



## 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.

For detailed information regarding overcoating times, which vary depending on application temperatures, please refer to the appropriate section of the FLEXICLAD® DuraTough™ DP Instruction Sheet.

### 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 <sup>3</sup> / 438 cc	
Mixed density	0.041 lbs per in <sup>3</sup> / 1.14 gm per cc	
Coverage rate per ½ kg @ 0.254 in / 6 mm.	100 in <sup>2</sup> / 0.06 m <sup>2</sup>	
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 <sup>2</sup>	ASTM D-1002
Aluminum	950 psi 67 kg/cm <sup>2</sup>	ASTM D-1002
Copper	900 psi 63 kg/cm <sup>2</sup>	ASTM D-1002
Stainless steel	850 psi 60 kg/cm <sup>2</sup>	ASTM D-1002
Peel Adhesion	-greater than 40 pli	ASTM D-1876
Comparative Cavitation Resistance		ASTM G-32
-Frequently: 20 KHZ; amplitude: 0.001 inches		
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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