

BREAK-THROUGH® SPECIFICATIONS

I. Job Conditions

- A. Apply Break-Through® only when temperature of surfaces to be painted and surrounding air temperatures are between 45°F and 90°F.
- B. Maintain surface and air temperature at 45°F or higher for a period of at least 24 hours after application.
- C. Do not apply paint in snow, rain, fog, or mist, or when relative humidity exceeds 85%, or to damp, wet surfaces.
- D. Painting may be continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits stated above.
- E. Do not paint over dirt, chalk, loose rust, scale, grease, moisture, or conditions otherwise detrimental to formation of a durable paint film.
- F. Do not allow water to pond on horizontal surfaces for a minimum of 3 days after application.

II. Materials Preparation & Storage

- A. Stir Break-Through® three to five minutes before use to produce a mixture of uniform density, and stir as required during application. If a surface film or "skin" is present, do not stir into material. Remove film and, if necessary, strain material before use. Always strain Break-Through® prior to applying by spray.
- B. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.
- C. Store materials not in actual use in tightly covered containers. Maintain containers used in storage of paint in a clean condition, free of foreign materials and residue. Protect from freezing where necessary. Keep out of reach of children.

III. Surface Preparation

A. General

1. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finishpainted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.
2. Clean surfaces to be painted before applying paint. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly painted surfaces.
3. Seal water stains, ballpoint ink, felt tip marker, and other water soluble stains which may bleed through the paint with a stain blocking sealer.
4. Mask surfaces not required to be painted.

B. Substrate Specific

1. Ferrous Metal, including Steel, Stainless Steel, and Chrome Plated Steel
 - a) Remove loose rust, grease, oils, etc.
 - b) Wash down with a water based cleaner, such as Break-Through® Equipment Cleaner 49-0. *Do not use a solvent wipe.*

- c) Rinse well with water.
 - d) Blow dry with clean air or wipe dry with a clean towel to prevent flash rust.
2. Galvanized Metal
- a) Remove grease, oils, etc.
 - b) Wash down with a water based cleaner, such as Break-Through® Equipment Cleaner 49-0. *Do not use a solvent wipe.*
 - c) Rinse well with water.
 - d) Allow to dry before painting.
3. Aluminum
- a) Remove grease, oils, etc.
 - b) Wash down with a water based cleaner, such as Break-Through® Equipment Cleaner 49-0. *Do not use a solvent wipe.*
 - c) Rinse well with water.
 - d) Allow to dry before painting.
4. Glazed Ceramic Tile
- a) Sand lightly - 400 grit or finer
 - b) Remove any foreign matter and film buildup with a basic cleaning solution of 1 gallon of water, 1 cup of bleach, and 2 tablespoons trisodium phosphate.
 - c) Rinse well with water.
 - d) Allow to dry before painting.
 - e) Break-Through® will adhere to *most* glazed ceramic tiles. Test adhesion to ceramic tile by painting a small test patch. Allow Break-Through® to dry for three days. Apply tape to painted surface and remove. If the painted film is not removed, Break-Through® will adhere to the ceramic tile that is to be painted.
5. Unglazed Ceramic Tile
- a) Remove any foreign matter and film buildup with a basic cleaning solution of 1 gallon of water, 1 cup of bleach, and 2 tablespoons trisodium phosphate.
 - b) Rinse well with water.
 - c) Allow to dry before painting.
6. Cementitious Surfaces of Concrete, Concrete Block, and Cement Plaster
- a) Floors
 - (1) Remove efflorescence, chalk, dust, dirt, grease, oils, and roughen as required to remove glaze.
 - (2) Concrete must age a minimum of 60 days prior to painting. Determine alkalinity of surfaces to be painted by performing appropriate tests. If the ph of the surface is 9 or above, it will cause blistering and burning of the finish. Correct this condition before application of paint.
 - (3) Inspect for oil or grease absorption. If present, thoroughly clean with a penetrating cleaner/degreaser.
 - (4) Etch concrete with a commercial solution of muriatic acid, or other etching cleaner.
 - (5) Flush floor with a basic cleaning solution of 1 gallon of water,

1 tablespoon of baking soda (or sodium bicarbonate), and 2 tablespoons trisodium phosphate to neutralize acid.

(6) Rinse well with water.

(7) Allow to dry before painting.

b) Walls

(1) Remove efflorescence, chalk, dust, dirt, and other foreign residue.

(2) Concrete must age a minimum of 60 days prior to painting. Determine alkalinity of surfaces to be painted by performing appropriate tests. If the ph of the surface is 9 or above, it will cause blistering and burning of the finish. Correct this condition before application of paint.

(3) If needed, clean with a basic cleaning solution of 1 gallon of water, 1 tablespoon of baking sodium (or sodium bicarbonate), and 2 tablespoons trisodium phosphate..

7. High Pressure Laminate and Formica®

a) Sand lightly using 400 grit or finer. Wet sanding achieves best appearance.

b) Remove any foreign matter and film buildup with a basic cleaning solution of 1 gallon of water, 1 cup of bleach, and 2 tablespoons trisodium phosphate.

c) Rinse well with water.

d) Allow to dry before painting.

8. Plexiglas®

a) Sand lightly using 400 grit or finer. If painting previously painted Plexiglas®, wet sanding achieves best appearance.

b) Remove any foreign matter and film buildup with a basic cleaning solution of 1 gallon of water, 1 cup of bleach, and 2 tablespoons trisodium phosphate.

c) Rinse well with water.

d) Allow to dry before painting.

9. Fiberglas®

a) Sand lightly using 400 grit or finer. Do not sand too strongly or fibers will be exposed. Wet sanding achieves best appearance.

b) Remove any foreign matter and film buildup with a basic cleaning solution of 1 gallon of water, 1 cup of bleach, and 2 tablespoons trisodium phosphate.

c) Rinse well with water.

d) Allow to dry before painting.

10. Sintra®

a) Sand lightly using 400 grit or finer.

b) Remove any foreign matter and film buildup with a basic cleaning solution of 1 gallon of water, 1 cup of bleach, and 2 tablespoons trisodium phosphate.

c) Rinse well with water.

d) Allow to dry before painting.

11. Plastic

- a) Break-Through® will not adhere to untreated polyethylene or polypropylene.
- b) Sand lightly using 400 grit or finer. Wet sanding achieves best appearance.
- c) Remove any foreign matter and film buildup with a basic cleaning solution of 1 gallon of water, 1 cup of bleach, and 2 tablespoons trisodium phosphate.
- d) Rinse well with water.
- e) Allow to dry before painting.
- f) Break-Through® will adhere to *most* plastics. Test adhesion to plastic by painting a small test patch. Allow Break-Through® to dry for three days. Apply tape to painted surface and remove. If the painted film is not removed, Break-Through® will adhere to the plastic that is to be painted.

12. Naugahyde® & Vinyl

- a) Remove any foreign matter and film buildup with a basic cleaning solution of 1 gallon of water, 1 cup of bleach, and 2 tablespoons trisodium phosphate.
- b) Rinse well with water.
- c) Allow to dry before painting. Break-Through® will adhere to *most* Naugahyde® and vinyl. Test adhesion to Naugahyde® or vinyl by painting a small test patch. Allow Break-Through® to dry for three days. Apply tape to painted surface and remove. If the painted film is not removed, Break-Through® will adhere to the Naugahyde® or vinyl that is to be painted.

13. Vinyl Flooring

- a) Remove all floor wax with a commercial wax remover.
- b) Sand lightly using 400 grit or finer. Wet sanding achieves best appearance.
- c) Remove any foreign matter and film buildup with a basic cleaning solution of 1 gallon of water, 1 cup of bleach, and 2 tablespoons trisodium phosphate.
- d) Rinse well with water.
- e) Allow to dry before painting.
- f) Break-Through® will adhere to *most* vinyl floors. Test adhesion to vinyl flooring by painting a small test patch. Allow Break-Through® to dry for three days. Apply tape to painted surface and remove. If the painted film is not removed, Break-Through® will adhere to the vinyl flooring that is to be painted.

14. Vinyl Wallcovering

- a) Glue down all seams and loose material.
- b) Assure wallcovering is free of paste or glue.
- c) Remove any foreign matter or film buildup with a basic cleaning solution of 1 gallon of water, 1 cup of bleach, and 2 tablespoons trisodium phosphate.
- d) Rinse well with water.
- e) Allow to dry before painting.

15. Wood

a) Pigmented Finish

- (1) Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers and sandpaper as required.
- (2) If painting a tannin bleeding wood, such as redwood or cedar, a tannin block primer must be applied. Also protect small, dry, seasoned knots from tannin bleed by applying a tannin block primer.
- (3) Fill holes and imperfections in finish surfaces with putty or wood filler.
- (4) Remove any soils and mildew with a basic cleaning solution of 1 gallon of water, 1 cup of bleach, and 2 tablespoons trisodium phosphate.
- (5) Sandpaper smooth when dried.

b) Clear Finish

- (1) Remove any soils and mildew with a basic cleaning solution of 1 gallon of water, 1 cup of bleach, and 2 tablespoons trisodium phosphate.
- (2) Sandpaper smooth when dried.
- (3) Remove sanding dust with clean compressed air, vacuum cleaner, or clean dry cloth. *Do not use a tack cloth.*

IV. Application

A. General

1. Do not thin Break-Through® more than 10% (12 ounces per gallon). Thin using distilled or deionized water.
2. Apply multiple thin coats instead of one heavy coat for better adhesion. Thicker films will take longer to fully cure.
3. At 70°F and 50% relative humidity, allow a dry time of two hours between each coat of primer or paint.
4. Deep colors will take longer to fully cure than lighter colors.
5. Allow paint to dry to touch before touching up any missed areas.
6. Clean up tools immediately after use with soap and water. If coating has cured to the extent it cannot be cleaned with soap and water, use Break-Through® Equipment Cleaner 49-0.
7. Cure Time, 70°F, 50% relative humidity
 - a) To touch - 30 minutes
 - b) To handle - 45 minutes
 - c) Back in service
 - (1) Most surfaces - 2 hours; areas with heavier use, such as countertops - overnight
 - (2) Floors - light traffic - overnight; heavy traffic, such as forklifts - 48 hours
 - d) Full cure - 5-7 days

B. Method Specific:

1. Airless Spray

- a) Spray at package viscosity unless excessive tailing or fingering

- requires thinning.
 - b) Adjust pump pressure and tip size to achieve proper atomization and appearance. Recommended pump pressure - 1800 psi; recommended tip size - .013 - .019.
 - c) Overlap the spray pattern a minimum of 50%.
2. Conventional
- a) Reduce 5-10% with distilled or deionized water.
 - b) Adjust pot pressure, air pressure, and air cap to achieve proper atomization and appearance. Recommended pot pressure - 15-20 psi; recommended air pressure - 40-60 psi; recommended aircap - 63pb in areas of high humidity; 66sd in areas of low humidity.
 - c) Overlap the spray pattern a minimum of 50%.
3. High Volume Low Pressure
- a) Reduce 5-10% with distilled or deionized water.
 - b) Adjust head pressure and atomization pressure to achieve proper atomization and appearance. Recommended head pressure - 5-10 psi; recommended air flow rate - 85cfm.
 - c) Overlap the spray pattern a minimum of 50%.
4. Pad Applicator
- a) Reduce 5-10% with distilled or deionized water. It may not be necessary to thin darker colors.
 - b) Use a premium quality synthetic pad applicator.
 - c) Break-Through® has a small window of open time. Pad apply a small area maintaining a wet edge. Break-Through® dries very rapidly. Do not overwork.
 - d) If wet edge is lost, allow coating to dry to touch before attempting to work back into coating.
5. Brush
- a) Reduce 5-10% with distilled or deionized water. It may not be necessary to thin darker colors.
 - b) Use a premium quality synthetic bristle brush, such as nylon or polyester. Natural bristle brushes are not recommended.
 - c) Break-Through® has a small window of open time. Brush a small area maintaining a wet edge. Break-Through® dries very rapidly. Do not overwork.
 - d) If wet edge is lost, allow coating to dry to touch before attempting to lap or brush back into coating.
 - e) Use Break-Through® Additive 48-0 to increase the open time. Do not add more than 10 ounces per gallon of Break-Through® Additive.
6. Roller
- a) Roller application is good for textured surfaces such as rough concrete walls & floors or textured walls.
 - b) Do not apply Break-Through® with a roller where a smooth surface is required.
 - c) Do not apply Break-Through® or Clear Advantage® clears with a roller cover.
 - d) For highly textured looks, no thinning is required. For lightly textured

looks, thin 5-10% with distilled or deionized water.

- e) Use a sponge roller cover or a high quality latex roller cover with a nap length of 1/4" or less.

C. Substrate Specific

1. Ferrous Metal, including Steel, Stainless Steel, and Chrome Plated Steel

a) Interior Metal

- (1) No primer necessary. As a direct to metal finish, Break Through® can achieve over 200 hours of salt spray.
- (2) For maximum durability, apply two finish coats of Break Through® Satin (50 Series) or Gloss (70 Series) Topcoat.

b) Exterior Unpainted Metal, Steel

(a) Normal Environments

- (i) For maximum durability, prime with two coats of Break-Through® MetaLast Primer 91-62. MetaLast can achieve over 400 hours of salt spray.
- (ii) For maximum durability, apply two finish coats of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat.

(b) Demanding Environments

- (i) For maximum durability, prime with two coats of Break-Through® 1000 Hour Primer 91-9300. Applied to thoroughly clean surfaces, 1000 Hour Primer can achieve over 1000 hours of salt spray. The best salt spray resistance is achieved when applied over iron phosphatized steel, zinc phosphatized steel, white or near-white metal blasted steel.
- (ii) For maximum durability, apply two finish coats of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat.

c) Exterior Unpainted Stainless Steel and Chrome Plated Steel

- (1) No primer necessary.
- (2) For maximum durability, two finish coats of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat.

2. Galvanized Metal

a) Paint Grade Galvanized or Weathered Unpainted Galvanized

- (1) No primer necessary.
- (2) For maximum durability, apply two finish coats of Break Through® Satin (50 Series) or Gloss (70 Series) Topcoat.

b) New Unpainted Galvanized

- (1) For maximum adhesion and durability, prime with two coats of Break-Through® MetaLast Primer 91-62.
- (2) For maximum durability, apply two finish coats of Break Through® Satin (50 Series) or Gloss (70 Series) Topcoat.

3. Aluminum

- a) For maximum adhesion and durability, prime with two coats of Break Through® MetaLast Primer 91-62.
 - b) For maximum durability, apply two finish coats of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat.
4. Glazed Ceramic Tile
 - a) No primer necessary.
 - b) For maximum durability, apply two finish coats of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat.
 5. Unglazed Ceramic Tile
 - a) No primer necessary.
 - b) For maximum durability, apply two finish coats of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat.
 6. Cementitious Surfaces of Concrete, Concrete, Block, and Cement Plaster
 - a) No primer necessary.
 - b) For better first coat penetration and flow, thin first coat of Break Through® 5-10% with distilled or deionized water.
 - c) Apply a finish coat of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat.
 7. High Pressure Laminate and Formica®
 - a) No primer necessary.
 - b) For maximum durability, apply two finish coats of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat.
 8. Plexiglas®
 - a) No primer necessary.
 - b) For maximum durability, apply two finish coats of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat.
 9. Fiberglas®
 - a) No primer necessary.
 - b) For maximum durability, apply two finish coats of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat.
 10. Sintra®
 - a) No primer necessary.
 - b) For maximum durability, apply two finish coats of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat.
 11. Plastic
 - a) No primer necessary.
 - b) For maximum durability, apply two finish coats of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat.
 12. Naugahyde® & Vinyl
 - a) No primer necessary.
 - b) For maximum durability, apply two finish coats of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat.
 13. Vinyl Flooring
 - a) No primer necessary.
 - b) For maximum durability, apply two finish coats of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat.
 14. Vinyl Wallcovering

- a) No primer necessary.
- b) For maximum durability, apply two finish coats of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat.

15. Wood

- a) Exterior Wood - Pigmented
 - (1) Prime with two coats of Break-Through® New Wood Primer 91-11.
 - (2) Apply two finish coats of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat.
 - (3) Protect horizontal surfaces from rain for three days.
- b) Interior Wood Composites, such as MDF and particle board, or other interior wood surfaces requiring a completely smooth finish
 - (1) Apply one coat of Break-Through® Interior Sanding Primer 79-1 to all porous cut edges.
 - (2) Apply a liberal coat of Break-Through® Interior Sanding Primer 79-1 to all surfaces, including porous cut edges.
 - (3) Allow to dry for two hours.
 - (4) Sand smooth.
 - (5) Acceptable smoothness and appearance can often be achieved with one edge coat and one full coat as outlined above. However, multiple coats of Break-Through® Interior Sanding Primer 79-1 may be applied to achieve desired film build and smoothness. Sand between each coat.
 - (6) Sand final coat of Break-Through® Interior Sanding Primer 79-1 with 400 grit or finer.
 - (7) For maximum durability, apply two finish coats of Break Through® Satin (50 Series) or Gloss (70 Series) Topcoat.
- c) Interior Wood Requiring Chemical Resistance
 - (1) Break-Through® Clears have a slight amber cast and are not recommended for use over whites or light pastel colors.
 - (2) Build desired depth with Clear Advantage® Sanding Sealer 51-0, sanding between coats. Apply two to three coats of Sanding Sealer.
 - (3) Apply final finish coats of Break-Through® Satin (50 Series) or Gloss (70 Series) Topcoat .
- d) Interior Wood Requiring Best Clarity, Mar, and Scuff Resistance
 - (1) Clear Advantage® Clear has no amber cast and is recommended for use over white or light pastel colors.
 - (2) Build desired depth with Clear Advantage® Sanding Sealer 51-0, sanding between coats. Apply two to three coats of Sanding Sealer.
 - (3) Apply final finish coats using Clear Advantage® Satin 55-0 or Gloss 75-0.

V. Technical Data

- A. Chemically resistant to a variety of chemicals including Formula 409®, gasoline, xylene, alcohol, mineral spirits, Clorox Bleach®.

- B. Pencil Hardness (depending on the thickness of the film and cure time)
 - 1. Air Dry: HB-H
 - 2. Bake: 2H
- C. Gloss
 - 1. 50 Series (Satin) - 20-25 on 60° Gloss Meter
 - 2. 70 Series (Gloss) - 70+ on 60° Gloss Meter; Clears and most deep colors achieve 80+
- D. Exterior Weathering - 700 hours with only 50% loss of gloss.
- E. Flexible - withstands 160 in/lbs impact and 1/8" mandrel bend.
- F. USDA approved for intermittent food contact.
- G. Class A Flame Spread Rating - will not contribute to the burning of wood.
- H. Service Temperature (slight color change may occur at higher temperatures depending upon the color used)
 - 1. Intermittent: - 50° to 300°F
 - 2. Continuous: -50° to 180°F
- I. Recommended Dry Film Thickness - 1.0-2.0 mils
- J. Tinting - Use no more than 8 ounces of glycol containing universal colorants when tinting Break-Through®. Tinting in excess of 8 ounces will soften the final film.
- K. Break-Through® is not recommended for the following applications:
 - 1. Bathtubs, sinks, shower basins, pools, or other continuous water immersion environments.
 - 2. Garage floors.
 - 3. Roofs.
 - 4. New or old unpainted exterior wood without Break-Through® New Wood Primer, 91-11.
 - 5. Exterior wood surfaces requiring a clear coating.
 - 6. Very flexible substrates subject to abuse such as canvas, nylon rope, rubbers and elastomers.