



## 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 <sup>3</sup> / 410 cc	
Mixed density	0.088 lbs per in <sup>3</sup> / 2.44 gm per cc	
Coverage rate per kg. @ 0.25 in / 6 mm	100 in <sup>2</sup> / 0.064 m <sup>2</sup>	
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 <sup>2</sup>	ASTM D-695
Flexural strength	9,500 psi	665 kg/cm <sup>2</sup>	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 <sup>2</sup>	ASTM D-1002
Aluminum	2000 psi	140 kg/cm <sup>2</sup>	ASTM D-1002
Copper	3000 psi	210 kg/cm <sup>2</sup>	ASTM D-1002
Stainless steel	3500 psi	245 kg/cm <sup>2</sup>	ASTM D-1002
Surface resistivity	1 x 10 <sup>15</sup> ohms		ASTM D-257
Volume resistivity	1 x 10 <sup>15</sup> 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.



ENECON products are manufactured under an ISO 9001 Registered Quality Management System.

### **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.

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