METALCLAD® DurAlloy®

Repairs to all types of equipment, including in-place shaft repairs...

- Machinable
- Trowelable
- Requires No Heat
- Unlimited Shelf Life
- 100% Solids
- Safe & Simple 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.
Tensile Shear Adhesion

Stainless steel 3500 psi 245 kg/cm² ASTM D-1002

Volume resistivity 1 x 10¹² ohm/cm ASTM D-257

Surface resistivity 1 x 10¹⁰ ohms ASTM D-257

Acetic acid (0-10%) ........ EX Methanol .............. 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.

Physical Properties

Typical Values

Compressive strength 13,500 psi 945 kg/cm² ASTM D-695
Flexural strength 9,500 psi 665 kg/cm² 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/cm² ASTM D-1002
Aluminum 2000 psi 140 kg/cm² ASTM D-1002
Copper 3000 psi 210 kg/cm² ASTM D-1002
Stainless steel 3500 psi 245 kg/cm² ASTM D-1002

Surface resistivity 1 x 10¹² ohms ASTM D-257
Volume resistivity 1 x 10¹⁰ ohm/cm ASTM D-257
Dielectric constant 7.5 ASTM D-150

Technical Data

Volume capacity per kg. 25 in³ / 410 cc
Mixed density 0.088 lbs per in³ / 2.44 gm per cc
Coverage rate per kg. @ 0.25 in / 6 mm 100 in² / 0.064 m²
Shelf life Indefinite
Volume solids 100%

Mixing ratio By volume 3 : 1 Base : Activator
By weight 5 : 1

Working Life & Cure Times

Temperature Ambient Working Life Machining/ Load Full Mechanical Chemical Immersion

41°F 5°C 40 min 1 day 4 days 7 days
59°F 15°C 25 min 5 hrs 2 days 3 days
77°F 25°C 20 min 2 hrs 1 day 2 days
86°F 30°C 15 min 1.5 hrs 16 hrs 1 day

Chemical Resistance

Surface Preparation - METALCLAD® DurAlloy® should only be applied 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 & 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 three parts Base and one 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.

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. Please refer to the detailed SAFETY DATA SHEETS (SDS) supplied with the material (also available on request) for more information.

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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