ENECON®

Using DuraTough® DP

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

FLEXICLAD® DuraTough™ DP is a two component, 100% solids elasto-ceramic Polymer composite specifically formulated to rebuild equipment prone to cavitation attack and subsequent damage. DuraTough™ DP combines the superior strength, durability and adhesion of an epoxy with the exceptional flexibility, abrasion resistance and shock-absorbency of an elastomeric urethane.

FLEXICLAD® DuraTough™ DP is ideal for rebuilding cavitated areas as well as creating or rebuilding flexible seals, gaskets, seats, etc., on machinery and equipment such as heat exchangers, pumps, valves and piping systems.

SURFACE PREPARATION

FLEXICLAD® DuraTough™ DP should only be applied to clean, firm, dry, and well roughened surfaces.
1. Removes all loose material and surface contamination and clean with a suitable solvent which leaves no residue on the surface after evaporation such as acetone, MEK, isopropyl alcohol, etc..

2. Clean / roughen surface by abrasive blasting.

3. If necessary, apply moderate heat and/or allow the component(s) to "leach" to remove ingrained contaminants.

4. Thoroughly roughen surfaces by abrasive blasting to achieve a 'white metal' degree of cleanliness and an anchor pattern of 3 mils.

***Please 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.*

PRIMING THE SURFACE

FLEXICLAD® Primer is supplied in each kit of DuraTough™ DP. After removing the divider, combine the Primer Base and Activator in the clear plastic packet, mixing until a uniform, streak-free color is obtained. Apply the Primer using a brush; be sure to "stipple" the rough areas to insure complete coverage (wetting) of all exposed surfaces.

Primer Working Life & Overcoat Window

Ambient Temperature		Working Life	Maximum Overcoating
41°F	5°C	4 hr	24 hrs
59°F	15°C	90 min	16 hrs
77°F	25°C	30 min	10 hrs
86°F	30°C	20 min	6 hrs

MIXING AND APPLICATION

Stir the Activator thoroughly to completely liquify it before mixing the two components together. For your convenience, the FLEXICLAD® DuraTough™ DP Base and Activator have been supplied in precisely measured quantities. However, should smaller quantities be desired, measure out 4 parts Base to 1 part Activator by volume (4:1, v/v) on a clean mixing surface and, using a spatula, putty knife or other appropriate tool, mix thoroughly until the DuraTough™ DP reaches a uniform, streak-free color.

Apply the mixed material to the prepared and Primed area using a flexible applicator, putty knife, etc., pressing down well to force out any entrapped air and insure intimate contact with the surface.

Technical Data

Volume capacity per ½ kg.	25.7 in^3 / 438 cc	
Mixed density	0.041 lbs per in^3 / 1.14 gm per cc	
Coverage rate per ½ kg @ 0.254 in / 6 mm.	100 in^2 / 0.06 m^2	
Shelf life	2 years	
Volume solids	100%	
Mixing ratio	Base	Activator
By volume	4	1
By weight	4	1

Working Life & Cure Times

Ambient Temperature		Working Life	Initial Set	Maximum Overcoating	Full Cure
41°F	5°C	150 min	6 hrs	12 hrs	5 days
59°F	15°C	2 hrs	3 hrs	8 hrs	4 days
77°F	25°C	1hr	2 hrs	6 hrs	3 days
86°F	30°C	45 min	90 mins	4 hrs	36 hrs

Physical Properties

	Typical Values		Test Method
Hardness - Shore D	50		ASTM D-2240
Tensile Shear Adhesion			
Steel	1000 psi	70 kg/cm^2	ASTM D-1002
Aluminum	950 psi	67 kg/cm^2	ASTM D-1002
Copper	900 psi	63 kg/cm^2	ASTM D-1002
Stainless steel	850 psi	60 kg/cm^2	ASTM D-1002
Peel Adhesion	-greater than 40 pli		ASTM D-1876
Comparative Cavitation Resistance -Frequently: 20 KHZ; amplitude: 0.001 inches			ASTM G-32
316 Stainless ste	60 microns		CMDE*
DuraTough™ DP	100 microns		CMDE*
Carbon Steel	240 microns		CMDE*

*Cumulative Mean Depth of Erosion

Chemical Resistance

Acetic acid (10%)	NR	Methanol	NR
Ammonium hydroxide (10%)	G	Mineral oil	G
Ammonium hydroxide (30%)	NR	Oxalic acid	G
Butyl cellosolve	NR	Phosphoric acid (10%)	G
Ethanol	NR	Phosphoric acid (50%)	NR
Ethanol glycol	G	Sodium hydroxide (10%)	EX
Hexane	G	Sodium hydroxide (50%)	EX
Hydrochloric acid (10%)	G	Sulfuric acid (10%)	G
Isoprophyl alcohol	G	Toluene	NR
MEK	NR	Trichloroethylene	NR

EX - Suitable for most applications including immersion.
G - Suitable for intermittent contact, splashes, etc.
NR- Not Recommended

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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