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ROCKWELD 55-27

TDS 55-27

Structural Adhesive Putty for Sculpturing, Repairs and Restoration of Stone, Concrete and Masonry, Terracotta, Ceramics

2-Component Epoxy System with Low Density, High-Strength and No Shrinkage.

SUGGESTED USES:

This clay-like putty can be used to build up, model, patch or replace shapes or parts of any structural or decorative element. Statues, architectural decorations, ornaments and mosaics can be repaired and restored using ROCKWELD. Broken stairs, railings, cracked and splitting concrete patios, floors and walls can be considered only as a few examples of ROCKWELD applications. Tenacious adhesion to metal and wood also allows the repair of items made of different materials.

SPECIFICATIONS:

ROCKWELD Part A: Resin Blend
Gray Thixotropic Paste
lb/gallon: 7.8 approx.
g/cc: 0.94

ROCKWELD Part B: Hardener Blend
Gray Thick Paste
lb/gallon: 9.6 approx.
g/cc: 1.15

PROPORTIONING: 1/1 by volume or weight

MIXED COLOR: Gray

MIXED DENSITY, lb/gallon: 9.0(1.08 g/cc)
VOLATILE ORGANIC COMPOUNDS (VOC):0.0%

WORKING LIFE (100 g @ 77ºF OR 25ºC): 50 min. approximate.

PHYSICAL PROPERTIES:

Tensile Strength, psi: 2,300 (15.9 N/mm^2, 1.6 kg/mm^2)
Elongation @ Break, %: 2.8
Compressive Strength, psi: 7,300 (50.3 N/mm^2, 5.1 kg/mm^2)
Flexural Strength, psi: 4,000 (27.6 N/mm^2, 2.8 kg/mm^2)
Hardness, Shore D: 80
Modulus of Elasticity, psi: 82,000 (565.4 N/mm^2, 57.6 kg/mm^2)

HARD: 2-4 hours at room temperature, much faster with heating. Thicker sections harden faster than thin layers. Low temperature retards hardening which can become unacceptably slow under 40-50º F (5-10º C).

FULL CURE: 7 days at room temperature or 1-2 hours at 200-220º F (93-105º C). Heat cure optimizes rigidity, chemical and heat resistance of material, but is not necessary in most cases.

CHARACTERISTICS:

* Clay-like putty hardens without shrinking. It can be built up several inches thick. Thicker layers can generate too much heat that may impair final properties of material.

*The new material adheres permanently to the old one. No ceramics, clay or concrete can offer this advantage.

* ROCKWELD can be shaped by hand because of its modeling clay consistency. It does not slump or sag when being applied to vertical surfaces.

* After hardening this material can be sanded by hand using coarse sandpaper (100 grit or less) or any

mechanical tools such as circular or belt sanders. Tools like knives or files are not recommended because of the high abrasiveness of ROCKWELD.

* ROCKWELD can be primed and coated using any solvent or waterborne paint. Slight sanding is recommended, in some cases, as a surface preparation.

* To match the color of the object to be repaired, any dry pigment or pigment dispersion compatible with epoxy systems can be admixed to ROCKWELD. It can be blended with pebble stone, gravel or concrete particles. It can be reinforced with inserts, rods, wires and other reinforcing elements.

* ROCKWELD is chemically resistant and unaffected by atmospheric conditions, soft and salt water.

* ROCKWELD bonds to wet as well as dry surfaces.

INSTRUCTIONS FOR USE:

SURFACE PREPARATION. Surfaces must be thoroughly clean and free of foreign matter, dust and loose debris. Sanding and roughening after washing and degreasing are recommended. In case of application to concrete, sandblasting or muriatic acid etching will give the best results. A primer is not necessary with ROCKWELD. However, on surfaces that are too porous or difficult to wet, PRIMKOTE 8006-1 can be used to insure best adhesion.

PART A/PART B MIXING must be thorough, or "soft spots" may result. A rigid spatula, scraper or power mixer are all adequate, if used properly. Kneading by hands is recommended if the hands are protected with chemical, surgical, disposable or other impervious gloves.

WORKING LIFE is the time the blend remains workable in a mixing container. As hardening generates heat, which in turn accelerates the hardening reaction, bulky masses harden faster than small ones or thin layers.

INDUCTION PERIOD (waiting period in the mixing container) of at least 5 minutes may be necessary to avoid "tacky hardening" of thin surface layers exposed to ambient moisture and carbon dioxide during hardening reaction.

APPLICATION is simple and requires no specialized tools or skills. In most cases any blade-like tool such as a putty knife or trowel is used to spread, fill, resurface or finish. If a bead is needed, it can be dispensed from a caulking gun. Skilled operators can make any shape with only their fingers.
The following application procedure is recommended: first apply a thin layer of ROCKWELD and wet the substrate by rubbing this material into its surface using a blade-like tool (in case of a flat even surface) or any brush with short stiff bristles (in case of a rough surface). Then apply the rest of ROCKWELD.

HARDENING of this epoxy putty is a result of chemical reaction. This chemical reaction generates heat and is accelerated by heat. Larger masses harden much faster than small ones or thin layers. Therefore, the working life of a 1-2 pound (0.5-1 kg) batch can be reduced to 10-15 minutes at room temperature. Heating accelerates hardening: at 150º F (66º C) ROCKWELD hardens in 15-20 min. To speed up the curing reaction an oven, heat lamp or heat gun can be used. ROCKWELD contains no solvents, water or other volatiles. That is why it is free of shrinkage and can be applied in any thickness.

CURING (completion of the chemical reactions and full development of all properties) continues 1-2 weeks at room temperature. It can be reduced to a few hours at higher temperatures, but for normal applications heat cure usually is not necessary.
