

2. AMENDMENT/MODIFICATION NO. <b>0001</b>	3. EFFECTIVE DATE <b>10 MAY 99</b>	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
6. ISSUED BY  <b>Department of the Army Corps of Engineers Fort Worth District</b>	CODE	7. ADMINISTERED BY (If other than Item 6)	CODE

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)	(✓)	9A. AMENDMENT OF SOLICITATION NO. <b>DACW63-99-B-0032</b>
	(X)	9B. DATED (SEE ITEM 11) <b>19 APRIL 1999</b>
		10A. MODIFICATION OF CONTRACTS/ORDER NO.
		10B. DATED (SEE ITEM 13)
CODE	FACILITY CODE	

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers tended.  is extended,  is not ex-

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

- (a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

**12. ACCOUNTING AND APPROPRIATION DATA (If required)**

**13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

(✓)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

**E. IMPORTANT:** Contractor  is not,  is required to sign this document and return \_\_\_\_\_ copies to the issuing office.

**14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)**

The Solicitation for MAINTENANCE PAINTING, LAKE O' THE PINES, JEFFERSON, TEXAS, is amended as follows:

See Continuation Sheet.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)
15B. CONTRACTOR/OFFEROR  _____ (Signature of person authorized to sign)	15C. DATE SIGNED
16B. UNITED STATES OF AMERICA  BY _____ (Signature of Contracting Officer)	16C. DATE SIGNED

Item 14. Continued.

a. Standard Form 1442, First Page, Item 13.A.- Change the bid opening date and time from "19 May 1999, 2 p.m. local time" to "25 May 1999, 2 p.m. local time."

b. Bidding Schedule.- The Bidding Schedule shall be voided and the accompanying new Bidding Schedule, bearing the notation "ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACW63-99-B-0032," shall be substituted therefor.

c. Section 00710 - Wage Rates.- Replace pages 00710-1 through 00710-3 with the attached new pages 00710-1 through 00710-4, each page bearing the notation "ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACW63-99-B-0032."

d. Section 00720 - Affirmative Action Plan.- Replace pages 00720-1 and 00720-2 with the new attached page 00720-1, bearing the notation "ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACW63-99-B-0032."

e. Section 0800 - Special Contract Requirements, Paragraph 3, 52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984).- Void this paragraph and replace with the following:

**"3 52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)**

**The Contractor shall be required to (a) commence work under this contract within 10 calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than (See Section 01000). The time stated for completion shall include final cleanup of the premises.**

**(End of clause)"**

f. Specifications.

(1) The following listed sections shall be voided and the accompanying new sections of the same number and title, each bearing the notation "ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACW63-99-B-0032," shall be substituted therefor:

<u>Section No</u>	<u>Title</u>
01200	PROJECT MEETINGS
09965	PAINTING: HYDRAULIC STRUCTURES

(2) SECTION 01452 - CONTRACTOR QUALITY CONTROL, Page 01452-18.- Following this page, void ENG Form 144 - PAINT SERVICE RECORD (1 page) and add the accompanying new ENG Form 144 - PAINT SERVICE RECORD (pages 144-1 thru 144-3), each page bearing the notation "ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACW63-99-B-0032."

Maintenance Painting (Title)  
Lake O' the Pines, Jefferson, Texas (Location)

Solicitation No. DACW63-99-B-0032

BIDDING SCHEDULE  
 (To be attached to SF 1442)

**BASE BID: All work required by the plans and specifications exclusive of work required by Option Bid Items.**

<u>Item No.</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Estimated Amount</u>
<b>BASE BID: Provide All Material, Labor, Equipment, Fuel, Maintenance, Supervision and Incidentals to Accomplish Painting of Air Vents, Conduit Liners, Emergency and Service Gate Frames and the Interior Outlet Works Structure at Lake O'the Pines in Accordance with the Specifications, Descriptions and Drawings</b>					
0001	Prepare and Paint Air Vents	EA	2	\$_____	\$_____
0002	Prepare and Paint Conduit Liners	EA	2	\$_____	\$_____
0003	Prepare and Paint Service Gate Frames	EA	2	\$_____	\$_____
0004	Prepare and Paint Emergency Gate Frames	EA	2	\$_____	\$_____
0005	Prepare and Paint Interior of the Outlet Works Structure (includes all ferrous items)	JOB	SUM	*****	\$_____
[AM#1]	0006 <u>TCLP Analysis for Lead - All Debris Collected After Surface Preparation</u>				
		Ea	20	\$_____	\$_____
[AM#1]	0007 <u>Dispose of All Non-Hazardous Materials</u>				
		CF	150	\$_____	\$_____

**TOTAL BASE BID (ITEMS 0001 THROUGH 0007) \$\_\_\_\_\_**

BIDDING SCHEDULE (cont)

**OPTIONS:** All work required by the plans and specifications for each listed option.

<u>Item No.</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Estimated Amount</u>
<b>OPTION NO. 1:</b>					
Provide All Material, Labor, Equipment, Fuel, Maintenance, Supervision and Incidentals to Accomplish Painting of the Service Bridge at Lake O' the Pines in Accordance with the Specifications, Descriptions and Drawings					

[AM#1] 0008	Prepare and Paint Service Bridge, including Railings	JOB	SUM	*****	\$_____
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SUBTOTAL OPTION NO. 1 \$\_\_\_\_\_

**OPTION NO. 2:**  
**PROVIDE ALL MATERIAL, LABOR, EQUIPMENT, FUEL, MAINTENANCE, SUPERVISION AND INCIDENTALS TO ACCOMPLISH PAINTING OF THE SPILLWAY BRIDGE AT LAKE O' THE PINES IN ACCORDANCE WITH THE SPECIFICATIONS, DESCRIPTIONS AND DRAWINGS**

0009 [AM#1]	PREPARE AND PAINT SPILLWAY BRIDGE, INCLUDING RAILINGS	JOB	SUM	*****	\$_____
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SUBTOTAL OPTION NO. 2 \$\_\_\_\_\_

**[AM#1] OPTION NO. 3:**  
**PROVIDE ALL MATERIAL, LABOR, EQUIPMENT, FUEL, MAINTENANCE, SUPERVISION AND INCIDENTALS TO DISPOSE OF ALL HAZARDOUS MATERIALS AT LAKE O' THE PINES IN ACCORDANCE WITH THE SPECIFICATIONS, DESCRIPTIONS AND DRAWINGS**

0010	Dispose of All Hazardous Materials	CF	40	\$_____	\$_____
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SUBTOTAL OPTION NO. 3 \$\_\_\_\_\_

TOTAL OPTIONS (ITEMS [AM#1] 0008, 0009, AND 0010) \$\_\_\_\_\_

TOTAL BASE BID PLUS OPTIONS \$\_\_\_\_\_

BIDDING SCHEDULE (cont)

NOTES:

1. ARITHMETIC DISCREPANCIES: (1989 JUL)

(a) For the purpose of initial evaluation of bids, the following will be utilized in resolving arithmetic discrepancies found on the face of the bidding schedule as submitted by bidders:

- (1) Obviously misplaced decimal points will be corrected;
  - (2) In case of discrepancy between unit price and extended price, the unit price will govern;
  - (3) Apparent errors in extension of unit prices will be corrected; and
  - (4) Apparent errors in addition of lump-sum and extended prices will be corrected.
- (b) For the purposes of bid evaluation, the Government will proceed on the assumption that the bidder intends his bid to be evaluated on the basis of the unit prices, extensions, and totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids. (EFARS 14.406-2)

2. If a modification to a bid based on unit prices is submitted, which provides for a lump sum adjustment to the total estimated cost, the application of the lump sum adjustment to each unit price in the bid schedule must be stated. If it is not stated, the bidder agrees that the lump sum adjustment shall be applied on a pro rata basis to every unit price in the bid schedule.

3. Bidders must bid on all items.

4. For the purpose of this solicitation, the word "item" shall be considered to mean "schedule" as used in Provision 52.214-0019, CONTRACT AWARD--SEALED BIDDING--CONSTRUCTION, in Section 00100 INSTRUCTIONS, CONDITIONS, AND NOTICES TO BIDDERS, excluding additives, deductives, or optional items.

5. EVALUATION OF OPTIONS (JUL 1990) (FAR 52.217-5)

Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

BIDDING SCHEDULE (cont)

NOTES: (cont)

6. OPTION FOR INCREASED QUANTITY- SEPARATELY PRICED LINE ITEM (MAR 1989)  
(FAR 52.217-7)

The Government may require the completion of the numbered line item, identified in the Bidding Schedule as an option item, in the quantity and at the price stated in the Bidding Schedule. The Contracting Officer may exercise the option by written notice to the Contractor within the period specified in the Bidding Schedule. Completion of added items shall continue at the same schedule as the Base Bid unless otherwise noted in the SPECIAL CONTRACT REQUIREMENTS, paragraph 1 entitled COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK.

7. The Government reserves the right to exercise the option(s) either singularly or in any combination for up to [AM#1]60 calendar days after award of the Base Bid without an increase in the Offeror's Bid Price.

[AM#1]8. 52.211-18 Variation in Estimated Quantity (Apr 1984)

If the quantity of a unit-priced item in this contract is an estimated quantity and the actual quantity of the unit-priced item varies more than 15 percent above or below the estimated quantity, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115 percent or below 85 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Contracting Officer within 10 days from the beginning of the delay, or within such further period as may be granted by the Contracting Officer before the date of final settlement of the contract. Upon the receipt of a written request for an extension, the Contracting Officer shall ascertain the facts and make an adjustment for extending the completion date as, in the judgement of the Contracting Officer, is justified.

END OF BIDDING SCHEDULE

**GENERAL DECISION TX990047 03/12/99 TX47**

General Decision Number TX990047

Superseded General Decision No. TX980047

State: **TEXAS**

Construction Type:

**HEAVY  
HIGHWAY**

County(ies):

ANDERSON	HOPKINS	RED RIVER
ANGELINA	HOUSTON	ROBERTSON
BOSQUE	HUNT	RUSK
BURLESON	JACK	SABINE
CAMP	JASPER	SAN AUGUSTINE
CASS	LAMAR	SAN JACINTO
CHAMBERS	LEON	SHELBY
CHEROKEE	LIMESTONE	SOMERVELL
DELTA	MADISON	TITUS
ERATH	MARION	TRINITY
FALLS	MILAM	TYLER
FANNIN	MORRIS	UPSHUR
FRANKLIN	NACOGDOCHES	VAN ZANDT
FREESTONE	NAVARRO	WALKER
GRIMES	NEWTON	WASHINGTON
HAMILTON	PALO PINTO	WISE
HENDERSON	PANOLA	WOOD
HILL	POLK	
HOOD	RAINS	

**HEAVY** (excluding tunnels & dams) **and HIGHWAY PROJECTS** (does not include building structures in rest area projects), & incidental Shore Work for Chambers Co. only. NOT TO BE USED FOR WORK ON SEWAGE OR WATER TREATMENT PLANTS OR LIFT/PUMP STATIONS IN LEON, MILAM, BOSQUE, FALLS, FREESTONE, HAMILTON, HILL, LIMESTONE, NAVARRO & ROBERTSON COUNTIES.

**Modification Number**                      **Publication Date**

0    03/12/1999

COUNTY(ies):

ANDERSON	HOPKINS	RED RIVER
ANGELINA	HOUSTON	ROBERTSON
BOSQUE	HUNT	RUSK
BURLESON	JACK	SABINE
CAMP	JASPER	SAN AUGUSTINE
CASS	LAMAR	SAN JACINTO
CHAMBERS	LEON	SHELBY
CHEROKEE	LIMESTONE	SOMERVELL
DELTA	MADISON	TITUS
ERATH	MARION	TRINITY
FALLS	MILAM	TYLER
FANNIN	MORRIS	UPSHUR
FRANKLIN	NACOGDOCHES	VAN ZANDT
FREESTONE	NAVARRO	WALKER

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACW63-99-B-0032

GRIMES	NEWTON	WASHINGTON
HAMILTON	PALO PINTO	WISE
HENDERSON	PANOLA	WOOD
HILL	POLK	
HOOD	RAINS	

SUTX2044A 03/26/1998

	Rates	Fringes
AIR TOOL OPERATOR	7.12	
ASPHALT HEATER OPERATOR	10.96	
ASPHALT RAKER	7.61	
ASPHALT SHOVELER	7.95	
BATCHING PLANT WEIGHER	12.84	
CARPENTER	10.62	
CONCRETE FINISHER-PAVING	10.02	
CONCRETE FINISHER-STRUCTURES	9.43	
CONCRETE RUBBER	8.27	
ELECTRICIAN	12.80	
FLAGGER	6.66	
FORM BUILDER-STRUCTURES	9.15	
FORM LINER-PAVING & CURB	7.94	
FORM SETTER-PAVING & CURB	9.35	
FORM SETTER-STRUCTURES	9.37	
LABORER-COMMON	7.12	
LABORER-UTILITY	8.99	
MECHANIC	12.00	
OILER	9.24	
SERVICER	8.85	
PAINTER-STRUCTURES	9.26	
PILEDRIVER	10.87	
PIPE LAYER	8.93	
ASPHALT DISTRIBUTOR OPERATOR	9.02	
ASPHALT PAVING MACHINE	9.88	
BROOM OR SWEEPER OPERATOR	7.50	
BULLDOZER	10.45	
CONCRETE CURING MACHINE	8.00	
CONCRETE PAVING SAW	10.97	
CRANE, CLAMSHELL, BACKHOE, DERRICK, DRAGLINE, SHOVEL	10.63	
FOUNDATION DRILL OPERATOR CRAWLER MOUNTED	11.61	
FOUNDATION DRILL OPERATOR TRUCK MOUNTED	11.67	
FRONT END LOADER	9.38	
MILLING MACHINE OPERATOR	8.20	
MIXER	9.35	
MOTOR GRADER OPERATOR FINE GRADE	12.18	
MOTOR GRADER OPERATOR	10.54	
PAVEMENT MARKING MACHINE	7.42	
ROLLER, STEEL WHEEL PLANT MIX PAVEMENTS	8.63	
ROLLER, STEEL WHEEL OTHER FLATWHEEL OR TAMPING	7.37	
ROLLER, PNEUMATIC, SELF- PROPELLED	7.67	
SCRAPER	8.84	
TRACTOR-CRAWLER TYPE	9.24	
TRACTOR-PNEUMATIC	9.12	

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACW63-99-B-0032

TRAVELING MIXER	9.41
REINFORCING STEEL SETTER PAVING	11.31
REINFORCING STEEL SETTER STRUCTURES	11.13
SPREADER BOX OPERATOR	8.29
WORK ZONE BARRICADE	7.43
TRUCK DRIVER-SINGLE AXLE LIGHT	8.10
TRUCK DRIVER-SINGLE AXLE HEAVY	8.20
TRUCK DRIVER-TANDEM AXLE SEMI- TRAILER	8.42
TRUCK DRIVER-LOWBOY/FLOAT	10.35
TRUCK DRIVER-TRANSIT MIX	8.81

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U. S. Department of Labor  
200 Constitution Avenue, N. W.  
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N. W.  
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U. S. Department of Labor  
200 Constitution Avenue, N. W.  
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

**END OF GENERAL DECISION**

**TYLER-LONGVIEW, TX, ECO AREA**

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)**

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
22.5%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Texas Counties of Anderson, Angelina, Cherokee, Henderson, Houston, Marion, Nacogdoches, Panola, Rusk, San Augustine, Shelby, Upshur, and Wood.

SECTION 01200

PROJECT MEETINGS  
02/97

PART 1 GENERAL

[AM#1] 1.1 PRECONSTRUCTION CONFERENCE

Approximately one week after award of the contract and prior to the start of any construction work an authorized representative of the Contracting Officer will schedule and conduct a preconstruction conference. The Contractor's Project Manager, Superintendent and his Quality Control Manager will attend this meeting. The Contractor is encouraged to have an officer of his company and representation from his sub-contractors at this conference. This conference will be held at the location specified by the Contracting Officer's authorized representative.

1.1.1 Start of Construction Work

If the Contractor has submitted the Accident Prevention (Safety) Plan, Quality Control Plan, and Environmental Protection Plan for review prior to this meeting, these may be accepted in toto or accepted with comments at the conference. Construction work will not proceed until after this meeting has been held, these three plans noted above have been accepted and the Notice to Proceed has been received and acknowledged by the Contractor.

1.2 OTHER MEETINGS

Construction Quality Control meetings and conferences are specified in Section 01452 CONTRACTOR QUALITY CONTROL. Other meetings are specified in various Division 1 and technical sections.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

-- End of Section --

PROJECT (General description)		TYPE OF STRUCTURE		LOCATION		
				COUNTY	STATE	
HOW PERFORMED: <input type="checkbox"/> Hired Labor <input type="checkbox"/> CONTRACT		TYPE OF PAINTING: <input type="checkbox"/> INITIAL <input type="checkbox"/> MAINTENANCE				
CONTRACT NO.		SURFACE PAINTED				
DATE WORK STARTED		<input type="checkbox"/> WOOD <input type="checkbox"/> METAL <input type="checkbox"/> CONCRETE <input type="checkbox"/> OTHER (Specify)				
DATE WORK COMPLETED		PREPARATION OF SURFACE				
CONDITION OF SERVICE PRIOR TO PAINTING		<input type="checkbox"/> SAND BLASTED <input type="checkbox"/> SCRAPED <input type="checkbox"/> FLAME SCALDED <input type="checkbox"/> CHEMICAL INHIBITOR <input type="checkbox"/> WIRE BRUSHED				
DESCRIPTION OF 1ST COAT	KIND OF PAINT USED		HOW APPLIED		LOWEST AMBIENT TEMPERATURE	
			<input type="checkbox"/> SPRAY <input type="checkbox"/> BRUSH <input type="checkbox"/> COMBINATION		HIGHEST HUMIDITY	
	NAMES OF		WEATHER DURING DRYING PERIOD			
	PAINT FOREMAN		REMARKS			
INSPECTOR						
DESCRIPTION OF 2D COAT	KIND OF PAINT USED		HOW APPLIED		LOWEST AMBIENT TEMPERATURE	
			<input type="checkbox"/> SPRAY <input type="checkbox"/> BRUSH <input type="checkbox"/> COMBINATION		HIGHEST HUMIDITY	
	NAMES OF		WEATHER DURING DRYING PERIOD			
	PAINT FOREMAN		REMARKS			
INSPECTOR						
TIME IN HOURS BETWEEN 1ST AND 2D COATS						
DESCRIPTION OF 3D COAT	KIND OF PAINT USED		HOW APPLIED		LOWEST AMBIENT TEMPERATURE	
			<input type="checkbox"/> SPRAY <input type="checkbox"/> BRUSH <input type="checkbox"/> COMBINATION		HIGHEST HUMIDITY	
	NAMES OF		WEATHER DURING DRYING PERIOD			
	PAINT FOREMAN		REMARKS			
INSPECTOR						
TIME IN HOURS BETWEEN 2D AND 3D COATS						
DESCRIPTION OF 4TH COAT	KIND OF PAINT USED		HOW APPLIED		LOWEST AMBIENT TEMPERATURE	
			<input type="checkbox"/> SPRAY <input type="checkbox"/> BRUSH <input type="checkbox"/> COMBINATION		HIGHEST HUMIDITY	
	NAMES OF		WEATHER DURING DRYING PERIOD			
	PAINT FOREMAN		REMARKS			
INSPECTOR						
TIME IN HOURS BETWEEN 3D AND 4TH COATS						
<p><b>NOTE:</b> Under "Kind of Paint Used" indicate Federal, Army, Corps of Engineers or division specification or formula number and designation of paint used, together with name of manufacturer. If paint is of proprietary nature, give trade name, manufacturer's type number, and manufacturer's name. Also indicate color of each coat. See reverse side for record of inspection.</p>						

PAINT SERVICE RECORD



Paint Type:		Project Name:						Page No.:
Batch No.:		Location:						Date:
Relative Time (hr.)	Clock Time (ie: 8:15am)	Ambient Temp. ( )	Surface Temp ( )	Relative Humidity ( )	Dew Point ( )	Narrative on Amount of Condensation and Water on Surfaces		
0								
4								
8								
Relative Time (hr.)	Clock Time (ie: 8:15am)	Ambient Temp. ( )	Surface Temp ( )	Relative Humidity ( )	Dew Point ( )	Narrative on Amount of Condensation and Water on Surfaces		
0								
4								
8								
Relative Time (hr.)	Clock Time (ie: 8:15am)	Ambient Temp. ( )	Surface Temp ( )	Relative Humidity ( )	Dew Point ( )	Narrative on Amount of Condensation and Water on Surfaces		
0								
4								
8								

Signature: \_\_\_\_\_

SECTION 09965  
PAINTING: HYDRAULIC STRUCTURES

12/95

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

- |             |   |
|-------------|---|
| ANSI Z87.1  | (1989; Z87.1a) Occupational and Educational Eye and Face Protection |
| ANSI Z358.1 | (1990) Emergency Eyewash Shower Equipment                           |

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- |             |   |
|-------------|---|
| ASTM D 304  | (1990) N-Butyl Alcohol (Butanol)  |
| ASTM D 1186 | (1987) Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to a Ferrous Base |
| ASTM D 4417 | (1984) Field Measurement of Surface Profile of Blast Cleaned Steel  |

CODE OF FEDERAL REGULATIONS (CFR)

- |                          |  |
|--------------------------|--|
| 29 CFR 1910              | Occupational Safety and Health Standards   |
| 29 CFR 1910.20           | Access to Employee Exposure and Medical Records                                      |
| 29 CFR 1910.94           | Ventilation  |
| 29 CFR 1910.134          | Respiratory Protection   |
| 29 CFR 1910.137          | Electrical Protective Devices  |
| 29 CFR 1910.146          | Permit-required Confined Spaces  |
| 29 CFR 1910, Subpart I   | Personal Protective Equipment  |
| 29 CFR 1926              | Safety and Health Regulations for Construction                                       |
| 29 CFR 1926.62           | Lead   |
| 40 CFR 60, App A, Mtd 22 | Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions |

from Flares

40 CFR 117	Determination of Reportable Quantities for Hazardous Substances
40 CFR 122	EPA Administered Permit Programs: the National Pollutant Discharge Elimination System
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 261, App II, Mtd 1311	Toxicity Characteristic Leaching Procedure (TCLP)
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 262.22	Number of Copies
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification
49 CFR 171, Subchapter C	Hazardous Materials Regulations

COMMERCIAL ITEM DESCRIPTIONS (CID)

CID A-A-3127	Coating System: Aluminum Epoxy Mastic, For Minimally Prepared Atmospheric Steel
CID A-A-3132	Coating System: Epoxy Primer/Polyurethane Topcoat, For Minimally Prepared Atmospheric Steel

ENGINEERING MANUALS (EM)

EM 385-1-1	U.S. Army Corps of Engineers Safety and Health Requirements Manual
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FEDERAL SPECIFICATIONS (FS)

FS TT-E-489	(Rev J) Enamel, Alkyd, Gloss, Low VOC Content
FS TT-P-38	(Rev E) Paint, Aluminum (Ready-Mixed)

MILITARY SPECIFICATIONS (MS)

MS DOD-P-15328	(Rev D; Am 1; Int Am 2; Notice 1) Primer (Wash), Pretreatment (Formula No. 117 for Metals (Metric)
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NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(1993) National Electrical Code
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)	
NIOSH Pub No. 84-100	(1984; Supple 1985, 1987, 1988, & 1990) NIOSH Manual of Analytical Methods
TEXAS NATURAL RESOURCE CONSERVATION COMMISSIONS (TNRCC)	
30 TAC	Texas Administrative Code (TAC), Sections 335.501-.515 (Subchapter R), Classifying and Coding Industrial Wastes and Hazardous Wastes
STEEL STRUCTURES PAINTING COUNCIL (SSPC)	
SSPC Paint 25	(1991) Red Iron Oxide, Zinc Oxide, Raw Linseed Oil and Alkyd Primer (without Lead and Chromate Pigments)
SSPC SP 1	(1982) Solvent Cleaning
SSPC SP 3	(1989) Power Tool Cleaning
SSPC SP 5	(1991) White Metal Blast Cleaning
SSPC SP 7	(1991) Brush-Off Blast Cleaning
SSPC Guide 6 (CON)	(1994) Containing Debris Generated During Paint Removal Operations
SSPC Guide 6I (CON)	(1992) Containing Debris Generated During Paint Removal Operations

## 1.2 WORK PERFORMANCE, DESCRIPTION AND PROJECT REQUIREMENTS

Work shall be performed in accordance with the requirements of 29 CFR 1910, 29 CFR 1926, EM 385-1-1, and other references as listed herein. Matters of interpretation of the standards shall be submitted to the Contracting Officer (CO) or the Contracting Officer Representative (COR) for resolution before starting work. Where the regulations conflict, the most stringent requirements shall apply.

The Contractor shall perform maintenance painting that includes (a) cleaning, preparation, and pretreatment of surfaces, (b) paint application, and (c) project site cleanup at Lake O'the Pines, Jefferson, Texas. The new paint systems shall be approved by the CO or COR. It is the responsibility of each bidder to verify the project and site conditions. Arrangement for access to project site shall be made with Mr. Johnny Campbell (phone, 903/665-2336) and a minimum of 24 hours advance notice shall be required.

Before start of work, the Contractor shall attend a pre-work conference with the CO or COR to discuss the proposed work plans, methods to accomplish the maintenance painting, safety and environmental plans (see submittal paragraphs 1.2), testing and recording requirements, and the sequence of work.

[AM#1] Base Bid shall consist of preparing and painting(1) air vents, (2)

conduit liners, (3) service gate frames, (4) emergency gate frames, (5) ferrous items inside tower i.e. overhead crane and rails, hoists, misc. equipment, ladders, handrails, gate well frames and covers, etc., (6) testing debris from surface preparation for lead by TCLP, and (7) disposing of non-hazardous debris.

Bid Option No.1 shall consist of painting Service Bridge to outlet works tower and galvanized bridge railings.

Bid Option No.2 shall consist of painting Spillway Bridge and bridge railings.

[Am#1] Bid Option No. 3 shall consist of disposing of all hazardous material, i.e debris from surface preparation which contains lead, as defined by 30 TAC.

For work in the Base Bid items (1) through (4), Paint System No. 1, Permox 9043, Type I (wet process epoxy), manufactured by Permite Corporation for damp or wet surface shall be used. The Contractor shall prepare the surfaces and apply paint on all surfaces of ferrous metal of two service and two emergency gate frames, two air vents and two conduit liners of the flood conduits. All work required, including inspection and acceptance by the CO or COR, shall be completed on one conduit liner (left sluice) before beginning work on the other conduit liner (right sluice). [Am#1] **Abrasive blast cleaning shall be used for Base Bid items (1) through (4).**

Application of Paint System No.1 is part of a research project conducted in coordination with the U.S. Army Corps of Engineers, Construction Engineering Research Laboratory (CERL), Champaign, Illinois. The Contractor shall perform testing and record keeping for Paint System No.1. Instruments for testing shall be provided by the Contractor and record keeping forms shall be provided by the Government, ([AM#1]see the forms appended in SECTION 01452). The Government representative on-site will cooperate with the Contractor, by assisting as necessary, in taking and recording test results and pertinent information.

[Am#1] The Contractor shall verify that the emergency gate is closed and locked out during work in the sluice. Stopping leakage from the gate is not a requirement for the completion of applying Paint System No. 1. Actions to slow or stop leaks shall be for the convenience of the Contractor and shall be his responsibility. When directed by the CO or COR, the Contractor shall remove any equipment or material in the flood conduit and allow for emergency release if there is a sudden rise in the elevation of the lake. However the COR will take all measures necessary to ensure that the Contractor has adequate time to complete work in each sluice before any such release and that the Contractor will not have to repeat completed work.

[Am#1] For Work in Base Bid item (5), Bid Option No.1, and Bid Option No.2, the Contractor shall prepare the surfaces and apply Paint System No. 2. Surfaces to be painted shall be prepared by mechanically removing loose or flaking paint and rust; cleaning the surfaces with a solution specifically designed to remove dust, grease, oil, mildew, and other contaminants; treating rusted areas to prevent further rusting; priming bare areas; and applying a layer of an overcoating especially formulated to immobilize lead, in accordance with the manufacturer's instructions. **Abrasive blast cleaning shall not be used for Base Bid item (5), Bid Option No.1, and Bid Option No.2.**

NOTE: As used in this specification, the term "Paint" includes products specifically designed to immobilize lead based paint and the term "painting" includes the procedure(s) by which the immobilization product is applied to the surface to be coated. [Am#1] The Contractor shall obtain written acceptance of each prepared surface from the CO or COR before applying the new painting system.

A lead-based paint (LBP) screening survey was performed on the service and emergency gates frames, and liners with an x-ray fluorescent analyzer (XRF) in July 1993. The XRF readings are attached to this section for reference.

At the time of the survey, the existing paint system contained a very low level of lead. In compliance with 29 CFR 1926, Section .62, worker protection shall be required when disturbing paint surfaces that contain lead.

The project site is at a water resource and containment of debris will be required. The Contractor shall develop a lead protection program, described in Part 1.3, which shall include plans to monitor worker exposure and minimize release of dust and debris to the environment.

The Contractor shall characterize the debris for disposal by the Toxicity Characteristic Leaching Procedures (TCLP) for lead (EPA Method 1311/6010A).

Debris containing lead shall be disposed in accordance with 30 TAC. The debris is potentially a Class II waste which be disposed at a Type I/IAE, or Type IV landfill. Class II waste does not require prior approval from TNRC for waste disposal.

The air vents, conduit liners, service gate frames, and emergency gate frames are in areas which have been determined to be confined spaces. These spaces are classified as permit required confined spaces because potential introduction of a hazardous atmosphere during surface preparation and painting. The Contractor shall prepare and submit a confined space plan in accordance with 29 CFR 1910, Section .146 and EM 385-1-1, Section 06.I (see paragraph Confined Space Procedures). [Am#1] All other items to be painted, i.e. the ferrous items inside the tower, the service bridge, and the spillway bridge are not in confined space areas.

### 1.3 LEAD PROTECTION PROGRAM

For all jobsites where lead is present, the Contractor shall develop a comprehensive lead protection program in accordance with 29 CFR 1926.62. [Am #1] The Contractor shall submit the program as a single document which shall include the following, as described separately in Paragraph 1.4:

- a. Accident Prevention Plan Plan
- b. Confined Space Procedures
- c. Respiratory Protection Plan
- d. Airborne Sampling Plan Plan
- e. Ventillation AssessmentPlan
- f. Medical Surveillance
- g. Waste Classification, Handling, and Disposal Plan
- h. Visible Emissions Monitoring Plan
- i. Water Quality Plan
- j. Paint Abatement and Containment Plan
- k. Confined Space Procedures

### 1.4 SUBMITTALS

Government approval is required for all submittals with a "GA" designation;

submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

deeeeddddddSD-08 Statements

Qualifications and Experience; GA.

The Contractor shall provide certification pursuant to paragraph QUALIFICATIONS for all job sites. Submittal of the qualifications and experience of any additional qualified and competent persons the CIH, IH, CSP employs to provide on-site safety and health will also be provided. Acceptance of this submission must be obtained prior to the submission of other required safety and health submittal items.

Accident Prevention Plan; GA.

The requirements included in Section 01 of EM 385-1-1 shall be followed by the Contractor when preparing the Accident Prevention Plan (APP). The plan shall be prepared for all sites and shall include, but is not limited to, each of the topic areas listed in Table 1-1 therein and the requirements of paragraph SAFETY AND HEALTH PROVISIONS; each topic shall be developed in a concise manner to include management and operational aspects. The Contractor shall develop the Activities Hazard Analysis (AHA) prior to beginning of each major phase of work as part of the APP.

Confined Space Procedures; GA.

The Contractor shall develop a written Permit Required Confined Space Program (PRCSP) in accordance with 29 CFR 1910.146 which shall include a measure of identification and classification of confined space as non-permit and permit required. As a minimum, the following elements shall be included, and along with any additional factors that the Contractor may identify.

- a. Procedures to identify confined spaces and determine if a permit is required.
- b. Identifications of the individuals responsible for administering the Contractor's confined Space Program. This shall include the name and qualification of the person, their specific role, and responsibility in administering this program; i.e. person(s) who will issue permits, conduct atmospheric testing, identification of entry supervisor, authorized entrants, and attendants, etc.
- c. Identification of monitoring equipment to be used for atmospheric testing; such as, oxygen content, combustible, and toxics; in the confined space prior to entry and during work. This shall include type of equipment, approval for use in hazardous environments and calibration requirements. The certificates of calibration shall be supplied by the Contractor, they shall include: type of equipment, model number, date of calibration, firm conducting calibration, and signature of individual certifying calibration.
- d. Development of an air monitoring equipment plan for confined space which identifies the specific type of monitoring, when and how often conducted, and by whom. A log shall be developed and kept for documentation of the following data: date, time, equipment used, type of air monitoring, date and time of equipment calibration, and person

conducting the air monitoring.

- e. Detailed description of the confined space permit system which shall include a copy of a permit, instructions for completion and issuance of the permit, and the person responsible for signing the permit.
- f. Training requirements and documentation of the training as required for supervisor, entrants, attendants, and stand-by personnel.
- g. Procedures which address entry prior to the permit determination, and all other entries which ensure a safe entry into the confined space.
- h. Documentation of the elimination of hazards prior to entry.
- i. Communication procedures, to include working in high-noise and/or toxic environments, shall be established to ensure effective employee communication at all times.
- j. Procedure for limiting unauthorized access to the confined space.
- k. Emergency procedures to include emergency entry, escape and rescue procedures, communication, and any personnel protective equipment necessary.
- l. Description of emergency rescue procedures including simulated drills, personnel protective equipment necessary, and retrieval system to be used.
- m. Description of the ventilation system to be used for confined space work to ensure adequate ventilation. This shall include system design description, the measure of determining efficiency and proper installation of the ventilation system.
- n. Measure of dust suppression to be used to minimize a potential toxic atmosphere.
- o. Description of methods used to inspect personnel protective equipment prior to use in the confined space.
- p. Description of method of inspection to ensure conditions within the confined space have not changed since the start of work and name of the person who is responsible for the inspections.

Respiratory Protection Program; FIO.

The Contractor shall develop a comprehensive written respiratory protection program for all job sites in accordance with 29 CFR 1910.137, 29 CFR 1926.62, and Section 05.E of EM 385-1-1.

Airborne Sampling Plan; GA.

The Contractor shall develop an Airborne Sampling Plan for all job sites detailing the NIOSH Pub No. 84-100, Factory Mutual, or Underwriters Laboratories approved equipment, equipment calibration procedures, sampling methods, sampling to be performed, and analytical procedures to be used based on the type of work to be performed and anticipated toxic contaminants to be generated. The Contractor shall include the name of the accredited laboratory, listed by the American Industrial Hygiene

Association (AIHA), to be used to conduct the analysis of collected personal and environmental air samples. In addition, the Contractor shall provide the CO or COR with a copy of the test results from the laboratory within 5 working days of the sampling date and shall provide results from direct-reading instrumentation on the same day the samples are collected.

This plan shall include discussion on documentation of results that exceed the specified limits (personal air samples that exceed 30 micrograms per cubic meter) or as required by Federal, State or local regulations shall be highlighted in the log in such a manner to make them easily distinguishable from monitoring results that do not exceed specified or regulated limits.

Ventilation Assessment; GA.

The Contractor shall develop a plan to provide ventilation assessment for all job sites as required by paragraph PAINT APPLICATION, subparagraph VENTILATION.

Medical Surveillance Plan; GA.

The Contractor shall develop a plan to provide medical surveillance to the work force for all job sites as required in paragraph MEDICAL STATUS and provide a statement from the examining physician indicating the name of each employee evaluated and any limitations which will preclude the employee from performing the work required. The statement shall include the date of the medical evaluation, the physician's name, signature, and telephone number. Medical records shall be maintained as required by 29 CFR 1910.20.

Waste Classification, Handling, and Disposal Plan; GA.

The Contractor is responsible for assuring the proper disposal of all hazardous and nonhazardous waste generated during the project. Therefore, the Contractor shall develop a Waste Classification, Handling, and Disposal Plan for all job sites in accordance with the requirements of 40 CFR 261 and 40 CFR 262. In addition, the following provisions shall be included:

- a. In the case of waste generated from abrasive blasting lead-containing paints with recyclable steel or iron abrasives, the spent abrasive shall be disposed of as a hazardous waste or shall be stabilized with proprietary blast additives regardless of the results of 40 CFR 261, App II, Mtd 1311. Where stabilization is preferred, the Contractor shall employ a proprietary blast additive during blasting operations.
- b. Hazardous waste shall be placed in closed containers and shall be shielded adequately to prevent dispersion of the waste by wind or water. Any evidence of improper storage shall be cause for immediate shutdown of the project until corrective action is taken.
- c. Nonhazardous waste shall be stored in closed containers separate from hazardous waste storage areas.
- d. All hazardous waste shall be transported by a licensed transporter in accordance with 40 CFR 263 and 49 CFR 171, Subchapter C.
- e. All nonhazardous waste shall be transported in accordance with local regulations regarding waste transportation.

f. In addition to the number of manifest copies required by 40 CFR 262.22, one copy of each manifest will be supplied to the CO or COR prior to transportation.

#### Visible Emissions Monitoring Plan; GA.

For all job sites where lead is present, a Visible Emissions Monitoring Plan is required for job sites requiring moderate control on emissions. The Contractor shall develop a plan for monitoring the visible emissions from the project. The time of emissions shall be measured in accordance with 40 CFR 60, App A, Mtd 22. The plan shall also include the provisions for halting work and correcting the containment in the event unacceptable emissions are observed. General statements shall not be used; specific methods, procedures, and details are required. Random emissions from the containment shall not exceed 1 percent of the work day. The Contractor shall document each time that the work is halted due to a violation of the visible emissions criteria. Documentation shall include the cause for shutdown and the corrective action taken to resolve the problem.

#### Water Quality Plan; GA.

For all job sites where lead is present, the Contractor shall develop a plan to ensure that no lead is released into bodies of water or storm sewers. Therefore, NPDES permits per EPA regulation 40 CFR 122 are not required for the project. The plan shall include provisions for halting work if spills or emissions are observed entering into bodies of water or found in areas where storm water runoff could carry the debris into bodies of water or storm sewers. The plan shall also address cleanup and reporting procedures.

In the event that there are any releases of lead paint debris into the waterways, with reportable quantities of hazardous substances designated pursuant to Section 311 of the Clean Water Act, they shall be reported to the EPA in accordance with 40 CFR 117 and 40 CFR 355. Releases or spills that carry into waterways or storm sewers shall be thoroughly documented. The documentation shall include the time and location of the release, amount of material released, actions taken to clean up the debris, amount of debris recovered, and corrective action taken to avoid a reoccurrence. Releases shall also be reported to the Coast Guard and other state and local authorities as appropriate. If the release is equivalent to 10 pounds or more of lead-containing material in a 24-hour period, it is considered to be a reportable quantity under CERCLA. The Contractor shall comply with 40 CFR 302.

#### Paint Abatement and Containment Plan; GA.

For all job sites where lead is present, the Contractor shall develop a plan for containing all lead contaminated waste. The plan shall discuss work procedures to be used in paint abatement including sketches showing locations and layouts of work control area, decontamination area, change rooms, and wash facilities. The plan shall identify personnel protective equipment; filtration and collection of wastewater from wash facilities; decontamination procedures for personnel, equipment, work control area, hygiene practices (i.e. eating, drinking, rest room procedures, and prohibition of smoking); and acceptance of the site clean-up by the CO or COR. The plan shall be prepared and signed by a competent person who has successfully completed an EPA accredited LBP abatement supervisor course (see paragraph - Certified Professionals). The containment shall comply with the requirements of SSPC Guide 6 (CON) and/or SSPC Guide 6I

(CON), where a ventilation system and tight control of emissions are required. The plan shall include drawings, load-bearing capacity calculations, and wind load calculations. When the design is such that the spent abrasive is allowed to accumulate in quantities greater than 1,000 pounds, and/or impart a significant wind load on the structure, the Contractor shall have the drawings approved by a registered structural engineer. The drawings and calculations shall be stamped with the engineer's seal. The Contractor shall also identify the type and placement of water booms, methods for anchoring the booms, and the procedures for removing debris.

#### SD-14 Samples

##### Special Paint Formulas; GA.

Samples of special paint formulas, listed in paragraph PAINT FORMULATIONS, shall be submitted during the pre-construction meeting. A Separate 1/2-pint samples of ingredient raw materials shall be retained by the Contractor for the duration of the contract. Samples shall be furnished to the Government if requested by the CO or COR. The ingredient of samples shall be clearly identified by commercial name, trade designation, manufacturer, batch or lot number, and such other data as may be required.

##### Specification and Proprietary Paints; GA.

Federal, Military, and Steel Structures Painting Council specification paints are those formulated to meet Federal, military, and industry specifications. One of the following shall be submitted:

- a. A certified test report showing the results of required tests made on the material and a statement that it meets all of the specification requirements.
- b. A certified test report showing the results of required tests made on a previous batch of paint produced by the same firm using the same ingredients and formulation except for minor differences necessitated by a color change and a statement that the previous batch met all of the specification requirements. A report of tests on the proposed batch showing the following properties applicable to the material specifications shall be furnished: color, gloss, drying time, opacity, viscosity, weight per gallon, and fineness of grind.
- c. A proprietary paint - When the required quantity of a particular type or color of a paint is 10 gallons or less, a proprietary, name-brand, shelf item paint of the same type and with similar properties to the material specified may be proposed without sampling. Proprietary paints are any which do not follow the formulas in paragraph PAINT FORMULATIONS or the complete specification requirements of Federal, Military, and Steel Structures Painting Council specifications. To receive consideration, a statement from the supplier that the paint is appropriate as to type, color, and gloss and is a premium grade of paint shall be furnished.

##### Thinners; GA.

The Contractor shall submit data showing thinners to be used in this contract. These are solvents recommended by the manufacturer to reduce the viscosity of the paint. A copy of the specification for approved thinners shall be available at the project site for reference.

Visual Standard for Abrasive Blast Steel Sample; GA.

The Contractor shall prepare the SSPC Visual Standard for Abrasive Blast Cleaned Steel sample on-site for judging the the level of cleanliness of the blasted surfaces (see paragraph Cleaning and Peperation of Surfaces to be Painted).

SD-18 Records

Inspections and Operations; GA.

The Contractor shall document and submit records of inspections and operations performed. Submittals shall be made on a timely basis and shall include but are not limited to:

- a. Inspections performed, including the area of the structure involved and the results of the inspection.
- b. Surface preparation operations performed, including the area of the structure involved, the mode of preparation, the kinds of solvent, abrasive, or power tools employed, and whether contract requirements were met.
- c. Thinning operations performed, including thinners used, batch numbers, and thinner/paint volume ratios.
- d. Application operations performed, including the area of the structure involved, mode of application employed, ambient temperature, substrate temperature, dew point, relative humidity, type of paint with batch numbers, elapsed time between surface preparation and application, elapsed time for recoat, condition of underlying coat, number of coats applied, and if specified, measured dry film thickness or spreading rate of each new coating.

The Contractor shall document the research paint system, Permox 9043, Type I (Paint System No.1).

Training program; GA.

The Contractor shall provide training certificates before start of work for all the Contractor's and subcontractor's workers, including on-site supervisor and Competent Person. Training shall meet the requirements of 29 CFR 1926, Sections .59 and .62, and that required by EPA or the State lead-based paint training course as approved by EPA. Training shall be provided prior to time of job assignment and, at least, annually. Training may cover all abatement methods and also specific to this project as stated in the approved Contractor's Lead Protection Program for protection of workers and environment. The project specific training shall, as a minimum, include the following:

- a. Specific nature of the operator which could result in exposure to lead.
- b. Purpose, proper selection, fitting, use and limitations of respirator.
- c. Purpose and descriptions of the medical surveillance program and the medical removal protection program, including information

concerning the adverse health effects associated with excessive exposure to lead (with particular attention to the adverse reproductive effects on both males and females, hazards to fetus, and additional precautions for employees who are pregnant).

d. Relevant engineering controls and poor work practices.

e. The contents of other compliance plans required during execution of work (i.e. monitoring and work practices in the permit required confined space).

f. Instructions to employees that chelating agents should not be used to remove lead from their bodies except under the direction of a licensed physician.

g. Employee's right to access medical record per 29 CFR 1910, Section .20.

Closure Document; GA.

The Contractor shall provide a copy of each document to the CO or COR after project completion and prior to final payment. They shall include, as a minimum, the documentation required for the research Paint System No.1 (Permax 9043, Type I), the disposal ticket, waste receipt, laboratory analytical results, sample chain of custody, daily field log, accident report, safety inspection record, and personal and environmental air monitoring results.

## 1.5 QUALIFICATIONS

Qualifications and experience shall comply with the following.

### 1.5.1 Certified Professional

The Contractor shall provide a person who is qualified and competent as defined in Section 01 of EM 385-1-1, will develop the required safety and health submittal, and will be responsible for on-site safety and health during the contract period. The person shall be a Certified Industrial Hygienist (CIH), an Industrial Hygienist (IH), or a Certified Safety Professional (CSP) with a minimum of 3 years of demonstrated experience in similar related work. The Contractor shall certify that the Certified Industrial Hygienist (CIH) holds current and valid certification from the American Board of Industrial Hygiene (ABIH), that the IH is considered board eligible by written confirmation from the ABIH, or that the CSP holds current and valid certification from the American Board of Certified Safety Professionals.

The CIH, IH, or CSP may utilize other qualified and competent persons, as defined in EM 385-1-1, to conduct on-site safety and health activities as long as these persons have a minimum of 3 years of demonstrated experience in similar related work and are under the direct supervision of the CIH, IH, or CSP. For lead containing job sites, the competent and qualified person shall have successfully completed an EPA or State accredited lead-based paint abatement Supervisor course specific to the work to be performed and shall possess current and valid State and/or local government certification, as required.

### 1.5.2 Certified Laboratory

The Contractor shall provide documentation which includes the name, address, and telephone number of the laboratories to be providing services.

**These testing laboratories shall be completely independent from the Contractors or subcontractors performing the abatement task as recognized by the Federal, State and local regulations.** In addition, the documentation shall indicate that each laboratory is an EPA National Lead Laboratory Accreditation Program (NLLAP) accredited laboratory and that each is rated proficient in the NIOSH/EPA Environmental Lead Proficiency Analytical Testing Program (ELPAT) and will document the date of current accreditation. Certification shall include accreditation for heavy metal analysis, list of experience relevant to analysis of lead in air, and a Quality Assurance and Quality Control Program.

#### 1.6 QUALITY CONTROL PROVISIONS (PAINT SYSTEM NO.1, PERMOX 9043, TYPE I)

For the research paint system, the Contractor shall document the amount of the paint used for each day's operation. Testing and recording data shall be coordinated between the Contractor and the Government representative. Forms are [AM#1] in SECTION 01452. All required record data shall be provided, on a daily basis, in legible hand/field writing, to the Government representative. The Contractor shall maintain accurate record of the following. These records shall be typed and submitted to the CO or COR weekly for each specific area prepared and painted.

- a. Initial Conditions. Describe the structure on which the test coatings are being applied. Include a description of the condition of the existing coating and surface.
- b. Surface Preparation. Identify the supplier, trade name, grade, etc. of the non-metallic abrasive used. Describe the surface preparation equipment and procedures (size of compressors, length and diameter of hoses, nozzle sizes, blow-down or vacuum procedure, spent abrasive removal procedure, any other associated equipment and procedures).
- c. Paint Preparation and Application. Identify paint applied including product, batch or lot numbers, and date of manufacturer. Describe mixing procedures (mix ratio, size of each batch mixed, amount of thinner used, actual induction time, specific area coated with each batch mixed, length of time needed to apply the mixed material, and amount of paint applied) Describe airless equipment (size of pump, hoses, tips, etc). The elapsed time between application of each successive paint coating shall be recorded.
- d. Conditions During Surface Preparation and Paint Application. Provide narrative of the amount of condensation and water on surfaces during preparation and painting, and the method or procedure used in applying water as described in paragraph PAINT APPLICATION for PermoX TYPE I. Describe difficulties encountered and how they are being resolved.

Describe any difficulties encountered in applying the paint coatings or in obtaining required film thickness, including how these issues are being resolved.

The Contractor shall furnish instruments for testing. Test location information relative to any surface prepared and painted shall be noted on the contract drawings. The Contractor shall obtain and record the following information during surface preparation and paint application.

- a. Temperature. Monitor ambient and surface temperatures, relative humidity and dew point, every four (4) hours while work is being performed.
- b. Surface Profile. Measure surface profile at least once on each 100 square feet (see paragraph Ferrous Surfaces Subject to Severe Exposure (White Metal Blast Cleaning)).
- c. Film Thickness. Measure and record the film thickness of each coat at least at five (5) locations per 100 square feet of surface coated (see paragraph Measurement on Ferrous Metal).

#### 1.7 SAFETY AND HEALTH PROVISIONS

This paragraph, SAFETY AND HEALTH PROVISIONS, supplements the requirements of EM 385-1-1, paragraph (1). In any conflict between Section 01 of EM 385-1-1 and this paragraph, the provisions herein shall govern.

##### 1.7.1 Abrasive Blasting

The Contractor shall comply with the requirements in Section 06.H of EM 385-1-1.

##### 1.7.1.1 Hoses And Nozzles

In addition to the requirements in Section 20 of EM 385-1-1, hoses and hose connections of a type to prevent shock from static electricity shall be used. Hose lengths shall be joined together by approved couplings of a material and type designed to prevent erosion and weakening of the couplings. The couplings and nozzle attachments shall fit on the outside of the hose and shall be designed to prevent accidental disengagement.

##### 1.7.1.2 Workers Other Than Blasters

Workers other than blasting operators working in close proximity to abrasive blasting operations shall be protected by utilizing MSHA/NIOSH-approved half-face or full-face air purifying respirators equipped with high-efficiency particulate air (HEPA) filters, eye protection meeting or exceeding ANSI Z87.1 and hearing protectors (ear plugs and/or ear muffs) providing at least 20 dBA reduction in noise level.

##### 1.7.2 Cleaning with Compressed Air

Cleaning with compressed air shall be in accordance with Section 20.B.5 of EM 385-1-1 and personnel shall be protected as specified in 29 CFR 1910.137.

##### 1.7.3 Cleaning with Solvents

##### 1.7.3.1 Ventilation

Ventilation shall be provided where required by 29 CFR 1910.146 or where the concentration of solvent vapors exceeds 10 percent of the Lower Explosive Limit (LEL). Ventilation shall be in accordance with 29 CFR 1910.94, paragraph (c)(5).

##### 1.7.3.2 Personal Protective Equipment

Personal protective equipment shall be provided where required by 29 CFR

1910.146 and in accordance with 29 CFR 1910, Subpart I.

#### 1.7.4 Pretreatment of Metals and Concrete with Acids

##### 1.7.4.1 Personal Protective Equipment

Personnel shall be protected in accordance with 29 CFR 1910, Subpart I.

##### 1.7.4.2 Emergency Equipment

In addition to the requirements of Section 05 of EM 385-1-1, the Contractor shall provide an eyewash in accordance with ANSI Z358.1, paragraph (6).

#### 1.7.5 Mixing Epoxy Resin Formulations (i.e. Permox 9043, Type I)

##### 1.7.5.1 Exhaust Ventilation

Local exhaust ventilation shall be provided in the area where the curing agent and resin are mixed. This ventilation system shall be capable of providing at least 100 linear feet per minute of capture velocity measured at the point where the curing agent and resin contact during mixing.

##### 1.7.5.2 Personal Protective Equipment

Exposure of skin and eyes to epoxy resin components shall be avoided by wearing appropriate chemically resistant gloves, apron, safety goggles, and face shields meeting or exceeding the requirements of ANSI Z87.1.

##### 1.7.5.3 Medical Precautions

Individuals who have a history of sensitivity to epoxy resin systems shall be medically evaluated before any exposure can occur. Individuals who are medically evaluated as exhibiting a sensitivity to epoxy resins shall not conduct work tasks or otherwise be exposed to such chemicals. Individuals who develop a sensitivity shall be immediately removed from further exposure and medically evaluated.

##### 1.7.5.4 Emergency Equipment

A combination unit, comprised of an eyewash and deluge shower, within close proximity to the epoxy resin mixing operation shall be provided in accordance with ANSI Z358.1, paragraph (9).

#### 1.7.6 Paint Application

##### 1.7.6.1 Ventilation

When using solvent-based paint in confined spaces, ventilation shall be provided to exchange air in the space at a minimum rate of 5,000 cubic feet per minute per spray gun in operation. It may be necessary to install both a mechanical supply and exhaust ventilation system to effect adequate air changes within the confined space. All air-moving devices shall be located and affixed to an opening of the confined space in a manner that assures that the airflow is not restricted or short circuited and is supplied in the proper direction. Means of egress shall not be blocked. Ventilation shall be continued after completion of painting and through the drying phase of the operation.

If the ventilation system fails or the concentration of volatiles exceeds

10 percent of the LEL (except in the zone immediately adjacent to the spray nozzle), painting shall be stopped and spaces evacuated until such time that adequate ventilation is provided. An audible alarm that signals system failure shall be an integral part of the ventilation system. The effectiveness of the ventilation shall be checked by using ventilation smoke tubes and making frequent oxygen and combustible gas readings during painting operations. Exhaust ducts shall discharge clear of the working areas and away from possible sources of ignition.

#### 1.7.6.2 Explosion Proof Equipment

Electrical wiring, lights, and other equipment located in the paint spraying area shall be of the explosion proof type designed for operation in Class I, Division 1, Group D, hazardous locations as required by the NFPA 70. Electrical wiring, motors, and other equipment, outside of but within 20 feet of any spraying area, shall not spark and shall conform to the provisions for Class I, Division 2, Group D, hazardous locations. Electric motors used to drive exhaust fans shall not be placed inside spraying areas or ducts. Fan blades and portable air ducts shall be constructed of nonferrous materials. Motors and associated control equipment shall be properly maintained and grounded. The metallic parts of air-moving devices, spray guns, connecting tubing, and duct work shall be electrically bonded and the bonded assembly shall be grounded.

#### 1.7.6.3 Further Precautions

- a. Workers shall wear nonsparking safety shoes.
- b. Solvent drums taken into the spraying area shall be placed on nonferrous surfaces and shall be grounded. Metallic bonding shall be maintained between containers and drums when materials are being transferred.
- c. Insulation on all power and lighting cables shall be inspected to ensure that the insulation is in excellent working condition and is free of all cracks and worn spots. Cables shall be further inspected to ensure that no connections are within 50 feet of the operation, that lines are not overloaded, and that they are suspended with sufficient slack to prevent undue stress or chafing.

#### 1.7.6.4 Ignition Sources

Ignition sources, to include lighted cigarettes, cigars, pipes, matches, or cigarette lighters shall be prohibited in area of solvent cleaning, paint storage, paint mixing, or paint application.

#### 1.7.7 Health Protection

##### 1.7.7.1 Respirators

During all spray painting operations, spray painters shall use approved SCBA or SAR (air line) respirators, unless valid air sampling has demonstrated contaminant levels to be consistently within concentrations that are compatible with air-purifying respirator Assigned Protection Factor (APF). Persons with facial hair that interferes with the sealing surface of the facepiece to face seal or interferes with respirator valve function shall not be allowed to perform work requiring respiratory protection. Air-purifying chemical cartridge/canister half- or full-facepiece respirators that have a particulate prefilter and are

suitable for the specific type(s) of gas/vapor and particulate contaminant(s) may be used for nonconfined space painting, mixing, and cleaning (using solvents).

These respirators may be used provided the measured or anticipated concentration of the contaminant(s) in the breathing zone of the exposed worker does not exceed the APF for the respirator and the gas/vapor has good warning properties or the respirator assembly is equipped with a NIOSH-approved end of service life indicator for the gas(es)/vapor anticipated or encountered. Where paint contains toxic elements such as lead, cadmium, chromium, or other toxic particulates that may become airborne during painting in nonconfined spaces, air-purifying half-and full-facepiece respirators or powered air-purifying respirators equipped with appropriate gas vapor cartridges, in combination with a high-efficiency filter, or an appropriate canister incorporating a high-efficiency filter, shall be used.

#### 1.7.7.2 Protective Clothing and Equipment

All workers shall wear safety shoes or boots, appropriate gloves to protect against the chemical to be encountered, and breathable, protective, full-body covering during spray-painting applications. Where necessary for emergencies, protective equipment such as life lines, body harnesses, or other means of personnel removal shall be used during confined-space work.

#### 1.8 MEDICAL STATUS

Prior to the start of work and annually thereafter, all Contractor employees working with or around paint systems, thinners, blast media, those required to wear respiratory protective equipment, and those who will be exposed to high noise levels shall be medically evaluated for the particular type of exposure they may encounter. The evaluation shall include:

- a. Audiometric testing and evaluation of employees who will work in the noise environments.
- b. Vision screening (employees who use full-facepiece respirators shall not wear contact lenses).
- c. Medical evaluation shall include, but shall not be limited to, the following:
  - (1) Medical history including, but not limited to, alcohol use, with emphasis on liver, kidney, and pulmonary systems, and sensitivity to chemicals to be used on the job.
  - (2) General physical examination with emphasis on liver, kidney, and pulmonary system.
  - (3) Determination of the employee's physical and psychological ability to wear respiratory protective equipment and to perform job-related tasks.
  - (4) Determination of baseline values of biological indices for later comparison to changes associated with exposure to paint systems and thinners or blast media, which include: liver function tests to include SGOT, SGPT, GGPT, alkaline phosphates, bilirubin, complete urinalysis, EKG (employees over age 40), blood urea

nitrogen (bun), serum creatinine, pulmonary function test, FVC, and FEV, chest x-ray (if medically indicated), blood lead (for individuals where it is known there will be an exposure to materials containing lead), other criteria that may be deemed necessary by the Contractor's physician, and Physician's statements for individual employees that medical status would permit specific task performance.

(5) For lead-based paint removal, the medical requirements of 29 CFR 1926.62 shall also be included.

#### 1.9 CHANGE IN MEDICAL STATUS

Any employee whose medical status has changed negatively due to work related chemical and/or physical agent exposure while working with or around paint systems and thinners, blast media, or other chemicals shall be evaluated by a physician, and the Contractor shall obtain a physicians statement as described in paragraph MEDICAL STATUS prior to allowing the employee to return to those work tasks. The Contractor shall notify the CO or COR in writing of any negative changes in employee medical status and the results of the physicians reevaluation statement.

#### 1.10 PAINT PACKAGING, DELIVERY, AND STORAGE

Paints shall be processed and packaged to ensure that within a period of one (1) year from date of manufacture, they will not gel, liver, or thicken deleteriously, or form gas in the closed container. Paints, unless otherwise specified or permitted, shall be packaged in standard containers not larger than 5 gallons, with removable friction or lug-type covers. Containers for paints shall be lined with a coating resistant to solvents in the formulations and capable of effectively isolating the paint from contact with the metal container. Each container of paint or separately packaged component thereof shall be labeled to indicate the purchaser's order number, date of manufacture, manufacturer's batch number, quantity, color, component identification and designated name, and formula or specification number of the paint together with special labeling instructions, when specified. Paint shall be delivered to the job in unbroken containers. Paints that can be harmed by exposure to cold weather shall be stored in ventilated, heated shelters. Paints that can be harmed by exposure to excessive heat shall be stored in appropriate shelters. All paints shall be stored under cover from the elements and in locations free from sparks and flames.

### PART 2 PRODUCTS

#### 2.1 SPECIAL PAINT FORMULAS

Special paints shall have the composition as indicated in the formulas listed herein. Where so specified, certain components of a paint formulation shall be packaged in separate containers for mixing on the job.

If not specified or otherwise prescribed, the color shall be that naturally obtained from the required pigmentation.

#### 2.2 PAINT FORMULATIONS

Special paint formulas shall comply with the following.

Product information and Material Safety Data Sheets for Paint System No.1, Permox 9043, Type I (gray) is appended herein. The manufacturer is Permite

Corporation, at 5239 Brer Rabbit Road, Stone Mountain, GA 30083, phone (404) 292-4842. This is a research paint system, therefore no substitute shall be acceptable.

Paint System No. 2 shall be an elastomeric-thermoplastic, water-based copolymer formulation that meets the requirements of ASTM 1795-97, Stant Specification for Non-Reinforced Liquid Coating Encapsulation Products for Leaded Paints in Buildings. Materials for surface preparation and priming shall be as recommended by the manufacturer of the coating, see Part 3, EXECUTION.

## 2.3 TESTING

### 2.3.1 Chromatographic Analysis

Solvents in paints and thinners shall be subject to analysis by programmed temperature gas chromatographic methods and/or spectrophotometric methods, employing the same techniques that give reproducible results on prepared control samples known to meet the specifications. If the solvent being analyzed is of the type consisting primarily of a single chemical compound or a mixture of two or more such solvents, interpretation of the test results shall take cognizance of the degree of purity of the individual solvents as commercially produced for the paint industry.

### 2.3.2 (null)

## PART 3 EXECUTION

### 3.1 CLEANING AND PREPARATION OF SURFACES TO BE PAINTED

#### 3.1.1 General Requirements

Surfaces to be painted shall be cleaned before applying paint or surface treatments. Deposits of grease or oil shall be removed in accordance with SSPC SP 1, [AM#1] before abrasive blast cleaning. Solvent cleaning shall be accomplished with mineral spirits or other low toxicity solvents having a flashpoint above 100 degrees F. Clean cloths and clean fluids shall be used to avoid leaving a thin film of greasy residue on the surfaces being cleaned. Items not to be prepared or coated shall be removed or protected from damage by the surface preparation methods. Any removal of items shall be performed by workman skilled in the trades involved. Machinery shall be protected against entry of blast abrasive and dust into working parts. Cleaning and painting shall be so programmed that dust or other contaminants from the cleaning process do not fall on wet, newly painted surfaces, and surfaces not intended to be painted shall be suitably protected from the effects of cleaning and painting operations. Welding of, or in the vicinity of, previously painted surfaces shall be conducted in a manner to prevent weld spatter from striking the paint and to otherwise reduce coating damage to a minimum; paint damaged by welding operations shall be restored to original condition. Surfaces to be painted that will be inaccessible after construction, erection, or installation operations are completed shall be painted before they become inaccessible.

The term "paint" is synonymous with the term "coating" or "coat". The term "touch-up" painting refers to the application of paint on small areas of painted surfaces to repair mars, scratches, and other defects where the coatings have deteriorated in order to repaint coatings to smooth and unbroken surfaces.

The Contractor shall have the Steel Structures Painting Council (SSPC) Visual Standard for Abrasive Blast Cleaned Steel on-site for use by both

the Contractor Quality Control and the Government Quality Assurance personnel in judging the cleaned surface of a prepared sample at the job sites. The Contractor shall prepare this cleaned and sealed steel plate sample and have it available at the job sites. This prepared sample shall be approved by the Government and shall be used as a standard to judge the level of cleanliness of the blasted surfaces.

### 3.1.2 Ferrous Surfaces Subject to Normal Exposure

Ferrous surfaces that are to be continuously in exterior or interior atmospheric exposure and other surfaces as directed (i.e. Item 5 in Base Bid, Items in Bid Options No.1 and No.2) shall be cleaned by means of power tools to the brushoff grade. Power tool cleaning shall conform to the requirements of SSPC SP 3. After mechanical cleaning is completed, all surfaces will be cleaned. All bare or rusted surfaces shall be primed as soon as practicable after cleaning but prior to contamination or deterioration of the prepared surfaces.

### 3.1.3 Ferrous Surfaces Subject to Severe Exposure (White Metal Blast Cleaning)

Ferrous surfaces subject to extended periods of immersion (i.e. Items 1 through 4 in Base Bid) shall be dry blast-cleaned to SSPC SP 5. Power Tool cleaning in accordance with SSPC SP 3 shall be used only to touch-up small areas that require additional preparation. The blast profile, unless otherwise specified, shall [AM#1] be between 2 mils and 4.5 mils at any measurement site as measured by ASTM D 4417, Method C. Non-metallic abrasive blast media shall be used to produce the desired surface profile and to give an angular anchor tooth pattern. All loose rust, mill scale, and other foreign substances shall be removed. If recycled blast media is used, an appropriate particle size distribution shall be maintained so that the specified profile is consistently obtained. Surfaces shall be dry at the time of blasting. Blast cleaning to SSPC SP 5 shall be done in the field.

Within 8 hours after cleaning, prior to the deposition of any detectable moisture, contaminants, or corrosion, all ferrous surfaces blast cleaned to SSPC SP 5 shall be cleaned of dust and abrasive particles by brush, vacuum cleaner, and/or blown down with clean, dry, compressed air, and given the first coat of paint.

### 3.1.5 Not Used

### 3.1.6 Not Used

## 3.2 PAINT APPLICATION

### 3.2.1 General

The finished coating shall be free from holidays, pinholes, bubbles, runs, drops, ridges, waves, laps, excessive or unsightly brush marks, and variations in color, texture, and gloss. Application of initial or subsequent coatings shall not commence until the CO or COR has verified that atmospheric conditions and the surfaces to be coated are satisfactory.

Each paint coat shall be applied in a manner that will produce an even, continuous film of uniform thickness. Edges, corners, crevices, seams, joints, welds, rivets, corrosion pits, and other surface irregularities shall receive special attention to ensure that they receive an adequate thickness of paint equivalent to that of the adjacent painted surfaces.

Spray equipment shall be equipped with traps and separators and where appropriate, mechanical agitators, pressure gauges, pressure regulators, and screens or filters. Air caps, nozzles, and needles shall be as recommended by the spray equipment manufacturer for the material being applied. Airless-type spray equipment may be used only on broad, flat, or otherwise simply configured surfaces, except that it may be employed for general painting if the spray gun is equipped with dual or adjustable tips of proper types and orifice sizes.

For application of Paint System No.1 (Permax 9043, Type I), all edges, angles, weld lines, fasteners, and other irregular surfaces shall be given a preliminary "stripe" coat of paint by brush. The stripe coat shall be followed as quickly as possible by the application of the first coat of the paint system. Paint on all vertical and overhead surfaces shall be applied by **airless spray**. If excessive moisture has condensed on these surfaces, they shall be wiped with clean rags prior to application of the coating. The floor of the structure will be wet due to the incomplete seal of the bulkhead. **NOTE: If the bulkhead (EMERGENCY GATE) seal is complete and the floor is not wet, the Contractor shall make the floor wet by using buckets of water or a garden hose to wet the floor during paint applications.** Application on the floor shall be conducted using a roller having a nap of not more than 1/4 inch. The area will be rolled and backrolled in an effort to displace the standing or flowing water. A second coat shall be applied to all surfaces. The preliminary stripe coat is not required; however, all other procedures specified above shall be used to apply the second coat. [AM#1] See Paragraph 3.3.3 for number of coats required.

Paint System No. 2, for immobilizing LBP, shall be applied in accordance with the manufacturer's recommendations.

### 3.2.2 Mixing and Thinning

Paints shall be thoroughly mixed, strained where necessary, and kept at a uniform composition and consistency during application. Paste or dry-powder pigments specified to be added at the time of use shall, with the aid of powered stirrers, be incorporated into the vehicle or base paint in a manner that will produce a smooth, homogeneous mixture free of lumps and dry particles. To suit conditions of the surface temperature, weather, and method of application, the paint shall be **thinned immediately prior to use in accordance with the manufacturer's instruction ONLY**. Thinning shall generally be limited to the addition of not more than 1 pint per gallon of the proper thinner; this general limitation shall not apply when more specific thinning instructions are provided.

The Permax Type I manufacturer indicated that this paint system is routinely applied without thinning with brushed, roller, or airless spray. The Contractor shall verify this information provided and test paint in an area to ensure this application is acceptable.

Paint that has been stored at low temperature, shall be brought up to at least 70 degrees F before being mixed and thinned, and its temperature in the spray tank or other working container shall not fall below 60 degrees F during the application. Paint that has deteriorated in any manner to a degree that it cannot be restored to essentially its original condition by customary field-mixing methods shall not be used and shall be removed from the project site. Paint and thinner that is more than 1 year old shall be resampled and resubmitted for testing to determine its suitability for application.

### 3.2.3 Atmospheric and Surface Conditions

Paint, [AM#1] other than the Permax system, shall be applied only to surfaces that are above the dew point temperature and that are completely free of moisture as determined by sight and touch. Paint shall not be applied to surfaces upon which there is detectable frost or ice. Except as otherwise specified, the temperature of the surfaces to be painted and of air in contact therewith shall be not less than 45 degrees F during paint application nor shall paint be applied if the surfaces can be expected to drop to 32 degrees F or lower before the film has dried to a reasonably firm condition.

During periods of inclement weather, painting may be continued by enclosing the surfaces and applying artificial heat, provided the minimum temperatures and surface dryness requirements prescribed previously are maintained. Paint shall not be applied to surfaces heated by direct sunlight or other sources to temperatures that will cause detrimental blistering, pin holing, or porosity of the film.

### 3.2.4 Time Between Surface Preparation and Painting

Surfaces that have been cleaned and/or otherwise prepared for painting shall be primed as soon as practicable after such preparation has been completed but, in any event, prior to any deterioration of the prepared surface. After blast cleaning and before oxidation begins, the first or the preliminary (stripe) coat of specified paint shall be applied to all prepared surfaces prior to ending work that day.

### 3.2.5 Method of Paint Application

Unless otherwise specified, paint shall be applied by brush or spray to ferrous. Special attention shall be directed toward ensuring adequate coverage of edges, corners, crevices, pits, rivets, bolts, welds, and similar surface irregularities. Other methods of application to metal surfaces shall be subject to the specific approval of the Contracting Officer or COR.

### 3.2.6 Coverage and Film Thickness

Film thickness or spreading rates [AM#1] for Paint System No.2 shall be as recommended by the manufacturer.

#### 3.2.6.1 Measurement on Ferrous Metal

Where dry film thickness requirements are specified for coatings on ferrous surfaces, measurements shall be made with one of the thickness gages listed below. They shall be calibrated and used in accordance with ASTM D 1186. They shall be calibrated using plastic shims with metal practically identical in composition and surface preparation to that being coated, and of substantially the same thickness (except that for measurements on metal thicker than 1/4 inch, the instrument may be calibrated on metal with a minimum thickness of 1/4 inch). Frequency of measurements shall be as recommended for field measurements by ASTM D 1186 and reported as the mean for each spot determination.

The instruments shall be calibrated or calibration verified prior to, during, and after each use. [AM#1] The Contractor shall demonstrate the accuracy of each thickness gage, after it has been calibrated on sample

blasted steel plate, to the COR's satisfaction. Gage accuracy shall be within the published range. Authorized thickness gages:

- a. Mikrotest, Elektro-Physik, Inc.
- b. Inspector Gage, Elcometer Instruments, Ltd.
- c. Positest, Defelsko Corporation
- d. Minitector, Elcometer Instruments, Ltd.
- e. Positector 2000, Defelsko Corporation

### 3.2.6.2 Not Used

### 3.2.7 Progress of Painting Work

Where field painting on any type of surface has commenced, the complete painting operation, including priming and finishing coats, on that portion of the work shall be completed as soon as practicable, without prolonged delays. Sufficient time shall be allowed between successive paint coats to dry, and this period shall be modified as necessary to suit adverse weather conditions. Paint shall be considered dry for recoating when it feels firm, does not deform or feel sticky under moderate pressure of the finger, and the application of another coat of paint does not cause film irregularities such as lifting or loss of adhesion of the undercoat. All coats of all painted surfaces shall be unscarred and completely integral at the time of application of succeeding coats.

At the time of application of each successive coat, undercoats shall be cleaned of dust, grease, overspray, or foreign matter by means of airblast, solvent cleaning, or other suitable means. Cement and mortar deposits on painted steel surfaces, not satisfactorily removed by ordinary cleaning methods, shall be brushoff blast cleaned and completely repainted as required. Undercoats of high gloss shall, if necessary for establishment of good adhesion, be scuff sanded, solvent wiped, or otherwise treated prior to application of a succeeding coat. Field coats on metal shall be applied after erection except as otherwise specified and except for surfaces to be painted that will become inaccessible after erection.

### 3.2.8 Contacting Surfaces

When riveted or ordinary bolted contact is to exist between surfaces of ferrous or other metal parts of substantially similar chemical composition, such surfaces will not be required to be painted, but any resulting crevices shall subsequently be filled or sealed with paint. **Contacting metal surfaces formed by high-strength bolts in friction-type connections shall not be painted.** Where a nonmetal surface is to be in riveted or bolted contact with a metal surface, the contacting surfaces of the metal shall be cleaned and given three coats of the specified primer. **Unless otherwise specified, corrosion-resisting metal surfaces, including cladding therewith, shall not be painted.**

### 3.2.9 Drying Time

Minimum drying periods after final coat prior to immersion for Permax 9043, Type I, Paint System No.1, shall be 7 days at 77 degrees F. Drying time of the preliminary (or stripe) coat and the first coat shall be a minimum drying period of 7 days at 77 degrees F, see manufacturer's product information appended at the end of this Section.

Minimum drying periods after final coat prior to immersion for Paint System No.2 shall be at least 6 days. Minimum drying period between successive

coats shall be 3 days, and 6 days if temperature is below 65 degrees F and other unfavorable weather conditions as determined by the CO or COR.

### 3.2.10 Protection of Painted Surfaces

Where shelter and/or heat are provided for painted surfaces during inclement weather, such protective measures shall be maintained until the paint film has dried and discontinuance of the measures is authorized. Items that have been painted shall not be handled, worked on, or otherwise disturbed until the paint coat is fully dry and hard. All metalwork coated in the field prior to final erection shall be stored out of contact with the ground in a manner and location that will minimize the formation of water-holding pockets; soiling, contamination, and deterioration of the paint film, and damaged areas of paint on such metalwork shall be cleaned and touched up without delay.

### 3.2.11 Not Used

## 3.3 PAINT SYSTEMS APPLICATION

The required paint systems and the surfaces to which they shall be applied are shown in this paragraph, and/or in the drawings. Supplementary information follows.

### 3.3.1 Not Used

### 3.3.2 Surface Preparation

The method of surface preparation and pretreatment shown in the tabulation of paint systems is for identification purposes only. Cleaning and pretreatment of surfaces prior to painting shall be accomplished in accordance with detailed requirements previously described.

### 3.3.3 Paint System No.1 (Permox 9043, Type I)

[AM#1] Except as specified in Paragraph 3.2.1 paint shall be spray applied to the target dry film thickness of 15.0 mils for the completed system with a minimum of a preliminary "stripe" coat, a first coat, and a second coat. The Contractor shall refer to the manufacturer's [AM#1] instructions for the number of paint coatings that are required to reach the specified 15.0 mils, target dry film thickness. The specified film thickness shall be attained in any event, and any extra coats needed to attain the specified thickness shall be applied at no additional cost to the Government. The Contractor shall not apply the paint coatings in such a manner as to create or increase pinholes, bubbles, blisters, or voids in the dried film.

The wet film thickness in excess of 10 mils may result in sagging in accordance with the manufacturer's recommendations.

The target dry film thickness as measured in accordance with paragraph Measurement on Ferrous Metal. Any area having a thickness measurement of less than 12 mils shall be given additional paint coating(s) as necessary to meet this requirement.

### 3.3.4 System No. 2

[AM#1] This system shall be applied as a single coat in accordance with the manufacturer's recommendations. The surface cleaner and primer used for

surface preparation in conjunction with this paint shall be the product of a single manufacturer.

3.3.5 Protection of Nonpainted Items and Cleanup

Walls, equipment, fixtures and all other items in the vicinity of the surfaces being painted shall be maintained free from damage by paint or painting activities. Paint spillage and painting activity damage shall be promptly repaired. Adajcent areas and installations shall be protected by the use of drop cloths, or other approved precautionary measures.

All construction debris shall be removed daily and disposed of by the Contractor. Upon completion of work specified, all staging scaffolding, and containers shall be removed and properly disposed. Solvents contaminated clothes or rags and paint containers shall be contained and disposed of in accordance with Federal, State and local regulations.

For final project acceptance, the Contractor is responsible for any additional cleanup effort as required by the CO or COR.

3.4 PAINTING SCHEDULES

SYSTEM NO. 1

Items or surfaces to be coated: Base Bid Items (1) through (4) Left side flood conduit including Air Vent and Conduit Liners, Service and Emergency Gates Frames. Right side flood conduit including Air Vent, and Conduit Liners, Service and Emergency Gates Frames. (see drawing)

SURFACE PREPARATION	Preliminary COAT (brush applied)	1st COAT	3nd COAT
White metal blast cleaning	Permox 9043 Type I	Permox 9043 Type I	Permox 9043 Type I

[AM#1]SYSTEM NO. 2

Items or surfaces to be coated: Base Bid Item 5, Bid Options 1 and 2

<u>SURFACE PREPARATION</u>	<u>SURFACE CLEANER</u>	<u>RUST INHIBITOR PRIMER</u>	<u>COATING</u>
Power tool or manual cleaning	Lead Prep II	Power Prime Premium	L-B-C Type II (silver gray)

Note: The Contractor shall use the above products manufactured by the Fiberlock Corporation or approved equal.

## LEAD-BASED PAINT SURVEY

## USING X-RAY FLUORESCENT ANALYZER

STRUCTURE: SERVICE AND EMERGENCY GATE LINERS

LOCATION: LAKE O' PINES

DATE: 23 JULY 1993

SAMPLE NO.	ASSAY LBP	K mg/cm2	L mg/cm2	COLOR/ SUBSTRATE	DESCRIPTION/ LOCATION
1.1	S	0.3	-0.0	Gray/Metal	Service Gate liner
1.2	S	0.4	0.0	Gray,Brown/Metal	Service Gate Liner
1.3	S	0.4	-0.0	Gray/Metal	Service Gate Liner Frame
1.4	S	0.5	0.1	Gray,Brown/Metal	Service Gate Liner
1.5	S	0.1	-0.1	Gray,Brown/Metal	Service Gate Liner Frame
1.6	S	-0.3	0.0	Gray,Brn/Concrete	Service Gate Liner
1.7	S	-0.6	-0.1	Gray,Brn/Concrete	Service Gate Liner
1.8	S	0.5	-0.1	Gray/Metal	Service Gate liner
1.9	S	0.3	-0.0	Brown/Metal	Service Gate Liner
1.10	S	0.6	0.0	Gray/Metal	Service Gate
1.11	S	0.3	-0.0	Gray,Brown/Metal	Emerg. Gate Liner

## NOTE:

1. S=Screening. XRF screening was perform on the paint coating of the service and emergency gate liners in one of the two flood conduits. Reservoir Manager Jerry Thomas mentioned that both conduits were painted at the same time with the same paint.
2. K=Readings of the amount of lead present in the lower layers of paint near the substrate.
3. L=readings of the amount of lead present in the surface layers of paint.
4. If K or L readings are greater than 1.0 mg/square centimeters, the paint being sampled is considered as lead-based paint.

-- End of Section --

APPENDIX

PRODUCT INFORMATION FOR PAINT SYSTEM NO.1  
(PERMOX 9043 TYPE I)

MATERIAL SAFETY DATA SHEET

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACW63-99-B-0032

**PRODUCT INFORMATION  
AND  
MATERIAL SAFETY DATA SHEETS  
FOR  
SYSTEM NO. 1**

PERMOX 9043, TYPE I

THE PERMITE CORPORATION  
5239 BRER RABBIT RD.  
STONE MOUNTAIN, GA 30083  
Ph. (404) 292-4842

09965-A-i



- ◆ O E M SYSTEMS
- ◆ SPECIALTY FINISHES
- ◆ MAINTENANCE COATINGS
- ◆ HIGH PERFORMANCE COATINGS

## PERMOX 9043

### PCS-9043 TYPE I — WET PROCESS EPOXY

**DESCRIPTION:** PCS-9043 TYPE I is a glass filled epoxy coating that can be applied to wet surfaces when the ambient temperature is as low as 35° F. It is intended primarily for maintenance use on steel and concrete but is suitable for immersion service in some applications; contact Permite for specific recommendations.

PCS-9043 TYPE I can be applied underwater for both fresh water and salt water uses. It is between thick mastics and thin film materials in that a relatively thin film, 40-150 mil DFT, can be applied by brush or mitt, usually without resorting to burlap or scrim assists.

PCS-9043 TYPE I has excellent resistance to most aqueous chemicals. In exterior applications, the erosion rate is less than one half of polyamide cured epoxies and one fourth of that amine cured systems.

**USES:** PCS-9043 TYPE I is especially suited for wet process industries such as pulp and paper mills, mining, chemical processes, dairies, marine environments, etc. Specialty uses include piling, sub-marine pens, underwater applications.

**SURFACE PREPARATION: Steel.** Remove oil and/or grease by solvent wipe, detergent wash or steam cleaning. Round all sharp edges, welds, etc. to a minimum of 1/8" radius and remove weld spatter. Abrasive blast clean to SSPC-SP10 (preferred) or SSPC-SP6 (acceptable). Better cleaning results in better performance capabilities. Anchor pattern should have a maximum profile of 2½-3 mil. Remove all dust and debris with clean air.

Where OSHA or EPA regulations preclude standard abrasive blasting because of dust, wet abrasive blasting can be utilized; apply PCS-9043 TYPE I to the wet surfaces before rust develops.

In special cases such as structural steel over paper machines, calendar stacks, etc., where no abrasives can be tolerated, water blasting is an effective surface preparation: apply PCS-9043 TYPE I to the clean wet surface before recontamination occurs.

**Concrete.** (1) **Abrasive blasting** is the preferred preparation. Fill all surface imperfections with grout before coating. (2) **Acid etch** is acceptable; remove any laitance, poorly bonded surfaces or other chalky materials; fill all surface defects with grout before coating. **DO NOT USE** form release agents, surface hardeners or curing compounds.

4/88

(continued)

PER 121

### Engineered Chemical Coatings Since 1921

Manufacturing and Executive Offices:  
5239 BRER RABBIT ROAD • (404) 292-4842 • STONE MOUNTAIN (ATLANTA), GEORGIA 30083

Mail Address:  
P.O. BOX 22127 • DECATUR, GEORGIA 30027

09965-A-1

Color: Standard colors available.

**SUGGESTED FILM THICKNESS:**  
Two coats. A minimum of 5 mil DFT each.

**VOLUME SOLIDS: 93.5%**

**THEORETICAL COVERAGE:**  
150 sq. ft./mil/gallon

**NUMBER OF COMPONENTS: Two**

**MIXING RATIO: 1 to 1 by volume.**

**INDUCTION PERIOD: 15 minutes**

**POT LIFE: 4 hours at 77° F (Shorter at higher temperatures) when reduced to spray. 1 hour when not reduced.**

**APPLICATION TEMPERATURE:**  
35° F - 120° F

**DRY TIME: To touch, 4 hours at 77° F; full cure 7 days at 77° F.**

**SERVICE TEMPERATURE:**  
280° F Dry, 180° F Wet

**RECOAT: 6-72 hours; longer period will result in poor intercoat adhesion. Consult Permite for recoating after 72 hours.**

**REDUCER & CLEAN-UP: #76 Reducer**

**PACKAGING: 2 and 10 gallon kits**

**SHELF LIFE: 12 months in unopened containers.**

**DO NOT STORE ABOVE 90° F.**

Filling surface voids is important. Because of the high viscosity required for film build, some pits will be bridged and later appear as holes in the coating. If the voids are few, PCS-9043 TYPE I may be scrubbed into them before coating the entire surface.

**MIXING:** Mix equal volumes of PCS-9043 TYPE I **Base** and **Hardener** for a minimum of three minutes using a power mixer. Mix to a uniform color. Allow to stand at least 10 minutes and mix thoroughly once more before proceeding. Do not mix more than can be used in a three hour period, if reduced for spray, or 45 minutes if not reduced.

**APPLICATION:** Flush all equipment thoroughly with REDUCER #76 before use. (1) **Airless:** minimum of 40:1 pump ratio, .019 inch tip. Adjust fluid pressure for proper atomization. (2) **Conventional spray:** DeVilbiss MBC or JGA<sup>®</sup> gun with 78 or 765 air cap, E fluid tip and needle. Use a pressure material pot with separate atomizing air and fluid pressure regulators; 50-70 psi atomizing air and 10-15 pot pressure.

Reduce approximately 10% by volume with REDUCER #76 for airless and 20% for conventional spray.

For most applications 2 coats at 5 mil DFT are sufficient; however, 10-15 mil DFT can be applied per coat by using multiple passes and a cross hatch pattern. PCS-9043 TYPE I may be applied to damp or wet surfaces at temperatures down to 35°F. Do not apply when temperatures can be expected to drop to freezing within four hours after application; PCS-9043 TYPE I will displace liquid water but not ice. Under these conditions, cure will be slow but not otherwise affected.

When used as a primer or seal coat on masonry surfaces, PCS-9043 TYPE I may be reduced 35-40% by volume with REDUCER #76 to facilitate penetration into crevices and voids.

**CLEAN-UP:** Use REDUCER #76 for clean-up which should be done immediately after use.

**UNDERWATER USES:** PCS-9043 TYPE I may be applied underwater to concrete or to steel in fresh or salt water at temperatures down to freezing.

The ideal surface preparation is abrasive blasting but power brushes and even hand cleaning has often proven to be adequate. It is most important that water repellent contaminants such as oil, greases, heavy solvents or waxes be removed. These usually accumulate in the tidal zone, that portion exposed to the surface of the water between high and low tides.

**For underwater applications, PCS-9043 TYPE I must be mixed without additional solvent.** Under these conditions the pot life is about one hour at 75°F. Chilling the components before mixing as well as the mixed product will result in a measurable increase in pot life.

Because of the viscosity required to prevent removal by the scrubbing action of tides a "cosmetic" appearance is difficult to achieve. PCS-9043 TYPE I may be applied by brush or mitt; some wiping action is beneficial in displacing water so that the coating does not slide off of vertical surfaces. A maximum of approximately 100-150 mils may be applied with this wiping action. If the texture of the surface requires a heavier coating or if tidal action is severe through a constricted area during application, the use of burlap or scrim to support the wet film is suggested.

As a starting point, mix about one gallon of PCS-9043 TYPE I, without reducing, and allow the diver to carry this down to the point of application in an open container.

Protection for eyes and skin must be provided underwater.

At 75°F the tack free time will be 3-4 hours with considerable toughness developing overnight and about 5 days required for full cure. At 35°F, overnight is required for tack free conditions, 3-5 days for significant toughness and 10-14 days for full cure.

PCS-9043 TYPE I is not an antifoulant coating but may be overcoated with the usual vinyl or chlorinated rubber antifoulant coatings if conditions permit.

## CHEMICAL RESISTANCE

PCS-9043 TYPE I HARDENER is extremely hydrophobic and this accounts for the unique ability of the coating to displace water from the surface being coated. Most ambient temperature curing agents for epoxy coatings are either partially soluble in water or are easily emulsified so that effective cure in the presence of water is not possible. These curing agents also react with carbon dioxide in the atmosphere to produce the "blush" associated with epoxy systems under wet and/or cold conditions. Except for a minor reduction in rate of cure, PCS-9043 TYPE I is unaffected under the same circumstances.

The most common cause of coating failure is not lack of chemical resistance. Usually failures can be traced to inadequate surface preparation or to application under less than ideal conditions. PCS-9043 TYPE I has been designed to minimize the importance of surface preparation and ideal application conditions for all types of service except immersion. The stresses of immersion service are so great that the best surface preparation possible must be specified but even with less than ideal preparation the excellent wetting properties and inertness to water will result in better performance with PCS-9043 TYPE I than is possible with other coatings.

The rate of cure of PCS-9043 TYPE I has been retarded to allow adequate time for penetration into voids and crevices before polymerization begins; this allows both chemical and mechanical adhesion to be effective. This relatively slow cure also permits the use of standard single component spray equipment.

**PCS-9043 TYPE I is suitable for immersion service at 77° in the following:**

Citric Acid, 10%	Sea Water
Sulfuric Acid, 10%	Tap Water
Phosphoric Acid, 10%	Sodium Sulfite, 1%
Sodium Hydroxide, 10%	Zinc Hydrosulfite, 1%
Hydrogen Peroxide, 5%	Gasoline
Distilled Water	Sour Crude Oil

**Spillage conditions at room temperature:**

Hydrochloric Acid, 10%	Ethyl Alcohol
Nitric Acid, 10%	Butyl Alcohol
Ammonium Hydroxide, 10%	Ethyl Acetate
Calcium Hypochlorite, 5%	Xylene
Sodium Hypochlorite, 5%	Carbon Tetrachloride

The service temperature of PCS-9043 TYPE I is 280°F dry and 180°F wet. It is extremely well suited for use on steel and concrete in corrosive conditions and where ideal surface preparation is not possible and/or where cold, humid or wet conditions exist.

**Areas of use:**

- Below grade concrete surfaces; tunnels, etc.
- Pulp and paper mills
- Wet processes; ore extraction, pigment slurries, etc.
- Waste water treatment facilities
- Sewer linings

**WARRANTY:** Permite warrants that the BASE and HARDENER for PCS-9043 TYPE I will be identical in chemical and physical properties from batch to batch within the specification limits of the raw materials used in their manufacture.

**CAUTIONS:** PCS-9043 TYPE I is not flammable. Components of this product, when combined, may be skin irritants and/or skin sensitizers. Based upon the presence of component 1, the mixed product is presumed to be severely irritating to the eyes.

**Respiratory Protection:** Avoid prolonged or repeated breathing of vapors. If exposure exceeds TLV use a NIOSH-approved respirator to prevent overexposure.

**Protective Clothing:** Avoid contact with eyes. Wear goggles if there is a likelihood of contact with eyes. Do not get on skin or on clothing.

**Additional Protective Measures: Use ventilation as required to control vapor concentrations. Eye wash fountains and safety showers should be available for use in an emergency.**

**If swallowed, do not induce vomiting. Call a physician immediately.**

**See material safety data sheet for full precautions prior to use.**

PCS-9043 TYPE I is intended for INDUSTRIAL USE ONLY.

date of prep : 05/10/95

9043-912 (page 1)

SECTION I

manufacturer : THE PERMITE CORPORATION  
 address : 5239 BREN RABBIT ROAD  
 STONE MOUNTAIN, GA  
 30083  
 telephone# : (404) 292-4842  
 emergency# : (800) 943-7849

- H M I S -

HEALTH : 3  
 FLAMMABILITY : 1  
 REACTIVITY : 0  
 PERSONAL PROTECT.: H

product class : EPOXY MASTIC COATING  
 mfg. code id : 9043-912  
 trade name : PERMIX WET PROCESS EPOXY HARDENER SLATE GRAY

(HAZARD RATING : 0=least, 1=slight, 2=moderate, 3=high, 4=extreme, #=chronic)  
 (H = splash goggles, gloves, synthetic apron, & vapor respirator)

SECTION II-A

HAZARDOUS COMPONENTS

no.	component	CAS#	SARA	vapor pressure (mm Hg @ 20 C)	LEL (@ 25 C)
1	QUARTZ	14808-60-7	NO	N/A	N/A
2	TITANIUM DIOXIDE	13463-67-7	NO	N/A	N/A
3	INORGANIC OXIDE	1309-37-1	NO	N/A	N/A
4	HYDROXY TOLUENE	100-51-6	NO	0.15 @ 25 C	N/A
5	TRIPHENYLPHOSPHITE	101-02-0	NO	5.00 @ 205 C	N/A
6	MOD. ALIPHATIC AMINE	PROPRIETARY	NO	N/A	N/A

>> None of the components of this product are recognized as carcinogenic.

(N/A = not applicable)

SECTION II-B

OCCUPATIONAL EXPOSURE LIMITS

no.	(OSHA) PEL/TWA	PEL/CEILING	PEL/STEL	skin
1	10 mg/m3 (NUISANCE DUST)	N/E	N/E	N/E
2	15 mg/m3 (total dust)	N/E	N/E	N/E
3	N/E	N/E	N/E	N/E
4	N/E	N/E	N/E	N/E
5	N/E	N/E	N/E	N/E
6	N/E	N/E	N/E	N/E

  

no.	(ACGIH) TLV/TWA	TLV/CEILING	TLV/STEL	skin
1	5 mg/m3 (NUISANCE DUST)	N/E	N/E	N/E
2	10 mg/m3 (total dust)	N/E	N/E	N/E
3	10 mg/m3 (nuisance dust)	N/E	N/E	N/E
4	N/E	N/E	N/E	N/E
5	N/E	N/E	N/E	N/E
6	N/E	N/E	N/E	N/E

Manufacturer exposure limits for component 5: 0.1 mg/m3

>> The dried film of this product may become a dust nuisance when removed by sanding or grinding. OSHA recommends a PEL/TWA of 15 mg/m3 for total dust and 5 mg/m3 for the respirable fraction. ACGIH recommends a TLV/TWA of 10 mg/m3 for total dust.

>> (SKIN) absorption may contribute to the overall exposure to this material. Take appropriate measures to prevent skin contact.  
 (N/E = not established)

## SECTION III

## PHYSICAL DATA

boiling point	: not established	% volatile by volume	: 0.42 +/- 2%
evaporation rate	: (1 (ether = 1))	% volatile by weight	: 0.13 +/- 2%
vapor density	: (1 (air = 1))	weight per gallon	: 15.75 +/- .2

## SECTION IV

## HEALTH INFORMATION

## EYE CONTACT

BASED ON THE PRESENCE OF COMPONENTS 4 AND 6 PRODUCT IS PRESUMED TO BE SEVERELY IRRITATING TO THE EYES. EXPOSURE MAY CAUSE EXTENSIVE CORNEAL INJURY. BASED ON THE PRESENCE OF COMPONENT 6 CAUSES CHEMICAL BURNS BASED ON THE PRESENCE OF COMPONENT 4 LIQUID, AEROSOLS AND VAPORS ARE IRRITATING AND CAN CAUSE PAIN, TEARING, REDDENING AND SWELLING ACCOMPANIED BY A STINGING SENSATION AND/OR A FEELING LIKE THAT OF A FINE DUST IN THE EYES.

## SKIN CONTACT

BASED ON THE PRESENCE OF COMPONENT 6 PRODUCT IS PRESUMED TO BE CORROSIVE TO THE SKIN. BASED ON THE PRESENCE OF COMPONENTS 4 AND 5 ABSORPTION THROUGH THE SKIN MAY RESULT IN SYMPTOMS OF EXPOSURE AS THOSE DESCRIBED FOR INHALATION AND INGESTION. BASED ON THE PRESENCE OF COMPONENTS 4 AND 5 PROLONGED OR REPEATED CONTACT MAY RESULT IN DEFATTING AND DRYING OF THE SKIN WHICH MAY RESULT IN DERMATITIS. BASED ON THE PRESENCE OF COMPONENT 6 CONTACT WITH THE SKIN MAY RESULT IN SKIN SENSITIZATION.

## INHALATION

EXPOSURE MAY PRODUCE IRRITATION TO THE NOSE, THROAT, RESPIRATORY TRACT, AND OTHER MUCOUS MEMBRANES. BASED ON THE PRESENCE OF COMPONENT 4 EXPOSURE TO HIGH VAPOR CONCENTRATIONS MAY PRODUCE CENTRAL NERVOUS SYSTEM DEPRESSION. BASED ON THE PRESENCE OF COMPONENT 6 SEVERE IRRITATION TO RESPIRATORY TRACT. INHALATION OF PRODUCT VAPOR OR MIST IS INJURIOUS TO MUCOUS MEMBRANES.

## INGESTION

BASED ON THE PRESENCE OF COMPONENT 5 PRODUCT IS PRESUMED TO BE SEVERELY TOXIC. BASED ON THE PRESENCE OF COMPONENT 6 SMALL AMOUNTS OF THE LIQUID ASPIRATED INTO THE LUNGS DURING INGESTION OR FROM VOMITING MAY RESULT IN SEVERE LUNG DAMAGE. BASED ON THE PRESENCE OF COMPONENT 4 INGESTION MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION. BASED ON THE PRESENCE OF COMPONENT 4 WHILE THIS MATERIAL HAS A LOW DEGREE OF TOXICITY. INGESTION OF EXCESSIVE QUANTITIES MAY CAUSE IRRITATION OF THE DIGESTIVE TRACT.

## SIGNS AND SYMPTOMS

SYMPTOMS OF EYE IRRITATION INCLUDE PAIN, TEARING, REDDENING AND SWELLING. SYMPTOMS OF SKIN IRRITATION INCLUDE REDDENING, SWELLING, RASH AND REDNESS. SYMPTOMS OF RESPIRATORY IRRITATION INCLUDE RUNNY NOSE, SORE THROAT, COUGHING, CHEST DISCOMFORT, SHORTNESS OF BREATH AND REDUCED LUNG FUNCTION. SYMPTOMS OF GASTROINTESTINAL IRRITATION INCLUDE SORE THROAT, ABDOMINAL PAIN, NAUSEA, VOMITING AND DIARRHEA. BASED ON THE PRESENCE OF COMPONENT 4 CENTRAL NERVOUS SYSTEM DEPRESSION MAY BE EVIDENCED BY HEADACHE, DIZZINESS, NAUSEA AND SYMPTOMS OF INTOXICATION; IN EXTREME CASES, UNCONSCIOUSNESS AND DEATH MAY OCCUR. BASED ON THE PRESENCE OF COMPONENTS 4 AND 6 SKIN SENSITIZATION RESULTS IN ALLERGIC DERMATITIS WHICH MAY INCLUDE RASH, ITCHING, HIVES AND SWELLING OF EXTREMITIES. BASED ON THE PRESENCE OF COMPONENTS 1 AND 4 LUNG SENSITIZATION RESULTS IN ASTHMA-LIKE SYMPTOMS: SHORTNESS OF BREATH, WHEEZING AND COUGHING.

## AGGRAVATED MEDICAL CONDITIONS

PREEXISTING SKIN, EYE AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT. IMPAIRED NERVOUS SYSTEM FUNCTIONS FROM PREEXISTING DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT. BASED ON THE PRESENCE OF COMPONENT 6 PREEXISTING SKIN OR LUNG ALLERGIES MAY INCREASE THE CHANCE OF DEVELOPING INCREASED ALLERGY SYMPTOMS FROM EXPOSURE TO THIS PRODUCT.

## OTHER HEALTH EFFECTS

BASED ON THE PRESENCE OF COMPONENT 1 CHRONIC OVEREXPOSURE TO PRODUCT DUST MAY PRODUCE A BENIGN PNEUMOCONIOSIS TERMED 'BARITOSIS.' THIS REACTION RESULTS IN NO IMPAIRMENT OF VENTILATORY FUNCTION.

## SECTION V

## EMERGENCY AND FIRST AID PROCEDURES

## EYE CONTACT

IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS OPEN. SEEK PROMPT MEDICAL ATTENTION.

**SKIN CONTACT**  
 REMOVE CONTAMINATED CLOTHING AND SHOES. WIPE EXCESS FROM SKIN AND FLUSH WITH WATER USING SOAP IF AVAILABLE. SEEK MEDICAL ATTENTION IF IRRITATION OCCURS. DO NOT REUSE CLOTHING UNTIL THOROUGHLY DECONTAMINATED. CONTAMINATED LEATHER ARTICLES CANNOT BE DECONTAMINATED AND SHOULD BE DISPOSED.

**INHALATION**  
 REMOVE VICTIM TO FRESH AIR AND TREAT SYMPTOMATICALLY. PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GIVE ARTIFICIAL RESPIRATION IF THE VICTIM IS NOT BREATHING. SEEK PROMPT MEDICAL ATTENTION.

**INGESTION**  
 If swallowed, seek emergency medical attention. If victim is drowsy or unconscious, place on the left side with head down and do NOT give anything by mouth. If victim is conscious and alert, vomiting should be induced for ingestion of large amounts (more than 5 ounces in an adult) preferably with syrup of ipecac UNDER DIRECTION OF A PHYSICIAN OR POISON CENTER. If syrup of ipecac is not available, vomiting can be induced by gently placing two fingers in back of the throat. If possible, do not leave victim unattended.

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 SECTION VI

FIRE AND EXPLOSION HAZARDS

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 flammability classification - OSHA : COMBUSTIBLE LIQUID - CLASS IIIB  
 - DOT : NOT REGULATED  
 flash point : 200 +/-2 degrees F (Setflash)

**EXTINGUISHING MEDIA**  
 USE WATER FOG, FOAM, DRY CHEMICAL OR CARBON DIOXIDE.

**SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS**  
 CLEAR FIRE AREA OF UNPROTECTED PERSONNEL. DO NOT ENTER CONFINED FIRE SPACE WITHOUT HELMET, FACE SHIELD, BUNKER COAT, GLOVES, RUBBER BOOTS, AND A POSITIVE PRESSURE NIOSH-APPROVED SELF-CONTAINED BREATHING APPARATUS.

**UNUSUAL FIRE AND EXPLOSION HAZARDS**  
 CONTAINERS EXPOSED TO INTENSE HEAT FROM FIRES SHOULD BE COOLED WITH WATER TO PREVENT VAPOR PRESSURE BUILDUP WHICH COULD RESULT IN CONTAINER RUPTURE. CONTAINER AREAS EXPOSED TO DIRECT FLAME CONTACT SHOULD BE COOLED WITH LARGE QUANTITIES OF WATER AS NEEDED TO PREVENT WEAKENING OF CONTAINER STRUCTURE.

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 SECTION VII

REACTIVITY

STABILITY : STABLE

HAZARDOUS POLYMERIZATION : WILL NOT OCCUR

**CONDITIONS AND MATERIALS TO AVOID**  
 BASED ON THE PRESENCE OF COMPONENT 5 AVOID OXIDIZING MATERIALS. BASED ON THE PRESENCE OF COMPONENTS 4, 5 AND 6 AVOID STRONG ACIDS. BASED ON THE PRESENCE OF COMPONENT 5 AVOID GROSS WATER CONTAMINATION. BASED ON THE PRESENCE OF COMPONENTS 4 AND 6 AVOID STRONG OXIDIZING AND REDUCING AGENTS

**HAZARDOUS DECOMPOSITION PRODUCTS**  
 OXIDES OF NITROGEN, SLOWLY HYDROLYZED BY MOISTURE WITH THE PRODUCTION OF PHOSPHOROUS ACID AND PHENOL. PHOSPHINE IS A POSSIBLE BYPRODUCT OF HYDROLYSIS AT ELEVATED TEMPERATURES., DECOMPOSES EXPLOSIVELY AT 356 F., CARBON DIOXIDE, CARBON MONOXIDE AND UNIDENTIFIED ORGANIC COMPOUNDS MAY BE FORMED DURING COMBUSTION.

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 SECTION VIII

EMPLOYEE PROTECTION

**RESPIRATORY PROTECTION**  
 AVOID PROLONGED OR REPEATED BREATHING OF VAPORS. IF EXPOSURE EXCEEDS TLV USE A NIOSH-APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE

**PROTECTIVE CLOTHING**  
 AVOID CONTACT WITH EYES. WEAR GOGGLES IF THERE IS A LIKELIHOOD OF CONTACT WITH EYES. DO NOT GET ON SKIN OR ON CLOTHING.

**ADDITIONAL PROTECTIVE MEASURES**

USE VENTILATION AS REQUIRED TO CONTROL VAPOR CONCENTRATIONS. EYE WASH FOUNTAINS AND SAFETY SHOWERS SHOULD BE AVAILABLE FOR USE IN AN EMERGENCY.

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**SECTION IX**

**ENVIRONMENTAL PROTECTION**

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**SPILL OR LEAK PROCEDURES**

LARGE SPILLS >> EVACUATE THE HAZARD AREA OF UNPROTECTED PERSONNEL. WEAR APPROPRIATE RESPIRATOR AND PROTECTIVE CLOTHING. SHUT OFF SOURCE OF LEAK ONLY IF SAFE TO DO SO. DIKE AND CONTAIN. IF VAPOR CLOUD FORMS, WATER FOG MAY BE USED TO SUPPRESS; CONTAIN RUN-OFF. REMOVE WITH VACUUM TRUCKS OR PUMP TO STORAGE/SALVAGE VESSELS. SOAK UP RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND OR OTHER SUITABLE MATERIAL; PLACE IN NON-LEAKING CONTAINERS FOR PROPER DISPOSAL. FLUSH AREA WITH WATER TO REMOVE TRACE RESIDUE; DISPOSE OF FLUSH SOLUTIONS AS ABOVE. SMALL SPILLS >> TAKE UP WITH AN ABSORBENT MATERIAL AND PLACE IN NON-LEAKING CONTAINERS; SEAL TIGHTLY FOR PROPER DISPOSAL.

**WASTE DISPOSAL**

REFER TO LATEST EPA OR STATE REGULATIONS REGARDING PROPER DISPOSAL.

=====

**SECTION I**

**ADDITIONAL PRECAUTIONS**

CONTAINERS CAN CONTAIN HAZARDOUS PRODUCT RESIDUES EVEN WHEN EMPTY. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING, OR USING TOILET FACILITIES.

=====

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, WE MAKE NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. WE ASSUME NO RESPONSIBILITY OR LIABILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACW63-99-B-0032

\*\*\* (MATERIAL SHEET) \*\*\*

date of prep : 04/30/93

9043-B (page 1)

SECTION I

manufacturer : THE PERMITE CORPORATION  
 address : 5239 BRER RABBIT ROAD  
 STONE MOUNTAIN, GA  
 30083  
 telephone# : (404) 292-4842  
 emergency# : (800) 843-7849

- H M I S -

HEALTH	: 2
FLAMMABILITY	: 2
REACTIVITY	: 0
PERSONAL PROTECT.:	6

product class: EPOXY-AMINE MASTIC  
 mfg. code id : 9043-B  
 trade name : PERMOX MET PROCESS EPOXY BASE

(HAZARD RATING : 0=least, 1=slight, 2=moderate, 3=high, 4=extreme, \*chronic)  
 (6 = safety glasses, gloves, & vapor respirator)

SECTION II-A

HAZARDOUS COMPONENTS

no.	component	CAS#	SARA	vapor pressure (mm Hg @ 20 C)	LEL (% 25 C)
1	BISPHENOL-A POLYGLYCIDYL ETHER	25068-38-6	NO	1.00 @ 100 C	N/A
2	1-NITROPROPANE	108-03-2	NO	N/A	N/A
3	NITROETHANE	79-24-3	NO	15.60	N/A
4	QUARTZ	14808-60-7	NO	N/A	N/A

>> None of the components of this product are recognized as carcinogenic.

(N/A = not applicable)

SECTION II-B

OCCUPATIONAL EXPOSURE LIMITS

no.	(OSHA) PEL/TWA	PEL/CEILING	PEL/STEL	skin
1	N/E	N/E	N/E	N/E
2	25 ppm	N/E	N/E	N/E
3	100 ppm	N/E	N/E	N/E
4	10 mg/m <sup>3</sup> (NIUSANCE DUST)	N/E	N/E	N/E

no.	(ACGIH) TLV/TWA	TLV/CEILING	TLV/STEL	skin
1	N/E	N/E	N/E	N/E
2	25 ppm	N/E	N/E	N/E
3	100 ppm	N/E	N/E	N/E
4	5 mg/m <sup>3</sup> (NIUSANCE DUST)	N/E	N/E	N/E

>> The dried film of this product may become a dust nuisance when removed by sanding or grinding. OSHA recommends a PEL/TWA of 15 mg/m<sup>3</sup> for total dust and 5 mg/m<sup>3</sup> for the respirable fraction. ACGIH recommends a TLV/TWA of 10 mg/m<sup>3</sup> for total dust.

>> (SKIN) absorption may contribute to the overall exposure to this material. Take appropriate measures to prevent skin contact.  
 (N/E = not established)

SECTION III

PHYSICAL DATA

boiling point	: not established	% volatile by volume	: 6.48 +/- 2%
evaporation rate	: <1 (ether = 1)	% volatile by weight	: 4.17 +/- 2%
vapor density	: >1 (air = 1)	weight per gallon	: 13.02 +/- .2

## SECTION IV

## HEALTH INFORMATION

## EYE CONTACT

BASED ON THE PRESENCE OF COMPONENTS 2 AND 3 PRODUCT IS PRESUMED TO BE MODERATELY IRRITATING TO THE EYES. EXPOSURE MAY CAUSE CORNEAL INJURY. BASED ON THE PRESENCE OF COMPONENTS 2 AND 3 LIQUID, AEROSOLS AND VAPORS ARE IRRITATING AND CAN CAUSE PAIN, TEARING, REDDENING AND SWELLING ACCOMPANIED BY A STINGING SENSATION AND/OR A FEELING LIKE THAT OF A FINE DUST IN THE EYES.

## SKIN CONTACT

EXPOSURE MAY PRODUCE SKIN IRRITATION. BASED ON THE PRESENCE OF COMPONENTS 2 AND 3 PROLONGED OR REPEATED CONTACT MAY RESULT IN DEFATTING AND DRYING OF THE SKIN WHICH MAY RESULT IN DERMATITIS. BASED ON THE PRESENCE OF COMPONENT 1 CONTACT WITH THE SKIN MAY RESULT IN SKIN SENSITIZATION TO EPOXIES. INDIVIDUALS WHO HAVE DEVELOPED A SKIN SENSITIZATION CAN DEVELOP THESE SYMPTOMS AS A RESULT OF CONTACT WITH VERY SMALL AMOUNTS OF LIQUID MATERIAL OR AS A RESULT OF EXPOSURE TO VAPOR. THIS SKIN SENSITIZATION MAY BE TEMPORARY OR PERMANENT. ONCE AN INDIVIDUAL IS DIAGNOSED AS BEING SENSITIZED, NO FURTHER EXPOSURE CAN BE PERMITTED.

## INHALATION

EXPOSURE MAY PRODUCE IRRITATION TO THE NOSE, THROAT, RESPIRATORY TRACT, AND OTHER MUCOUS MEMBRANES. BASED ON THE PRESENCE OF COMPONENTS 2 AND 3 EXPOSURE TO HIGH VAPOR CONCENTRATIONS MAY PRODUCE CENTRAL NERVOUS SYSTEM DEPRESSION. BASED ON THE PRESENCE OF COMPONENT 2 VAPORS ARE IRRITATING AND MAY CAUSE NAUSEA AND VOMITING

## INGESTION

BASED ON THE PRESENCE OF COMPONENT 2 PRODUCT IS PRESUMED TO BE MODERATELY TOXIC. MAY CAUSE NAUSEA, VOMITING, AND ABDOMINAL PAINS.

## SIGNS AND SYMPTOMS

SYMPTOMS OF EYE IRRITATION INCLUDE PAIN, TEARING, REDDENING AND SWELLING. SYMPTOMS OF SKIN IRRITATION INCLUDE REDDENING, SWELLING, RASH AND REDNESS. SYMPTOMS OF RESPIRATORY IRRITATION INCLUDE RUNNY NOSE, SORE THROAT, COUGHING, CHEST DISCOMFORT, SHORTNESS OF BREATH AND REDUCED LUNG FUNCTION. SYMPTOMS OF GASTROINTESTINAL IRRITATION INCLUDE SORE THROAT, ABDOMINAL PAIN, NAUSEA, VOMITING AND DIARRHEA. BASED ON THE PRESENCE OF COMPONENTS 2 AND 3 CENTRAL NERVOUS SYSTEM DEPRESSION MAY BE EVIDENCED BY HEADACHE, DIZZINESS, NAUSEA AND SYMPTOMS OF INTOXICATION; IN EXTREME CASES, UNCONSCIOUSNESS AND DEATH MAY OCCUR. BASED ON THE PRESENCE OF COMPONENTS 2 AND 3 SKIN SENSITIZATION RESULTS IN ALLERGIC DERMATITIS WHICH MAY INCLUDE RASH, ITCHING, HIVES AND SWELLING OF EXTREMITIES. BASED ON THE PRESENCE OF COMPONENTS 2, 3 AND 4 LUNG SENSITIZATION RESULTS IN ASTHMA-LIKE SYMPTOMS: SHORTNESS OF BREATH, WHEEZING AND COUGHING.

## AGGRAVATED MEDICAL CONDITIONS

PREEXISTING SKIN, EYE AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT. IMPAIRED LIVER FUNCTIONS FROM PREEXISTING DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.

## OTHER HEALTH EFFECTS

BASED ON THE PRESENCE OF COMPONENTS 2 AND 3 CHRONIC OVEREXPOSURE MAY CAUSE INJURY TO THE KIDNEYS AND LIVER. BASED ON THE PRESENCE OF COMPONENT 4 CHRONIC OVEREXPOSURE TO PRODUCT DUST MAY PRODUCE A BENIGN PNEUMOCONIOSIS TERMED 'BARITOSIS.' THIS REACTION RESULTS IN NO IMPAIRMENT OF VENTILATORY FUNCTION.

## SECTION V

## EMERGENCY AND FIRST AID PROCEDURES

## EYE CONTACT

IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS OPEN. SEEK PROMPT MEDICAL ATTENTION.

## SKIN CONTACT

REMOVE CONTAMINATED CLOTHING AND SHOES. WIPE EXCESS FROM SKIN AND FLUSH WITH WATER USING SOAP IF AVAILABLE. SEEK MEDICAL ATTENTION IF IRRITATION OCCURS. DO NOT REUSE CLOTHING UNTIL THOROUGHLY DECONTAMINATED.

## INHALATION

REMOVE VICTIM TO FRESH AIR AND TREAT SYMPTOMATICALLY. PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GIVE ARTIFICIAL RESPIRATION IF THE VICTIM IS NOT BREATHING. SEEK PROMPT MEDICAL ATTENTION.

**INGESTION**

DILUTE WITH TWO GLASSES OF WATER UNLESS THE VICTIM IS UNCONSCIOUS OR VERY DROWSY. INDUCE VOMITING BY GIVING TWO TABLESPOONS OF IPECAC OR BY TOUCHING A FINGER TO THE BACK OF THE VICTIM'S THROAT. KEEP THE VICTIM'S HEAD BELOW THE HIPS TO PREVENT ASPIRATION INTO THE LUNGS. CONSULT A PHYSICIAN, HOSPITAL OR POISON CONTROL CENTER AND/OR TRANSPORT TO AN EMERGENCY FACILITY IMMEDIATELY.

>> COMPONENTS 2 AND 3 PRODUCT IS PRESUMED TO BE TOXIC AND THE PROPER FIRST AID IS TO INDUCE VOMITING.

SECTION VI

FIRE AND EXPLOSION HAZARDS

flammability classification - OSHA : COMBUSTIBLE LIQUID - CLASS II  
 - DOT : COMBUSTIBLE LIQUID

flash point : 120 +/-2 degrees F (Setaflash)

**EXTINGUISHING MEDIA**

USE WATER FOG, FOAM, DRY CHEMICAL OR CARBON DIOXIDE.

**SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS**

WARNING. COMBUSTIBLE. CLEAR FIRE AREA OF UNPROTECTED PERSONNEL. DO NOT ENTER CONFINED FIRE SPACE WITHOUT HELMET, FACE SHIELD, BUNKER COAT, GLOVES, RUBBER BOOTS, AND A POSITIVE PRESSURE MISH-APPROVED SELF-CONTAINED BREATHING APPARATUS.

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

CONTAINERS EXPOSED TO INTENSE HEAT FROM FIRES SHOULD BE COOLED WITH WATER TO PREVENT VAPOR PRESSURE BUILDUP WHICH COULD RESULT IN CONTAINER RUPTURE. CONTAINER AREAS EXPOSED TO DIRECT FLAME CONTACT SHOULD BE COOLED WITH LARGE QUANTITIES OF WATER AS NEEDED TO PREVENT WEAKENING OF CONTAINER STRUCTURE.

SECTION VII

REACTIVITY

STABILITY : STABLE

HAZARDOUS POLYMERIZATION : WILL NOT OCCUR

**CONDITIONS AND MATERIALS TO AVOID**

BASED ON THE PRESENCE OF COMPONENT 1 AVOID OXIDIZING MATERIALS. BASED ON THE PRESENCE OF COMPONENT 1 AVOID STRONG ACIDS. BASED ON THE PRESENCE OF COMPONENTS 2 AND 3 AVOID LEAD, COPPER, AND THEIR ALLOYS. BASED ON THE PRESENCE OF COMPONENTS 2 AND 3 AVOID STRONG OXIDIZING AND REDUCING AGENTS BASED ON THE PRESENCE OF COMPONENT 1 AVOID AMINES, POLYAMINES, AND POLYAMIDES UNDER UNCONTROLLED CONDITIONS.

**HAZARDOUS DECOMPOSITION PRODUCTS**

OXIDES OF NITROGEN, CARBON DIOXIDE, CARBON MONOXIDE AND UNIDENTIFIED ORGANIC COMPOUNDS MAY BE FORMED DURING COMBUSTION.

SECTION VIII

EMPLOYEE PROTECTION

**RESPIRATORY PROTECTION**

AVOID PROLONGED OR REPEATED BREATHING OF VAPORS. IF EXPOSURE EXCEEDS TLV USE A MISH-APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE.

**PROTECTIVE CLOTHING**

AVOID CONTACT WITH EYES. WEAR GOGGLES IF THERE IS A LIKELIHOOD OF CONTACT WITH EYES. DO NOT GET ON SKIN OR ON CLOTHING.

**ADDITIONAL PROTECTIVE MEASURES**

USE VENTILATION AS REQUIRED TO CONTROL VAPOR CONCENTRATIONS. EYE WASH FOUNTAINS AND SAFETY SHOWERS SHOULD BE AVAILABLE FOR USE IN AN EMERGENCY.

## SECTION IX

## ENVIRONMENTAL PROTECTION

## SPILL OR LEAK PROCEDURES

LARGE SPILLS >> EVACUATE THE HAZARD AREA OF UNPROTECTED PERSONNEL. WEAR APPROPRIATE RESPIRATOR AND PROTECTIVE CLOTHING. SHUT OFF SOURCE OF LEAK ONLY IF SAFE TO DO SO. DIKE AND CONTAIN. IF VAPOR CLOUD FORMS, WATER FOG MAY BE USED TO SUPPRESS; CONTAIN RUN-OFF. REMOVE WITH VACUUM TRUCKS OR PUMP TO STORAGE/SALVAGE VESSELS. SOAK UP RESIDUE WITH AN ADSORBENT SUCH AS CLAY, SAND OR OTHER SUITABLE MATERIAL; PLACE IN NON-LEAKING CONTAINERS FOR PROPER DISPOSAL. FLUSH AREA WITH WATER TO REMOVE TRACE RESIDUE; DISPOSE OF FLUSH SOLUTIONS AS ABOVE. SMALL SPILLS >> TAKE UP WITH AN ADSORBENT MATERIAL AND PLACE IN NON-LEAKING CONTAINERS; SEAL TIGHTLY FOR PROPER DISPOSAL.

## WASTE DISPOSAL

REFER TO LATEST EPA OR STATE REGULATIONS REGARDING PROPER DISPOSAL.

## SECTION X

## ADDITIONAL PRECAUTIONS

KEEP LIQUID AND VAPOR AWAY FROM HEAT, SPARKS, AND FLAME. EXTINGUISH PILOT LIGHTS, CIGARETTES AND TURN OFF OTHER POSSIBLE SOURCES OF IGNITION PRIOR TO USE AND UNTIL VAPORS ARE GONE. SURFACES THAT ARE SUFFICIENTLY HOT MAY IGNITE PRODUCT IN THE ABSENCE OF SPARKS OR FLAME. VAPORS MAY ACCUMULATE AND TRAVEL TO IGNITION SOURCES DISTANT FROM HANDLING SITE. KEEP CONTAINERS CLOSED WHEN NOT IN USE. USE WITH ADEQUATE VENTILATION. CONTAINERS, EVEN IF EMPTY, CAN CONTAIN EXPLOSIVE VAPORS. DO NOT CUT, DRILL, GRIND, OR WELD NEAR CONTAINERS.

CONTAINERS CAN CONTAIN HAZARDOUS PRODUCT RESIDUES EVEN WHEN EMPTY. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING, OR USING TOILET FACILITIES.

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