



# TECHNICAL REPORT

NUMBER

624-82

TITLE

ADHESION AND DIRECT IMPACT OF THE NUTEC 11/1201 SYSTEM  
ON STEEL SUBSTRATE

FOR

GENERAL USE

CUSTOMER

Submitted by: Tom Kessel *TSK*  
Accepted by: Jerry Arnold *JCA*  
Approved: Robert Taylor *RTT* 6/25/82  
Date:

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 warranty as part of our service to customers. It is intended for use by persons having technical skills. 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.

SCOPE:

The objective of this test is to evaluate the adhesive properties and the impact resistance of the NUTEC 11/1201 system on steel substrates. Various methods of surface preparation will be used: hand tool cleaning, power tool cleaning, and abrasive blasting.

SUMMARY:

The NUTEC 11/1201 system shows excellent adhesion and impact resistance when applied to steel substrates regardless of surface preparation.

PROCEDURE:

One 12 x 12 x  $\frac{1}{4}$ " steel plate covered with milscale and slight signs of rusting was prepared in the following manner. One-third of the panel was blasted to SSPC-SP-10 using G-40 steel grit with a resulting surface profile of 1 $\frac{1}{2}$ -2 mils, one-third of the panel was power tool cleaned using a drill powered wire brush and the remaining third was wire brushed by hand. The entire panel was then solvent wiped to remove any loose rust or surface contamination. The panel was coated with the NUTEC 11 /1201 system as per the attached panel preparation sheet and allowed to cure a minimum of seven days at ambient conditions. On June 15, 1982, five Elcometer adhesion dollies were attached to each section using NUTEC 8 as an adhesive. The dollies were pulled and impact testing was preformed on June 18, 1982, to complete the testing.

RESULTS:AdhesionHand tool cleaned

Dolly #	PSI to Remove Dolly	Mode of Failure
1	1500	100% 1201 Cohesion Failure
2	1300	100% 1201 Cohesion Failure
3	1200	100% 1201 Cohesion Failure
4	1300	100% 1201 Cohesion Failure
5	1200	100% 1201 Cohesion Failure
Average	1300	100% 1201 Cohesion Failure

RESULTS (Con't)

## Power tool cleaned

Dolly #	PSI to Remove Dolly	Mode of Failure
1	1200	100% 1201 Cohesion Failure
2	1250	100% 1201 Cohesion Failure
3	1200	100% 1201 Cohesion Failure
4	1200	100% 1201 Cohesion Failure
5	1500	100% 1201 Cohesion Failure
Average	1270	100% 1201 Cohesion Failure

## Blasted

Dolly #	PSI to Remove Dolly	Mode of Failure
1	1600	100% 1201 Cohesion Failure
2	1300	100% 1201 Cohesion Failure
3	1500	100% 1201 Cohesion Failure
4	1300	100% 1201 Cohesion Failure
5	1400	100% 1201 Cohesion Failure
Average	1420	100% 1201 Cohesion Failure

Impact resistance:

Blasted 3/16-5/16" delamination

Hand Tooled 5/16-3/8" delamination

Power Tooled 5/16-3/8" delamination

CONCLUSION:

The NUTEC 11/1201 system shows excellent adhesion and impact resistance when applied to steel substrates.

All areas met the 200 PSI criteria of ANSI N5.12 Section 6.4 and far exceeded that figure. The manner of surface preparation was of little significance in determining the most beneficial method.

The impact resistance of all areas met the 3/4" maximum established in ANSI N5.12 Section 6.5. The only defects observed was slight delamination at the point of impact; no delamination, cracking or other detrimental effects radiated from this point.

REFERENCE:

Action Request 1463

# PHYSICAL PROPERTIES

A.N.S.I. N-5.12

Test No: 1463

1. PRODUCT TESTED: Nutec 11/1201
2. TYPE OF SUBSTRATE: Steel with Milscale SIZE: 12 x 12 x 1/4"
3. SURFACE PREPARATION: 1/3 blasted to SSPC-SP-10, 1/3 hand tooled to SSPC-SP-2, 1/3 power tool cleaned to SSPC-SP-3, entire panel solvent wiped to remove surface contamination.
4. PRODUCT DATA: N/A SAMPLE #'s: A787

COAT	PRODUCT	PRODUCT CODES	BATCH #	APPLICATION METHOD	CONDITIONS R/M(°F) %R.H.	THICKNESS (Inches)	DATE APPLIED
1	Nutec	11	3372/3368/3411	Squeegee	84/87	.005-.006	5/26/82
2	Nutec	1201	3301/3369	Spray	82/74	.005-.006	5/27/82

SP-10	SP-2	SP-3
-------	------	------

Total DFT .010-.012

coated on front face only

5. CURING DATA: N/A  
 AMBIENT TEMP. 65-95 °F REL. HUMIDITY: 60-100 % MIN. CURE TIME: 7 DAYS

6. TEST PROCEDURE: A.N.S.I. N-5.12

## 7. TEST RESULTS:

7.1 ABRASION: Federal Test Method Standard 141 Test Method 6192, 1000 cycles with a CS-17 wheel and a 1000 gram

LOW N/A HIGH N/A AVERAGE N/A

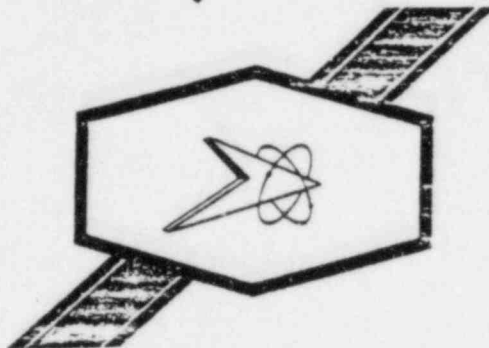
7.2 ADHESION: Determined by use of the Elcometer Adhesion Tester SEE TECHNICAL REPORT FOR RESULTS

AVERAGE OF \_\_\_\_\_ TESTS \_\_\_\_\_ PSI

7.3 DIRECT IMPACT RESISTANCE:

TEST REPORT # 624-82 SUBMITTED BY Tom Kessel DATE SUBMITTED 6/22/82 APPROVED BY Frank E. Rumble

# Imperial



## TECHNICAL REPORT

NUMBER

444-80

TITLE

NUTEC 6/1201 and NUTEC 11S/1201  
Testing in Humidity Cabinet and  
Weatherometer for Rust Through  
FOR

CUSTOMER

Submitted by: Harriet Springgate

Accepted by:

Approved: *Gene Durr*

Date:

November 11, 1980

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.

NUTEC 6/1201 and NUTEC 11S/1201  
Testing in Humidity Cabinet and  
Weatherometer for Rust Through

SCOPE

The purpose of this project is to determine if rusting through will occur through the systems of Nutec 6/1201 and Nutec 11S/1201 where exposed in high humidity and ambient weather conditions of rain and sun.

CONCLUSION

After 2000 hours of 100% Relative Humidity Testing and 2000 hours of accelerated weathering, absolutely no hint of rusting through was observed in either system.

METHOD

Eight (8) 3' x 6" x 1/10" ASTM A-36 Carbon Steel panels were sandblasted to an SSPC-SP-10 near white blast. Four were coated with Nutec #6 to a DFT of 5.0 - 6.0 mils and four were coated with Nutec 11S to a DFT of 25 - 30 mils. Both sets of panels were allowed to cure a minimum of 48 hours (72 hours for the 11S) and then topcoated with Nutec 1201 to 5.0 - 6.0 mils DFT. Material batch numbers used:

Nutec 6: Base 2067  
Cure 8461

Nutec 11S: Base 6962  
Cure 6308  
Filler 2103

Nutec 1201: Base 1958  
Cure 6333

Subsequent to topcoat application, all panels were allowed a seven day cure before testing was initiated.

Two panels of each system were then placed in 100% Relative Humidity Testing (ASTM-D-2247) and two of each in Accelerated Weathering (Weatherometer ASTM-D-822.21) where they remained for 2000 hours. Following these exposures, panels were removed and carefully sight evaluated for evidence of rusting through from the substrate.

RESULTS

No evidence of rusting through occurred on any panels of either system.

References: LN 110-25 and LN 108, p. 77.