

2018 COLLISION**Paint And Coatings****SPECIFICATIONS****CLEARCOAT REPAIR SPECIFICATIONS - 3M PRODUCTS**

Paint Condition	Wet Sanding	Scratch Refinement	Compounding	Rotary Polisher	Dual Action Orbital Polisher	Hand Glazing/ Polishing
New vehicle prep or fine wheel marks	-	-	-	-	• Perfect-It 3000 Swirl Mark Remover P/N 06064 • Perfect-It Foam Polishing Pad P/N 05725/38 • Hookit DA 6-inch Backup Pad P/N 05776	• Perfect-It Wax P/N 39026/39526 • Detail Cloth P/N 06016
Swirl marks, water spotting, or light oxidation	-	-	-	• Perfect-It 3000 Swirl Mark Remover P/N 06064 • Perfect-It Foam Polishing Pad P/N 05725/38 • Hookit SBS/Perfect-it Backup Pad P/N 05717/18	• Perfect-It 3000 Swirl Mark Remover P/N 06064 • Perfect-It Foam Polishing Pad P/N 05725/38 • Hookit DA 6-inch Backup Pad P/N 05776	• Perfect-It 3000 Swirl Mark Remover P/N 06066 • Perfect-It III Foam DA Pad P/N 05729 • Detail Cloth P/N 06016 • Perfect-It Wax P/N 39026/39526

Paint Condition	Wet Sanding	Scratch Refinement	Compounding	Rotary Polisher	Dual Action Orbital Polisher	Hand Glazing/ Polishing
Overspray or medium oxidation	-	-	• Perfect-It III Cleaning Clay P/N 38070 • Perfect-It 3000 Rubbing Compound P/N 06060/62 • Superbuff III Buff Pad P/N 05703/04	• Perfect-It 3000 Swirl Mark Remover P/N 06064 • Perfect-It Foam Polishing Pad P/N 05725/38 • Hookit SBS/Perfect-it Backup Pad P/N 05717/18	• Perfect-It 3000 Swirl Mark Remover P/N 06064 • Perfect-It Foam Polishing Pad P/N 05725/38 • Hookit DA 6-inch Backup Pad P/N 05776	• Perfect-It 3000 Swirl Mark Remover P/N 06066 • Perfect-It III Foam DA Pad P/N 05729 • Detail Cloth P/N 06016 • Perfect-It Wax P/N 39026/39526
Heavy oxidation or minor acid rain pitting	Micro Fine 2000	-	• Perfect-It 3000 Rubbing Compound P/N 06060/62 • Superbuff III Buff Pad P/N 05703/04	• Perfect-It 3000 Swirl Mark Remover P/N 06064 • Perfect-It Foam Polishing Pad P/N 05725/38 • Hookit SBS/Perfect-It Backup Pad P/N 05717/18	• Perfect-It 3000 Swirl Mark Remover P/N 06064 • Perfect-It Foam Polishing Pad P/N 05725/38 • Hookit DA 6 in Backup Pad P/N 05776	• Perfect-It 3000 Swirl Mark Remover P/N 06066 • Perfect-It III Foam DA Pad P/N 05729 • Detail Cloth P/N 06016 • Perfect-It Wax P/N 39026/39526

Paint Condition	Wet Sanding	Scratch Refinement	Compounding	Rotary Polisher	Dual Action Orbital Polisher	Hand Glazing/ Polishing
Dust nibs, minor scratches, or major acid rain pitting	Micro Fine 1500 or 2000	• Trizact Hookit II Foam Disc 6 in 3000 P/N 02075 • Hookit II Soft Interface Pad 6 in P/N 05274 • Hookit II Painters Disc Pad 6 in P/N 05251	• Perfect-It 3000 Rubbing Compound P/N 06060/62 • Superbuff III Buff Pad P/N 05703/04	• Perfect-It 3000 Swirl Mark Remover P/N 06064 • Perfect-It Foam Polishing Pad P/N 05725/38 • Hookit SBS/Perfect-It Backup Pad P/N 05717/18	• Perfect-It 3000 Swirl Mark Remover P/N 06064 • Perfect-It Foam Polishing Pad P/N 05725/38 • Hookit DA 6 in Backup Pad P/N 05776	• Perfect-It 3000 Swirl Mark Remover P/N 06066 • Perfect-It III Foam DA Pad P/N 05729 • Detail Cloth P/N 06016 • Perfect-It Wax P/N 39026/39526
Orange peel, paint runs or sags	• Hookit II Film Disc 6 in P1200 P/N 00868 • Hookit II Film Disc 6 in P1500 P/N 000850 • Hookit II Painters Disc Pad P/N 05251	• Trizact Hookit II Foam Disc 6 in 3000 P/N 02075 • Hookit II Soft Interface Pad 6 in P/N 05274 • Hookit II Painters Disc Pad 6 in P/N 05251	• Perfect-It 3000 Rubbing Compound P/N 06060/62 • Superbuff III Buff Pad P/N 05703/04	• Perfect-It 3000 Swirl Mark Remover P/N 06064 • Perfect-It Foam Polishing Pad P/N 05725/38 • Hookit SBS/Perfect-It Backup Pad P/N 05717/18	• Perfect-It 3000 Swirl Mark Remover P/N 06064 • Perfect-It Foam Polishing Pad P/N 05725/38 • Hookit DA 6 in Backup Pad P/N 05776	• Perfect-It 3000 Swirl Mark Remover P/N 06066 • Perfect-It III Foam DA Pad P/N 05729 • Detail Cloth P/N 06016 • Perfect-It Wax P/N 39026/39526

INTRODUCTION

BASECOAT/CLEARCOAT PAINT SYSTEMS

WARNING: Exposure to isocyanates during paint preparation and application processes can cause severe breathing problems. Read and follow all of the instructions from the manufacturers of painting materials, equipment, and protective gear.

All paint finish repairs of rigid exterior surfaces must meet GM standards. Refer to the latest revision of the GM Approved Refinish Materials book to identify the paint systems you may use that have been engineered to meet GM standards. The GM Approved Refinish Materials book supplies all approved products, including volatile organic

compound (VOC) compliant regulations recommended by the individual manufacturer, and detailed procedures for materials used in their paint system.

The latest revision of the GM Approved Refinish Materials booklet is located on the Genuine GM Parts website at www.genuinegmparts.com.

ANTI-CORROSION TREATMENT AND REPAIR

Corrosion Preventative Paint (Chassis Coating) and Primer Coatings

NOTE: Always use these products according to their manufacturer's recommendations. Corrosion Resistant paint and primers will only function properly when mixed properly and when applied to a properly prepared metal surface. Always follow paint manufacturers recommendations for application and use of Corrosion Preventative Paint Products.

Corrosion Preventative Primers are also referred to as Direct to Metal or DTM primers. Extensive testing is done for corrosion resistance and adhesion of these products. Most paint manufacturers require a bare metal treatment chemical first be applied before the paint or primer product is applied. These coatings are very important to providing a properly prepared metal surface for the paint or primer to perform properly. The GM Approved Primers are listed in the GM Approved Refinish Materials book. The latest revision of the GM Approved Refinish Materials booklet is located on the GM Genuine Parts website at www.genuinegmparts.com.

Corrosion Preventative Paint Products are recommended for under-carriage areas like frames, drive line and suspension components that often show corrosion and need to be painted in the field. Any place where bare metal is exposed for any reason or where corrosion prevention is desired from a paint like product that will not likely be top coated with color can use this Corrosion Preventative Paint. A Phosphate metal treatment MUST be applied to the cleaned and dried surface that is free of corrosion scale. This Phosphate prep works well on both Aluminum and steel. While sandblasting can be performed for corrosion removal, it is not necessary for these products to work properly. Application of this product must be performed to Manufacturer's recommendations for them to work properly. See product listing below for Corrosion Preventative Paint Products.

Stock number	Type	Description
36500 or 36502	Kryptonite Solvent Based Chassis Coating	Solvent based rust protective coating for all areas of under vehicle corrosion protection on aluminum and steel.
25418	Pure Prep Phosphate Metal Treatment	Phosphate bare metal treatment for metal preparation of clean or oxidized metal surfaces, areas of under vehicle corrosion protection on aluminum and steel

Undercoating and Closed Cavity Coatings

WARNING: When applying sound deadeners, or anti-corrosion materials due care and preventative measures must be exercised to prevent any material from being sprayed into door and quarter panel mechanisms such as door locks, window run channels, window regulators and seat belt retractors, as well as any moving or rotating mechanical or suspension parts on the underbody, particularly the parking brake cable. After material application, be sure that all body drain holes are open. Improper application may increase chance of corrosion damage or limit the operation of moving parts, resulting in personal injury.

Any procedure that disturbs these special treatments, such as panel replacement or collision damage repair operations, may leave the metal unprotected and result in corrosion. Proper recoating of these surfaces with service-type anti-corrosion material is essential.

After repair and/or replacement parts are installed, all accessible bare metal surfaces must be treated with metal conditioner and re-primed. Refer to the GM Approved Refinish Materials book which identifies the paint systems you may use.

The latest revision of the GM Approved Refinish Materials booklet is located on the GM Genuine Parts website at www.genuinegmparts.com.

After a collision, some vehicle structure areas such as frame rails, cross-members and rocker panel sections may need to be repaired. In most cases, the anti-corrosion materials need to be removed to perform these repairs. These materials are classified into two types: Closed Cavity coatings and Undercoat coatings. The primary difference is the way the products set up or "dry". Both are intended to protect the surface they are applied to from corrosion caused by water, salt water or Magnesium Chloride blended de-icing compounds used to thaw icy winter roads. They also can provide a measure of sound deadening.

The Closed Cavity coatings remain sticky to the touch and will seep into seams initially and over extended periods of time. Closed Cavity coatings provide the best corrosion protection inside of rocker panel sections, pillar sections, frame rails, cross-members, doors, rear compartment lids and closed areas of hoods - anywhere that is concealed or closed off to exterior surfaces.

The Undercoat coatings are "dry to the touch" and offer the best corrosion protection and sound deadening for floor pans, wheelhouses, inside rear compartment and underhood areas - anywhere the coated surface is exposed.

Below is a listing of Undercoat coatings and Closed Cavity coatings that GM believes to be reliable. While others may exist, we have found these products, or equivalents to them, can be used with satisfactory results. Always use these products according to their manufacturer's recommendations.

The following products are available from *Automotive International/Valugard. Contact them at 1-800-543-7156, or at www.valugard.net

Stock number	Type	Description
VG-104	WAX/SOLVENT BASED UNDERCOAT	Traditional Wax/Solvent based Undercoating available in aerosol or spray gun canister Meets OE specifications for corrosion resistance
VG-076M	HYBRID (SOLV./WATER) UNDERCOAT	Meets OE specifications for corrosion resistance
VG-140	WATER BASED UNDERCOAT	Meets OE specifications for corrosion resistance
VG-101	WAX BASED CLOSED CAVITY COATING	Meets OE specifications for corrosion resistance
VG-UCG	CANISTER UNDERCOATING GUN	High quality undercoating gun uses canister packaging of undercoating
VG-CRG	CANISTER CLOSED CAVITY COATING GUN	High quality closed cavity coating gun uses canister packaging of coating and comes with 30 in inner panel application tube with nozzle

The following products are available through your local *3M[®] distributor. Information about 3M[®] product retailers in your area may be obtained at 1-866-364-3577 or at www.mmm.com/automotive.

Stock number	Type	Description
08804	No Cleanup Water-Based Undercoating - Black	Coarse texture SBR rubber and acrylic applied with 3M No-Cleanup Gun 08801
08964	No Cleanup High Coverage Body Schutz - Black	Smooth texture SBR rubber applied with 3M No-Cleanup Gun 08801
08882	17 oz aerosol Underseal [™] Undercoating - Black	Rubber based, paintable undercoating
08883	19.7 oz aerosol Rubberized Undercoating - Black	Synthetic polymer based undercoating
08801	No Cleanup Undercoating Gun	-
08744	Paintable Undercoating Water Based	Water based rubberized undercoating, applied with HGP gun
08747	Paintable Undercoating Pouch	Rubberized, paintable undercoating, applied with HGP gun
16587	Accuspray [™] HGP Spray Gun Kit	Designed for use with PPST [™] H/O Pressure Cups and high viscosity coatings
16121	PPST [™] H/O Pressure Cups	Pressurized cups to efficiently spray thick, high viscosity coatings
08852	Cavity Wax Plus	Aerosol spray, corrosion protection, reflows into cracks and crevices while remaining soft and pliable

Stock number	Type	Description
08851	Cavity Wax Plus Applicator Wand Kit	Applicator wands ensure 360° coverage in closed cavities

The following products are available from *Crest Industries, Inc. at 1-800-822-4100 or www.crestauto.com.

Stock number	Type	Description
AH-C	HONEY COAT/WAX BASED CLOSED CAVITY COATING	16.5 OZ AEROSOL CAN AMBER COLORED SEEPS INTO CREVICES AND REMAINS PLIABLE 36 in spray wand with 360 degree nozzle available (WA-HC)
BZ-BAC BZ-BACB	AMBER COAT/WAX BASED CLOSED CAVITY COATING	GALLON - AMBER COLORED (BZ-BAC) OR BLACK (BZ-BACB) SEEPS INTO CREVICES AND REMAINS PLIABLE APPLIED WITH WZ-GRP GUN AND SIPHON HOSE Flexible spray wand also available (WA-ND)
AC-R	RUBBER COAT/RUBBER BASED UNDERCOATING, PAINTABLE	17.75 OZ AEROSOL
AR-C	SUPER RUBBER COAT/LOW V.O.C. RUBBER BASED UNDERCOATING, PAINTABLE	17.75 OZ AEROSOL
BA-C	AUTO COAT/RUBBER BASED UNDERCOATING, PAINTABLE	28.7 FL OZ CONE-TOP CAN AND GALLON APPLIED WITH GU-C UNDERCOATING GUN
GU-C	UNDERCOATING GUN	ATTACHES TO BA-C CONE-TOP CAN
WZ-GRP	GUN AND SIPHON HOSE	USED WITH BZ-BAC AND BZ-BACB
WA-ND	FLEXIBLE SPRAY WAND	USED WITH WZ-GRP

The following products are available from *Kent Automotive. Contact them at 1-888-YES-KENT (888-937-5368) or at www.kent-automotive.com.

Stock number	Type	Description
P60305	Wax Based Inner Panel Rustproofer - CLOSED CAVITY COATING	24 oz Aerosol (can apply with 36 in wand and 360 degree nozzle kit)
KT14912	Rubber Guard Low VOC Rubber Based Undercoating	24 oz Aerosol (can apply with 36 in wand and 360 degree nozzle kit)
KT14725	Aerosol Extension Wand Kit	36 in wand and 360 degree nozzle
KT14796	Rubber Guard Low VOC Rubber Based Undercoating	QUART - Applied with undercoating gun
P30025	Siphon Feed Gun	-
P86079	360 Degree Wand for siphon feed gun	-

*We believe these sources and their products to be reliable. There may be additional manufacturers of such material. General Motors does not endorse, indicate any preference for or assume any responsibility for the products from these firms or for any such items which may be available from other sources.

Seam Sealers

Sealers are intended to prevent water and dust from entering the vehicle and also are anti-corrosion barriers. Sealers are applied to such areas as rear compartment lid hem flanges, wheelhouse, quarter outer, floor, cowl, roof, and various other panel to panel attaching points. The originally sealed joints are obvious and any damage to these sealed locations should be corrected by resealing. Attaching points of new replacement panels should be resealed. Replacement lids and doors will also require sealing in the hem flange areas.

Flanged joints, overlap joints, and seams should be sealed using a quality sealer of medium-bodied consistency. The sealer used must retain its flexible characteristics after curing and be paintable.

Open joints which require bridging of the sealer in order to close a gap should be sealed using a heavy-bodied caulking material. Follow the label directions for the material selected.

Color application may be required in order to restore repaired areas such as hood, fenders, doors, quarters, lid, roof, engine compartment, underbody, and inner panels to original appearance. When this is necessary, conventional refinishing preparation, undercoat buildup, and color application techniques should be followed.

Deadener materials, spray-on type, are used on various metal panels in order to provide corrosion resistance and joint sealing. They control the general noise level inside the passenger area of the vehicle. When deadeners are disturbed because of damage, are removed during repair operations, or a new replacement panel is installed, the deadener material must be replaced by a service equivalent material. The application pattern and location of deadener materials can be determined by observing the original production installation.

Cleaning of the interior and underbody panel surfaces is necessary when original galvanized or other anti-corrosion materials have been burned off during welding or heating operations. Removal of the residue from burning will require additional care in such areas as interior surfaces of box-type construction and when configurations of the metal panels limit access to interior surfaces.

PAINT IDENTIFICATION

WARNING: Exposure to isocyanates during paint preparation and application processes can cause severe breathing problems. Read and follow all of the instructions from the manufacturers of painting materials, equipment, and protective gear.

NOTE: Always refer to the GM Approved Refinish Materials book. This book identifies the paint systems you may use.

The latest revision of the GM Approved Refinish Materials booklet is located on the Goodwrench website at www.gmgoodwrench.com.

Use the service parts identification label to identify the type of paint technology, paint codes, trim level, and any special order paint colors on the vehicle. Refer to [Vehicle Certification, Tire Placard, Anti-Theft, and Service Parts ID Label](#).

REPAIR INSTRUCTIONS

CLEARCOAT REPAIR WITHOUT REPAINTING

Repair Procedure

1. Thoroughly wash the repair area with Liquid Wash and Wax GM P/N 1052870 or the equivalent.
2. Environmental damage may be corrected. Refer to [Environmental Fallout \(Acid Rain\)](#), or [Rail Dust Damage Repair](#).

IMPORTANT: Follow all of the instructions from the manufacturer of the polishing material.

3. Use a paint gauge before, during, and after sanding and/or polishing, to avoid removing too much clearcoat. Refer to [Paint Gauges](#).

ENVIRONMENTAL FALLOUT (ACID RAIN)

CAUTION: Refer to [Clearcoat/Ultraviolet Screeners Caution](#).

NOTE: Always refer to the manufacturer's packaged instructions for the detailed procedures of materials used for compounding and/or polishing.

Since the severity of the condition varies from area to area, proper diagnosis of the contamination extent is critical to the success of the repairs. Perform the diagnosis under high intensity fluorescent lighting on the horizontal surfaces (hood, roof panel, rear compartment lid), after the surfaces have been properly cleaned by washing the vehicle with GM Wash and Wax GM P/N 1237841 (Canadian P/N 10953203), or equivalent.

There are 3 basic types of acid rain damage:

Surface Level Contamination

May be repaired by simply washing the vehicle, cleaning the surface with a silicone wax and grease remover, neutralizing acidic residue, and finesse polishing - Refer to Surface Level Contamination Repair.

Clearcoat Etching

Slight etching is still noticeable after the above washing and finesse polishing procedure. Refer to Slight Clearcoat Damage - Wet Sanding, Finesse Polishing.

Basecoat Etching

Severe etching beyond the clearcoat into the basecoat in the affected areas will require refinishing. Refer to [Basecoat/Clearcoat Paint Systems](#).

Surface Level Contamination Repair

1. Thoroughly wash and dry the contaminated area with GM Wash and Wax GM P/N 1237841 (Canadian P/N 10953203), or equivalent.
2. Clean the affected area with silicone, wax and grease remover.
3. Remove and neutralize acidic residue by cleaning the contaminated areas with a mixture of baking soda and water (1 tablespoon of baking soda per 1 liter or 1 quart of water). Rinse thoroughly and dry the panel completely.
4. Apply finesse-type polish with a foam panel. If damage has been repaired, remove any swirl marks with a dual action orbital polisher and foam pad. Refer to [Clearcoat Repair Specifications - 3M Products](#).
5. If some damage remains, refer to Slight Clearcoat Damage - Wet Sanding, Finesse Polishing.

Slight Clearcoat Damage - Wet Sanding, Finesse Polishing

1. Select a small contaminated test area.
2. Film thickness should be taken prior to the sanding and polishing. Refer to [Paint Gauges](#).
3. Wet sand and finesse polish the contaminated test area. Refer to [Clearcoat Repair Specifications - 3M Products](#). If during the polishing you suspect or observe that etching has penetrated into the basecoat, too much clearcoat has been removed during sanding, or base color is transferred to the polishing pad during polishing, then the affected areas will require refinishing. Refer to [Basecoat/Clearcoat Paint Systems](#).

PAINT GAUGES

Paint thickness gauges measure the total thickness of the vehicle finish. It is important to accurately measure the thickness of the finish on each vehicle as the thickness of the finish will vary on each vehicle. Use a paint gauge before the sanding process in order to accurately measure how much finish there is to remove before, during, and after the sanding process. Paint gauges range from magnetic pull type to sophisticated electronic types, and are available from a variety of sources. The older magnetic type gauges, at best have a 5 percent accuracy range and are not sensitive enough to detect removal of 0.02 mm 0.5 mil (0.0005 in) clearcoat. The newer type magnetic gauges have improved accuracy ranges. Most gauges are confined to checking either ferrous metal, steel, non-ferrous metal, or aluminum panel. At this time, there are no viable gauges for reading film thickness on composite (SCM doors, RIM fenders) panels. The more sophisticated (ETG) electronic paint thickness gauges digital type gauges are able to read film thickness on both ferrous and non-ferrous metal panel. Digital ETG gauges may have an accuracy range of 1 percent and include thickness standards for recalibration. The following paint thickness gauges are available. Call 1-800-GM-TOOLS for information:

Paint Thickness Gauges

- 147-5437-ETG Standard model
- 147-5437-ETG-P Standard model with print option
- 147-5437-N-ETG-N Non-ferrous model for aluminum panels
- 147-5437-NP-ETG-NP Non-ferrous model with print option
- 147-54437-SD-ETG Steel and aluminum gauge

CLEARCOAT THICKNESS

The clearcoat on the vehicle is typically 0.059 - 0.078 mm (1.5 - 2 mils [0.0015 - 0.0020 in]) thick. The clearcoat contains ultraviolet screeners. Removing more than 0.5 mils (0.019 in) of the clearcoat may result in early paint failure.

RAIL DUST DAMAGE REPAIR

WARNING: Refer to [Eye Protection Warning](#) .

NOTE: If rail dust has penetrated into the basecoat, the panel requires refinishing. Ensure all the rail dust has been removed prior to refinishing or the rust spots will return.

Rail dust damage comes from the tiny iron particles produced from the friction between the train wheels and the track. It can also be deposited on vehicles if stored near any operation producing iron dust (i.e., steel ore yards). This dust can either lay on top of, or embed into the paint surface. It is usually diagnosed as bumps in the paint surface or rust colored spots in the paint.

1. Move the vehicle to a cool shaded area and ensure the vehicle surfaces are cool during the removal process.
 2. Thoroughly wash the repair area with Liquid Wash and Wax GM P/N 1052870, or equivalent.
 3. Wipe the area dry.
 4. Clean the affected area with silicone, wax and grease remover.
 5. Perform the removal process according to the manufacturer's directions of the type of repair material used (Gel Type Oxalic Acid or Clay Type Non-Acid Based). If, upon inspection, some particles are still present, the process may be repeated. If the damage has been repaired, complete the repair to the entire panel.
 6. Polish the entire panel after the removal process. Refer to [Clearcoat Repair Specifications - 3M Products](#). If small pits remain in the clearcoat after all of the damage has been repaired, refer to [Clearcoat Repair without Repainting](#).
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