

APPLICATION INFORMATION

(Continued)

applied in two coats as follows:

First Coat: Apply mixed material at coverage rate specified below for first coat and scrub into surface to insure filling of small voids and cracks. Finish with strokes all in one direction. Even when initially distributing the material with spray units, the surface should be brushed or broomed to insure even coverage and a texture suitable for adhesion of the second coat. Allow first coat to dry overnight before application of second coat. On block masonry walls, allow one week before applying second coat.

Second Coat: Apply same as first coat except using second coat coverage rate specified below. Finish with final brush strokes **perpendicular** to the first coat.

Seal Pressure Relief Holes: If pressure relief holes were drilled to relieve hydrostatic water pressure behind the wall, they should be plugged with HydraPlug as soon as the second coat hardens.

Curing: Keep surface damp during first three days of the curing process by water misting. In very hot, arid climates, vented plastic sheeting is recommended to prevent premature drying of the application.

Color & Topcoating: HydraCoat will initially have a dark gray color. As it cures, it will lighten to a typical concrete color. As a maintenance coating, color uniformity is not guaranteed. If additional color control or color matching is desired, the cured surface can be topcoated with any high quality acrylic emulsion paint. Solvent based paints or coatings should not be used. If protection is desired from direct exposure to excessively soft, acid, alkaline or corrosive water conditions, apply a water-base anti-corrosive top coating.

Potable Water Applications: If used for resurfacing interior of potable water tanks, reservoirs or other applications where the product would come in contact with potable water, it is recommended that the finished application be thoroughly rinsed

with a mild saline solution before being put in service. Let stand for 24 hours and rinse with clear water. Repeat as necessary until final rinse water is clear.

APPLICATION PRECAUTIONS: Poor surface preparation and inadequate mixing of material are the two most common causes of a failed application. Adequate attention to both of these requirements cannot be overstressed. Do not apply at temperatures below 40°F (4°C) or store below 35°F (2°C). Do not apply in rainy weather or when rain is expected within two hours. Not intended for use in swimming pools or on traffic surfaces. Direct exposure to excessively soft, alkaline or acid water conditions can shorten service life. Water-base anti-corrosive top coatings can afford additional protection in such environments. Will not provide prolonged waterproofing on surfaces which are shifting or settling. Contact Southwestern Petroleum Corporation for special information regarding applications where high negative hydrostatic water pressure conditions exist or where below grade exterior dampproofing is required.

COVERAGE RATES FOR MIXED MATERIAL: Coverage varies with texture of existing surface and degree of protection needed. Typical rates for normal applications are as follows:

Typical Above Grade Uses:

First Coat --
1/16 inch (1.6 mm) 28.0 lbs/100 sq ft
(1.4 kg/m²)

Second Coat --
1/32 inch (0.8 mm) 14.0 lbs/100 sq ft
(0.7 kg/m²)

*Typical Below Grade Interior Uses or Uses
Where Hydrostatic Water Pressure Exists:*

First Coat --
3/32 inch (2.4 mm) 42.0 lbs/100 sq ft
(2.1 kg/m²)

Second Coat --
1/16 inch (1.6 mm) 28.0 lbs/100 sq ft
(1.4 kg/m²)

MATERIAL REQUIREMENTS: One 65 pound (29 kg) pail has 52 pounds (24 kg) of mortar and 13 pounds (6 kg) of activator, yielding 65 pounds (29 kg) of mixed material.

CURING: Initial set occurs within 15 minutes. Final set occurs within 90 minutes. The product continues to cure for as much or more than 28 days. Allow minimum 30 day cure before application of compatible coatings.

CLEAN-UP: Clean tools with water

before material hardens.

STORAGE: Unopened containers of SWEPCO HydraCoat have a shelf life of one year provided they are stored in a dry location and protected from temperature extremes. This product has a water-based component which will freeze. It should be protected from freezing both in transit and during storage. Do not store material in temperatures below 35°F (2°C).

ADDITIONAL INFORMATION: For more information write: Southwestern Petroleum Corporation, P.O. Box 961005, Fort Worth, Texas 76161-0005; Southwestern Petroleum Canada Ltd., 87 West Drive, Brampton, Ontario, Canada L6T 2J6; or N. V. Southwestern Petroleum Europe S. A., Industrieweg 6, B-2390 Oostmalle, Belgium.

SAFETY PRECAUTIONS: Contains Portland cement. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Avoid breathing of dust. Wear gloves, safety goggles and dust mask when mixing and applying. Do not take internally. Do not transfer to unlabeled or breakable containers. Use only for purposes intended. Keep out of reach of children.

EFFECTS OF OVEREXPOSURE: Contact with eyes or prolonged or repeated contact with skin can cause irritation and inflammation. Ingestion can cause impairment of digestive functions; aspiration into lungs can cause serious injury or death.

FIRST AID PROCEDURES: Eye Contact - Flush with water for 15 minutes. If pain or redness persists, seek medical attention immediately. Skin Contact - Wash thoroughly with soap and water after wiping off excess material. If irritation persists, seek medical attention. Ingestion - Do NOT induce vomiting. If vomiting occurs, keep head below hips to prevent aspiration. SEEK MEDICAL ATTENTION IMMEDIATELY.

For further health and safety information, consult Material Safety Data Sheet (MSDS) for this product or, in an EMERGENCY, call 1-800-424-9300, 24 hours per day.

HYDRACOAT WATERPROOFING CEMENT

DESCRIPTION AND PURPOSE:

SWEPCO HydraCoat is a fast setting hydraulic cement coating used for waterproofing above and below grade concrete and masonry construction. Excellent bond adhesion and flexural strength enable HydraCoat to handle negative hydrostatic water pressures. Because it works where others fail, it is ideal for use on subgrade walls, tunnels, pipes, equipment roofs, stairwells, elevator shafts, tanks and conduits. It also meets British Standard 6920 for direct contact with potable water, so it is an excellent choice for lining concrete cisterns and water tanks. Suitable for a wide variety of other uses including waterproofing exterior masonry walls, parapet walls and many other applications.

OUTSTANDING FEATURES:

ADVANCED TOBERMORITE GEL TECHNOLOGY YIELDS SUPERIOR BOND STRENGTH

The most advanced hydraulic cement formulation technology provides SWEPCO HydraCoat with superior flexural and bond adhesion strengths. These are the performance characteristics most desirable in a waterproofing coating. And HydraCoat is two to three times stronger than competitive products in these important areas.

ESPECIALLY RECOMMENDED FOR MODERATE SUBGRADE HYDROSTATIC WATER PRESSURE APPLICATIONS

SWEPCO HydraCoat is even strong enough to provide reliable waterproofing on interior subgrade walls which have

seepage due to hydrostatic water pressures. It is the economical solution for damp basements, parking garages, elevator subbasements and other below grade walls with moisture problems.

MEETS BRITISH STANDARD FOR POTABLE WATER

Because it meets the widely recognized British Standard 6920 for use in direct contact with potable water, SWEPCO HydraCoat is the perfect product for lining the insides of new concrete water tanks and cisterns and maintenance of old ones. Either way, it retards water loss and contamination.

USEFUL IN A WIDE VARIETY OF OTHER WATERPROOFING APPLICATIONS

SWEPCO HydraCoat is recommended for many other uses, including protection of above ground exterior concrete and masonry walls, retaining walls, parapet walls, drainage structures and most any other concrete or masonry surface needing reliable protection from water.

SIMPLE APPLICATION

Application is simple and can be performed by staff maintenance personnel with professional results. After preparation of the surface, the HydraCoat mortar is mixed with the HydraCoat activator. A first coat is brushed on and allowed to dry. A second coat is then applied to complete the application and provide reliable waterproofing protection.



GENERAL DATA:

TYPICAL PHYSICAL PROPERTIES

Viscosity, @77°F (25°C), cP	57,000
Specific Gravity, @60°F (15.5°C) (ASTM D-70)	2.04
Unit Weight (Cured), @60°F (15.5°C), lb/gal (ASTM D-70)	17.0
Unit Weight (Cured), @60°F (15.5°C), kg/liter (ASTM D-70)	2.04
Wet Film Thickness, 1 gal/100 ft ² , mil	16
Wet Film Thickness, 1 liter/m ² , mm	1
Dry Film Thickness, 1 gal/100 ft ² , mil	14.25
Dry Film Thickness, 1 liter/m ² , mm	0.89
Initial Set, @70°F (21.6°C), 50% Humidity, Minutes	15
Final Set, @70°F (21.6°C), 50% Humidity, Minutes	95
Pot Life, @70°F (21.6°C), 50% Humidity, Minutes, Maximum	60
Color	Gray

TYPICAL PERFORMANCE PROPERTIES

Compression Strength, PSI (N/mm ²), 7 Days, (ASTM C109)	3460 (23.87)
Compression Strength, PSI (N/mm ²), 28 Days, (ASTM C109)	4260 (29.39)
Flexural Strength, PSI (N/mm ²), 7 Days, (ASTM C348)	1620 (11.18)
Flexural Strength, PSI (N/mm ²), 28 Days, (ASTM C348)	2670 (18.42)
Tensile Strength, PSI (N/mm ²), 7 Days, (ASTM C190)	550 (3.80)
Tensile Strength, PSI (N/mm ²), 28 Days, (ASTM C190)	766 (5.29)
Bond Adhesion Strength, PSI (N/mm ²), 7 Days (ASTM C348)	970 (6.69)
Bond Adhesion Strength, PSI (N/mm ²), 28 Days (ASTM C348)	1320 (9.11)
Modulus of Elasticity, PSI (N/mm ²), 28 Days (ASTM C469)	2.55x10 ⁶ (1.76x10 ⁴)
Shore Hardness, D Scale (ASTM D2240)	84
Impact Strength (Gardner Impact Tester)	No Chipping or Separation
Freeze Thaw Resistance, 50 Cycles (ASTM C666)	No Change
Freeze Thaw Resistance, Activator, 5°F to 77°F (-15°C to 25°C), Number of Cycles ...	5
Coefficient of Thermal Expansion, % (ASTM C531)	0.01
Water Vapor Permeability, Perms (ASTM E96)	10
Water Potability Test, Direct Contact (British Standard 6920)	Suitable
Dimensional Stability	No Shrinkage
Accelerated Weathering, 4500 Hours	No Surface Defects
Workability	Brushable, Sprayable
Storage Stability	One Year

TYPICAL CHEMICAL PROPERTIES

Non-Volatiles, Mortar, % wt	100
Non-Volatiles, Activator, % wt	37
Resistance to Mild Acids	Fair
Resistance to Petroleum Solvents	Fair

APPLICATION INFORMATION:

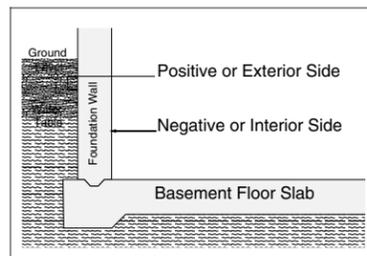


Fig. No. 1: Understanding Subgrade Hydrostatic Water Pressure -- On the positive or exterior side of a below grade structure, hydrostatic water pressure is directed against the surface, forcing water into the pores of the masonry. On the negative or interior side, hydrostatic water pressure forces moisture out of the wall through pores, holes or cracks. Coatings applied to the interior wall must withstand this pressure or they will fail.

IMPORTANT: SWEPCO HydraCoat is a two-part, two-coat hydraulic cement coating formulated for waterproofing above and below grade concrete and masonry construction, including walls, parapet walls, retaining walls, foundations, tunnels, pipes, conduits, tanks and cisterns. Whenever possible, waterproofing is best performed on the wet or positive pressure side of a structure. However, when used as directed, HydraCoat provides a cost-effective solution for seepage and weeping due to negative hydrostatic water pressures. (See Fig. No. 1.) This makes it especially useful in below grade interior masonry construction such as basements, parking garages, elevator shafts and similar applications. Because it meets the widely recognized British Standard 6920 for potable water, HydraCoat is also suitable for waterproofing the inside of potable water tanks and cisterns.

PREPARATION: A clean, sound, porous surface is absolutely essential for satisfactory performance. Glazed or smooth finishes must be roughened. ALL oil, dirt, debris, contaminants, chemical residue, existing paint or unsound masonry must be removed. Mechanical surface abrasion methods, such as abrasive blasting, very high pressure water blasting (minimum 3,000 PSI), chipping or wire brushing, are preferred. Dust and debris created by these methods should be vacuumed or power washed from the surface. Chemical etching of surfaces is permitted, provided all chemical residues of the etching process are removed prior to use of HydraCoat. Static holes and cracks should be repaired with SWEPCO HydraPlug. (See application instructions for SWEPCO HydraPlug.) Exposed wire ties or reinforcing rods should be cut back below the surface

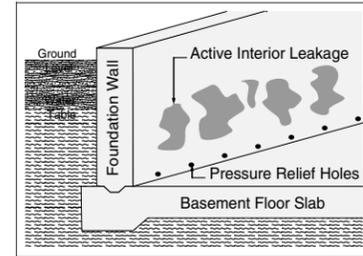


Fig. No. 2: Use Of Pressure Relief Holes -- Hydrostatic water pressure must be relieved before application of HydraCoat to walls with active seepage. This is done by drilling pressure relief holes along the base of the wall. This helps divert water pressure from the upper wall and permits proper application. After application of the coating, the pressure relief holes can be plugged with SWEPCO HydraPlug.



Fig. No. 3: Mix Mortar With Activator -- Thorough mixing is essential for proper performance. For pail size batches, mix with a minimum 1/2 inch (1.25 cm) power drill and commercial grade paddle (or "mud") mixing attachment with dual 5-inch (12.5-cm) mixing blades for five minutes. Start by emptying contents of two full activator containers and three quarters of the third activator container into a clean pail. Add all of mortar contents slowly while mixing. After initial mixing, allow to sit undisturbed for 10 minutes, then remix and temper with remaining activator as necessary to achieve smooth heavy batter.

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and the area patched with HydraPlug. Dynamic or moving cracks or expansion joints should be sealed with a product designed specifically for that purpose according to manufacturer's directions. If a wall is actively weeping or seeping water, pressure relief holes should be drilled through the wall at its base and adequate time allowed for excess

water to drain from behind the wall. Above ground masonry should be permitted to dry out before application of HydraCoat to prevent entrapment of water and possible freeze/thaw or other damage. New concrete should be allowed to cure a minimum of 28 days prior to use. Mask all adjacent metal, wood or other surfaces which might be harmed by HydraCoat during application. (For additional information concerning preparation and testing of masonry surfaces prior to surface treatment, Southwestern Petroleum Corporation recommends review and use, as applicable, of methods explained in American Society of Testing and Materials Publications ASTM D4258, ASTM D4259, ASTM D4260, ASTM D4261, ASTM D4262 and ASTM D4541. Copies available upon request from Southwestern Petroleum.)

BOND TEST: As an extra precaution when chemical etching has been performed or on large projects or if there is any doubt concerning the suitability of the prepared surface, a bond test is highly recommended. To test the bondability of a prepared surface, install HydraCoat on a small area. Allow to cure for a minimum of one week and then chip HydraCoat away with a hammer and chisel. If it separates easily or cleanly from the surface, more surface preparation is required. If separation causes damage to HydraCoat and/or the original surface, then preparation was adequate.

IMPORTANT TEMPERATURE CONSIDERATIONS: Temperature affects HydraCoat's pot life, initial set and curing. The most workable temperature range for ambient temperatures, surface temperatures and temperatures of materials and tools is 70-80°F (21-27°C). In this temperature range, pot life will be 60 minutes maximum.

Hot Weather: In hot, arid climates, application is best performed in the coolest part of the day. Night application should be considered. Cooling the HydraCoat mortar and activator and tools can help lengthen working time. Other measures which can be taken are to protect the surface, materials and tools from the sun and wind. Water misting of the surface and tools can help. HydraCoat itself should be stored at around 70°F (21°C) until ready for mixing.

Cold Weather: HydraCoat should not be used on frozen surfaces, when frost is present or when ambient temperatures or surfaces are below 40°F (4°C) or are expected to fall below 40°F (4°C) within

24 hours of placement. For cold weather applications at 40°F (4°C) or above, materials should be brought to a minimum of 50°F (10°C) before mixing and placement by storing in a warm area.

MIXING: HydraCoat workable pot life is no more than 60 minutes total including mixing time and placement time. Mix only as much material as can be applied in 40 minutes following the mixing procedure. It is highly recommended that inexperienced users mix smaller partial batches until their application speed is determined.

HydraCoat is prepared for use by blending the powdered mortar into the liquid activator until a smooth heavy batter is obtained. The standard mix ratio is four parts mortar to one part activator by weight. One full pail of HydraCoat will yield 65 pounds (29 kg) of mixed material. To mix a full pail of material, start by emptying the liquid contents of two of the three 1/2-gallon (1.89 liter) activator bottles and 3/4 of the third activator bottle into a clean 6 gallon (23 liter) pail. Slowly add all the powdered mortar to the liquid activator, mixing continuously as the mortar is added. **Thorough mixing is essential.** A minimum of five minutes of mechanical mixing is required. For pail size batches, a 1/2-inch (1.25 cm) drill with a commercial grade paddle (or "mud") mixer with dual 5-inch (12.5-cm) mixing blades running at 400-600 rpm is recommended. After initial mixing, let the mixture stand undisturbed for 10 minutes to insure proper wetting of all ingredients. Then remix, retempering as necessary with remaining activator to achieve proper consistency and immediately begin application. If mixture stiffens during application, it can be retempered only one additional time with remaining activator. Under no circumstances should other admixtures, mildewcides, surfactants or additives be used. High performance additives of this nature are included in the activator.

APPLICATION: For small projects, HydraCoat is best installed with stiff short bristle masonry brushes or brooms. It can also be initially placed with a masonry trowel but should be brushed in after placement. Depending upon the application tool used, transferring the mixed material into a mortar box or other open tub type container can help speed application. In larger applications, specialized spray equipment/hopper guns can be used. Airless spray equipment should not be used. The prepared surface must be **predampened** to insure proper penetration and adhesion. HydraCoat is then