FLEX•SHIELD PATCHING COMPOUND

DESCRIPTION AND PURPOSE:

SWEPCO Flex•Shield Patching Compound is a superior colloidal asphalt emulsion waterproofing compound manufactured from "Heart of Texas" Asphalt, a special grade of bentonite, High-Strength Micro Fibers and other mineral and chemical ingredients which insure the creation of a durable product. It is also used as a highly versatile adhesive, sealer and filler in roof repair, maintenance and new construction.

OUTSTANDING FEATURES:

SUPERIOR WATERPROOFING FOR CRITICAL HIGH STRESS AREAS

Cracks, blisters, open seams and other roof trouble spots such as edge, wall and protrusion flashings are subject to high stress which can quickly destroy inferior patching materials and cause leaks. If not properly repaired, such damage can expose the roofing and building interior to expensive water damage.

MODERN ASPHALT TECHNOLOGY INSURES SUPERIOR PERFORMANCE

SWEPCO Flex•Shield Patching Compound is the most desirable type of asphalt emulsion for roofing applications. The asphalt component is milled under highly controlled conditions into extremely fine, microscopic size particles. These particles are forcibly blended with a chemically treated bentonite slurry at carefully controlled blending temperatures. Microscopically, the finished film resembles a "loose pack" of premium quality waterproofing asphalt particles, each coated and cemented together with a hard exterior of bentonite. This unique physical structure has weathering characteristics superior to any other type of waterproofing asphalt.

UNIQUE FORMULATION INSURES MAXIMUM RESISTANCE TO BLISTERING, PEELING & CRACKING

SWEPCO Flex•Shield Patching Compound has outstanding resistance to blistering and peeling because the arrangement of the asphalt particles permits the film to "breath". Microscopic passages between the asphalt particles permit the trapped moisture which causes blistering and peeling of conventional asphalts to escape harmlessly into the atmosphere. But these passages are so small they do not permit water to penetrate the protective film. This loose arrangement also leaves more room for relief of the stresses which cause alligatoring, checking and cracking in more densely structured coatings.

UNIQUE STRUCTURE PREVENTS FLOW & SAG, INSURES LONGER LIFE FROM ASPHALT

SWEPCO Flex•Shield Patching Compound also has superior resistance to flow, sag and oxidation. A highly magnified cross section of SWEPCO Flex•Shield Patching Compound reveals a "honeycomb" of hard bentonite with individual cells filled with premium quality soft waterproofing asphalt. This stable honeycomb of bentonite prevents the asphalt from flowing or sagging on hot days even on vertical surfaces. It also helps lock the interior particles of asphalt in the interior and protects them from exposure to

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the ultra-violet radiation which causes age hardening of asphalts. As a result SWEPCO Flex•Shield Patching Compound tends to oxidize only on the surface and lasts longer than most conventional waterproofing compounds.

QUALITY INGREDIENTS ENHANCE PERFORMANCE

Another reason for SWEPCO Flex•Shield Patching Compound's superior performance is the choice of raw materials used. Only the very finest ingredients are accepted. The formulation starts with SWEPCO's own "Heart of Texas" Asphalt, a premium quality waterproofing asphalt carefully selected and refined for maximum resistance to the weathering cycle. The bentonite used is a special grade which comes from the purest bentonite deposits in the world. Use of less expensive, lower quality bentonite deposits would introduce impurities into the product and compromise performance. By using only this special grade, SWEPCO insures superior weathering characteristics and consistently high quality. High Strength Micro Fibers are another carefully selected ingredient, chosen because they enhance the product's natural resistance to flow and sag in hot weather and improve its tensile strength and resistance to cracking and erosion.

IDEAL FOR A WIDE VARIETY OF ROOFING APPLICATIONS IN BOTH NEW CONSTRUCTION AND MAINTENANCE

SWEPCO Flex•Shield Patching Compound is perfect for many types of maintenance and new built-up roof construction. When used with Heavy Duty Patching Fabric for additional reinforcement, it is exceptionally dependable for sealing cracks, blisters, open seams, fishmouths and either new or deteriorated flashings, at vents skylights, pitch pans and other common stress points and trouble spots. Its flexibility and strong bond make it effective for sealing metal seams, gravel guards and flashing flanges, as well as caulking small cracks, copings, counter flashings and drainage gutters.

HELPS TAKE THE POLLUTION OUT OF ROOFING, CONSERVES PETROLEUM

SWEPCO Flex•Shield Patching Compound is environmentally safe. It doesn't contain large concentrations of petroleum solvents which escape upon application to pollute the environment, like those found in many other patching compounds. It requires up to 30% less petroleum to make. This contributes to the overall economy of the product and helps assure wiser use of petroleum reserves.

EASY APPLICATION REDUCES ROOF MAINTENANCE COSTS

Because application is easy and simple, SWEPCO Flex•Shield Patching Compound reduces roof maintenance costs. It requires no special preparation or equipment and no heating. It is applied straight from the container and troweled smooth.

Ease of application reduces time and labor costs spent on maintenance or new construction. Since your general maintenance staff can get professional results by following the simple instructions found on each container, more of your maintenance dollar can go into high quality waterproofing instead of labor costs.

GENERAL DATA:

TYPICAL PHYSICAL PROPERTIES

Consistency, Cone Penetration @77°F (25°C) (ASTM D-217)	320-350
Specific Gravity, @60°F (15.5°C) (ASTM D-70)	1.15
Unit Weight, lb / gal (ASTM D-70)	9.57
Unit Weight, kg / liter (ASTM D-70)	1.15
Drying Time, to Touch, hours	2-4 (Depends on temperature and humidity)
Drying time, Through, hours	24 (Depends on temperature and humidity)
Flash Point, °F	N.A.
Freezing Point, °F (°C)	32 (0)
Wet Film Thickness, 1 gal / 100 ft^2, mil (Calculation)	16
Wet Film Thickness, 1 liter / m^2 mm (Calculation)	1
Dry Thickness, 1 gal / 100 ft^2 mil (Calculation)	8.58
Dry Thickness 1 liter / m^2, mm (Calculation)	.54
Color, wet (Observation)	Dark brown to black
Color, dry (Observation)	Black
Odor (Observation)	Pungent

TYPICAL PERFORMANCE PROPERTIES

Workability	Permits smooth application by damp towel
Behavior, @140°F (60°C) (ASTM D-466)	No blistering, sagging or sliding
Pliability, @32°F (0°C)	No cracking, flaking or loss of adhesion
Adhesion	Excellent
Accelerated Weathering, hours (ASTM G-53)	4,000*
Film Appearance	Good
Peeling and Chipping	None
Erosion	Slight
Water Penetration	NIL
Storage Stability	1 Year

TYPICAL CHEMICAL PROPERTIES

Non Volatile, % wt (by evaporation) (ASTM D-244)	54
Volatile, % wt (by evaporation) (ASTM D-244)	46
Oil Distillation, % wt (ASTM D-244)	NIL
Resistance to Mild Acids and Alkali	Good
Resistance to Water	Good
Resistance to Petroleum Solvents	Poor (Causes Softening)
Asphalt Portion	
% wt Soluble in CS_2 (ASTM D-4)	99.9
Softening Point (ASTM D-36)	110
Penetration, @77°F, 100 grams, 5 seconds (ASTM D-5)	90
Type	Vacuum reduced

*NOTE: This is roughly equivalent to eight years of exposure to ultra-violet radiation, heat and moisture generally encountered in field service.

APPLICATION INFORMATION:

IMPORTANT: SWEPCO Flex•Shield Patching Compound is a thick, black heavy-bodied waterproofing compound, designed as an adhesive, sealer and filler for new roofing, roof repair and roof maintenance.

PREPARATION: The roof surface should be sound and should drain water freely. Because standing water accelerates deterioration of all asphalt roofing products, every effort should be made to isolate and correct the causes of any standing water or ponding on the roof. A minimum slope of 1 / 4 in. per foot (2%) is recommended. When this is not possible, SWEPCO Products can still be applied and will provide temporary protection for such areas. However, it must be understood that performance of SWEPCO Products cannot be guaranteed in any area of the roof subject to standing water. The surface to be repaired must be thoroughly cleaned free of all dust, dirt and loose debris. On gravel, granule or other aggregate covered asphalt roofs, all embedded aggregate must be scraped or spudded off the area to be repaired and a minimum of 4 in. (10.16 cm) around the area to be repaired to create a smooth, bondable surface. On granular surfaced roll roofing, all loose granules must be removed. On exposed metal surfaces, surface impurities such as rust and corrosion must be removed.

APPLICATION: SWEPCO Flex•Shield Patching Compound is applied straight from the container with a plastic glove or a standard trowel. It requires no heating or thinning prior to application. A slight amount of moisture on the glove or trowel is helpful in application

APPLICATION INFORMATION

(Continued)

and clean-up. Reinforcing flashings and deteriorated areas with SWEPCO Flex • Shield Patching Compound and Patching Fabric is a three-step process. First, trowel a layer (approximately 3/16th of an inch or 0.5 cm thick) of SWEPCO Patching Compound over the area to be repaired. Second, embed into this layer of Patching Compound, a piece of SWEPCO Patching Fabric. Third, trowel another layer (same thickness as first layer) of Patching Compound over and beyond the Patching Fabric on all sides. The width of Patching Fabric required is determined by the type and size of the repair. Instructions for some common uses follow:

Repairing Flat Edge and Flange Type Protrusion Flashings — Compound and Fabric must extend a minimum of 4 in. (10.16 cm) beyond existing flashing or 4 in. (10.16 cm) beyond metal flange anchoring metal work, whichever is greater.

Repairing Raised Edge, Wall or Curb Type Protrusion Flashing — Compound and Fabric must extend well up under counter flashing and a minimum of 4 in. (10.16 cm) beyond existing flashing materials or 4 in. (10.16 cm) onto flat roof membrane, whichever is greater.

Repairing Blisters — Distorted roofing felts should be cut out, being careful to remove only enough of the original roof membrane to create a flat, sound surface. Allow sufficient time for any trapped moisture to evaporate thoroughly. Compound and Fabric should overlap sound existing surface a minimum of 4 in. (10.16 cm) on all sides.

Repairing Cracks, Cuts, Tears and Open Seams —Permit any trapped moisture to evaporate before repairing the area. Compound and Fabric should overlap sound existing surface a minimum of 3 in. (7.5 cm) on all sides.

Sealing Metal Roof Joints — Compound and 6 in. (15.24 cm) Fabric are usually sufficient for this application.

APPLICATION PRECAUTIONS: SWEPCO Flex • Shield Patching Compound will freeze. It should not be applied in temperatures below 40°F. (4°C). Nor should it be applied in rainy weather or if rain is expected before complete curing can take place. Normally only 24 hours is required for curing, but in cool, cloudy, damp or humid conditions curing can take longer. Avoid unusually heavy build-ups of the material as this can cause shrinkage cracking.

MINIMUM COVERAGE RATES: The amount of SWEPCO Flex • Shield Patching Compound required depends on the width of Heavy Duty Patching Fabric used:

When using 6 in (15.24 cm) Fabric — 0.50 lb./lineal ft. (0.74 kg/m)

When using 12 in. (30.48 cm) Fabric — 1.00 lb./lineal ft. (1.49 kg/m)

When using 36 in. (91.44 cm) Fabric — 3.00 lb./lineal ft. (4.46 kg/m)

NOTE: These coverage rates are our minimum coverage rates. Do not under apply the product as this can adversely affect product performance and will negate any guarantee to which the product may be subject.

CURING: The curing rate of SWEPCO Flex • Shield Patching Compound varies with temperature and humidity. However, it is normally completely cured within 24 hours.

CLEAN-UP: SWEPCO Flex • Shield Patching Compound can be removed from tools and other areas with soap and water before it cures and kerosene or mineral spirits after it cures.

STORAGE: SWEPCO Flex • Shield Patching Compound has a minimum shelf life of one year provided containers are kept tightly sealed and protected from high temperatures. This product will freeze and should be stored where temperatures will not drop below 35°F. (2°C).

ADDITIONAL INFORMATION: For additional information or recommendations, 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., P.O. Box No. 3, B-2390 Oostmalle, Belgium.

SAFETY PRECAUTIONS

HARMFUL OR FATAL IF SWALLOWED - IRRITANT - COMBUSTIBLE

Contains Petroleum Distillates

Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wear protective goggles, gloves and clothing. Avoid prolonged breathing of vapors. se with adequate ventilation or approved respirators in confined areas. Do not take internally. Store and use away from heat, open flame or spark sources. Close container tightly after each use. 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. Prolonged breathing of vapors can cause respiratory difficulty, dizziness, headache, nausea, irritation of nose or throat, drowsiness, blurred vision and coma. Ingestion could be harmful; aspiration into lungs can cause serious injury of death.

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

PHYSICAL EMERGENCY PROCEDURES: If ignited, extinguish with CO_2 or dry chemicals. Water or foam may cause frothing. Water may be used to keep containers cool or flush spills away from area of involvement.

Consult Material Safety Data Sheet (MSDS) for this product or call Southwestern Petroleum Corporation at (817) 332-2336 for further health and safety information.

SOUTHWESTERN PETROLEUM CORPORATION FORT WORTH, TEXAS U.S.A.

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