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Noise Barriers, Pre-Qualified Systems

Date: 1/31/2012

The Noise Barrier Systems herein listed meet the System Pre-Qualification requirements of the applicable Standardized Special Provision (STSP).
Lists of pre-qualified sealers and paint systems are also contained herein

Click on one of the below links or use the bookmark to move to a list

- **Non-Absorptive Structure**
- **Single-Sided Sound Absorptive Structure**
- **Double -Sided Sound Absorptive Structure**
- **Sealer Sources and Products**

Click below to obtain instructions and submittal form

WisDOT Noise Wall Pre-approval Requirements
New Product Form DT 2164 -double click to open attachment in panel below

	STSP #	
8/20/2004	531-005	Noise Barriers Single-Sided Sound Absorptive (Structure)
8/20/2004	531-010	Noise Barriers Double-Sided Sound Absorptive (Structure)
8/20/2004	531-015	Noise Barriers Double-Sided Sound Absorptive (Structure)

WisDOT LAN users can link to the STSP list on the DOTNET at:
http://dotnet/dtidcons/constnds/stsp/stsp-master.pdf
Standardized Special Provisions are available to WisDOT eligible engineering consultants, city, county, and municipal staff at:
http://on.dot.wi.gov/consultants/stsp.shtm

Contact Information:
Peter Kemp. P.E.
Bureau of Technical Services
3502 Kinsman Blvd.
Madison, WI 53704
Phone: 608-246-7953 E-Mail: peter.kemp@dot.wi.gov

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Noise Barriers, Non-Absorptive Structure

Up Dated: 4-16-12

Company	Product	Address	Phone	Fax	Web Site	Email
Durisol	**NB24** **NB15** **NB12**	**505 York Blvd., Suite 2** **Hamilton, ON** **L8R 3K4**	**905-521-0999**	**905-521-8658**	http://www.durisol.com	info@durisol.com
Concrete Solutions Inc	**SoundSorb**	**3300 Bee Caves Road** **Suite 650** **Austin, TX 78746**	**512-327-8481**	**512-327-5111**	www.soundsorb.com	csi@soundsorb.com
Faddis Concrete Products	**AcoustaCrete**	**3515 Kings Highway,** **Downingtown, PA 19335**	**610-269-4685**	**610-873-8431**	www.faddis.com	info@faddis.com
JBM Solutions, Inc.	**JBM75**	**162 Bay Club Pkwy** **North East, MD 21901**	**703-861-9004**	**410-287-8885**		jbmsolutions@comcas

Contact Information:

Peter Kemp, P.E.
WisDOT
Bureau of Technical Services
3502 Kinsman Blvd.
Madison, WI 53704
Phone: 608-246-7953

E-Mail:
peter.kemp@dot.wi.gov

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Noise Barriers Single-Sided Sound Absorptive Structure

Up Dated: 4-16-12

Company	Product	Address	Phone	Fax	Web Site	Email
Durisol	**NB24** **NB15** **NB12**	**505 York Blvd., Suite 2** **Hamilton, ON** **L8R 3K4**	**905-521-0999**	**905-521-8658**	http://www.durisol.com	info@durisol.com
Concrete Solutions Inc	**SoundSorb**	**3300 Bee Caves Road** **Suite 650** **Austin, TX 78746**	**512-327-8481**	**512-327-5111**	www.soundsorb.com	csi@soundsorb.com
Faddis Concrete Products	**AcoustaCrete**	**3515 Kings Highway,** **Downingtown, PA 19335**	**610-269-4685**	**610-873-8431**	www.faddis.com	info@faddis.com
JBM Solutions, Inc.	**JBM75**	**162 Bay Club Pkwy** **North East, MD 21901**	**703-861-9004**	**410-287-8885**		jbmsolutions@comcas

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Peter Kemp, P.E.
WisDOT
Bureau of Technical Services
3502 Kinsman Blvd.
Madison, WI 53704
Phone: 608-246-7953

E-Mail:
peter.kemp@dot.wi.gov

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Noise Barriers Double-Sided Sound Absorptive Structure

Up Dated: 4-16-12

Company	Product	Address	Phone	Fax	Web Site	Email
Durisol	**NB15** **NB12**	**505 York Blvd., Suite 2** **Hamilton, ON** **L8R 3K4**	**905-521-0999**	**905-521-8658**	http://www.durisol.com	info@durisol.com
Concrete Solutions Inc	**SoundSorb**	**3300 Bee Caves Road** **Suite 650** **Austin, TX 78746**	**512-327-8481**	**512-327-5111**	www.soundsorb.com	csi@soundsorb.com
Faddis Concrete Products	**AcoustaCrete**	**3515 Kings Highway,** **Downingtown, PA 19335**	**610-269-4685**	**610-873-8431**	www.faddis.com	info@faddis.com
JBM Solutions, Inc.	**JBM75**	**162 Bay Club Pkwy** **North East, MD 21901**	**703-861-9004**	**410-287-8885**		jbmsolutions@comcas

Contact Information:

Peter Kemp, P.E.
WisDOT
Bureau of Technical Services
3502 Kinsman Blvd.
Madison, WI 53704
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E-Mail:
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Qualified Paint Sources and Products

Date: 8-20-2004

(Organic Zinc-Rich and Epoxy Systems with VOC's at 2.8 pounds or less per gallon)
(335 grams or less per Liter) Minimum Slip Coefficient Class B

Producer	Coat	Products	Minimum Dry Film Thickness Mils (mm)	Maximum Dry Film Thickness Mils (mm)	Minimum Time Between Coats - Hours
Ameron Protective					
Coating Division	**1st**	**Amercoat 68 HS**	**3.0 (.076)**	**7.0 (0.178)**	**24**
201 North Berry St.	**2nd**	**Amercoat 385 or 370**	**3.5 (.089)**	**8.0 (0.203)**	**8**
Brea, CA 92621	**3rd**	**Amercoat 450 H**	**1.0 (.025)**	**3.0 (0.076)**	
800-344-0025					
Carboline					
350 Hanley Industrial	**1st**	**Carbozine 859**	**3.0 (.076)**	**7.0 (0.178)**	**24**
St. Louis, MO 63144	**2nd**	**Carboguard 561**	**3.5 (.089)**	**8.0 (0.203)**	**8**
314-644-1000	**3rd**	**Carbothane 134 HG**	**1.0 (.025)**	**3.0 (0.076)**	
Sherwin Williams					
1051 Perimeter Dr.	**1st**	**Zinc Clad III HS**	**3.0 (.076)**	**7.0 (0.178)**	**24**
Schaumberg, IL 60173	**2nd**	**Epoxy Mastic D.O.T.**	**3.5 (.089)**	**8.0 (0.203)**	**8**
847-240-1550	**3rd**	**Acrolon 218 HS**	**1.0 (.025)**	**3.0 (0.076)**	
Tnemec Company, Inc					
6800 Corporate Dr.	**1st**	**Tneme-Zinc 90-97**	**3.0 (.076)**	**7.0 (0.178)**	**24**
Kansas City, MO 64120	**2nd**	**F.C. Typoxy Series 27**	**3.5 (.089)**	**8.0 (0.203)**	**8**
816-483-3400	**3rd**	**Endura-shield Series 74**	**1.0 (.025)**	**3.0 (0.076)**	
Wasser Coatings					
8041 S. 228th St.	**1st**	**MC-Zinc WO1**	**3.0 (.076)**	**7.0 (0.178)**	**24**
Kent, WA 98032	**2nd**	**MC-Ferrox B W11**	**3.5 (.089)**	**8.0 (0.203)**	**8**
920-684-1985	**3rd**	**MC-Ferrox A W23**	**1.0 (.025)**	**3.0 (0.076)**	

Contact Information:
Peter Kemp
Bureau of Highway Construction
3502 Kinsman Blvd.
Madison, WI 53704

Phone: 608-246-7953
E-Mail: peter.kemp@dot.state.wi.us

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Sealer Sources and Products

Date: 8-20-2004

Product	Producer
Rymar Penetrating Wood Sealer	**Rymar Industries, Inc** **6620 N. CTH J** **Cato, WI 54206**
Olympic Waterguard for Wood Water Based	**P.P.G. Industries** **4325 Rosanna Dr.** **P.O. Box 9** **Allison Park, PA 15101**
Wolmans Wood Finish and Preservative	**Kop-Coat, Inc.** **436 7th Avenue** **1824 Koppers Bldg.** **Pittsburg, PA 15219**

Contact Information:
Peter Kemp
Bureau of Highway Construction
3502 Kinsman Blvd.
Madison, WI 53704

Phone: 608-246-7953
E-Mail: peter.kemp@dot.wi.gov

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Wisconsin Department of Transportation Noise Wall Pre Approval Requirements

Please submit Certified Independent Third Party Test Reports for the Following:

Flame Spread Index and Smoke Develop Index
ASTM E84-05

Sound Transmission Loss (TL)
Noise barrier panel material shall achieve a transmission loss equal to or greater than 20 decibels in all test frequency bands when tested in accordance to ASTM E90.

Noise Reduction Coefficient (NRC)
The noise barrier panel shall be tested in accordance to ASTM C423, and placed in accordance to ASTM E795, mounting type A, to determine the noise reduction coefficient (NRC) of the material. Panels shall achieve a minimum NRC of 0.80.

Salt Scaling Resistance
All sound absorbing concrete and composite concrete components shall be tested for salt scaling resistance in accordance to ASTM C672 and the following modifications and/or requirements.

Test Specimens
For the purposes of the test, three specimens at least 12-inches x 12-inches shall be selected at random from the finished product. Specimens shall be from production and representative of the manufacturer's continuous production operation.

The surface(s) of the sound absorbing material shall be prepared for testing as follows. Brush the surface of the sample to remove any loose particles. The test specimens shall then be submerged in water for a period of 24 hours prior to testing. Immediately following this, the specimens shall be covered with the sodium chloride solution as stated below.

Test Procedure
Place the samples in a container in which a solution of sodium chloride (concentration 3% by mass) shall be placed to fully submerge the specimen to a depth of ¼-inch.

The specimens shall then be subjected to continuous freeze-thaw cycles as follows:

After each five cycles, the salt solution and particles of deteriorated concrete shall be removed from the slab and collected in a watertight container. The operation is best accomplished by tilting the slab in a funnel approximately 20-inches in diameter and washing the surface of the slab with a 3% sodium chloride solution. This washing should

continue until all loose particles are removed from the concrete. The solution shall then be strained through a filter and the residue dried out at 221 degrees Fahrenheit to a constant mass condition. The residue shall be cumulatively weighed after each five cycles. This residue shall be defined as the loss of mass and expressed in pounds per square foot of exposed slab area. The loss of mass shall be calculated to the nearest 0.01 pounds per square foot. The surfaces should be rated in accordance to 10.1.5 of ASTM C672 including any delamination of the sound absorbing material from the concrete core for composite concrete materials. After the washing of each slab, a new solution of sodium chloride shall be placed in the container to fully submerge the specimen to a depth of ¼-inch.

The test shall continue until 50 freeze-thaw cycles have been completed.

During the test each specimen shall be positioned and supported to allow free air circulation under, around, and over test pieces. The bottom of the specimens shall be supported on wooden blocks in a manner to assure movement of moisture through the test pieces.

Test Report

Submit to the engineer an independent testing laboratory test report which shows that all solid and composite concrete products meet or exceed the following criteria:

a. After 50 freeze-thaw cycles the test specimens shall not exhibit excessive deterioration in the form of cracks, spalls, aggregate disintegration, delamination, or other objectionable features.
b. Compliance with the test requirements is based upon a loss of mass of not more than 0.2 pounds per square foot from the surface after 50 cycles of freezing and thawing. The measured surfaces are not to include the exposed surface of any core material of a composite concrete component.
c. The report shall include the following:
    1. Name of manufacturer.
    2. Location of production.
    3. Production description.
    4. Date product sample was cast.
    5. Commencement date of testing.
    6. Specimen identification.
    7. 5x7-inch color photographs of the test specimens before and after the 50 cycles of freeze-thaw testing.
    8. A graph of the cumulative mass loss of each specimen plotted against the number of freeze-thaw cycles for 5, 10, 15, 20, 25, 30, 40, and 50 freeze-thaw cycles.
    9. Visual rating in accordance to 10.1.5 ASTM C672 including report of any delamination of the sound absorbing material from the concrete core for composite concrete components.

Accelerated Weathering

All coatings on barrier components, with the exception of structural steel and wood components, comply with the following requirements when tested by ASTM Standard D6695, G155, G153, or G152 after 2400 hours of exposure. Coatings for sound absorbing concrete and composite concrete components shall be tested on a cement based test specimen(s). For alternative sound absorbing substrates test panel shall be of a similar material.

1. No checking when rated in accordance to ASTM D660.
2. No cracking when rated in accordance to ASTM D661.
3. No blistering when rated in accordance to ASTM D714.
4. No difference in adhesion between the unexposed control sample and an exposed sample when tested in accordance to ASTM D3359, Method A.
5. No chalking less than #7 rating when rated in accordance to ASTM D4214.
6. No color change greater than 5 NBS units when measured in accordance to ASTM D2244, using illuminant D65 and the 1964 10 degree standard observer.

Corrosion Resistance (Salt Fog Exposure)

All coated steel components, with the exception of structural steel, have test reports that show when tested for corrosion resistance in accordance to ASTM B117 comply with the following requirements:

1. No checking when rated in accordance to ASTM D660.
2. No blistering when rated in accordance to ASTM D714.
3. No loss of adhesion when tested in accordance to ASTM D3359 with no evidence of corrosion along the edges of the samples or along the score lines or other defects.

Please submit Independent Third Party Certification of Compliance for the Following:

Steel Panels
All steel panels shall be minimum nominal 20 gauge galvanized steel. The steel panels shall be free from laminations, blisters, slivers, open seams, pits from heavy rolled-in scale, ragged edges or other defects which may affect their appearance or use for the intended purpose. All shearing, cutting and punching shall be done prior to preparation of the panels for application of coatings.

Aluminum Panels
All aluminum panels shall be minimum 0.063 inch nominal thickness or greater. The aluminum panels shall be free from laminations, blisters, slivers, open seams, pits from heavy rolled-in scale, ragged edges or other defects which may affect their appearance or use for the intended purpose. All aluminum panels shall conform to the thickness tolerances of the

Aluminum Association, Inc. All shearing, cutting and punching shall be done prior to preparation of the panels for application of coatings.

Timber Components
All lumber and timber furnished for the work shall be in accordance to the requirements of section 507 of the Wisconsin Department of Transportation's Standard Specifications and as hereinafter specified.

Species of Wood
All lumber and timber, with the exception of Glue Laminated Timber, shall be from one of the following species: Douglas Fir-Larch, Southern Pine, and Hem-Fir.
Glue laminated timber shall be Southern Pine.

Preservative Treatment
All timber components shall receive a chemical preservative treatment. The wood shall be dried to 19% or less prior to treatment. The wood shall be treated using a chromated-copper arsenate solution in accordance to 507.2.2.6 of the standard specifications. After treatment, all wood having nominal dimensions less than 3-inches by 3-inches shall be air or kiln dried to a maximum moisture content of 15%. Wood in greater dimensions shall be dried to maximum moisture content of 19%. The required Certificate of Preservative Treatment shall indicate compliance with the maximum moisture content requirement(s), in addition to requirements of the preservative treatment specifications herewith set forth. Wood shall be protected from increases in moisture content until incorporated into the work.

Glue Laminated Timber
Glue Laminated Timber shall contain the mark of a recognized inspection agency as being in conformance with ANSI/AITC A190.1. A wet-use adhesive suitable for use with treated wood as shown in ANSI/AITC A190.1 shall be used. Members shall be of 'Industrial' appearance grade per AITC 110.

Lumber to be glue laminated shall be pressure preservative treated prior to gluing to retention of 0.4 pounds per cubic foot.

Lumber
Non-Laminated Timber shall not exceed the proportion of six (nominal width) to one (nominal thickness) and shall be No. 1 grade or better. Sound knots shall extend through members no farther than 50 percent of the cross-section width. Unsound knots
are not permitted. Knots are not permitted in the fastening area of any member.

Plywood
Plywood shall be exterior type conforming to the provisions of the U.S. Product Standards PS-1 and shall bear the mark of a qualified and approved inspection and testing agency.

Sealant/Stain
All wood components of the barrier system shall be coated with a wood sealer/stain as hereinafter provided.

The manufacturer shall select a sealer/stain from one of the approved sources or equal on the department's approved product list available at:
http://www.dot.wisconsin.gov/business/engrserv/approvedprod.htm .
Product data sheets shall be provided which indicate the mixing directions and recommended method(s) of application. The method and rate of application shall be as recommended by the producer.

Hardware and Fasteners
All hardware and fastening devices shall be either hot dipped galvanized steel or made of nonferrous or stainless steel. Fastening devices shall be screws; no nails or staples shall be allowed.

Mineral Fiber Material
Mineral fiber material used to increase sound absorption shall be manufactured in conformance with Federal Specification HH-1-558B and ASTM C612. Mineral fiber material shall have a minimum density of 6 pounds per cubic foot, shall absorb less than 1 percent of water when tested in accordance to ASTM C553, be non-corrosive, and nonhygroscopic. The mineral fiber material shall be fastened to the noise barrier system in a manner to prevent sagging when in a saturated condition.

Please submit in duplicate:

Structural and Foundation Design

The structural and foundation design of the noise barrier system shall be in accordance to the current edition of "Guide Specifications for Structural Design of Sound Barriers" published by the American Association of State Highway and Transportation Officials (AASHTO), 444 North Capitol Street, N.W., Suite 225, Washington, D.C. 20001.

Design the noise barrier to withstand wind pressure, applied perpendicular to the barrier in each direction, of 28.5 pounds per square foot for ground mounted barriers, and 37.5 pounds per square foot for structure mounted barriers.

The top 3 feet of supporting soil shall be ignored in the design of ground-mounted barrier foundations. Heights of 20 feet shall be used for ground mounted barriers while heights of 15 feet shall be used for parapet mounted barriers.

Please submit a completed New Product Form DT2164

Submit neatly bound and organized materials to:

New Products Engineer
Bureau of Technical Services
Division of Transportation System Development
Wisconsin Department of Transportation
3502 Kinsman Blvd., Truax Center
Madison, WI 53704-2507

Systems other then composite concrete panels, wood, aluminum or steel panels maybe subject to other testing requirements to ensure public safety and durability.