

3M™ Surface Pre-Treatment AC-130

Product Description

3M™ Surface Pre-Treatment AC-130 and AC-130-2 are high-performance surface preparations for adhesive bonding. As sol-gel preparations, 3M AC-130 Pre-Treatment products promote enhanced adhesion as a result of the chemical interaction at the interfaces between the metal and the 3M AC-130 Pre-Treatment (sol-gel) and the 3M AC-130 Pre-Treatment and the primer.

Common surface preparation techniques such as phosphoric acid anodizing (PAA) or sulfuric acid-sodium dichromate etchings are used to provide acceptable surfaces for bonding. These hazardous materials and waste produced by these procedures are both environmentally and economically undesirable. 3M AC-130 Pre-Treatment provides an excellent environmentally friendly alternative to achieve the high performance required.

When used with the leading adhesive primers and adhesives, 3M AC-130 Pre-Treatment provides an economical and environmentally superior alternative to more costly and hazardous processes. The product may be applied by brush, spray, or dip. Simply, 3M AC-130 Pre-Treatment is applied to surfaces at ambient drying conditions and then primed prior to bonding.

Long-term durability of adhesion to metal has been demonstrated. Data reveals 3M AC-130 Pre-Treatment provides equivalent or better moisture durability than many of the currently used surface preparations for on-aircraft repairs.

Testing by the wedge test described in ASTM D3762 on aluminum substrates shows that 3M AC-130 Pre-Treatment performs comparatively to the more traditional grit-blast silane procedure. When grit-blast is used with the 3M AC-130 Pre-Treatment, the sol-gel process has shown wedge test results similar to PAA (Phosphoric Acid Anodizing). The grit-blast and 3M AC-130 Pre-Treatment process also provided acceptable test results on titanium, stainless steel, and nickel alloys in the same test compared to standard controls.

3M AC-130 Pre-Treatment also performs similarly to PAA in tensile lap shear and floating roller peel tests at a variety of temperatures. The grit-blast process has been shown to provide a more durable bond than the nylon pad process in the wedge test at 60°C and 95-100% RH. However, the nylon pad process provides end-users with a process that exceeds the performance of the grit-blast silane surface preparation, is quicker to perform in the field, and does not require the painstaking containment and subsequent cleaning of residual grit.

Surface Preparation

3M™ Surface Pre-Treatment AC-130 may be applied to surfaces after manually deoxidizing the surface by either 1) grit blasting; 2) sanding with #180 or finer sandpaper, or 3) Scotch-Brite™ pad abrasion. The success of the bonding operation relies on the thorough de-oxidation and preparation of the metal surface.

Patents

5,958,578	5,939,197	5,869,140
5,869,141	5,849,110	5,814,137
6,037,060		

Typical Physical and Application Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Color	As mixed, it is slightly cloudy un-tinted
Induction Time	30 minutes
Pot Life	10 Hours after mixing

Standard Package Sizes and Coverage

Kit Designation	Coverage	
	Square Feet	Square Meters
50ml Kit	2.5	0.23
100ml Kit	5.0	0.50
500ml Kit	25	2.3
1000ml Kit	50	4.6
1,500ml Kit	75	6.9
Gallon Kit	189	17.4

Available Product Configurations

3M™ Surface Pre-Treatment AC-130	4-Part, Clear
3M™ Surface Pre-Treatment AC-130-2	2-Part, Clear



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Typical Application Technique

Prepare 3M™ Surface Pre-Treatment AC-130 in accordance with instructions. Scale up for size of part and the method of spray application as necessary. Application rate is approximately 1 liter of 3M AC-130 Pre-Treatment per 50 square feet of surface to be coated.

Spray Application

Apply 3M™ Surface Pre-Treatment AC-130 coating solution by spray-drenching the part surface. Spray solution generously, allowing excess to run off of the part surface. Keep part surface continuously wet with the solution for a minimum of 1 minute. Part surfaces must not be allowed to dry and should be drenched with fresh solution at least 1 time during the application period. Ensure treated surface does not dry between spray coats. Larger surface areas may require being coated in sections.

Allow coated part to drain for 5 to 10 minutes. If there is any surplus 3M AC-130 Pre-Treatment that has pooled or collected in crevices, pockets, or other collection areas, including drip edges or fastener holes, use filtered compressed air to blow off excess solution while maintaining a wet surface. Do not splatter this excess solution onto adjoining part surfaces. A cloth pre-wetted with 3M AC-130 Pre-Treatment may be used to gently blot, not rub, the surface of pooled solution. Do not blow dry areas of the part that are able to freely drain

Brush Application

Apply fresh 3M™ Surface Pre-Treatment AC-130 liberally by brushing with a clean natural bristle brush or swabbing with a clean wiper, cheesecloth or gauze. Do not scrub with a brush or applicator. Apply solution generously, keeping the part surface continuously wet with the solution for a minimum period of 1 minute. Part surface should be drenched with solution. Brushes or wipers should not leave streaks on the surface. Part surfaces must not be allowed to dry and should be wetted with fresh solution at least one time during the solution application process.

Allow coated part to drain for 5 to 10 minutes. If there is any surplus 3M AC-130 Pre-Treatment that has pooled or collected in crevices, pockets, or other collection areas, including drip edges or fastener holes, use filtered compressed air to blow off excess solution while maintaining a wet surface. Do not splatter this excess solution onto adjoining part surfaces. A cloth pre-wetted with 3M AC-130 Pre-Treatment may be used to gently blot, not rub, the surface of pooled solution. Do not blow dry areas of the part that are able to freely drain.

Dry/Cure of 3M™ Surface Pre-Treatment AC-130

Dry the solution-coated parts under ambient conditions for a minimum of 60 minutes. Minimize contact with the part, as the coating may be easily damaged or contaminated until fully cured. Exact drying time will vary depending on configuration of the part and ambient conditions. Alternately, after drying at ambient temperature for a minimum of 30 minutes parts may be heated to 140°F maximum for an additional 30 minutes minimum to facilitate drying. After drying, coated surfaces should be protected from contamination prior to applying the bonding primer.

Health and Safety Precaution

3M™ Surface Pre-Treatment AC-130 is safe to use and apply when recommended precautions are followed. Before using this product, read and understand the Material Safety Data Sheet (MSDS), which provides information on health, physical and environmental hazards, handling precautions and first aid recommendations. An MSDS is available on request.

Storage

The shelf life of 3M™ Surface Pre-Treatment AC-130 and AC-130-2 is 12 months from date of packaging, when stored in the original unopened containers between 40°F and 100°F.

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For Additional Information

In the U.S., call toll free 1-800-235-2376, or fax 1-800-435-3082 or 651-737-2171. For U.S. Military, call 1-866-556-5714. If you are outside of the U.S., please contact your nearest 3M office or one of the following branches:

Australia 61-2-498-9711 tel 61-2-498-9710 fax	Austria 01-86686-298 tel 01-86686-229 fax	Brazil 55 19 3838-7876 tel 55 19 3838-6892 fax	Canada 800-410-6880 ext. 6018 tel 800-263-3489 fax
China 86-21-62753535 tel 86-21-62190698 fax	Denmark 45-43-480100 tel 45-43-968596 fax	France 0810-331-300 tel 30-31-6195 fax	Germany 02131-14-2344 tel 02131-14-3647 fax
Italy 02-7035-2177 tel 02-7035-2125 fax	Japan 03-3709-8245 tel 03-3709-8743 fax	Korea 02-3771-4114 tel 02-786-7429 fax	Netherlands 31-71-5-450-272 tel 31-71-5-450-280 fax
South Africa 11-922-9111 tel 11-922-2116 fax	Spain 34-91-321-6000 tel 34-91-321-6002 fax	Switzerland 01-724-9114 tel 01-724-9068 fax	United Kingdom (0) 161-237-6174 tel (0) 161-237-3371 fax

Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

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These products were manufactured under a 3M Quality Management System registered to the AS9100 standard.



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60-9700-0317-8

