Pacific Wood Laminates, Inc.

PRO*face*™ HDO
Concrete Form
Overlay System

Arclin Overlays

FACE SHEET

252 HDO (HIGH DENSITY OVERLAY)

Resin Content	54%	Base Paper Weight	16#	MSF	GSM	78
		Core Resin Weight	18#	MSF	GSM	83
		Total Weight	**34#**	**MSF**	**GSM**	**161**

CUSHION SHEET

323 CONCRETE FORM MDO

		Base Paper Weight	41#	MSF	GSM	200
Resin Content	35%	Core Resin Weight	22#	MSF	GSM	108
		Glue Line Weight	13#	MSF	GSM	64
		Total Weight	**76#**	**MSF**	**GSM**	**372**

BACKER SHEET

341 "PWL BACKER"

		Base Paper Weight	31#	MSF	GSM	152
Resin Content	28%	Core Resin Weight	12#	MSF	GSM	59
		Glue Line Weight	10#	MSF	GSM	49
		Total Weight	**53#**	**MSF**	**GSM**	**259**

PANEL FEATURES

Face Veneer	-----	Fine Grain Proprietary Imported Hardwood (no wood patches)
Back Veneer	-----	Fine Grain Proprietary Imported Hardwood (no wood patches)
Inner Plies	-----	"C" Plugged or better Veneers
Resin	-----	Phenolic Exterior Glue
Size	-----	48" X 96"
Thickness	-----	1/2 - 1 1/8
Edge Seal	-----	Nox-Crete Edge Flex 235
Realease Agent	-----	Recommended Nox-Crete Form Release PCE (not applied at mill)
Stamp	-----	APA Trademark

SPAN TABLES

FACE GRAIN ACROSS SUPPORTS — **ONE STEP**

Support	3/4		5/8		1/2	
Spacing	**L/360**	**L/270**	**L/360**	**L/270**	**L/360**	**L/270**
4"	5108	5108				
8"	1965	1965				
12"	1054	1054				
16"	525	593				
19.2"	319	412				
24"	170	226				

FACE GRAIN PARALELL TO SUPPORTS

Support	3/4		5/8		1/2	
Spacing	**L/360**	**L/270**	**L/360**	**L/270**	**L/360**	**L/270**
4"	4411	4411				
8"	1617	1617				
12"	631	719				
16"	275	367				
19.2"	195	225				
24"	101	135				

Arclin™ Performance Applied

Technical Data Sheet

Arclin™ Readyform 2252

DESCRIPTION

Arclin™ Readyform 2252 High Density Overlay (HDO) is a self-bonding phenolic resin impregnated overlay, specifically designed to provide a smooth surface on engineered wood products to allow multiple reuse of panels in concrete pours. The new resin formulation in this product reduces formaldehyde emissions by 50%. Using advanced resin formulations, **Arclin™ Readyform 2252** significantly increases performance in plywood products for reusable concrete forms and it conforms to requirements of the U.S. Product Standard PSI-95 for Construction and Industrial Plywood.

PHYSICAL PROPERTIES AND SPECIFICATIONS

	North American Standard	Export Metric Standard
Color	Buff Yellow	Buff Yellow
Resin content	54%	54%
Raw paper weight	16# /MSF	78 gsm
Finished paper weight	34# /MSF	168 gsm
Thickness before pressing	0.008 in	0.203 mm
Thickness after pressing	0.005 in	0.127 mm
Number of 4' x 8' sheets per bundle	2,000	2,000
Total area per standard 4' x 8' bundle	68,750 ft²	6,388 m²
Total gross weight per 4'x 8' bundle	2,610 lbs	1,186 kg

TECHNICAL INFORMATION

STORAGE CONDITIONS

We recommend storage in a cool, dry place with the original wrapping intact. Ideal conditions are less than 50% relative humidity, and 25°C (77°F) or below. Contact Arclin's technical staff before using a product over six months old.

PRESSING SCHEDULE

Please consult Arclin's technical personnel to develop the best pressing conditions for your application.

PANEL EDGE SEAL

Seal all edges with a high quality edge-sealer to provide moisture protection and resistance.

RELEASE AGENT

For optimum performance we recommend concrete form panels to be coated with Nox-Crete or an equivalent chemically active release agent.

STANDARD SIZES

Sheets

Size	North American Standard	Export Metric Standard
4' x 8'	50" x 99"	1270 x 2515 mm
4' x 10'	50" x 124"	1270 x 3150 mm

Rolls

Size	North American Standard			Export Metric Standard		
Width Feet	Width Inches	Length Feet	Diameter Inches	Width mm	Length m	Diameter mm
4	50	2,400	18	1270	731	457

Other sizes available on request depending on paper availability and commercial agreements

Typical container configurations – Export (can vary)

Container	Sheets per bundle	Bundles per container	Rolls per container
20 foot	2,000	8	44
40 foot	2,000	16	80

Arclin™
Performance Applied

Technical Data Sheet

Arclin™ Readyform 3323

DESCRIPTION

Arclin™ Readyform 3323 concrete form overlay is an MDO which represents the industrial standard in concrete form overlay performance. Using an advanced resin formulation, **Arclin™ Readyform 3323** significantly increases performance in engineered wood products for reusable concrete forms. **Arclin™ Readyform 3323** conforms to requirements of the U.S. Product Standard PS1-95 for Construction and Industrial Plywood. **Arclin™ Readyform 3323** is a phenolic resin impregnated overlay specifically designed to provide a smooth surface on engineered wood substrates to allow multiple re-use of panels in concrete pours.

PHYSICAL PROPERTIES AND SPECIFICATIONS

	North American Standard	Export Metric Standard
Color	Kraft Brown	Kraft Brown
Resin content	35%	35%
Raw paper weight	41# /MSF	200 gsm
Finished paper weight	75# /MSF	367 gsm
Thickness before pressing	0.019 in	0.47 mm
Thickness after pressing	0.013 in	0.33 mm
Number of 4' x 8' sheets per bundle	1,000	1,000
Total area per standard 4' x 8' bundle	34,375 ft²	3,194 m²
Total gross weight per 4' x 8' bundle	2,802 lbs	1,274 kg

TECHNICAL INFORMATION

STORAGE CONDITIONS

We recommend storage in a cool, dry place with the original wrapping intact. Ideal conditions are less than 50% relative humidity, and 25°C (77°F) or below. Contact Arclin's technical staff before using a product over one year old.

PRESSING SCHEDULE

Please consult Arclin's technical personnel to develop the best pressing conditions for your application.

PANEL EDGE SEAL

Seal all edges with a high quality edge-sealer to provide moisture protection and resistance.

RELEASE AGENT

For optimum performance we recommend concrete form panels to be coated with Nox-Crete or an equivalent chemically active release agent.

STANDARD SIZES

Sheets

Size	North American Standard	Export Metric Standard
4' x 8'	50" x 99"	1270 x 2515 mm
4' x 10'	50" x 124"	1270 x 3150 mm
4' x 12'	50" x 148"	1270 x 3759 mm
5' x 8'	62" x 99"	1574 x 2515 mm
5' x 10'	62" x 124"	1574 x 3150 mm
5' x 12'	62" x 148"	1574 x 3759 mm

Rolls

Size	North American Standard			Export Metric Standard		
Width Feet	Width Inches	Length Feet	Diameter Inches	Width mm	Length M	Diameter mm
4	50	1,300	22	1270	396	559
4	62	1,300	22	1270	396	559

Other sizes available on request depending on paper availability and commercial agreements

Typical container configurations – Export (can vary)

Container	Sheets per bundle	Bundles per container	Rolls per container
20 foot	1,000	8	44
40 foot	1,000	16	88

TECHNICAL DATA SHEET

ENGINEERED SURFACES

Arclin™ Backer 3341

DESCRIPTION

Arclin™ Backer 3341 resin impregnated Kraft overlay with "PWL LOGO" is used as an economical backer or balance sheet. **Arclin™ Backer 3341** is back-coated with a thermosetting phenolic adhesive for bonding to wood based substrates, primarily plywood.

PHYSICAL PROPERTIES AND SPECIFICATIONS

	North American Standard
Color	Buff Yellow
Resin content	35%
Raw paper weight	16# /MSF
Finished paper weight	33# /MSF
Thickness before pressing	.008"
Thickness after pressing	.005"
Number of 4' x 8' sheets per bundle	1500
Total area per standard 4' x 8' bundle	51,563 ft^2
Total gross weight per 4' x 8' bundle	1856 lbs

TECHNICAL INFORMATION

STORAGE CONDITIONS Recommend storage in a cool, dry place with the original wrapping intact. Contact Arclin's technical staff before using a product over twelve months old.

PRESSING SCHEDULE Consult Arclin's technical personnel for developing optimum pressing conditions for your application.

PAINTABILITY Provides a smooth surface suited for interior and exterior applications.

MACHINABILITY Machines well during sawing, boring, nailing, routing, drilling and planning. Minimizes veneer tearing and chip-out.

STANDARD SIZES - Sheets

Size	North American Standard
4' x 8'	50" x 99"

2144 Milwaukee Way • Tacoma, WA 98421-2706 USA • p 800.426.5025 • f 253.627.2896
2301 North Columbia Blvd. • PO Box 17307 • Portland, OR 97217 • **p** 503.289.1111 • **f** 503.978.2607
15895 Dyno Drive • Hayward, WI 54843 • **p** 715-634-5057 • **f** 715-634-2361 • www.arclin.com

EDGE-FLEX 235

Maximum performance edge sealer
specifically formulated for use on concrete form panels.

HOW IT WORKS

EDGE-FLEX 235 prevents the absorption of highly alkaline concrete bleed water into the edges of plywood and oriented strand board (OSB) concrete form panels by penetrating the edges and sealing off the wood fibers with an extremely durable, yet very elastic, film which expands and contracts with the substrate.

APPLICATIONS

- Use in sealing the edges of all types of manufactured wood form panels, including plywood and oriented strand board (OSB) to be used in concrete forming applications.
- Use to seal all field-cut panel edges and snap-tie holes.
- For reapplication over poor performing mill applied edge sealants.
- Essential for use on all manufactured wood form panels to be used in the production of architectural concrete.

ADVANTAGES

- Completely resistant to the higher alkalinity of many modern concrete mix designs.
- Reduces alkaline water absorption through panel edges by up to 95%.
- By minimizing water absorption into the panel edges, wood sugar and tannin migration is simultaneously minimized, reducing concrete color variations, staining and concrete surface dusting.
- Significantly reduces panel edge swelling and the related elevation variations from panel to panel that are commonly seen in gang forming applications. Panel elevation variations yield unsightly concrete surface elevation variations that are often unacceptable to owners and are costly to repair.
- Panel life is greatly increased. This is especially true with higher performance overlaid panels (HDO, PSF and CBF) where panel failure almost always originates at the edges.
- Provides excellent resistance to ultra-violet radiation from the sun.
- Exceptional resistance to commonly used form oils and form release agents.
- DOT classified as non-flammable and non-combustible and is considered safe to apply under most manufacturing or field conditions.
- Unlike competitive edge sealers, EDGE-FLEX 235 is not only available to plywood and OSB producers, but is also available to concrete forming contractors through local concrete form and accessory distributors throughout North America.
- Green Engineered™ – better for health and the environment.
- Meets all federal and state VOC requirements.

⚠ PRECAUTIONS ⚠

- Do not apply to wet substrates.
- Do not apply to substrates that have been covered with a form oil or other coating/surface treatment that could interfere with the proper penetration and adhesion of EDGE-FLEX 235.
- Do not overapply. Excess application of EDGE-FLEX 235 that results in runs, drips or excess on offset panel edges can glue stacked panels together unless excess is removed from the face and back of panels before drying.
- Protect from freezing. If allowed to freeze, product packaging may rupture and the emulsion stability of this product may be affected, making it difficult to keep product mixed during application. Product which is suspected of freezing should not be used.
- Verify that product is within the “USE BY” date stated on product packaging. Do not use expired product. The use of expired product may result in poor product performance or failure.
- Treated substrates should be protected from exposure to water and freezing temperatures until the EDGE-FLEX 235 application has completely dried. Product dry time will vary depending on the ambient temperature and relative humidity at the time of application. The dry time at 70^0 F (21^0 C) and 50% relative humidity is approximately 1 hour.

USE INSTRUCTIONS

- Request current product literature, labels and material safety data sheets from manufacturer and read thoroughly before product use.

- Site environmental conditions, substrate conditions and construction have a major impact on product selection, application methods, procedures and rates, appearance and performance. Product literature provides general information applicable to some conditions. However, an adequate site test application by the purchaser or installer in advance of field scale use is mandatory (irrespective of any other verbal or written representations) to verify that product and quantities purchased can be satisfactorily applied and will achieve desired appearance and performance under intended use conditions.
- Ambient air and substrate temperatures must be in excess of 40^0 F (5^0 C).
- Mix thoroughly before using and intermittently during use.
- Apply to panel edges using a brush, roller or airless spray equipment in two successive coats, applying the second coat immediately after applying the first coat (wet on wet).
- Avoid runs or drips in both coats.
- The application rate of EDGE-FLEX 235 varies with the substrate porosity and saw cut roughness. Typical combined effective application rate for both coats is 100-150 sf/gal (2.5-3.75 sm/l) for optimum masking properties and performance.
- Application equipment should be cleaned with water immediately after use. EDGE-FLEX 235 develops a skin within a few minutes after application. Once this skin develops, water will no longer remove the coating and an aromatic solvent such as xylene must be used.

TECHNICAL DATA

Bulk Density .....8.50 lbs/gal (1.02 kg/l)
Freeze Point ..... 32^0 F (0^0 C)
pH 10
Brookfield Viscosity ..... 550 cp
Freeze/Thaw Stability ..... Poor

	AVERAGE IMPROVEMENT IN WATER WEIGHT GAIN COMPARED TO UNSEALED CONTROL		
	3.5 Hours	10 Hours	24 Hours
Percent Improvement	414%	368%	261%

PACKAGING

Packaged in 1 gal (3.8 l) jugs, 5 gal (19 l) pails, 55 gal (208 l) drums and 275 gal (1,041 l) bulk totes.

SHELF LIFE

Shelf life is nine months. Use before the “USE BY” date stated on product packaging.

HANDLING/STORAGE

Store in a dry location within a temperature range between 40^0 F (4^0 C) and 100^0 F (38^0 C).

AVAILABILITY & TECHNICAL SERVICES

In addition to corporate offices in Omaha, Nebraska, NOX-CRETE Products Group also maintains regional offices and distribution centers in principal markets throughout the world. For source or technical information, phone (800) 669-2738 or (402) 341-1976.

LIMITED WARRANTY

NOTICE-READ CAREFULLY

CONDITIONS OF SALE

NOX-CRETE offers this product for sale subject to, and Buyer and all users are deemed to have accepted, the following conditions of sale and limited warranty which may only be varied by written agreement of a duly authorized corporate officer of NOX-CRETE. No other representative of or for NOX-CRETE is authorized to grant any warranty or to waive limitation of liability set forth below.

WARRANTY LIMITATION

NOX-CRETE warrants this product to be free of manufacturing defects. If the product when purchased was defective and was within use period indicated on container or carton, when used, NOX-CRETE will replace the defective product with new product without charge to the purchaser.

NOX-CRETE makes NO OTHER WARRANTY, either express or implied, concerning this product. There is NO WARRANTY OF MERCHANTABILITY. In no case shall NOX-CRETE be liable for special, indirect or consequential damages resulting from the use or handling of the product and no claim of any kind shall be greater in amount than the purchase price of the product in respect of which damages are claimed.

INHERENT RISKS

NOX-CRETE MAKES NO WARRANTY WITH RESPECT TO THE PERFORMANCE OF THE PRODUCT AFTER IT IS APPLIED BY THE PURCHASER, AND PURCHASER ASSUMES ALL RISKS ASSOCIATED WITH THE USE OR APPLICATION OF THE PRODUCT.

NOX-CRETE PRODUCTS GROUP • 1444 S. 20th St. • P.O. Box 8102 • Omaha, Nebraska 68108 USA
PHONE: (800) NOX-CRETE (669-2738) or (402) 341-1976 • FAX: (800) FAX-ORDER (329-6733)

NOX-CRETE PCE

Maximum performance, biodegradable, water based, chemically active concrete form release agent.

HOW IT WORKS

NOX-CRETE PCE dries to form a tough, transparent, wax-like film which physically becomes welded to the form surface. Upon contact with cement, it chemically reacts to form a soapy film that allows trapped air and free water to escape during vibration, minimizing surface voids and providing a smooth, uniform concrete finish.

APPLICATIONS

- Use on steel, high density plastic, fiberglass, rubber, formliners and HDO, PSF and CBF overlaid plywood forms.
- Use where form design creates extended surface area or shallow draft which may cause mechanical bonding/binding.
- Use where treated forms are subject to heavy rain, foot traffic or other adverse conditions prior to concrete placement.
- Use with mix designs containing high amounts of fly ash, silica fume or high range water reducers.
- Use where governmental and/or use conditions prohibit petroleum or solvent vapors for health and/or safety reasons.

ADVANTAGES

- 100% biodegradable formulation.
- Produces uniformly white architectural concrete surfaces with substantially fewer surface voids (bugholes).
- Provides maximum release and concrete performance with low slump high density (LSHD) and/or superplasticized concrete mix designs.
- Dries to form a non-slippery film that prevents contamination of prestress cables.
- Maximum resistance to removal by heavy rain, foot traffic, running water and scouring during placement of concrete.
- Contains a corrosion inhibitor designed to prevent flash rusting.
- Reduces binding.
- Non-staining.
- Reduces form cleaning and maintenance costs -- forms become self-cleaning with continued use.
- Less sensitive to application rate variations than other chemically active form release agents.
- Can be applied to damp forms.
- Does not impair the natural bonding characteristics of subsequently applied paint or other surface coatings with proper surface preparation.
- Green Engineered™ – better for health and the environment.
- Meets all federal and state VOC requirements. Meets the California Air Quality Rule 1113 requirements.

⚠ PRECAUTIONS ⚠

- Water based, chemically active form release agents are not visible on applied surfaces once dry. This is normal and does not affect release agent performance. After form stripping, a white, powdery film will be present on form surfaces. This causes no adverse affects on the form or the concrete and should not be confused with buildup.
- Do not use on aluminum, paper, medium density overlays (MDO) or absorbent wood form surfaces. For such applications, use NOX-CRETE FORM COATING or FORM COATING E.
- Do not use on open cell Styrofoam. For such applications use NOX-CRETE FORM COATING E.
- Do not dilute. Dilution may cause adverse reaction, separation and render product unsuitable for use.
- Protect from freezing. If allowed to freeze, product packaging may rupture and the emulsion stability of this product may be affected, making it difficult to keep product mixed during application. Product which is suspected of freezing should not be used.
- Verify that product is within the “USE BY” date stated on product packaging. Do not use expired product. The use of expired product may result in poor product performance or failure.
- Do not apply if temperature is at or below 32^0 F (0^0 C). Freezing temperatures occurring after applied NOX-CRETE PCE has dried does not affect product performance.

USE INSTRUCTIONS

- Request current product literature, labels and material safety data sheets from manufacturer and read thoroughly before product use.

NOX-CRETE PCE form release agents

- Site environmental conditions, substrate conditions and construction have a major effect on product selection, application methods, procedures and rates, appearance and performance. Product literature provides general information applicable to some conditions. However, an adequate site test application by the purchaser or installer in advance of field scale use is mandatory (irrespective of any other verbal or written representations) to verify that product and quantities purchased can be satisfactorily applied and will achieve desired appearance and performance under intended use conditions.
- Typical application rate on non-porous substrates is 3000 sf/gal. (75 sm/l).
- Typical application rate on slightly absorbent forms or those with increased surface area is 2200 sf/gal. (55 sm/l) or to the point of saturation and surface rejection.
- Form surfaces may be dry or surface damp at time of application, but puddles or standing or running water must not be present.
- Where architectural or exposed concrete surfaces are involved, extreme care should be taken to remove all concrete, rust, mill scale and existing form oils from form surface prior to product application.
- Mix well before use with NOX-CRETE's drum or pail agitator or other suitable mixing apparatus before use. Always remix prior to each withdrawal from container and immediately prior to each use.
- Care should be exercised to prevent contact with reinforcing steel and prestressed tendons during the application process.
- All conventional application methods may be employed, but spray application is recommended using the NOX-CRETE PERFECT FORM AND CONCRETE SPRAYER or PERFECT POWER SPRAYER.
- Avoid puddles, runs and excessive spray drift.

TECHNICAL DATA

Bulk Density	8.3 lbs./gal. (999 g/l)
Freeze Point	32º F (0º C)
Flash Point, ASTM D92	>200º F min. (>93º C)
Color, ASTM D1500	White Emulsion
VOC, ASTM D2369	<150 g/l

PACKAGING

Packaged in 5.28 gal (20 l) bag-in-a-box, 55 gal (208 l) drums and 275 gal (1,041 l) bulk tanks.

SHELF LIFE

Shelf life is one year. Use before the "USE BY" date stated on product packaging.

HANDLING/STORAGE

Store in a dry location within a temperature range between 40^0 F (4^0 C) and 100^0 F (38^0 C).

AVAILABILITY & TECHNICAL SERVICES

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INHERENT RISKS

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