# ULTRA-BUILD
## Ceramic Carbide Putty

**PRODUCT DATA SHEET**

### GENERAL DESCRIPTION

**DUROMAR ULTRA-BUILD** is a rugged, durable, trowel grade product filled with ceramic beads and other abrasion resistant fillers. It is used primarily in areas where abrasion resistance to both small and coarse slurries are required over large areas.

It is typically used in the mining industry on chutes, hoppers, classifiers or mills. It can be built up to 2" in thickness or more in a single coat.

### FEATURES

- Good chemical and thermal resistance
- Outstanding resistance to abrasion
- Long term flexibility
- Good resistance to cavitation

### PACKAGING

1 kg, 4 kg and 11 kg units

### COVERAGE

**ULTRA-BUILD** has the consistency of a heavy paste and can be applied up to 2000 mils per coat. Theoretical coverage at 250 mils is 115 sq. in. per kg.

### MIXING RATIO

3 parts base (B) to 1 part (A) hardener by weight

2.6 parts base (B) to 1 part (A) hardener by volume

### POT LIFE

For a 1 kg unit, mix at 70ºF (21$^{O}$C),pot life is approximately 35 minutes. Higher temperatures or larger mass will shorten this time, lower temperatures or smaller mass will extend it. Pot life can also be extended by spreading the mass out to dissipate heat.

### COLORS

**ULTRA-BUILD** is black in color.

### TECHNICAL DATA AND INFORMATION

Basic Chemical Resistance at Room Temperature:

| | |
|---|---|
| Inorganic Acids | Very Good |
| Organic Acids | Good |
| Solvents | Fair |
| Alkalis | Very Good |
| Salts | Very Good |
| Alcohols | Good |
| Hydrocarbons | Good |

Typical Physical Properties of Cured System:

| | |
|---|---|
| Density | 2.12 |
| % Solids | 100 |
| Flexural Strength @70ºF (21$^{O}$C) | 17,000 psi(117MPa) |
| Tensile Strength @70ºF (21$^{O}$C) | 9,000 psi(62.05MPa) |
| Tensile Shear @ 70ºF (21$^{O}$C) | 1,500 psi(10.34MPa) |
| Max. Dry Operating Temp | 500ºF (260$^{O}$C) |
| Operating pH Range | 2.0-14.0 |

### SURFACE PREPARATION

- For maximum adhesion, material should be applied to a firm, clean, dry and abraded surface.
- Best results will be obtained by abrasive blasting the surface.
- If blasting is impractical, a grinding wheel, needle gun, or very stiff wire brush may be used.
- Clean greasy, oily or waxed surfaces with suitable solvent before applying material.

### MIXING

Mix ALL of Part A with ALL of Part B. Mixing may be done in a container large enough to hold both the base and hardener. The selected container must be clean and dry. Mix the material thoroughly until no streaks of any kind are visible. If materials are cold, warm them to 70ºF(21$^{O}$C), before mixing.

### CLEANUP

Most solvents and commonly used thinners such as MEK, acetone, xylene, I,I,I trichloroethane, and safety solvents such as Ensolv, etc., can be used for cleaning tools and equipment. However, as many of these materials are flammable or present other safety hazards, the user should read the MSDS for these materials before using. In no event should these materials be used to clean material from the skin, eyes or clothing.

## APPLICATION

**ULTRA-BUILD** is best applied with a squeegee, trowel or the plastic applicator supplied with the kit. Press material thoroughly into substrate and insure a completely wetted out surface. Build up to the required thickness with a second pass. Large cracks or holes should be bridged with glass or metal cloth. Reinforcement should be overcoated.

- Min. Thickness/Coat (mils) 60
- Max. Thickness/Coat (mils) 2000
- Number of Coats 1
- Min. Application Temperature 55ºF (13$^{o}$C)

For best results, do not apply:

- When humidity is over 90%
- When there is moisture on the surface
- When surface temperature is not 5ºF (-15$^{o}$C) above dew point

## OVERCOATING

For thicker buildup, two or more coats may be employed. **ULTRA-BUILD** may be overcoated with other **DUROMAR** materials such as **EAC** or **EXP** for enhanced smoothness or increased chemical resistance. Overcoating may begin as soon as the first coat is firm enough to accept a second coat. In high humidity or cold temperatures a blush may develop which should first be wiped down with clean water. The following table is an approximate guide to the earliest and latest times an overcoat may be applied:

**ULTRA-BUILD Overcoating Window**

| 55ºF (13$^{o}$C) | 70ºF (21$^{O}$C) | 85ºF ( 29$^{O}$C) |
|---|---|---|
| 3 -12 h | 2 - 6 h | 1.5 - 4 h |

At 70ºF (21$^{O}$C), if 6 hours have elapsed or the material is dry to the touch, it must be roughened before overcoating. The preferred method is a light abrasive brush blasting. Other treatments are light sanding, grinding or wire brushing.

**CURING** @ 70ºF (21$^{O}$C)

- Dry to Touch (hours) 4
- Functional Cure (hours) 24
- Full Cure (hours) 120

## Q/C

The material should be visually inspected just after application and touched up where necessary. The material cannot be spark tested because of the conductive fillers necessary to achieve the abrasion resistance of the material. Therefore extreme care must be used when inspecting the surface.

## FORCE CURING

Force cures are recommended for severe service conditions as both the physical and chemical properties are enhanced. Force curing should not start until material has firmly set.

Recommended Force Cure Schedule:

- Full Cure 4 hours @ 180ºF (82$^{o}$C)
- Functional Cure 8 hours @ 120ºF (49$^{o}$C)

## STORAGE/SHELF LIFE

Store in dry area in closed containers between 50ºF (10$^{o}$C) and 110ºF (43$^{o}$C).Shelf life at these conditions is greater than one year.

## HEALTH AND SAFETY

READ AND UNDERSTAND ALL MATERIAL GIVEN IN THE MSDS SHEETS BEFORE USING THE PRODUCT.

**ULTRA-BUILD** DOES NOT CONTAIN ANY FLAMMABLE MATERIAL OF ANY KIND. HOWEVER, THE MATERIAL IS COMBUSTIBLE. IN THE EVENT OF A FIRE, DRY POWDER, FOAM, OR CARBON DIOXIDE FIRE EXTINGUISHERS SHOULD BE USED. FIRE FIGHTERS SHOULD WEAR RESPIRATORS.

USE PROTECTIVE GLOVES AND EYEGLASSES WHEN USING.

USE IN AREAS OF GOOD VENTILATION.

## LIMITED WARRANTY

All recommendations covering the use of this product are based on past experience and laboratory findings. Methods or conditions of application and use of the product are beyond our control. We assume responsibility only for the uniformity of our product within normal manufacturing balances.



Rev. 06/2015