



Using DurAlloy®

Repair & Rebuilding Polymer Composite / Fully Machineable.

PLEASE READ THESE INSTRUCTIONS AND SAFETY DATA SHEET (SDS) CAREFULLY PRIOR TO USE

METALCLAD® DurAlloy® is a two-component, 100% solids, multi-purpose polymer composite which can be easily machined on a lathe, drilled, tapped, filed, sanded and polished.

When properly mixed, METALCLAD® DurAlloy® is a non-sagging paste which quickly cures to a metal-hard material creating a permanent bond to any rigid surface such as metal, plastic, glass, wood, concrete and more.

SURFACE PREPARATION

METALCLAD® DurAlloy® should be applied only to clean, dry and well roughened surfaces.

1. Remove all loose material and surface contamination.
2. Clean with a suitable solvent which leaves no residue on the surface after evaporation such as acetone, MEK, isopropyl alcohol, etc.
3. If necessary, apply moderate heat to remove ingrained oil and clean again with solvent.
4. Roughen surface by abrasive blasting, grinding, rotary file or other appropriate means.

Note: In situations where adhesion is not desired, such as when making molds and patterns or to ease future disassembly, apply a suitable release agent (mold release compound, paste wax, etc.) to the appropriate surfaces.

MIXING AND APPLICATION

For your convenience, the METALCLAD® DurAlloy® Base and Activator have been supplied in precisely measured quantities to simplify mixing of full units. Should a small amount of material be required, measure out 3 parts Base and 1 part Activator by volume (3:1, v:v) on a clean mixing surface. Keep Base and Activator separated until ready to mix and apply.

Using a spatula, putty knife or other appropriate tool, mix thoroughly until all streaks disappear, resulting in a uniform color and consistency. Spread material out in a thin layer over the mixing surface to force out any trapped air. This procedure will also maximize working time.

Some applications such as holed pipes or tanks and cracked casings may require the use of reinforcement tape to bridge the damaged area(s) followed by the application of additional material to completely cover the reinforcement tape.

Technical Data

Volume capacity per kg.	25 in ³ / 410 cc	
Mixed density	0.088 lbs per in ³ / 2.44 gm per cc	
Coverage rate per kg. @ 0.25 in / 6 mm	100 in ² / 0.064 m ²	
Shelf life	Indefinite	
Volume solids	100%	
Mixing ratio	Base	Activator
By volume	3	1
By weight	5	1

Working Life & Cure Times

Ambient Temperature	Working Life	Machining Light Load	Full Mechanical	Chemical Immersion
41°F 5°C	40 min	24 hrs	96 hrs	7 days
59°F 15°C	25 min	5 hrs	48 hrs	3 days
77°F 25°C	20 min	2 hrs	24 hrs	2 days
86°F 30°C	15 min	1.5 hrs	16 hrs	1 day

Physical Properties

Typical Values	Test Method
Compressive strength 13,500 psi 945 kg/cm ²	ASTM D-695
Flexural strength 9,500 psi 665 kg/cm ²	ASTM D-790
Izod impact strength 1.2 ft lbs/in 0.69 j/cm	ASTM D-256
Hardness - Shore D 86	ASTM D-2240
Tensile Shear Adhesion	
Steel 3600 psi 252 kg/cm ²	ASTM D-1002
Aluminum 2000 psi 140 kg/cm ²	ASTM D-1002
Copper 3000 psi 210 kg/cm ²	ASTM D-1002
Stainless steel 3500 psi 245 kg/cm ²	ASTM D-1002
Surface resistivity 1 x 10 ¹⁵ ohms	ASTM D-257
Volume resistivity 1 x 10 ¹⁵ ohm/cm	ASTM D-257
Dielectric constant 7.5	ASTM D-150

Chemical Resistance

Acetic acid (0-10%) EX	Methyl alcohol G
Ammonium hydroxide (0-10%) EX	Mineral oil EX
Aviation fuel EX	Nitric acid (0-10%) EX
Butyl alcohol EX	Nitric acid (10-20%) G
Calcium chloride EX	Phosphoric acid (0-10%) G
Crude oil EX	Potassium chloride EX
Diesel fuel EX	Propyl alcohol EX
Ethyl alcohol G	Sodium chloride EX
Gasoline EX	Sodium hydroxide EX
Heptane EX	Sulfuric acid (0-10%) EX
Hydrochloric acid (0-10%) EX	Sulfuric acid (10-20%) G
Hydrochloric acid (10-20%) G	Toluene G
Kerosene EX	Xylene EX

EX - Suitable for most applications including immersion.
G - Suitable for intermittent contact, splashes, etc.

HEALTH & SAFETY

Every effort is made to insure that ENECON® products are as simple and safe to use as possible. Normal industry standards and practices for housekeeping, cleanliness and personal protection should be observed. For further information and guidance, please refer to the detailed MATERIAL SAFETY DATA SHEETS (MSDS) supplied with the material and also available on request.

CLEANING EQUIPMENT

Wipe excess material from tools immediately. Use acetone, MEK, isopropyl alcohol or similar solvent as needed.

TECHNICAL SUPPORT

The ENECON® engineering team is always available to provide technical support and assistance. For guidance on difficult application procedures or for answers to simple questions, call your local ENECON® Fluid Flow Systems Specialist or the ENECON® Engineering Center.

All information contained herein is based on long term testing in our laboratories as well as practical field experience and is believed to be reliable and accurate. No condition or warranty is given covering the results from use of our products in any particular case, whether the purpose is disclosed or not, and we cannot accept liability if the desired results are not obtained.

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