266-4018 ◆ Fax: (608) 267-1533

Commissioner / Director
Gerald J. Mandli

July 8, 2010

ATTENTION ALL REQUEST FOR BID (RFB) HOLDERS

RFB NO. 310020 - ADDENDUM NO. 2

GIRAFFE ROOF REPLACEMENT
HENRY VILAS ZOO
702 S. RANDALL AVE.
MADISON, WISCONSIN

BIDS DUE: TUESDAY, JULY 13, 2010, 2:00 PM. DUE DATE AND TIME ARE NOT CHANGED BY THIS ADDENDUM.

This Addendum is issued to modify, explain or clarify the original Request for Bid (RFB) and is hereby made a part of the RFB. **Acknowledge all Addenda on the Bid Form.**

PLEASE MAKE THE FOLLOWING CHANGES:

1. **Base Bid**
   The exisiting roof is built-up over a pre-existing lower roof. The Base Bid will include removing both roofs and disposing of each.

2. **Asbestos**
   The pre-existing lower roof beneath the existing EPDM and insulation may contain asbestos. However, Bidder should assume there is no asbestos. Dane County will conduct asbestos testing on the lower roof materials. If tests samples come back positive for asbestos, the Contractor will be responsible for removing and disposing of the existing roofs according to applicable standards. This change in scope will be addressed in a Change Order.

3. **Patching**
   The three (3) curbs indicated on Sheet No. 2 may be patched with 24 Gauge steel decking.

4. **Remove High Density Fiberboard**
   Remove all references to ½" high density fiberboard. That product may not be used on this project. Wherever the specifications and drawings reference the ½" high density fiberboard, change that language to either ½" DensDeck Prime Roof Board or ½" Firestone ISOGARD HD Cover Board. Cut sheets for both of the substitute products are attached to this Addendum. These products must be installed according to

manufacturer's recommendations and in a manner that does not adversely affect the requirement for a 10-year warranty.

5. Wall Flashing

The metal wall flashing where the roof meets the interior wood wall will not have to be replaced if conditions allow it to remain and watertight seal remains. All other metal wall flahings must be replaced.

6. Section 07 71 23

Replace 8" K-style aluminum gutters with 8" shop fabricated Pre-Finished Galvanized Steel Sheet: ASTM A924, Grade A, or ASTM A653, G90 zinc coating; 24 gauge core steel, shop pre-coated with polyester coating; color by Owner.

All fasteners and fabrication techniques should meet manufacturer's recommendations.

If any additional information about this Addendum is needed, please call John Welch at 608-267-8815, welch@co.dane.wi.us or Caleb Barth at 608-219-2917, barth.caleb@co.dane.wi.us.

Sincerely,

John Welch
Project Engineer

Enclosures:

DensDeck Prime Roof Board Cut Sheet
Firestone ISOGARD HD Cover Board Cut Sheet

Georgia-Pacific

DensDeck®
Prime Roof Board

Technical Service Hotline 1.800.225.6119 or
www.densdeck.com

Manufacturer

Georgia-Pacific Gypsum LLC
133 Peachtree Street, 8th floor, Atlanta, GA 30303
Technical Service Hotline 1-800-225-6119 or www.densdeck.com

Description

DensDeck® Prime Roof Board is an exceptional fire barrier, thermal barrier and recovery board used in various commercial roofing systems. The product features a pre-primed surface to make the bond even stronger. The patented DensDeck design employs glass mat facings front and back that are embedded into a water resistant and moisture-resistant treated core, providing excellent fire resistance, moisture resistance and wind uplift properties. The unique construction of DensDeck Prime provides superior flute spanning and will help stiffen and stabilize the roof deck. Additionally, DensDeck Prime has been shown to withstand delamination, deterioration, warping and jobsite damage more effectively than roofing membrane substrates such as paper-faced gypsum board, fiberboard and perlite insulation. DensDeck Prime resists the growth of mold and mildew per ASTM D 3273.

Primary Uses

Roof system manufacturers and designers have found DensDeck Prime Roof Board to be compatible with many types of roofing systems, including: modified asphalt, single-ply, metal systems, recover board, as well as an overlayment for polyisocyanurate and polystyrene insulation. DensDeck Prime can also be used as a form board for poured gypsum concrete deck in roof applications as well as a substrate for spray foam roofing systems. 1/2" (12.7 mm) and 5/8" (15.9 mm) DensDeck Prime may also be used in vertical applications as a backer board or liner for the roof side of parapet walls.

DensDeck Prime Roof Board allows the bonding of cold mastic modified bitumen and torching directly to the surface. ***Consult with the system manufacturer for recommendations on this application.*** System manufacturers and designers have found DensDeck Prime to be compatible with bonding adhesives for fully adhered single-ply membrane applications and has been shown to extend the adhesive usage.

DensDeck Prime Roof Board's exceptional moisture resistance make it the preferred substrate for vapor retarders. An excellent fire barrier, DensDeck Prime features a noncombustible core and inorganic surface that offers greater fire protection than other conventional commercial roofing products when applied over combustible roof decks and steel decks.

Limitations

DensDeck Prime Roof Board is designed to act with a properly designed roof system. The actual use of DensDeck Prime as a roofing component is the responsibility of the roofing system's designing authority. Georgia-Pacific does not offer roofing system design services.

Consult membrane manufacturer for specific system installation instructions.

Conditions beyond the control of Georgia-Pacific such as weather conditions, dew, application temperatures and techniques may cause adverse effects with adhered roofing systems. Always consult roofing manufacturers for their specific instructions on applying their products to DensDeck Prime Roof Board.

Panels must be kept dry before, during and after installation. Apply only as much DensDeck Prime Roof Board as can be covered by a roof membrane system in the same day.

Accumulation of water due to leaks or condensation in or on DensDeck Prime Roof Board must be avoided during construction and after construction. Avoid over-use of non-vented direct-fired heaters during winter months. Avoid application of DensDeck Prime during rains, heavy fogs and other conditions that may deposit moisture on the surface.

For vertical parapet applications, 1/2" (12.7 mm) DensDeck Prime can span 16" oc (406 mm) and 5/8" (15.9 mm) DensDeck Prime can span 24" oc (610 mm).

The need for a separator sheet between the DensDeck Prime Roof Board and the roofing membrane shall be determined by the roof membrane manufacturer or roofing systems designer.

When applying solvent-based adhesives or primers, allow sufficient time for the solvent to flash off to avoid damage to roofing components.

Maximum flute span is 2-5/8" (66.7 mm) for 1/4" (6.4 mm) DensDeck Prime; 5" (127 mm) for 1/2" (12.7 mm) DensDeck Prime; and 8" (203 mm) for 5/8" (15.9 mm) DensDeck® Prime Fireguard® Type X.

DensDeck roof board products may have temporary factory-applied packaging (plastic wrap) that must be removed upon receipt to prevent accumulation or entrapment of condensation or moisture which may cause application problems. Provide other suitable breathable weather protection for storage to keep DensDeck products dry.

Technical Data

Flame spread 0, smoke developed 0, when tested in accordance with ASTM E 84 or CAN/ULC-S102. Noncombustible when tested in accordance with ASTM E 136.

DensDeck® Prime Fireguard®: UL Classified when tested in accordance with ASTM E 119.

1/4" (6.4 mm) DensDeck Prime has been tested in Georgia-Pacific sponsored tests with Factory Mutual for 60 psf and 90 psf wind uplift for BUR, EPDM, thermoplastics and modified bitumen roof systems. Higher wind uplift ratings have been achieved by numerous membrane manufacturers using DensDeck Prime in their FMRC approved construction designs.

DensDeck Prime is FM tested and approved as the only 1/2" (12.7 mm) gypsum product to meet the calorimeter requirements for conventionally insulated decks.

Miami-Dade County, Florida NOA 07-0124.02.

Submittal Approvals

Job Name _____

Contractor _____

Date _____

Stamps / Signatures

Physical Properties

Properties	1/4" (6.4 mm)	1/2" (12.7mm)	5/8" (15.9 mm)
Thickness, nominal	1/4" (6.4 mm) + 1/16" (1.6 mm)	1/2" (12.7 mm) ± 1/32" (.8 mm)	5/8" (15.9 mm) ± 1/32" (.8 mm)
Width, standard	4' (1219 mm) ± 1/8" (3 mm)	4' (1219 mm) ± 1/8" (3 mm)	4' (1219 mm) ± 1/8" (3 mm)
Length, standard	4' (1219 mm) and 8' (2438 mm) ± 1/4" (6.4 mm)	4' (1219 mm) and 8' (2438 mm) ± 1/4" (6.4 mm)	4' (1219 mm) and 8' (2438 mm) ± 1/4" (6.4 mm)
Weight, lbs./sq. ft., nominal	1.15-1.25	1.975	2.55
Surfacing	Fiberglass mat with non-asphaltic coating	Fiberglass mat with non-asphaltic coating	Fiberglass mat with non-asphaltic coating
Flexural Strength[1], parallel, lbs. min.	40	80	100
Flute Spanability[2]	2-5/8" (66.7 mm)	5" (127 mm)	8" (203 mm)
Permeance[3], Perms	50	35	32
"R" Value[4]	.28	.56	.67
Linear Variation with Change in Temp., in/in °F	$8.5x10^{-6}$	$8.5x10^{-6}$	$8.5x10^{-6}$
Linear Variation with Change in Moisture, in/in %RH	$6.25x10^{-6}$	$6.25x10^{-6}$	$6.25x10^{-6}$
Water Absorption[5], % max	10.0	10.0	10.0
Compression Strength, psi nominal	500 - 900	500 - 900	500 - 900
Surface Water Absorption, grams, nominal	≤2.0	≤2.0	≤2.0
Flame Spread, Smoke Developed (ASTM E 84)	0/0	0/0	0/0
Fire Classification	FM CLASS 1 (as overlayment)	FM Class 1 (FM 4450)	FM Class 1 (FM 4450)
	UL 1256, ULC S-126 UL Class A (UL 790) ULC S-107	UL 1256, ULC S-126 UL Class A (UL 790) ULC S-107	UL 1256, ULC S-126 UL Class A (UL 790) ULC S-107
Mold Resistance per ASTM D 3273[6]	10 (Highest Score)	10 (Highest Score)	10 (Highest Score)
ASTM Standard	C 1177	C 1177	C 1177
Uplift Standards and Testing	ANSI/UL 1897 ASCE 7 FM 4470	ANSI/UL 1897 ASCE 7 FM 4470	ANSI/UL 1897 ASCE 7 FM 4470
Bending Radius	5' (1524 mm)	8' (2438 mm)	12' (3658 mm)

1. Tested in accordance with ASTM C 473.
2. Tested in accordance with ASTM E 661 (400 lb. conc. load only for 1/2" (12.7 mm) and 5/8" (15.9 mm)).
3. Tested in accordance with ASTM E-96 (dry cup method).
4. Tested in accordance with ASTM C 518 (heat flow meter).
5. ASTM C 1177 minimums.
6. The mold resistance of DensDeck® Roof Boards has been tested, as manufactured, in accordance with ASTM D 3273. The ASTM D 3273 test is a 4-week controlled laboratory test. The mold resistance of any building product when used in actual job site conditions may not produce the same results as were achieved in the controlled, laboratory setting. No material can be considered mold proof. When properly used with good design, handling and construction practices, DensDeck Roof Boards provide increased mold resistance.

Georgia-Pacific Gypsum

U.S.A.– Georgia-Pacific Gypsum LLC
Canada – Georgia-Pacific Canada, ULC

SALES INFORMATION AND ORDER PLACEMENT
U.S.A. Midwest: **1-800-876-4746** West: **1-800-824-7503**
South: **1-800-327-2344** Northeast: **1-800-947-4497**

CANADA Canada Toll Free: **1-800-387-6823**
Quebec Toll Free: **1-800-361-0486**

TECHNICAL INFORMATION
U.S.A. and Canada: **1-800-225-6119**
www.gpgypsum.com

TRADEMARKS Unless otherwise noted, all trademarks are owned by or licensed to Georgia-Pacific Gypsum LLC.

REMEDIES AND TERMS OF SALE
All sales of this product by Georgia-Pacific are subject to our Terms of Sale available at www.gpgypsum.com.

UPDATES AND CURRENT INFORMATION
The information in this document may change without notice. Visit our website at www.gpgypsum.com for updates and current information.

CAUTION For product fire, safety and use information, go to www.gp.com/safetyinfo or call 1-800-225-6119.

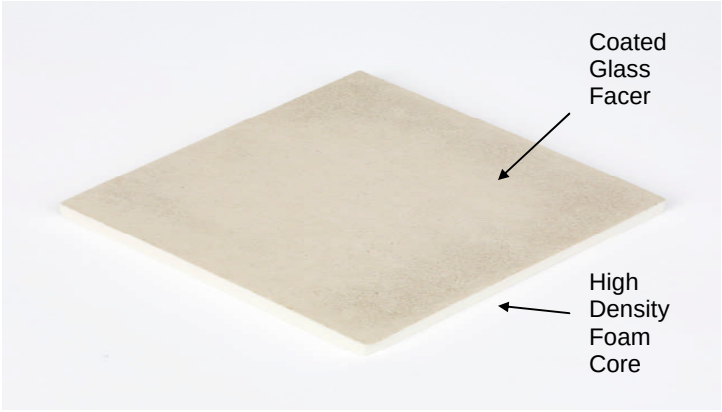
HANDLING AND USE–CAUTION This product contains fiberglass facings which may cause skin irritation. Dust and fibers produced during the handling and installation of the product may cause skin, eye and respiratory tract irritation. Avoid breathing dust and minimize contact with skin and eyes. Wear long sleeve shirts, long pants and eye protection. Always maintain adequate ventilation. Use a dust mask or NIOSH/MSHA approved respirator as appropriate in dusty or poorly ventilated areas.

FIRE SAFETY CAUTION Passing a fire test in a controlled laboratory setting and/or certifying or labeling a product as having a one-hour, two-hour, or any other fire resistance or protection rating and, therefore, as acceptable for use in certain fire rated assemblies/systems, does not mean that either a particular assembly/system incorporating the product, or any given piece of the product itself, will necessarily provide one-hour fire resistance, two-hour fire resistance, or any other specified fire resistance or protection in an actual fire. In the event of an actual fire, you should immediately take any and all actions necessary for your safety and the safety of others without regard for any fire rating of any product or assembly/system.

Firestone BUILDING PRODUCTS

ISOGARD™ HD Cover Board

Board Size	Item Number
4' x 4' (1.2m x 1.2m)	W8H3GG0504
4' x 8' (1.2m x 2.4m)	W8H3GG0508



DESCRIPTION:
Firestone ISOGARD™ HD Cover Board is a half-inch (12.7 mm) thick polyiso insulation designed for use as a cover board. It is a high density, closed-cell, polyisocyanurate foam core that has been manufactured with a coated glass facer. Firestone ISOGARD™ HD provides the highest thermal performance when compared to other half-inch roof cover boards.

All Firestone polyisocyanurate insulations use EPA accepted blowing agents. Firestone ISOGARD™ HD with IsoGard™ Foam Technology incorporates a HCFC-free blowing agent that does not contribute to the depletion of the ozone (ODP-free).

ADVANTAGES:
1. Outstanding thermal performance
2. Available in 4' x 4' (1.2 m x 1.2 m) and 4' x 8' (1.2 m x 2.4 m) panels
3. Lightweight 12 ± 2 lb per 4' x 8' panel (5.44 ± 0.907 kg per 1.2 m x 2.4 m)
4. Strong and durable enough to protect any roof system
5. Compatible with fully adhered and mechanically attached Single-Ply, Cold and Cold Adhesive Modified Bitumen systems
6. Easier to handle and cut than other cover board products
7. Superior FM Global, wind uplift performance. 1-90 requires only 12 fasteners per board*
8. 96 pieces per bundle
9. Coverage per bundle: 4' x 8' = 3072 ft^2 (285.4 m^2)
   4' x 4' = 1536 ft^2 (142.7 m^2)

SPECIFICATION COMPLIANCE:
Manufactured in an ISO 9000 Registered Facility
FM Global Approved when applied with the fastening pattern shown
UL Classified

METHOD OF APPLICATION:
Insulation shall be neatly fitted to all roof penetrations, projections and nailers. No more insulation shall be installed than can be covered with membrane and completed before the end of each day's work or before the onset of inclement weather.

Firestone ISOGARD™ HD can be applied over existing roof surfaces and under adhered or mechanically attached Single Ply, and Modified Bitumen systems applied in Multi-Purpose MB Cold Adhesive and SA Base with a Torch Applied Cap.

DO NOT use hot asphalt with ISOGARD™ HD

FIRESTONE ISOGARD™ HD Must Be Installed Using:
Fasteners and plates as shown below or Firestone approved insulation adhesives

Contact Firestone Roof Solutions for insulation attachment requirements or go to:
www.firestonebpco.com

PRODUCT DATA

Thickness inches	Thickness mm	R-Value
0.5	12.7	2.5

R-Values shown are based on ASTM Test C518 or C177 at 75° F mean.

LTTR value pending

POLYISO PHYSICAL PROPERTIES

Physical Property	ASTM Test	English Values	Metric Values
Compressive strength:	D 1621	120 psi	827 kPa
Density:	D 1622	5 pcf	80 kg/m^3
Pull through resistance:	D 473 modified	210 lb	934 N
Foot traffic resistance:	Rolling Load Emulator	>6000 passes	>6000 passes
Dimensional stability:	D 2126	<0.5%	<0.5%
Water absorption:	C 209	<3%	<3%
Facer adhesion:	D 1623	20 psi	138 kPa
Resistance to mold:	D 3273	Pass	Pass
1-90 Fastener density:	FM Global	12 per 4'x8'	12 per 1.22m x 2.44m
Flute Span over metal decks:		2.625"	Pass

LEED INFORMATION:
Post Industrial Recycled Content: Average 8.3%

Manufacturing Locations: DeForest, WI
Florence, KY

STORAGE and PRECAUTIONS
1. Keep insulation dry at all times.
2. Elevate insulation above the deck or ground.
3. Cover insulation with waterproof tarps.
4. Combustible. Refer to MSDS for more information.
5. Do not install over wet, damp or uneven substrates.
6. Do NOT mop
7. Do NOT torch

PIMA

FM APPROVED

Foamed Plastic for Roofing Systems
As to an External Fire Exposure Only
61P2
See UL Directory of Products
Certified for Canada
And UL Roofing Materials
And Systems Directory
R9516

IBC
Section 2603

Patents Pending

Firestone Building Products Company, LLC
250 West 96th Street, Indianapolis, IN 46260
Sales: (800) 428-4442 • Technical (800) 428-4511

Firestone
BUILDING PRODUCTS

ISOGARD™ HD Cover Board

FM Global fastening pattern for 1-90 attachment of ISODARD™HD