

All surfaces must be cured, clean, sound, dry and free of all dirt, dust, efflorescence, wax, oil, grease, chalk and any other contamination that would interfere with new coating adhesion. **Bare surfaces must be properly prepared and primed prior to application of the topcoat.**

INTERIOR

Masonry Surfaces - Poured Concrete, Concrete Block: New concrete and mortar should cure for a *minimum* of 30 days at 72° F (22° C) prior to coating application. Level all surface projections and mortar spatters by stoning. Rake mortar joints clean and remove all soluble salts.

Wood Surfaces: Sand smooth any exposed wood surfaces. Patch nail holes and any imperfections with wood filler or putty and sand smooth. Remove sanding dust.

Plaster Surfaces: New plaster must cure for a *minimum* of 30 days at 72° F (22° C) prior to coating application. Sand smooth and dust. Fill cracks with spackling compound, allow to dry and sand smooth. Remove sanding dust. If new plaster is to be painted with latex as a first coat, wash the dry plaster with a wet sponge to remove any dust or chalk from the plaster; then use an acrylic latex primer. Alkyd base primers adhere better to new plaster because of their ability to penetrate compared to latex.

Drywall Surfaces: Fill nail holes and imperfections with spackling compound and allow to dry. Sand tape joints and spackled areas and remove dust.

Previously Painted Surfaces: Cleaning is recommended to remove contamination. If oil or grease is present, use of a cleaner/degreaser is required. All cleaning residue must be completely rinsed from the surface. Allow to dry.

Remove all loose coatings and corrosion by scraping, sanding or other abrading method. Dull glossy, slick and/or non-porous surfaces with sandpaper. Patch and fill areas as needed. Spot prime bare areas with appropriate primer.

Mildew: Remove by using a solution of one (1) part household bleach to three (3) parts water. Apply to mildewed area and scrub. Allow solution to remain on the surface for 3 to 5 minutes then rinse completely and allow to dry before coating application.

EXTERIOR

Masonry Surfaces: Poured Concrete, Concrete Block: New concrete and mortar should cure for a *minimum* of 30 days at 72° F (22° C) prior to coating application. Level all surface projections and mortar spatters by stoning. Rake mortar joints clean and remove all soluble salts.

Summary of Surface Preparation

Wood Surfaces: Patch nail holes, cracks and imperfections with exterior spackling compound. Sand and wipe clean. Woods subject to tannin bleeding should be primed with a stain blocking primer (BU-1501, AU-1301 or AU-1404).

Ferrous Metal Surfaces: Consult the Diamond Vogel publication "Steel Preparation".

New Galvanized/Aluminum Surfaces: Solvent wipe to remove surface contamination, then use an etching solution or abrade the surface by sanding.

Weathered Galvanized/Aluminum Surfaces: Power or hand wash with detergent and rinse thoroughly. The surface must be dull and slightly rough; use an etching solution or sand if needed.

Previously Painted Surfaces: Power or hand washing is recommended to remove contamination. If oil or grease is present, use of a cleaner/degreaser is required. All cleaning residue must be completely rinsed from the surface. Allow to dry.

Remove all loose coatings and corrosion by scraping, sanding or other abrading method. Dull glossy, slick and/or non-porous surfaces with sandpaper. Patch and fill areas as needed. Spot prime bare areas with appropriate primer.

Vinyl Surfaces: Power or hand wash with detergent and rinse thoroughly. All chalky residue must be removed from the surface.

Cement Board: Be sure surface is clean and free of all contaminants.

Mildew: Remove by using a solution of one (1) part household bleach and three (3) parts water. Apply to mildewed area and scrub. Allow solution to remain on the surface for 3 to 5 minutes then rinse completely and allow to dry before coating application.

Steel should be cleaned by one or more of the 10 surface preparation methods described. These methods were originally established by the Society for Protective Coatings (formerly the Steel Structures Painting Council) in 1952. The surface preparation specifications, with updated modifications, are used throughout the world. Visual standards are available through the Society for Protective Coatings. Although these specifications are primarily intended for heavy metal or plate, most are also suitable for light weight or thin section metal. Obviously, caution must be exercised when using methods such as blast cleaning on thin section metal since damage by warping or from excessive peening of the surface may occur.

SSPC-SP 1 SOLVENT CLEANING

Includes simple solvent wiping, immersion in solvent, solvent spray, vapor degreasing, steam cleaning, emulsion cleaning, chemical paint stripping and alkaline cleaners.

Solvent cleaning is used primarily to remove oil, grease, dirt, soil, drawing compounds and other similar organic compounds. Solvent cleaning may also be used to remove old paint by the use of paint removers or alkaline paint strippers. Inorganic compounds such as chlorides, sulfates, weld flux, rust and mill scale are not removed by cleaning with organic solvents.

SSPC-SP 2 HAND TOOL CLEANING

Prior to the use of hand tools, remove visible oil and/or grease by power or hand washing. A surface prepared with hand tools requires that all loose mill scale, loose rust, loose paint and other loose foreign material be removed. It is not intended to remove adherent mill scale, rust and paint. Material is considered to be adherent if they can not be removed by lifting with a dull putty knife. Types of tools used include: non-woven abrasive hand pads, wire brushes, and scrapers. 3M Scotch-Brite Hand Pads can be used to accomplish this type of preparation.

SSPC-SP 3 POWER TOOL CLEANING

Prior to the use of power tools, remove visible oil and/or grease by power or hand washing. A surface prepared with power tools requires that all loose mill scale, loose rust, loose paint and other loose foreign material be removed. It is not intended to remove adherent mill scale, rust and paint or to produce a surface profile. Material is considered to be adherent if they can not be removed by lifting with a dull putty knife. Types of power tools used are generally impact or rotary power tools, to which any of the following types of media can be attached: non-woven abrasive wheels and discs, coated abrasive discs, flap wheels, needle guns or other devices. 3M Scotch-Brite Surface Conditioning Products line can provide this type of abrasive media to be mounted onto power tools.

SSPC-SP 5 WHITE METAL BLAST CLEANING

Removal of all visible rust, mill scale, paint, and foreign matter by blast cleaning by wheel of nozzle (dry or wet) using sand, grit, or shot. (For very corrosive atmosphere where high cost of cleaning is warranted.)

SSPC-SP 6 COMMERCIAL BLAST CLEANING

This is the most commonly specified grade of abrasive blasting and is suitable for most industrial coatings when not intended for immersion service. Prior to blast cleaning, visible deposits of oil and/or grease should be removed by power washing or other agreed upon methods. In addition, sharp fins, edges and weld spatter should be removed. A surface prepared according to SSPC-SP-6-85 requires that the surface, when viewed without magnification, be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products and other foreign matter. Light staining due to rust, mill scale, and previous coatings may remain on no more than 33% of each square inch of surface area. The unit area for determining staining shall be approximately 9 square inches (6400 square millimeters). The profile produced by blasting should be controlled by the selection of blast media and should not exceed the filling capacity of the primer to be applied.

SSPC-SP 7 BRUSH-OFF BLAST CLEANING

A surface prepared according to SSPC-SP-7-85 requires that the surface, when viewed without magnification, be free of all visible oil, grease, dirt, dust, loose rust, loose mill scale, and loose coatings. It is not intended to remove tightly bonded mill scale, sound rust or adherent coatings. Material is considered adherent if it can not be lifted with a dull putty knife. Prior to blast cleaning, visible deposits of oil and/or grease should be removed by power washing or other agreed upon methods. A Brush-off Blast may also be used to abrade a previous coating, providing a surface profile for new coating application.

SSPC-SP 8 PICKLING

Complete removal of rust and mill scale by acid pickling, duplex pickling, or electrolytic pickling.

SSPC-SP 10 NEAR-WHITE BLAST CLEANING

Prior to blast cleaning, visible deposits of oil and/or grease should be removed by power washing or other agreed upon methods. In addition, sharp fins, edges and weld spatter should be removed. A surface prepared according to SSPC-SP-10-85 requires that the surface, when viewed without magnification, be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products and other foreign matter. Light staining due to rust, mill scale, and previous coatings may remain on no more than 5% of each square inch of surface area. The profile produced by blasting should be controlled by the selection of blast media and should not exceed the filling capacity of the primer to be applied.

SSPC-SP-11 POWER TOOL CLEANING TO BARE METAL

In areas where an abrasive blast is desirable but impractical, Power Tool Cleaning to bare metal may be used to prepare the surface. Prior to blast cleaning, visible deposits of oil and/or grease should be removed by power washing or other agreed upon methods. In addition, sharp fins, edges and weld spatter should be removed. The prepared surface will be free of all visible oil, grease, dirt, rust, paint, and other foreign matter. Residues of rust and paint may be left in the pits of the surface. This method may be used to produce a surface profile in small areas.

Surface cleaning power tools are generally impact or profile producing power tools, to which any of the following type of media can be attached: non-woven abrasive wheels and discs, coated abrasive discs, flap wheels, needle guns or other devices. 3M Scotch-Brite Surface Conditioning Products line can provide this type of abrasive media to be mounted onto power tools.

VIS 1-89 VISUAL STANDARD FOR ABRASIVE BLAST CLEANED STEEL

Standard reference photographs; recommended supplement to SSPC Surface preparation Specification SSPC-SP 5,6,7 and 10.

VIS 2 STANDARD METHOD OF EVALUATING DEGREE OF RUSTING ON PAINTED STEEL SURFACES

A geometric numerical scale for evaluating degree of rusting of painted steel. Illustrated by color photographs and black & white dot diagrams.

VIS 3 VISUAL STANDARD FOR POWER AND HAND TOOL CLEANED STEEL

Standard reference photographs; recommended supplement to SSPC-SP 2, 3 and 11.

Galvanized metal is iron or steel with a 2 - 3 mil (DFT) coating of zinc metal. This process which is called Hot Dip Galvanizing is done at the fabrication mill. Galvanized steel normally comes from the mill chemically treated, or passivated, to prevent white rusting or oxidation of the galvanized surface during the time it is being stored or shipped to the project site. According to galvanized steel distributors, most galvanized steel goes through this passivation treatment unless it is special ordered without it. Passivated galvanized steel can also be ordered pre-cleaned and etched at the mill when they know it is going to be painted. To be safe, treat all galvanized steel as if it has been passivated, unless it can be documented that it has been pre-cleaned and acid etched from the fabricator.

Testing for the Presence of Passivators

1. Prepare a solution by dissolving 20 grams of copper sulphate in one liter of water. (2%)
2. Solvent wash a small area per SSPC-SP 1.
3. Sand a small area of this washed area using emery cloth.
4. Using a cotton swab saturated with the copper sulfate solution, apply a swipe to both sanded and unsanded washed areas.
5. If the sanded and unsanded surfaces turn black at the same time (less than 10 secs.), there is no passivation on the surface other than light oil, and normal degreasing/cleaning operation is sufficient prior to coating application. If the unsanded surface turns slower than the sanded surface, or not at all, a passivator of some type is present on the surface. If neither surface turns, the surface is probably an alloy of zinc or some other metal.

The only two ways to prepare a passivated galvanized steel surface for painting is to thoroughly scrub with a phosphoric acid solution and thoroughly rinse with clean water or you can abrasive brush blast the new galvanized metal surface removing the treatment. Solvent wiping, washing with TSP or washing with a detergent, will not adequately remove this treatment. Diamond Vogel does market a product called Great Lakes Inc. Clean N' Etch which works well for this cleaning process. We recommend using 16 oz. of Clean N' Etch solution to one gallon of water, and scrubbing the surface with a 3M Scotch Brite Heavy Duty Abrasive Pad.

Based on testing done in the lab on a variety of different galvanized surfaces, and the result of several years of field exposure, Diamond Vogel's recommendation for galvanized surfaces is to use the following coatings:

1. V-Cote 200 Acrylic Maintenance Primer/Finish.
2. V-Tech 600 Fast Dry Universal Primer
3. V-Tech 700 Metallic Zinc Dust Primer (Normally for exterior galvanized surfaces).
4. V-Tech 703 Brite Gold Galvanizing Primer Finish
5. Mut-E-Poxy 180 Epoxy Mastic

Always apply a test patch of the above coatings to the galvanized surface to be painted to determine if you are getting proper adhesion. There is no cut and dried solution to painting all galvanized steel, and we should approach every project cautiously, recognizing that all surfaces can be a potential coating problem. The above recommendations are our best known information at this time and have proven to be very effective.

Scrape all loose, peeling and cracked paint off surfaces. Remove any paint that is not tightly adhering. Hand sand all edges of remaining paint film smooth or buff with right angle grinder and Scotch-Brite Coarse Surface Conditioning Disc. Clean by power or hand washing. Patch all irregularities with Nu-Klad 965 Acrylic Modified Cement and trowel smooth. (965 dries hard and is not sandable). Spot prime all patches and exposed block with BF-1504 Acrylic Block Filler or BF-1501 Permafil. Allow primer to dry and then topcoat with required coating.

PREPARING A CONCRETE SLAB

The most difficult aspect of satisfactorily coating a concrete floor is preparing the floor to insure that the coating system will adhere. The following tests should be performed to determine the extent of surface preparation required to insure a successful coating application.

Test for Curing Compound: Most concrete had a chemical curing agent applied at the time the concrete was poured. Such chemical curing agents frequently prevent adhesion of coatings. Test for curing compound by applying a muriatic acid solution to bare concrete. If the solution does not react, (bubble vigorously) when in contact with the concrete, the presence of a curing compound is indicated. Check various areas of the floor. Curing compounds must be either chemically or mechanically removed prior to coating. Generally, acid etching does not remove chemical curing compounds

Test for Grease: The presence of oil or grease will interfere with coating adhesion. Dark and discolored areas often indicate that grease and/or oil has contaminated the floor. Test for contamination by pouring a small amount of water on the floor. If it beads up, oil and/or grease is present. Another test which can indicate the presence of oil or grease is to press a strip of duct tape firmly onto the surface. If the duct tape does not strongly adhere to the surface, oil and/or grease may be indicated. If grease or oil is present, the floor must be degreased before further surface preparation is performed.

Test for Moisture: There may be moisture in the concrete or moisture vapor may be seeping up through it. Test for moisture by taping a 2' x 2' plastic sheet over different areas of the floor. Examine the plastic after 24 hours for signs of moisture. If moisture is present the floor should not be coated until the source of the moisture is determined. Hydrostatic Pressure occurs when a body of water, restricted by any structure, is prevented from flowing along its normal path. The pressure created by this build of water exerts unpredictable amounts of pressure on the concrete itself and any coating that may be attached. This force has the capability of causing failure in a concrete foundation hence a failure in any coating system applied where hydrostatic pressure exists. Because the effects of hydrostatic pressure can not be predicted, there exists no guarantee by Diamond Vogel that any coating will be able to withstand the forces capable of causing failure in the concrete substrate.

Test Adhesion of Previous Coatings: Some coating systems do not require the complete removal of previously applied coatings in order to repaint the floor but all existing coating that remains that is painted over must be tightly adherent. After required mechanical and chemical cleaning of the surface is accomplished, cut 2" x 2" "X" cross-hatches into remaining coatings.

Concrete Preparation Techniques

Then apply 6" stripes of duct tape over the "X's" and press the duct tape firmly onto the floor and then quickly pull it off. If large portions of the prior coating come off with the tape additional surface preparation must be done before recoating. ***The applicator of the coating is responsible for determining whether the floor will hold a coating or not.***

Abrasive blast cleaning may be necessary to completely remove all existing coatings and to provide a new surface profile. Some floors may be impregnated with oils, solvents, or water to such a degree that coating adhesion will be impossible even with abrasive blasting. If the floor has been heavily soiled in the past it is recommended that a core sample of the concrete be taken to determine the level of contamination. If the core sample indicates contamination into the concrete that can not be removed by abrasive blasting the floor will probably never allow a coating to adhere.

DEGREASING A CONCRETE FLOOR

Dampen the concrete surface and then apply a 1:1 solution of Great Lakes Laboratories' Extra Muscle and water. Allow to soak for 15 to 20 minutes. Keep the surface wet by adding water while scrubbing the solution over the entire floor with an electric floor scrubber or stiff bristle brush. Rinse floor thoroughly using a power washer with a minimum 1000 psi and a minimum fluid flow of 1 gpm. Final rinse water should be neutral-pH 7. Allow to dry. The color and dullness of the floor should be uniform. Dark areas indicate the presence of grease/oil and the floor must be de-greased again. Check for invisible grease/oil in several areas of the floor by applying a 1:1 solution of muriatic acid to the floor. If the acid turns brown or does not react (bubble), grease/oil has penetrated the floor and a repeat de-greasing procedure is necessary. Repeat the acid test after subsequent de-greasing until all areas tested indicate the floor to be free of grease and oil. After repeat de-greasing, rinse the floor by power washing to a neutral pH. **Duct tape should adhere tightly to a properly de-greased floor. If the tape does not tightly adhere, the presence of grease is indicated and further degreasing is necessary.**

PREPARING A CONCRETE FLOOR BY ACID ETCHING

Sweep the floor clean and dispose of dust. Remove from the floor any contaminant, including oil and grease. Dampen the floor and apply a 1:1 solution of muriatic acid and water through a sprinkling device. The acid should bubble vigorously when applied to the concrete. Coverage should be about 1 gallon of solution per 100 square feet. Allow reaction between solution and concrete to occur for approximately 3-5 minutes, then follow with a stiff broom or mechanical scrubber to remove surface laitance. Rinse the etched surface with clean water, preferably with a high pressure washer. If use of a pressure washer is not possible, rinse and remove water a minimum of three times to ensure a complete rinse is obtained. **Do not let the acid dry out on the floor.** Continue power scrubbing while rinsing with clean potable water.

Household ammonia or soda ash may be added in the rinse to help neutralize the acid. Pick up the water. Litmus paper should be used to check the pH of the rinse water. If the rinse water is not pH neutral (pH 7-8) or if there appears to be a film on the floor, additional rinsing is necessary. Allow the surface to completely dry then vacuum again to remove fine particles loosened by the acid-etch. **Do not allow un-neutralized acid solution to flow into the sewer system or ground.**

Concrete Preparation Techniques

PREPARING A CONCRETE FLOOR BY SHOT BLASTING

Sweep the floor clean and dispose of dust. Remove from the floor any contaminant including oil and grease. Shot blast to produce a 3 - 4 mil profile on the concrete floor. The shot blasting machine must be equipped with a vacuum system to recover shot and to reduce airborne dust and contaminants. After blasting sweep the floor to remove any shot, dust and loose contaminants. Areas that cannot be reached with the blasting machine must be mechanically abraded by hand held devices to remove curing compound and produce a minimum 3-4 mil profile.

DYNAMIC AND NON-DYNAMIC CRACKS

- 1) Dynamic cracks or joints greater than 1/4" should be filled with Vulkem #45 Polyurethane sealant after the coating is applied (within three months). Degloss the coating adjacent to the joint by scuffing with 3M #7447 Scotch-Brite hand pads. Vulkem #45 requires a minimum of 24 hours drying time to become tack free and require 7 days for a full cure. This product cures by reacting with moisture in the air. Curing can be sped up by misting the sealant with moisture after application but you must anticipate a period in which you can not drive or walk directly onto the sealant.
- 2) Joints should be filled from the deepest point to the surface. In joints over 1/2" sealant depth should be controlled to a maximum of 1/2" with Closed Cell Backer Rod.
- 3) Fill all holes, spalled spots and random non-dynamic cracks with Nu-Klad 114A Epoxy Filler. Body-up compound with silica sand when filling holes over 1/4" in diameter. Areas must be dry and dust free. Apply Nu-Klad 114A Epoxy Filler into depressions with a putty knife and smooth to an aesthetic appearance. 114A will not shrink and cannot easily be sanded once cured. Allow 12-48 hours for cure depending upon temperature.

This recommended specification describes various levels of finish of gypsum board surfaces prior to the application of specific types of final decoration. The recommended level of finish of gypsum board wall and the ceiling surfaces varies with the final decoration to be applied and can also be dependent on their location in a structure and the type of illumination striking the surface. Each recommended level of finish is described with typical applications.

TERMINOLOGY

The following definitions are applicable to this document.

Accessories: Metal or plastic beads, trim, or moulding used to protect or conceal comers, edges, or abutments of the gypsum board construction.

Critical Lighting: Strong sidelighting from windows or surface-mounted light fixtures.
Syn. severe lighting. See “comments” section of this document.

Joint Photographing: The shadowing of the finished joint areas through the surface decoration. **Syn.** telegraphing.

Primer/Sealer: A paint material formulated to fill the pores and equalize the suction difference between gypsum board surface paper and the compound used on finished joints, angles, fastener heads, and accessories, and over skim coatings. See “comments” section of this document.

Skim Coat: A thin coat of joint compound over the entire surface to fill imperfections in the joint work, smooth the paper texture, and provide a uniform surface for decorating.

Spotting: To cover fastener heads with joint compound.

Texture: A decorative treatment of gypsum board surfaces.

Texturing: Regular or irregular patterns typically produced by applying a mixture of joint compound and water, or proprietary texture materials including latex base texture paint, to a gypsum board surface.

LEVELS OF FINISH

The following levels of finish are established as a guide for specific final decoration.

Level 0: No taping, finishing, or accessories required. This level of finish may be useful in temporary construction or whenever the final decoration has not been determined.

Levels of Gypsum Board Finish

Level 1: All joints and interior angles shall have tape embedded in joint compound. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable. Level 1 is frequently specified in plenum areas above ceilings, in attics, in areas where the assembly would generally be concealed, or in building service corridors and other areas not normally open to public view. Accessories are optional at specifier discretion in corridors and other areas with pedestrian traffic.

Level 2: All joints and interior angles shall have tape embedded in joint compound and one separate coat of joint compound applied over all joints, angles, fastener heads, and accessories. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable.

Specified where water resistant gypsum backing board (ASTM C630) is used as a substrate for tile; may be specified in garages, warehouse storage or other similar areas where surface appearance is not of primary concern.

Level 3: All joints and interior angles shall have tape embedded in joint compound and two separate coats of joint compound applied over all joints, angles, fastener heads, and accessories. All joint compound shall be smooth and free of tool marks and ridges.

Typically specified in appearance areas which are to receive heavy or medium texture (spray or hand applied) finishes before final painting, or where heavy grade wallcoverings are to be applied as the final decoration.

This level of finish is not recommended where smooth painted surfaces, or light to medium weight wallcoverings, are specified.

Level 4: All joints and interior angles shall have tape embedded in joint compound and three separate coats of joint compound applied over all joints, angles, fastener heads, and accessories. All joint compound shall be smooth and free of tool marks and ridges.

This level should be specified where light textures or wallcoverings are to be applied, or economy is of concern.

In critical lighting areas, flat paints applied over light textures tend to reduce joint photographing. Gloss, semi-gloss, and enamel paints are not recommended over this level of finish.

The weight, texture, and sheen level of wallcoverings applied over this level of finish should be carefully evaluated. Joints and fasteners must be adequately concealed if the wallcovering material is lightweight, contains limited pattern, has a gloss finish, or any combination of these features is present. Unbacked vinyl wallcoverings are not recommended over this level of finish.

Level 5: All joints and interior angles shall have tape embedded in joint compound and three separate coats of joint compound applied over all joints, angles, fastener heads, and accessories. A thin skim coat of joint compound, or a material manufactured especially for this

Levels of Gypsum Board Finish

purpose, shall be applied to the entire surface. The surface shall be smooth and free of tool marks and ridges.

Level 5 is recommended where gloss, semi-gloss, enamel, or non-textured flat paints are specified or where severe lighting conditions occur. This “highest quality” finish is the most effective method to provide a uniform surface and minimize the possibility of joint photographing and of fasteners showing through the final decoration.

COMMENTS

Critical (Severe) Lighting Areas: Wall and ceiling areas abutting window mullions or skylights, long hallways, or atriums with large surface areas flooded with artificial and/or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal even minor surface imperfections. Light striking the surface obliquely, at a very slight angle, greatly exaggerates surface irregularities. If critical lighting cannot be avoided, the effects can be minimized by skim coating the gypsum board surfaces, or by decorating the surface with medium to heavy textures, or by the use of draperies and blinds which soften shadows. In general: gloss, semi-gloss, and enamel finishes highlight surface defects; textures hide minor imperfections.

Tool Marks and Ridges: A smooth surface may be achieved by lightly sanding or wiping joint compound with a dampened sponge. Care shall be exercised to ensure that the nap of the gypsum board facing paper is not raised during sanding operations.

The challenge of finishing plywood is to overcome the tendency toward face checking and coating failure as a result of the stresses induced by dimensional changes during wet-dry moisture cycling. There are basically three options:

Option 1: Use a penetrating finish that does not form a surface film and therefore cannot fail by checking and flaking. High quality semi-transparent stains highlight the architectural intent of textured plywood siding. They add color and beauty to the plywood siding, showing off its rustic rough texture. The wood grain and other natural characteristics, such as color differences in the wood, show through the finish. However, be aware that repairs which have been made on the veneer face of the plywood will also show.

We recommend two coats of Diamond Vogel Grain Stain be applied to rough texture plywood. Note, you need to allow time for the first coat to soak into the wood but the second coat has to be applied before the first coat dries. Any excess after the application of the second coat should be removed with a dry brush or a sponge to make sure the application is even with no lap marks. A full panel should be done at one time to keep down the possibility of lap marks.

Option 2: Use solid color stains for a flexible coating when you want to cover the grain and color of the wood, as well as surface repairs, but your desire is for the texture of the wood to show through.

Two coats of Grain Stain Solid Latex Stain are recommended for use on plywood. The plywood should be primed with Diamond Vogel BU-1501 tinted and top coated with one or two coats of BT-Series Grain Stain.

Option 3: Use a high quality acrylic latex paint which is sufficiently flexible to withstand dimensional changes in the wood and helps to protect against the checking and cracking that occurs in the face veneer. Acrylic latex paints offer the best protection and the greatest durability for plywood

Diamond Vogel's Permacryl Exterior 100% Acrylic Latex would be the best recommendation if you want to paint the plywood. Again, we recommend that it be primed with a coat of Diamond Vogel BU-1501 tinted to the color of the finish coat followed by two coats of Permacryl Exterior Latex.