

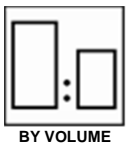
Description

Many of today's vehicles have 3-stage colors that create interesting color effects. These effects are created by allowing light to pass through a pearl or translucent mid-coat color and reflecting back with attention grabbing color. Autowave allows you to create these same effects with step by step application instructions. This provides the user with a simple method for obtaining an invisible repair.



Safety Considerations

- Use suitable personal protection.
- AkzoNobel recommends the use of a fresh air supply respirator.
- Refer to the product Safety Data Sheet (SDS) for more complete safety information.



3-Stage Pearl Solid Foundation Color

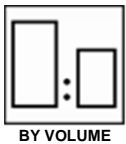
- 100** Autowave Foundation Color
 - 5-10** WB Hardener
- STIR & THEN

- 100** Foundation + WB Hardener
- 10-30** Autowave Activator

3-Stage Effect/Metallic Foundation Color

- 100** Autowave Foundation Color
 - 5-10** WB Hardener
- STIR & THEN

- 100** Foundation + WB Hardener
- 30-50** Autowave Activator



3-Stage Pearl Mid-Coat Color

- 100** Autowave Pearl Mid-Coat Color
- 10-30** Autowave Activator

3-Stage Effect/Metallic Mid-Coat Color

- 100** Autowave Foundation Color
- 20-30** Autowave Activator



HVLP or Compliant Spray-Gun Set-Up:

- HVLP Gravity – 1.3 – 1.5 mm
- Compliant Gravity – 1.3 – 1.5 mm

Application Air Pressure:

- HVLP – 10 psi (0.7 bar) at cap maximum.
- Consult manufacturers' specifications.



3-Stage Pearl Solid Foundation Application

- Apply 2-4 coats of the foundation color or until covered.

3-Stage Effect/Metallic Foundation

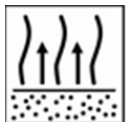
- Apply 2-4 coats of the foundation color or until covered.
- If the metallic appears uneven, apply an orientation coat.

3-Stage Pearl Mid-Coat Color Application

- Apply 2-4 coats of the Mid-Coat color or until desired appearance is achieved.

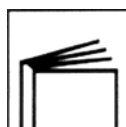
3-Stage Effect/Metallic Mid-Coat

- Apply 2-4 coats of the Mid-Coat color or until desired appearance is achieved.



Flash Drying at 70°F

- Flash 3-5 minutes between coats.
- Flash 15-20 minutes between the foundation and the mid-coat.
- Flash 20-30 minutes before applying clear coat.



Re-Coatable With:

- Sikkens Clearcoats
 - For a detailed list of suitable clearcoats, please refer to page 10 of this document.

Read complete TDS for detailed product information.



Description

Many of today's vehicles have 3-stage colors that create interesting color effects. These effects are created by allowing light to pass through a pearl or translucent mid-coat color and reflecting back with attention grabbing color. Autowave allows you to create these same effects with step by step application instructions. This provides the user with a simple method for obtaining an invisible repair.

Suitable Substrates

SUITABLE SURFACES

- All existing OEM finishes
- Sikkens preparatory products

CANNOT BE APPLIED OVER

- AutoPrep Pretreatment wipes
- Thermoplastic acrylic lacquers
- Airbag covers
- Direct to e-coat without prior application of Primer Surfacer / Sealer.

Products and Additives

- Product**
- Autowave MM (Mixing Machine) formulas.

- Hardeners**
- Autowave WB Hardener – Item #553737, #484386
 - The addition of 5-10% WB Hardener can be used to improve system robustness including stone chip resistance, adhesion and system hardness. WB Hardener is also recommended when multi-layer systems are applied where the recommended layer thickness may be exceeded.

- Activators**
- Autowave Activator WB – Item #391196
 - Activator WB, the Autowave waterborne basecoat activator is used for all repair sizes.

- Additives**
- Autowave Additive LP – Item #391192
 - Autowave Additive LP is used to extend the pot-life of Autowave metallic colors.

Basic Raw Materials

- Product**
- Autowave – Water based acrylic dispersion
 - Autowave Activator WB – Water / Glycol mixture
 - Autowave WB Hardener – Poly-Isocyanate resins

Substrate Preparation



Pre-Cleaning

- If needed, pre-wash the repair with warm soap and water. Rinse completely with clean water.
- Regulated VOC locations; thoroughly clean the surface and remove contamination with AutoPrep Ultra Prep Surface Cleaner. If allowed also clean with M600 Surface Cleaner.
- National Rule locations; thoroughly clean the surface with AutoPrep UltraPrep followed by M600 Surface Cleaner.



Dry sanding

- Initial sanding steps may be executed with coarser sanding grit #P360 - #P400.
 - Final sanding steps use #P500 - #P600.
- Note: Respect a maximum 100 sanding grit step difference or less throughout the sanding steps.



Wet sanding

- Initial sanding steps may be executed with coarser sanding grit #P500.
 - Final sanding step #P600 to #P800
- Note: Respect a maximum 200 sanding grit step difference or less throughout the sanding steps.



Surface Cleaning

- Regulated VOC locations; thoroughly clean the surface and remove contamination with AutoPrep Ultra Prep Surface Cleaner. If allowed also clean with M600 Surface Cleaner.
- National Rule locations; thoroughly clean the surface with AutoPrep UltraPrep followed by M600 Surface Cleaner.

Product Agitation



Mixing Toner Prep and Use

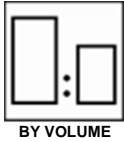
- Shake paint on a paint shaker or vigorously by hand for 45 seconds before first use.
- For metallic, pearl or effect toners, also stir the mixing color before first use.
- Gently shake Autowave toner before each pour.
- Once all of the toners in a formula have been combined, stir the paint prior to reduction and then stir again after the Activator WB has been added.

Points of Attention



- Solvents – Avoid contact between waterborne products and any conventional solvents.
- Filtering / Straining – Use waterborne suitable 125 micron paint strainers.
- Special Effect Colors – When applying a black pre-coat for special effect colors, use deep black MM400 for the most vivid effects.

Autowave Reduction



3-Stage Pearl Solid Foundation Color

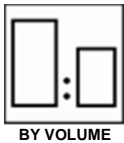
100 Autowave Foundation Color
5-10 WB Hardener
 STIR & THEN

100 Foundation + WB Hardener
10-30 Autowave Activator

3-Stage Effect/Metallic Foundation Color

100 Autowave Foundation Color
5-10 WB Hardener
 STIR & THEN

100 Foundation + WB Hardener
30-50 Autowave Activator



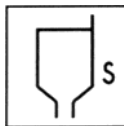
3-Stage Pearl Mid-Coat Color

100 Autowave Pearl Mid-Coat Color
10-30 Autowave Activator

3-Stage Effect/Metallic Mid-Coat Color

100 Autowave Foundation Color
10-30 Autowave Activator

Viscosity When Mixed



- Autowave 20-30 seconds DIN Cup #4 at 70°F (21°C)

Pot-Life When Mixed



Autowave Mixed Colors

- Autowave foundation colors with 5% WB Hardener
- Autowave foundation with 50% or more MM245 with 5% WB Hardener
- Autowave colors containing MM338 or MM888 toners and MM777
- Autowave colors containing MM338 or MM888 toners
- Autowave pearl colors

70°F (21°C)

- 1.5 hours
- 1 hour
- 1 day
- 1 week
- 3 months

Spray Gun Set-Up



Spray-Gun Set-Up:

- HVLP Gravity – 1.3 – 1.5 mm
- Compliant Gravity – 1.3 – 1.5 mm

Application Air Pressure:

- HVLP – 10 psi (0.7 bar) at cap maximum.
- Consult manufacturers' specifications.

Application, Pearl 3 Stage – Full Panel or Complete



Autowave Solid Foundation Color:

- Apply 2-3 coats or until opacity is reached.
- Allow a flash off time between coats of 3 to 5 minutes at 70°F (21°C).
 - Flash time will be dependent on ambient temperature, applied paint wetness/thickness and available air-flow.
- The first coat is applied as a closed wet coat with a gun distance of 6".
- The 2nd – 3rd coats are applied medium wet until coverage is achieved.
- With proper application the foundation color should be smooth when completed.

Application, Pearl 3 Stage – Continued



Flash Drying Before Mid-Coat:

- Allow Ground-Coat to flash for 15-20 minutes at 70°F (21°C) before application of the Autowave Mid-Coat color.
 - Flash time will be dependent on ambient temperature, applied paint wetness/thickness and available air-flow.



Autowave Pearl Mid-Coat Color:

- Apply 2-4 medium wet coats of Pearl Mid-Coat color with a gun distance of 6-8" from the panel until color is equal to vehicle.
- Allow a flash off time between coats of 3 to 5 minutes at 70°F (21°C).
 - Flash time will be dependent on ambient temperature, applied paint wetness/thickness and available air-flow.

Notes:

- The application must be consistent and even to avoid a cloudy appearance.
- Altering the overlap areas between coats will help avoid darker areas between panels.
- Some unique colors may require 1-2 additional coats for the desired appearance.



Flash Drying Before Clear-Coat:

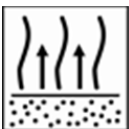
- Allow Mid-Coat to flash for 20-30 minutes at 70°F (21°C)
 - If wanted the system can be baked for 15 minutes at 140°F (allow to cool), before application of clear coat.

Application, Effect / Metallic 3 Stage – Full Panel or Complete



Autowave Solid Foundation Color:

- Apply 2-3 coats or until opacity is reached.
 - Allow a flash off time between coats of 3 to 5 minutes at 70°F (21°C).
 - Flash time will be dependent on ambient temperature, applied paint wetness/thickness and available air-flow.
- The first coat is applied as a closed wet coat with a gun distance of 6".
- The 2nd – 3rd coats should be 80% closed with a gun distance of 6-8" from the panel, until coverage is achieved.
- If the ground coat appears uneven, apply an orientation coat.



Flash Drying Before Mid-Coat:

- Allow Ground-Coat to flash for 15-20 minutes at 70°F (21°C) before application of the Autowave Mid-Coat color.
 - Flash time will be dependent on ambient temperature, applied paint wetness/thickness and available air-flow.

Application, Effect / Metallic 3 Stage – Continued



Autowave Effect Mid-Coat Color:

- Apply 2-4 wet coats of Effect Mid-Coat color with a gun distance of 6-8” from the panel until color is equal to vehicle.
- Allow a flash off time between coats of 3 to 5 minutes at 70°F (21°C).
 - Flash time will be dependent on ambient temperature, applied paint wetness/thickness and available air-flow.

Notes:

- The application must be consistent and even to avoid a cloudy appearance.
- Altering the overlap areas between coats will help avoid darker areas between panels.
- Some unique colors may require 1-2 additional coats for the desired appearance.



Flash Drying Before Clear-Coat:

- Allow Mid-Coat to flash for 20-30 minutes at 70°F (21°C)
 - If wanted the system can be baked for 15 minutes at 140°F (allow to cool), before application of clear coat.

3 Stage Repair – Let-Down Panels



Let down panels are used as an aid to estimate the number of second layer or mid-coat applications that are needed to achieve a suitable color match for three stage colors. They are used as a tool for comparing the build-up of applications to the repair vehicle so the painter can determine the suitable number of mid-coat layers to arrive at a suitable color match for the job.

- The color of the foundation coat and the thickness of the mid-coat determine the hue of three stage colors. Therefore a let-down panel allows the painter to evaluate the combination of both.
- When completed, your let down panel should also include an area that has not been painted with the second layer color. You can then use the let-down panel to assess the first layer color, the mid-coat color and its application prior to and while painting the vehicle.



Note:

When spraying an actual repair stop one coat short of the estimated number of coats of the Mid-Coat. Using the Mid-Coat side of the let-down do an evaluation of your progress and determine how many more coats of the second layer may be needed.



Let-Down Panel Application

- 1) Apply the Ground-Coat to a spray-out panel and dry.
- 2) Mask off approximately 6 equal segments on the spray-out.
- 3) Apply Mid-Coat to the first un-masked area. It is important to apply the Mid-Coat exactly as you would if you were spraying a repair. Flash dry.
- 4) Remove masking from the next application area and apply Mid-Coat to the 1st application area and the 2nd.
- 5) Repeat until each area except one has been coated with Mid-Coat color. Flash for 20 minutes.
- 6) Mask off 1/2 of the panel across the panel vertically.
- 7) Clearcoat the un-masked portion of the let-down panel.

3 Stage Repair – Mid-Coat Points of Attention

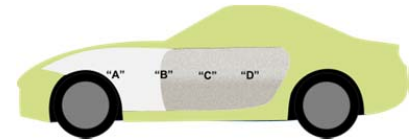


- Check each application of mid-coat with color checking light.
- The second layer color is translucent to create the even, clean and vivid appearance required. Therefore, while many colors can be completed with 4 coats, some may require additional coats to achieve the desired appearance.
- When the 1st layer in a 3-Step color is applied varying amounts of the original effect show through the application. For this reason a corresponding amount of 2nd layer color must be applied to create a seamless repair. Therefore a staggered application is used.

3 Stage Pearl Repair – Preparation



- Sand primer area “A” using #P500-600 dry or #P600-800 wet. Extend into area “B” 4”- 6”.
- De-Gloss areas blend areas “C” and “D” with a D.A. using #P1000 dry and a 3M Interface pad or 3M Gray Scotch-Brite with Sikkens BlendPrep and water.

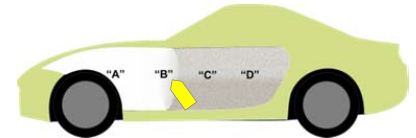


3 Stage Pearl Repair – Application



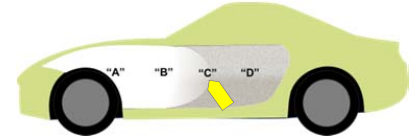
Application – Solid Foundation Color

- Spray medium wet coats in areas “A” and “B” until covered.
- Extend each coat slightly making the final coat fade into the original finish.



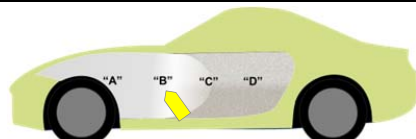
Application – Optional Blending Solid Foundation Color

- Mix 1 part ready to spray foundation color with 1 part ready to spray pearl mid-coat color.
- Spray 1-2 single coats fading out into area “C”.
 - This combined blending mix must blend invisibly into the original finish.
- Flash for 15-20 minutes before applying the mid-coat.



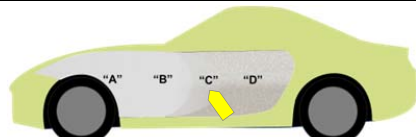
1st Coat Pearl Mid-Coat Color

- This coat is applied to the area that will need the most Mid-Coat Pearl.
- It covers the original full strength first layer color (Area “A” into “B”).



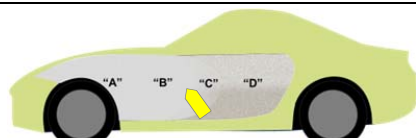
2nd Coat Pearl Mid-Coat Color

- This application coats areas “A,” “B” and into “C” including the layer 1 invisible blend.
- The middle of this coat may appear as if it needs more coverage when done. This will be tended to in the next coat.



3rd Coat Pearl Mid-Coat Color

- After the second coat is applied, looking closely you notice an area that needs to be touched up between areas “B” and “C”.
- Apply paint across the repair and to that target area.

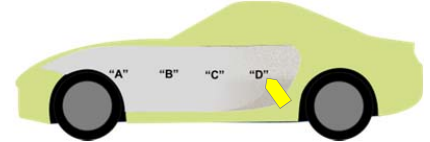


3 Stage Pearl Repair – Continued



4th Coat Pearl Mid-Coat Color

- The final coat is used to blend the second layer into the existing color.
- Flash for 20-30 minutes and apply clear coat.

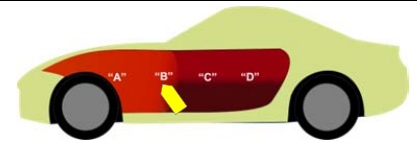


3 Stage Metallic / Effect Repair – Application



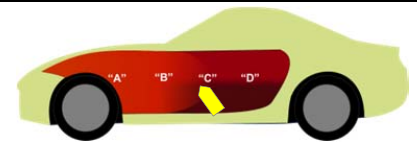
Application – Metallic Foundation Color

- Spray medium coats in areas “A” and “B” until covered.
- Extend each coat slightly making the final coat fade into the original finish.



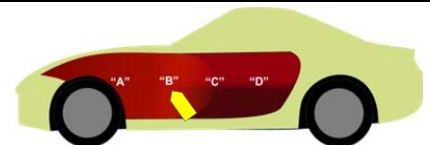
Application – Optional Blending Metallic Foundation Color

- Mix 2 part ready to spray foundation color with 1 part ready to spray effect mid-coat color.
 - *Autobase Plus RM Mid-Coat Color can never be mixed with Autowave.*
- Spray 1-2 single coats fading out into area “C”.
 - This combined blending mix must blend invisibly into the original finish.
- Flash for 15-20 minutes before applying the mid-coat.



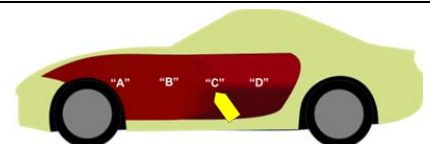
1st Coat Mid-Coat, Effect

- This coat is applied to the area that will need the most Mid-Coat.
- It covers the original full strength first layer color (Area “A” into “B”).



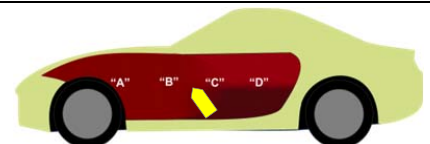
2nd Coat Mid-Coat, Effect

- This application coats areas “A,” “B” and “C” including the layer 1 invisible blend.
- The middle of this coat may appear as if it needs more coverage when done. This will be tended to in the next coat.



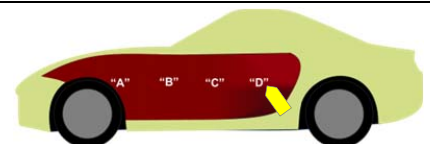
3rd Coat Mid-Coat, Effect

- After the second coat is applied, looking closely you notice an area that needs to be touched up between areas “B” and “C”.
- Apply paint across the repair and to that target area.



4th Coat Mid-Coat, Effect

- The final coat is used to blend the second layer into the existing color.
- Flash for 20-30 minutes and apply clear coat.



Film Thickness – Using Suitable Application



- With the recommended application you will achieve a thickness of 0.3-0.4 mils per coat (7.6 – 10.2µm).

Drying / Curing

Drying times are stated a recommended application method, film thickness and object temperature.



- Foundation color must dry for 15 to 20 minutes at 70°F (21°C) before applying the mid-coat.
- Mid-Coat color must flash dry 20-30 minutes at 70°F (21°C) or 15 minutes at 140°F (allow to cool), before application of clear coat.
- Maximum recoat time is 24 hours at 75°F (24°C).

Recoating



- Autobase Plus RM Mid-Coat – Mixed, ready to spray Autobase Plus RM Mid-Coat colors may be applied over Autowave Foundation Color after a flash of 15-20 minutes at 70°F (21°C). Refer to the Autobase Plus RM 3 Stage TDS for usage details.
- Autoclear Superior 250 2 Pack Fast and Slow
- Autoclear Energy Select LV Fast and Slow
- Autoclear HS+ LV 2 Pack Fast and Slow
- Autoclear HS+ 2 Pack Fast and Slow
- Autoclear PC Standard and Production
- Autoclear Mix and Matte or Matte Select

Ground-Coat Repair



If during the application of the Autowave Ground-Coat damage occurs:

1. Allow the Autowave to flash off for 20 minutes at 70°F (21°C).
2. Lightly sand the damaged area with #P600 to #P800 grit sand paper dry.
3. Re-apply ground coat and proceed as normal with the Mid-Coat.
4. As there is no Mid-Coat or clearcoat to protect the basecoat at this stage, care must be taken to clean up all sanding residue before re-application of basecoat.

Cleaning of Equipment



- Clean and rinse the spray gun thoroughly after use.

Theoretical Coverage



Theoretical coverage is dependent of many factors. These may include; the shape of the object, surface smoothness, application technique and other application variables among others. Calculations are done on ready to spray product at 1 mil dry film thickness and 100% transfer efficiency.

- Autowave ready to spray 254ft²/gallon (6.3 m²/liter) at 1 mil film thickness.



North America

Autowave™

3-Stage Application & Repair

Technical Data Sheet

Basecoat

09/01/17

FOR PROFESSIONAL USE ONLY

VOC / Regulatory Information



Ready to spray VOC:

- Autowave mixed RTS 3.50 lbs/gal (<420 gr/lit)
- Autobase Plus RM Mid-Coat mixed RTS <3.50 lbs/gal (<420 gr/lit)

Notice: Do not handle until the Safety Data Sheets have been read and understood. Regulations require that all employees be trained on Safety Data Sheets for all chemicals with which they come in contact. The manufacturer recommends the use of an air-supplied respirator when exposed to vapors or spray mist.

Product Storage

- Product shelf-life is determined when products are stored unopened at 70°F (21 °C).
- Avoid too much temperature fluctuation.
 - For optimal performance, allow the ready to spray material to reach the application temperature before application
 - Maximum transport and storage temperatures between 36°F-95°F (2 °C and 35 °C).
 - Frozen Autowave toners causes gelling / lumps after which these toners can no longer be used.
- Please reference the Sikkens Shelf Life TDS for the shelf life limits for each Autowave component.

AkzoNobel 1845 Maxwell Street Troy, MI 48084 USA

Telephone: 800.618.1010

FOR PROFESSIONAL USE ONLY

IMPORTANT NOTE The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws: any person using the product for any purpose other than that specifically recommended in the technical data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. Always read the Safety Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing otherwise, we do not accept any liability whatsoever for the performance of the product or for any loss or damage arising out of the use of the product. All products supplied and technical advices given are subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to verify that this data sheet is current prior to using the product.

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