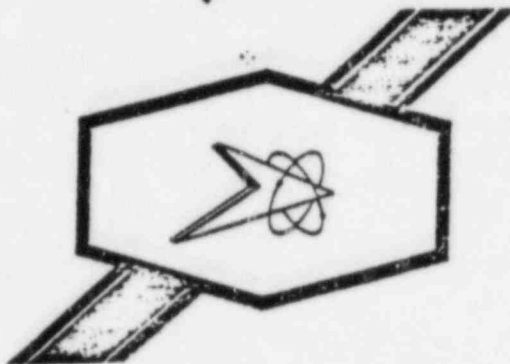


Imperial



TECHNICAL REPORT

NUMBER

246-78-G

TITLE

Effects of Felt-tip Markers on
#11S/1201 system

FOR

Company Knowledge

S.R. #1396
CUSTOMER

Submitted by: Coastal Science Associates

Approved: *SKL*

Date: 4/78

SOUTHERN IMPERIAL COATINGS CORPORATION, INC.
P. O. Box 29077, • New Orleans, Louisiana 70189
Phone: (504) 254-1433

The information contained in this report, based upon our experience, is offered without charge as part of our service to customers. It is intended for use by persons having technical skill, at their own discretion and risk. We assume no liability in connection with its use. This information is not intended as a license to operate under, nor a recommendation to infringe, any patent covering any material or use.

SUMMARY: Black and white felt tip markings were applied to concrete and Nutec #11S surfaces. The test specimen was completely coated with the Nutec #11S/Reactic #1201 system and then DBA tested to determine the effect of the markings.

The coated test specimen was exposed to DBA conditions in an autoclave for 24 hours (Coastal Science Associates) with maximum temperature and pressure of 307° F. and 58 psig.

Careful inspection of the specimen revealed no defects other than bleeding through of the black markings.

INTRODUCTION: The objective of this test was to determine what effect, if any, felt tip markings on concrete and Nutec #11S would have on the #11S/1201 system.

METHODS:

- a. Specimen: the test specimen used was a concrete coupon, measuring 2" x 4" x 2". and prepared in accordance with the proposed ASTM D1.43 (modified) mix and ASTM C192-69 procedure. The concrete specimen was cured by applying Nutec #10 as a curing membrane within 24 hours of the removal of the concrete from the forms.
- b. Markings: Two types of felt tip markers were used:
 1. White - white marker
Carter's Ink Company
Cambridge, Mass. 02142
 2. Black - Graphi 500
Graphic Industries
L.A., Calif. 90038

Each marker was applied to the concrete and to the applied Nutec #11S.

Marker	Location of Marking	Surface applied to:
White	Bottom face	Concrete
White	Side B	Nutec #11S
Black	Top face	Concrete
Black	Side D	Nutec #11S

- c. Application: Nutec #11S was applied to four faces of the concrete coupon and was allowed to cure fully. The marking inks were applied

liberally to the top and bottom faces (bare concrete) and to two of the four faces coated with Nutec #11S. Nutec #11S was applied to the top and bottom faces after the markings had dried for 24 hours. The entire coupon was then topcoated with Reactic #1201. No surface preparation was used between coats to remove the markings. Essentially, two systems were applied for testing:

1. Markings/Nutec #11S/Reactic #1201
2. Nutec #11S/Markings/Reactic #1201

See attached panel preparation sheet for application and curing details.

- d. Testing: The test specimen was allowed to cure for 17 days and then submitted to Coastal Science Associates for DBA testing at the Houston Lighting and Power curve, Revision 0, 10-22-75. The maximum temperature and pressure achieved was 307°F. and 58 psig.

RESULTS: No defects other than bleeding through of the black marking ink were noted. Coastal Science reported dense #6 blisters on Side D, however, microscopic inspection of the surface in question, revealed only the usual rough surface. Apparently the rough, sandpaper-like surface, contrasted by the bleeding-through black marking ink was mistaken to be uniformly covered with small blisters.

Under the conditions [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Although the test indicated no compatibility problems, as a precaution it is suggested that the markings be removed as well as possible by solvent wiping with Xylol, in accordance with SSPC-SP-1.

REFERENCES: Lab. Notebook #56, p.p.53,54,56

COASTAL SCIENCE ASSOCIATES, INC.
6900 CANAL BLVD.
NEW ORLEANS, LOUISIANA 70124
TEL. 504-283-7251

SUBJECT: DESIGN BASIS ACCIDENT COATINGS TEST REPORT.

DATE: 3/21/78

DBA TEST CONDITIONS: 24 HR. HL&P, REVISION 0

HIGHEST TEMPERATURE DURING RUN..... 307 DEG. F.

HIGHEST PRESSURE DURING RUN..... 58 LBS./ SQ. IN.

SAMPLE NUMBER: 3790 SAMPLE TYPE: CONCRETE COUPON

SAMPLE #	DESCRIPTION
----------	-------------

3790	SIDE 1: NO DEFECTS
	SIDE 2: NO DEFECTS
	SIDE 3: NO DEFECTS
	SIDE 4: DENSE COVERAGE OF NO. 6 BLISTERS, SURFACE COAT

REPORT WRITTEN FOR: SOUTHERN IMPERIAL

REPORT # 069032178

APPROVED BY... *Charles A. French*

DBA AND RADIATION TOLERANCE

TEST PANEL PREPARATION DATA

1. PRODUCT TO BE TESTED: NUTEC #10/ NUTEC #11S/REACTIC #1201
2. TYPE SUBSTRATE: Concrete SIZE: 2" x 4" x 2"
3. SURFACE PREPARATION (Describe): 100 psi air blast

4. PRODUCT DATA: SAMPLE NO.(s): 3790
5. DATE AND TIME CURING COMPOUND OR PRIMER APPLIED: 8/2/77

COAT	PRODUCT	PRODUCT CODES	BATCH #	APPLICATION METHOD	CONDITIONS R/M(°F)%R.H.	THICKNESS (ins.)	TIME & DATE APPLIED
1	NUTEC	#10	6526/6531	Spray	92°F/53%	400 ft ² /gal.	8/2/77
2	NUTEC	#11S	3227/3228/3229	Squeegee	68°F/60%	.025 - .035	2/21/78
3	REACTIC	#1201	3952/3953	Spray	65°F/66%	.005 - .006	3/3/78

Total dry film thickness: .030 - .041

6. CURING CONDITIONS: AMBIENT TEMP. 70-80 °F REL. HUMIDITY 45 - 60
MINIMUM CURE 17 DAYS

7. TEST PROCEDURE: DBA per Houston Lighting & Power, Revision 0, 10/22/75

8. TESTING PERFORMED BY: Coastal Science Associates DATE SUBMITTED 3/16/78

APPROVED BY: HL

DATE: 4/19/78

PREPARED BY: Small E. Arnold

DATE: 4/19/78

TEST REPORT NO.: 246-78-G



VBR-7496

April 19, 1978

Mr. Don Sutton
c/o Brown & Root
Comanche Peak Steam Electric Station
P.O.Box 1001
GLEN ROSE, TX 76043

SUBJECT: Markings on Concrete

Attached is a copy of Technical report #246-78-G, describing the compatibility testing of Nutec #11S and Reactic #1201 over felt-tipped marking inks on concrete and Nutec #11S.

DBA testing over black and white felt-tipped markings revealed no significant defects, other than bleeding through of the black markings (black marking inks on #11S bled through the topcoat).

It is strongly recommended that a solvent dissolvable marker be used, such as a felt tip marking pen. A white marking pen would be desirable to prevent bleeding. Prior to application of the coating, I recommend the markings be solvent wiped per SSPC-SP-1 with DL-6A Universal Solvent, or Xylol. The cleaned surface shall be allowed to dry thoroughly before the coating is applied. Marking stains imbedded in the concrete and not removable by this procedure should not be deleterious to the coatings performance.

PREFARED BY:

Heath L. Curtis

APPROVED BY:

JH

DATE: 4/19/78

GEA/nd