



KLEINFELDER

5/19/89

transmittal

ALAMEDA COUNTY  
DEPT. OF ENVIRONMENTAL HEALTH  
HAZARDOUS MATERIALS

Date 5/16/89

File 10-1492-01

Copies 1

To Larry Sato

Alam. County Dept. of Envir Health

Hazardous Materials Division

Oakland, CA

Subject Waste Oil Tank

We are sending  Attached  Under separate cover

The following:

Per your request, attached is a copy of  
our report sent to you on April 26, 89.

Via:

Remarks

- Messenger
- First Class Mail
- Air
- Express
- United Parcel
- Air Freight
- \_\_\_\_\_

Transmitted:

- As Requested
- For Approval
- For Your Use
- For Review & Comment

By

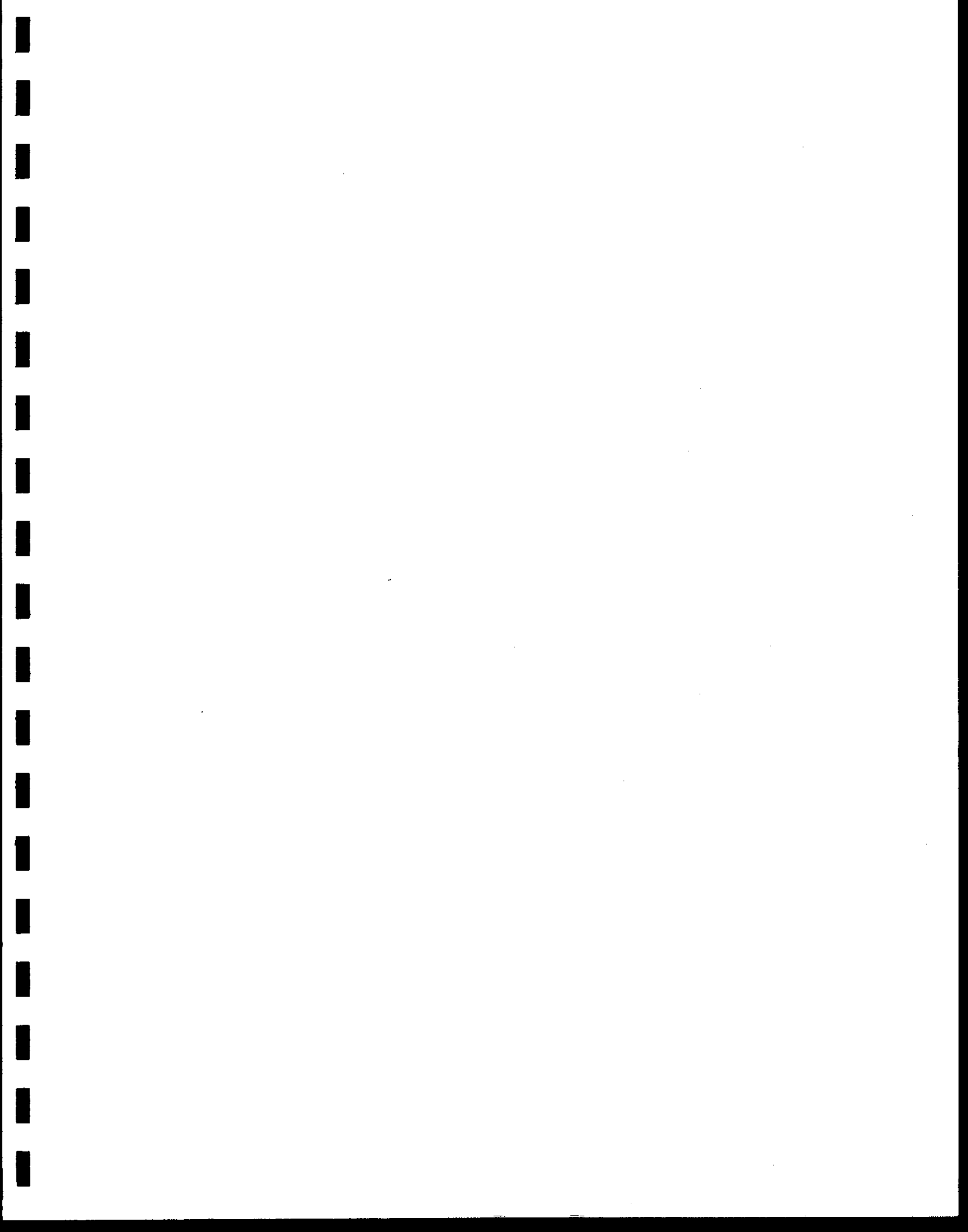
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**REMOVAL OF THE WASTE OIL  
UNDERGROUND STORAGE TANK  
VASCO ROAD SANITARY LANDFILL  
LIVERMORE, CALIFORNIA**

April 1989

April 28, 1989

ALAMEDA COUNTY  
DEPT. OF ENVIRONMENTAL HEALTH  
HAZARDOUS MATERIALS  
518



April 26, 1989  
File: 10-1492-01

Mr. Larry Seto  
Alameda County Department of Environmental Health  
Hazardous Materials Division  
80 Swan Way, Room 200  
Oakland, CA 94621

**SUBJECT: Removal of the Waste Oil Underground Storage Tank, Vasco Road Sanitary Landfill, Livermore, California**

Dear Mr. Seto:

As discussed during our telephone conversation on April 3, 1989, Kleinfelder, Inc., on behalf of the new owner of the landfill, Browning-Ferris Industries (BFI), is submitting additional information regarding the removal of the underground waste oil storage tank.

Since our plan of correction dated July 7, 1988, along with an Underground Tank Closure (Modification Plans) has been accepted, this letter presents only our proposed approach to inert the tank before its removal as well as design of the secondary containment for this tank to allow its continued use above ground.

1. Tank Removal

Firstly, all waste oil from the tank will be pumped out. A hand pump may be needed to remove the bottom few inches of product.

Subsequently, the tank will be conditioned to ensure that no flammable, hazardous, or toxic vapors remain in it. The vapors in the tank will be made inert by adding solid carbon dioxide (dry ice) in the amount of 1.5 pounds per 100 gallons of tank capacity. The dry ice will be crushed and distributed evenly over the greatest possible area to secure rapid evaporation. As the dry ice vaporizes, tank vapors will flow out of the tank and may surround the area. Hence, safety precautions regarding flammable, hazardous, or toxic vapors will be observed. It will be ascertained that all of the dry ice has vaporized. The vapor concentration in the tank will be checked with suitable instrumentation such as TIP or OVA to confirm that the tank is gas-free.

During tank removal, discolored soils will be excavated and stockpiled onsite pending laboratory results as described in our violation correction plan dated July 7, 1988. A report describing field activities along with laboratory results of the closure samples will be submitted to the ACEHD.

## 2. Containment Design

Since BFI intends to reuse the waste oil tank above ground, as requested attached is the design and specifications for containment of the waste oil tank storage area.

A vault unit will be protected against physical damage by installation of 6" concrete filled pipes (6 feet post; 2 feet in concrete below ground and 4 feet above ground) placed a maximum of 12" from vault with a minimum of 6 posts, one at each corner and one in the middle on two sides.

As required by the Alameda County Fire Code Requirements for Above-Ground Flammable Liquid Storage Vaults, the tank will be marked with the product name and the words "FLAMMABLE LIQUIDS, KEEP FIRE AND FLAME AWAY", with lettering a minimum of 4" in height. In addition, the dispensing area will have signs posted in a conspicuous location around the dispensing area stating "NO SMOKING OR OPEN FLAME ALLOWED IN DISPENSING AREA; STOP YOUR ENGINE DURING FUELING OPERATION". Two fire extinguishers with a minimum classification of 2-A, 20 B-C will be located not less than 10 feet and no more than 50 feet from the storage area. The fire extinguishers will be certified annually.


Please note that the tank will be placed in the containment constructed at the present tank location after soil (and ground water, if necessary) remediation and backfilling. Therefore, the code requirement with regard to a 20 feet-wide access way that will allow fire-control apparatus to approach the tank will be met.

We will appreciate your prompt response to this letter. Once we get your approval, BFI will proceed immediately with the work. Should you have any questions or comments regarding this letter, please contact the undersigned.

Sincerely,

KLEINFELDER, INC.

  
Krzysztof (Krys) S. Jesionek  
Project Engineer

  
R. Jeffrey Dunn, P.E., G.E.  
Assistant Regional Manager

cc: Mr. Tim Cox, BFI - Vasco Road Sanitary Landfill  
Mr. Ted Ferrera, Alameda County Fire Department

KSJ:RJD:jwb

PROJECT VASCO ROAD SANITARY LAND

PROJECT NO. 10-1492-01 (20)

SUBJECT CONTAINMENT BERMS

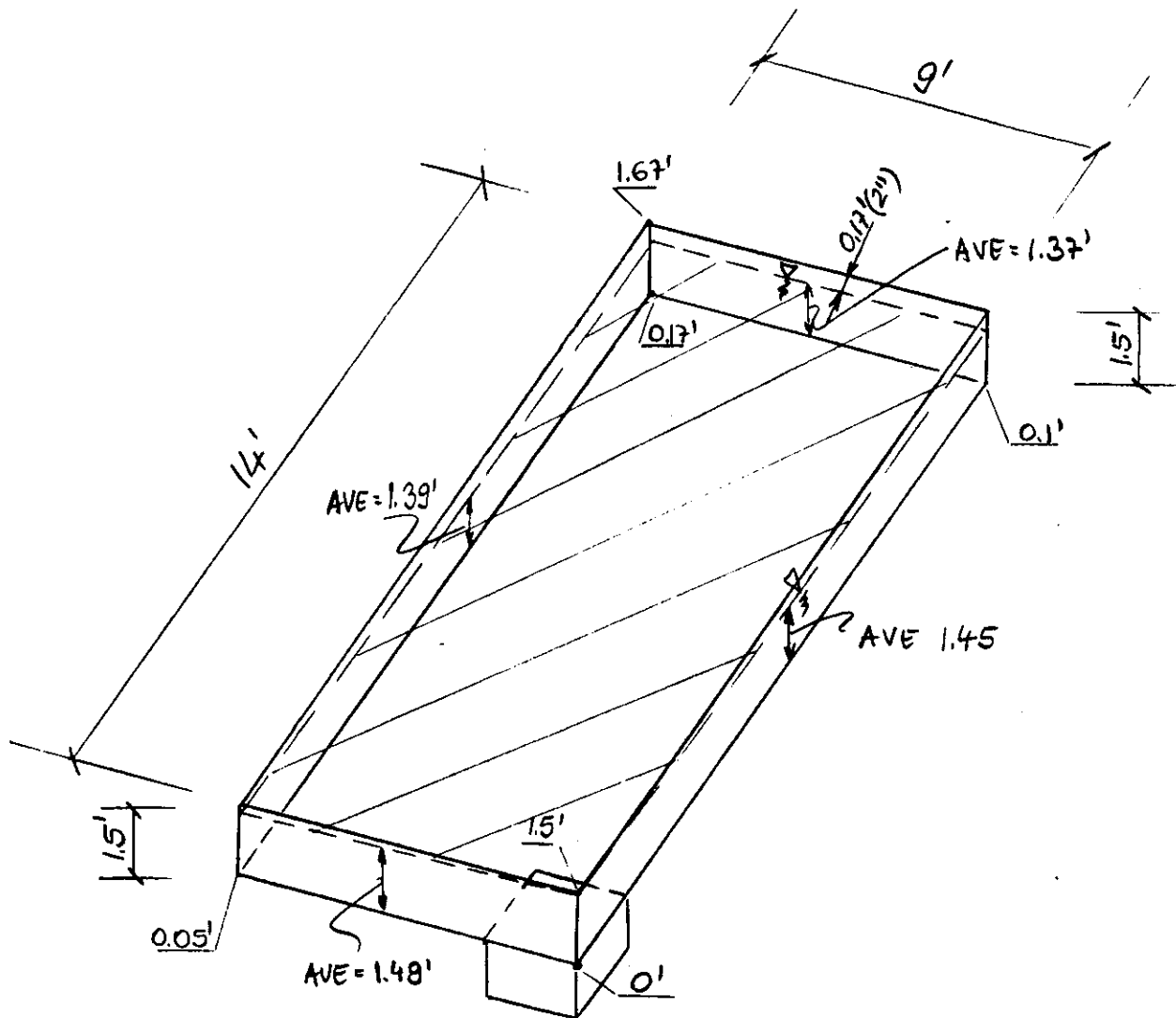
BY KSJ

DATE 4/23/89

FOR WASTE OIL TANK

REVIEWED BY \_\_\_\_\_

DATE \_\_\_\_\_



— VOLUME CONTAINED = AREA × AVE HEIGHT

$$\text{AREA} = 9' \times 14' = 126 \text{ ft}^2$$

$$\text{AVE HEIGHT} = (1.48' + 1.39' + 1.37' + 1.45') / 4 = 1.42'$$

$$\begin{aligned} \therefore \text{VOLUME CONTAINED} &= 126 \times 1.42 = 178.9 \text{ ft}^3 \\ &= \underline{\underline{1,338 \text{ gal}}} \end{aligned}$$

PROJECT VASCO ROAD SANITARY LAND PROJECT NO. 10-1492-01 (20)  
SUBJECT CONTAINMENT BERMS BY KSJ DATE 4/23/89  
FOR WASTE OIL TANK REVIEWED BY \_\_\_\_\_ DATE \_\_\_\_\_

- WASTE OIL TANK VOLUME

$$\text{GIVEN} = 750 \text{ gal}$$

- VOLUME REQUIRED TO BE CONTAINED (110%)

$$1.1 \times 750 \text{ gal} = \underline{825 \text{ gal}}$$

- VOLUME OF THE TANK IN THE CONTAINMENT BERMS

$$10' \times 5' \times 1.38' = 69 \text{ ft}^3 = \underline{516 \text{ gal}}$$

- TOTAL USEABLE VOLUME OF THE CONTAINMENT BERMS

$$1,338 - 516 = \underline{822 \text{ gal}}$$

$$\therefore 825 \approx 822 \text{ gal (O.K.)}$$



**Related Bulletins  
No. CG-251, CG-252**



**Flakeline 251 and 252** are flake-filled polyester coatings designed primarily for use in coating pipeline exteriors, as well as storage tanks, valves and fittings. With over 16 years of proven field experience, Flakeline 251 and 252 have become widely accepted as truly superior protective coatings for metal and concrete surfaces.

**Flakeline 251 and 252** are formulated using polyester resins reinforced with laminar flake particles which form dozens of micron-thick layers within the coating film. These overlapping layers provide an almost totally impermeable film which inhibits the passage of moisture and chemical ions through the coating, thereby preventing underfilm corrosion. The permeability is actually so low that no inhibitive primer is required, corrosion being prevented solely by the coating's film integrity.

**Flakeline 251 and 252** have shown excellent results when subjected to cathodic disbondment testing. The most severe laboratory tests, where offshore conditions are simulated, at cyclic temperatures up to 275° F., are ASTM G8 and G42 with the Vennett adaption of the latter. Flakeline has proven its superiority under these very demanding test procedures, particularly when compared to other types of protective coating materials.

# CeilGard<sup>TM</sup>

## Corrosion Coatings

**CellGard Flakeline® 251 & 252**  
(Formerly CellGard 371 & 372)

The superior adhesion of Flakeline contributes to the overall performance of the coating. Bond strength of over 2500 psi assures maximum adhesion and eliminates failure due to delamination. If mechanical damage should occur due to extremely high impact loads (above 150 in. lbs.), the coating will chip only at point of impact and surrounding areas will be totally unaffected. The adhesion also prevents corrosive undercutting if damage does occur; localized repairs can be made easily and inexpensively.

The cured film exhibits adequate flexibility for stringing operations and is capable of surviving the handling, transportation and installation of the pipeline sections.

Based on a chemical resistant bisphenol polyester resin, Flakeline possesses outstanding resistance to a wide range of aggressive and corrosive environments such as ground water, soil and salt water.

**Flakeline 251** is a rapid curing version of Flakeline 252 and provides the same performance characteristics. (Must be applied by special spray equipment; refer to CeilGard Bulletin CG-200 and Bulletin C-20 for details.)

### BID SPECIFICATIONS

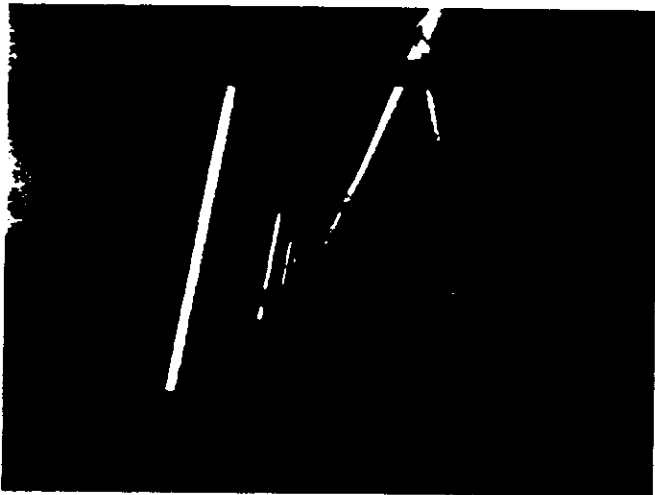
Where the specific performance capabilities of Flakeline products are desired, specifications should be written to ensure that Ceilcote materials are used.

If "equals" are considered, the specifier should require that documented proof of performance equal to Flakeline 251 and 252 be submitted prior to approval of alternate materials.

### SURFACE PREPARATION

- A. Steel:** For fumes and dry environments sandblast to "Near White", SP-10-63 or NACE #2. A minimum surface profile of 3 mils is required.
- B. Concrete:** Previously coated or heavily contaminated surfaces should be sandblasted to provide a clean strong surface. New or uncontaminated horizontal surfaces may be prepared by etching with





1 part hydrochloric acid to 2-3 parts water instead of sandblasting. For detailed surface preparation refer to Installation Bulletin CG-200.

- C. Other Surfaces:** Consult Ceilcote for specific recommendations.

#### PRIMING

- A. Steel:** For fume conditions and relatively dry environments the use of CeilGard 370 is optional, but may be used to "hold" the blasted surface until the basecoat is applied.

**Number of Coats and Thickness:** One coat at 1.0-4.0 wet mils. Three wet mils will yield 2.0 dry mils.

The appearance of CeilGard 370, when applied by brush, roller or spray, should be translucent. The metal substrate should be visible. The aesthetics of this application will be poor due to overlaps and slight thickness variation. Overlap areas should also be translucent.

This product is not intended to have a uniform opaque appearance. An opaque appearance with CeilGard 370 indicates a dry film thickness in excess of 5 mils which is considered over thickness. Over thickness may cause polyester and vinyl ester topcoats to sag or slide off vertical surfaces.

- B. Concrete:** Following surface preparation, all cracks and voids should be filled and one coat of CeilGard 380 Primer must be applied at 1.0 - 4.0 wet mils (approximately 250 sq. ft. per gallon). For detailed information refer to Installation Bulletin No. CG-200.

#### ESTIMATING AND ORDERING

##### A. Material Requirements

**Flakeline** materials, applied at 30-40 mils, will average 30-35 sq. ft. per gallon on flat surfaces.

**P-370 Primer**, for metal substrates, will cover approximately 300 sq. ft. per gallon.

**P-380 Primer**, for concrete surfaces, will cover approximately 200 sq. ft. per gallon. Rough and porous surfaces may require additional film thickness.

**Hardeners** (catalyst) for the above materials are included with the liquid base, but additional catalyst may be ordered if desired. When catalyst injection spray equipment is used, order one extra quart of Hardener for priming pot and lines.

**CeilGard T-410 Solvent** is recommended for cleaning tools and equipment. MEK or lacquer thinner may be used if available. **Do Not Use Acetone.** The Flakelines and Primers require no thinners.

The above coverage figures are based upon field experience and are usually accurate. Coverage can vary, however, dependent upon excessive spray loss, substrate texture, spillage and varying film thickness.

##### B. Packaging:

Flakeline 251 and 252 are shipped in 1 gallon, 5 gallon, and 30 gallon units.



### APPLICATION EQUIPMENT

Flakeline 200 Series materials are normally applied by spray in two 20-26 mil coats to achieve a total dry film thickness of 30-40 mils. Brush or roller application can be used, but may require an additional coat to achieve adequate film thickness. CeilGard Primers 370 and 380 can be easily applied by spray.

For specific application procedures and equipment recommendations consult Ceilcote Installation Bulletin No. CG-200 and C-20.

### SAFETY

Flakeline 251 and 252 contain polyester resins, styrene monomers and inert flake fillers. The hardener is an organic peroxide. The Flakeline components have been formulated to optimize physical lining characteristics while minimizing hazardous physical and health factors encountered during application. A concerned effort is made to be aware of the latest chemical toxicological information and to apply this knowledge in a responsible manner to ensure product safety.

During application of Ceilcote's CeilGard Flakeline materials always wear gloves and appropriate work clothing to minimize contact. Ventilation is required with special consideration for enclosed or confined area. Air movement must be designed to ensure turnover at all locations in work area and adjacent areas to avoid build-

up of heavy vapors. Use caution when handling flammable liquids, eliminate sources of ignition from work area, and containers with residues.

Observe safe storage practices by separating resins from hardeners, by keeping solvents and hardeners in a cool area free of sources of ignition, and by observing a special Ceilcote warning on **RED** and **YELLOW** labeled products. The Ceilcote **RED** labels represent amine-type chemicals, and the Ceilcote **YELLOW** labels represent organic peroxide type chemicals which should not be stored adjacent or mixed together because of the possible violent reaction between them. **NOTE: THE ABOVE WARNING DOES NOT REFER TO DOT DIAMOND SHAPED SHIPPING LABELS — ONLY TO CEILCOTE LABEL COLORS.**

Product Material Safety Data Sheets and Installation Bulletin CG-200 and C-20 are available and should be consulted when handling products. These products are for industrial and professional use only; application directions must be followed.

### RETURN GOODS POLICY

All returns must be approved by Ceilcote, shipped prepaid, and are subject to a restocking charge. No material may be returned for credit after 90 days from date of shipments. **Sales and return of materials are subject to Terms and Conditions of Sale on current price list.**

PRODUCT DATA

**CEILGARD FLAKELINE 251 AND 252**

Composition	Thermoset bisphenol polyester resin with inert flake fillers.		
Coverage	Actual coverage is 25-30 sq. ft./gal. @ 35 mils. which includes approximately 20% loss due to waste and overspray.		
Number of Coats and Thickness	Each coat requires application of 20-26 mils wet film thickness to achieve 15-20 mils dry. Minimum 2 coats is normally required.		
Viscosity	3500-4000 CPS @ 75° F. (ASTM-D2393)		
Flash Point	Pensky-Martens Closed Cup (ASTM-D93) Flakeline 251, 252 - 93° F. (34° C.)                      Hardener #3C and 3R - 210° F. (99° C.)		
Film Properties	Exhibits exceptional adhesion, tensile strength is 2500-3000 PSI (17-21 Mpa)                      (ASTM-D4060)		
Abrasion	Excellent. Tabor coefficient of 78 (CS17 wheel, 1000 grams, 5000 rev.)		
Moisture Vapor Transmission	Extremely low. At 35 mils permeance is 0.046 perms; permeability is 0.0016 perm inches. (ASTM-E96-PROCEDURE E)		
Dielectric Strength	394 volts/mil (ASTM D-149)		
Surface Preparation	White Metal Sandblast (SSPC #5 or NACE #1) for immersion or elevated temperature. Near White Sandblast (SSPC #10 or NACE #2) for atmospheric service. Minimum surface profile of 3 mils is required.		
Primers	Steel: CeilGard 370 Primer is optional, but is recommended for immersion or elevated temperature service. Concrete: CeilGard 380 Primer on all concrete surfaces.		
Thinning	<b>DO NOT THIN - WILL NOT TOLERATE SOLVENTS</b>		
Clean Up	Use CeilGard T-410, MEK or Lacquer Thinner. <b>DO NOT USE ACETONE</b>		
Shelf Life	At 40-64° F. shelf life is 6 months; at 65-79° F., 3 months.; 2 months at 80-90° F. Store in a cool, dry place. (Flakeline 251 is 3 months at 40-70° F.)		
Colors	Available in off-white (pink) or gray. Basecoat is usually off-white, topcoat gray. Other colors available on special order, allow 3 weeks for manufacturing.		
Recoat & Curing Time	FLAKELINE 251	FLAKELINE 252	(ASTM D-1640)
@50° F.	6/48 hrs.	12/48 hrs.	
@75° F.	2/24 hrs.	4/24 hrs.	
@90° F.	1/16 hrs.	3/16 hrs.	
Pot Life	FLAKELINE 251	FLAKELINE 252	
50° F.	15-20 min.	100 min.	
75° F.	7-12 min.	60 min.	
90° F.	2- 5 min.	45 min.	
Service Temperature Limits	FLAKELINE 251	FLAKELINE 252	
Dry	350° F.	350° F.	
Wet	130° F.	130° F.	
Wt. Per Gallon	10.0 lbs.	10.0 lbs.	(ASTM D1475)
Application and Equipment	Spray application recommended, but brush or roller accepted for small areas. Air spray equipment with pressure pot or 4:1 airless pump recommended. Airless spray not usually recommended. <b>Plural Component spray equipment required for CeilGard Flakeline 251.</b> For detailed application recommendations refer to CeilGard CG-200 and Bulletin C-20.		

The technical data furnished herein is true and accurate to the best of our knowledge; however, no guarantee of accuracy is given or implied. Ceilcote assumes no responsibility for any loss of damage resulting from the handling or use of the products by the buyer. Seller warrants only that the products to be delivered will conform to Ceilcote's manufacturing standards. In no event shall Ceilcote be responsible for consequential damages of any such breach of warranty including, but not limited to, the Buyer's loss of material or profits, increased expense of operation, down-time or reconstruction of the work, and, in no event shall the Ceilcote obligation under this warranty exceed the price of the defective material.

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