# Concrete Restoration

Smalley & Company represents the industry's leading manufacturers of concrete restoration products and we can help you with virtually any repair project. Our diverse line of concrete restoration products includes the following.

## Chemical Grout

Chemical grout is a polyurethane-based material that is pumped into concrete under pressure to fill cracks, joints, pipe intrusions, and honeycombed areas. Once in place, chemical grout will expand quickly to fill the voids in concrete to stop unwanted water infiltration immediately and permanently.

## Corrosion Inhibitor

Corrosion inhibitors are designed to penetrate hardened concrete and deposit a protective barrier on the surface of the steel reinforcement. This barrier delays the initiation of corrosion on the steel components caused by the carbonation of the concrete and the presence of chlorides.

## Epoxy Resin & Grout

Epoxy resin and grout is used in a multitude of concrete restoration projects. Epoxy resin is often called a "sealer / healer" because some formulations are designed to seal the concrete, while others are designed for concrete repair. The repairs can be anything from a simple patch to a complete restoration of the structural integrity by means of injection. Epoxy resin is also excellent for grouting applications that require higher strength and more chemical resistance than regular cementitious grouts.

## Hydraulic Cement

Hydraulic cements are powdered formulations that activate when they come into contact with water. These products are designed to quickly stop active leaks in concrete and masonry. Because hydraulic cements are iron, chloride and gypsum free, they will not rust, corrode or ravel under continuous moist or humid conditions.

## Rapid Setting Mortar

Rapid setting mortars are very rapid-hardening Portland cement-based, vertical repair mortars for load-bearing substrates. Primarily used for quick turn around repairs to highways, bridge decks, parking structures, balconies and walkways, rapid set mortars can be opened to foot traffic in 45 minutes and vehicle traffic in one hour. In some cases rapid set mortars allow coating to be applied in 4 hours.

## Polymer-Modified Repair Mortar

Polymer-modified repair mortars are cement-based materials that have a thermal coefficient of expansion nearly identical to concrete. For this reason, these products are the best choice for repairing concrete and masonry that will be subjected to a wide thermal range.

## Machine-Applied Mortar

Machine-applied mortars are formulated for application using dry process shotcrete equipment. These mortars are designed to be used in large repair areas such as bridge, viaduct, tunnels, piers and offshore platforms. The low water to cement ratio reduces shrinkage and promotes rapid strength development.

## Non-Shrink Grout

Non-shrink grout is a special blend of cement, aggregate, and other additives to compensate for shrinkage, flowability and setting time. The most commonly used blends are non-metallic and contain no chlorides. Non-shrink grout is used for structural grouting of precast, column base plates, machine base plates, anchor rods and bearing plates.

## Structural Strengthening System

A structural strengthening system is a manufacturer engineered approach to increasing the flexural and shear properties of concrete, masonry and timber structures. Composed of epoxy resins, carbon strips and fabrics, these systems are light-weight, non- corrosive and alkali and acid resistant.

## Underlayment

An underlayment is a superior bonding and high-strength cement based material designed to perform in the ultra-thin applications encountered with the leveling of floors. Over properly prepared rigid substrates like concrete, wood, and steel, these products will withstand the point loads that are found in most commercial and light industrial applications.

## Which product is best for you?

Smalley & Company's experienced sales staff can assist you whether you have just a simple question or a complex problem that requires on-site consultation. For more information about concrete restoration products, contact the company that knows more about them than anyone else:

Smalley & Company
Corporate Office
861 South Jason Street
Denver, Colorado 80223
Toll Free: (800) 777-6656
Phone: (303) 777-3435
Email: sales@smalleyandcompany.com
Web: www.smalleyandcompany.com

# Restoration Product Manufacturers

## Chemical Grout
- ❑ BASF
- ❑ Sika

## Corrosion Inhibitor
- ❑ BASF
- ❑ Euclid
- ❑ Sika

## Epoxy Resin/Grout
- ❑ BASF
- ❑ L & M
- ❑ Metzger Mc Guire
- ❑ Sika
- ❑ US Spec
- ❑ W.R. Meadows

## Hydraulic Cement
- ❑ BASF
- ❑ Euclid
- ❑ US Spec

## Polymer-Modified Mortar
- ❑ BASF
- ❑ Euclid
- ❑ Sika
- ❑ US Spec

## Rapid Setting Mortar
- ❑ American All Patch
- ❑ BASF
- ❑ Euclid
- ❑ Sika
- ❑ US Spec

## Machine-Applied Mortar
- ❑ Sika

## Non-Shrink Grout
- ❑ BASF
- ❑ Euclid
- ❑ L & M
- ❑ Sika
- ❑ US Spec

## Structural Strengthening
- ❑ BASF
- ❑ Sika

## Underlayment
- ❑ BASF
- ❑ L & M
- ❑ US Spec
- ❑ WR Meadows

# ESTIMATING FORMULAS

## CROSS-REFERENCES

### SPECIFIC WEIGHT
1 pound water = 27.7 cubic inches = 0.1198 gallons
1 cubic foot water = 62.43 pounds
1 gallon water = 8.345 pounds

### LENGTH
1 inch = 2.54 centimeters — 1 centimeter = 0.39 inches
1 foot = .0305 meter — 1 meter = 3.28 feet
1 mile = 1.61 kilometers — 1 kilometer = .62 miles
Inches to centimeters – multiply by 2.54
Centimeters to inches – multiply by .039
Feet to meters – multiply 0.305
Meters to feet – multiply by 3.28

### VOLUME
1 fluid ounce = 29.57 milliliters — 10 milliliters = 0.34 fluid oz
1 quart = 9.46.35 milliliters — 1 liter = 1.06 US quarts
1 gallon = 3.79
Ounces to milliliters – multiply by 29.57
Milliliters to ounces – multiply by 0.034
Quarts to liters – multiply by .095
Liters to quarts – multiply by 1.06

1 cubic inch = 16.39 cubic centimeters
1 cubic foot = 1728 cubic inches = 7.48 gallons
1 cubic yard = 27 cubic feet = 0.7646 cubic meters

## SHAPES

### CIRCLE
AREA = Square of Diameter x .7854 or Radius x 3.1416
CIRCUMFERENCE = Diameter x 3.1416
DIAMETER = Circumference ÷ 3.1416
AREA OF CIRCULAR RING = .7854 x (Outside Diameter Squared minus Inside Diameter Squared)
Doubling diameter increases area four (4) times; tripling diameter increases area nine (9) times.

### SQUARE/RECTANGLE
AREA = Length x Width
DIAGONAL = Square Root of Width Squared + Length Squared.
SIDE (Square Only) = Diagonal x .7071

### TRIANGLE
AREA = Base x ½ of Perpendicular Height

### CUBE
AREA OF SURFACE = Square of Side x 6
VOLUME = Cube of Side
DIAGONAL = Side x 1.732

### CYLINDER
AREA OF CURVED SURFACE = Diameter x Length x 3.1416
VOLUME = Square of Diameter x .7854 x Length

### CONE
AREA OF CURVED SURFACE = Diameter of Base x Slant Ht x 1.5708
VOLUME = Diameter of Base Squared x Perpendicular Height x .2618 or Area of Base x 1/3 Perpendicular Height

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## Nine Locations

Albuquerque, NM 505-797-7222
Denver, CO 303-777-3435
Fullerton, CA 714-441-4100
Las Vegas, NV 702-739-8600
Ontario, CA 909-605-6540
Phoenix, AZ 602-269-7089
Salt Lake City, UT 801-975-0672
San Diego, CA 858-573-9124
Van Nuys, CA 818-786-2460

Smalley & Company
"Since 1967"