


**TGI NBR: 634-63421-008**

**DATE: June 2, 2000**

**TASK GROUP INSTRUCTION (TGI)**

**GENERAL COLOR TOPPING OF NON-SKID AREAS  
(NON-LANDING AREAS AVIATION DECKS)  
LSA TRAX-COAT**

<b>AGENCY</b>	<b>Approved by:</b>	<b>DATE</b>
NAVSEA 05M1		10 JULY 00
TYCOM (if required)	Approved by:	
TYCOM (if required)	Approved by:	

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

**1. SCOPE:**

- 1.1 Accomplish surface preparation to Non-Skid Areas (For Non-Landing Area Aviation Decks) IAW:  
Ref. 2.1: Solvent Cleaning to an SSPC-SP 1,  
Ref. 2.2: Low-Pressure Water Cleaning NACE 5/SSPC-SP 12.
- 1.2 Accomplish the application of Low Solar Absorbing Water Based Acrylic Anti-Slip Enhancer by spraying or rolling onto prepared surfaces.
- 1.3 A TYCOM / NAVSEA authorized representative will provide Q.A. oversight for this process. Notification and documentation of all checkpoints is **MANDATORY**.
- 1.4 This TGI was developed for one time application of one coat only of LSA TRAX-COAT to improve Non-Skid appearances. This TGI does not cover any repair procedures to Non-Skid, which can be found in NSTM 634 (Ref. 2.9).

NAVSEA Administrative Note: This TGI is to be utilized specifically for application of LOW SOLAR ABSORBING TRAX-COAT TO NON-SKID AREA (NON-LANDING AREAS AVIATION DECKS). As new coating manufacturers systems are approved by COMNAVSEA, a separate TGI will be prepared.

**2. REFERENCES:**

REF. No.	DOCUMENT NUMBER	DOCUMENT TITLE	COPY REQUIRED (Y/N)
2.1	SSPC-SP 1	Surface Preparation by Solvent Cleaning	Y
2.2	NACE 5/SSPC-SP 12	Surface Preparation and Cleaning of Steel and Other Hard Materials by High and Ultrahigh Pressure Water Jetting	Y
2.3	-	MSDS, LSA Trax-Coat	Y
2.4	-	PDS, LSA Trax-Coat	Y
2.5	631	Naval Ship's Technical Manual, Preservation of Ships in Service	Y
2.6	009-06	NAVSEA Standard Items	Y
2.7	009-24	NAVSEA Standard Items	Y
2.8	009-32	NAVSEA Standard Items	Y
2.9	634	Naval Ship's Technical Manual, Deck Coverings	Y

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

### 3. APPENDICES:

APPENDICES	APPENDIX/TABLE TITLE	APPLICABLE (Y/N)
1	QA INSPECTION FORM – ENVIRONMENTAL READINGS	Y
2	EQUIPMENT TYPE AND MATERIAL USED LOG	Y
3	SURFACE PREPARATION DEFICIENCY LOG	NO
4	QA PROFILE READINGS	NO
5	QA SURFACE CONDUCTIVITY LOG	Y
6	WATER SOLUBLE SALTS CONDUCTIVITY MEASUREMENTS CHARTS	Y
7	QA WET FILM THICKNESS MEASUREMENTS	NO
8	QA DRY FILM THICKNESS MEASUREMENTS	NO
9	CHECKPOINT & MILESTONE COMPLETION LOG	Y
10	INSPECTION AND ACCEPTANCE LOG	Y
11	COATING SYSTEMS	Y

### 4. REQUIREMENTS:

4.1 **SAFETY:** It is the responsibility of the user of this work item to establish appropriate safety and health practices to determine the applicability of regulatory limitations prior to the use of this work item.

4.1.1 All surface preparation and coating application shall be in accordance with delineated guidance herein as approved by the responsible implementing authority. Any deviation will require NAVSEA and/or TYCOM approval.

4.1.2 Accomplish degreasing and low pressure water wash in accordance with local, state, and federal regulations and OPNAVINST 5100.19C and 5100.23C.

4.1.3 In addition to the safety precautions contained herein, manufacturer’s recommended instructions and safety precautions shall also be followed.

- Safety glasses or safety goggles shall be worn when using power tools; a face shield or chemical safety goggles shall be worn to protect face and eyes during cleaning and rust treatment.
- Consult the coating manufacture for product data and material safety data sheets and instructions concerning required respiratory protection. (Ref. 2.3 and 2.4).
- Adequate clothing and gloves to prevent skin contact with painting and cleaning materials shall be worn.
- Positive measures shall be taken to prevent paint chips and debris from entering water.

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

- No food, drink, or smoking materials shall be allowed in the painting area.

4.1.4 Consider existing shipboard coatings to contain heavy metal based material (i.e., lead, cadmium, or chromium), unless it can be established by laboratory analysis or other reliable methods that the coatings are free of heavy metals prior to commencement of work. Apply and remove marine coatings in accordance with federal, state local laws and regulations.

Provide written notice to the SUPERVISOR and the Commanding Officer's representative of potential exposure of personnel to toxic or hazardous substances.

See Naval Ships Technical Manual (NSTM) Chapter 631 "Preservation Of Ships In Service", Volume I, Section 2 for additional information. (Ref. 2.5).

4.2 **TEMPORARY SERVICES:** The project will require temporary services such as lighting, compressed air and ventilation, portable heads, 110-volt service and fresh water.

4.3 **HAZARDOUS WASTE/MATERIAL:** This work generates "Hazardous Waste/Material". Hazardous Waste/Material must be properly identified, labeled, packaged and turned over to waste handling personnel in accordance with local regulations. Accomplish work IAW local ordinances and manufacture's MSDS (Ref. 2.3). Ensure personnel are aware of hazards associated with hazardous waste/materials used in the preservation process.

4.4 Throughout the solvent cleaning, paint application and drying processes utilize ventilation as needed to maintain a 10% Lower Explosive Limit (LEL) or at the paint or solvent manufacturer's recommended LEL IAW manufacturer's MSDS (Ref. 2.3), whichever is lower.

4.5 **ENVIRONMENTAL AND PAINT INFORMATION:** This document requires environmental and paints information to be recorded and maintained by the personnel responsible for quality control. After the project is completed, forward two copies of the completed TGI to the TYCOM and Supervisor of Shipbuilding.

4.5.1 Environmental conditions shall be monitored every hour for air temperature, wet bulb, relative humidity, deck temperature and dewpoint. The readings are required to start at beginning of surface preparation and through final checkpoint. Limits are identified in manufactures product data sheets. (Ref. 2.4).

4.5.2 If difficulties are encountered in meeting the required conditions, it will be necessary to either erect an environmental structure which can control humidity and

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

temperature levels or to halt work until the required conditions are met (Ref. 2.9)

- 4.5.3 Wind velocity, if too great, can negatively affect wet film build during the application of trax-coat by air spray methods. Do not apply trax-coat or do not use spray application, if wind velocity at the application site is sufficient to interfere with the spray application(Ref. 2.9).
- 4.6 **EQUIPMENT:** Ensure equipment which may be damaged or adversely impacted by exposure to water, degreaser, solvent, paint and paint waste products is protected prior to the start of work (Ref. 2.6).
  - 4.6.1 Ensure that all openings and pipes are blanked and that any electrical equipment (motors, junction boxes, transmitters, cables, deck drains and counter measure washdown nozzles) are protected prior to the start of surface preparation (Ref. 2.6).
  - 4.6.2 Tag out of service electrical equipment that may be impacted during the Low Pressure Water Cleaning (LP WC) (1000 PSI), degreasing, and paint coat applications (Ref. 2.7).
- 4.7 **DOCUMENTATION:** A record of equipment type and material used shall be kept and documented in APPENDIX 2.
- 4.8 **SAFETY CHECKPOINT:**  
**Conduct all environmental checks IAW federal, state, and local laws and regulations and OPNAVINST's 5100.19C, 5100.23C, and NAVSEA Standard Item 009-32.**  
**Ensure all electrical equipment is properly tagged out and covered to NAVSEA Standard Item 009-24 to protect against water damage, and contamination.**

## 5. PROCESS USED ON DECKS:

- 5.1 **DEGREASING:**
  - 5.1.1 IAW manufacturer's instructions apply a MIL -C-22230 or MIL -D-16791 approved degreaser to surfaces contaminated with oil, grease, hydraulic fluid, fuel oil, salt and dirt etc. The scope of the degreasing shall include foundations and other mounting hardware.
  - 5.1.2 After the degreaser manufacturer's recommended soaking time, accomplish a NACE 5/ SSPC-SP 12 Low-Pressure Water Cleaning (LP WC) to remove degreaser and oil, grease, salt and dirt deposits from the surface.

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

5.1.3 Ensure prepared surfaces are dried completely prior to conducting checkpoint.

5.1.4 During the degreasing procedure, visually and white rag inspect following the degreasing process to ensure a complete removal of all oil and grease deposits from surfaces. If there has not been a complete oil/grease removal, repeat steps 5.1.1 through 5.1.3.

**NOTE:** Subsection 5.1.4 is a process control, to be carried out during the degreasing, not a segment of the checkpoint.

**5.2 DEGREASING CHECKPOINT: The purpose of this checkpoint is to confirm the surfaces have been degreased as directed in Section 5.1. At the discretion of the responsible implementing authority, the checkpoint shall be terminated and rescheduled if the criteria of this checkpoint are not accomplished.**

**5.2.1 OIL AND GREASE DETECTION: Inspect surface to detect oil or grease residue on the surface.**

**5.2.2 If oil or grease is detected on the surface after attempting to solvent spot repair, the responsible implementing authority shall require the surface be de-greased again as directed in section 5.1.**

**5.3 SURFACE PREPARATION:**

5.3.1 Accomplish surface preparation as directed in this TGI to the NON-SKID Surfaces.

5.3.2 Accomplish a NACE 5/ SSPC-SP 12 Low-Pressure Water Cleaning (LP WC) to remove salt and dirt deposits.

5.3.3 Ensure prepared surfaces are dried completely prior to conducting checkpoint.

**5.4 SURFACE PREPARATION CHECKPOINT:**

**5.4.1 The purpose of this checkpoint is to confirm the specified checkpoint criteria are accomplished. At the discretion of TYCOM/NAVSEA authorized representative, the surface preparation checkpoint shall be terminated and rescheduled if the criteria of this checkpoint are not accomplished.**

**5.4.2 VERIFY SURFACE PREPARATION: Ensure the surface has been properly prepared IAW applicable subsections 5.1 through 5.3.**

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

- 5.4.3 **VERIFY ENVIRONMENTAL CONDITIONS:** Ensure environmental conditions have been measured, posted at the job site, reviewed and comply with subsection 4.5.1. Record measurements on APPENDIX 1 and submit copies to QA.
- 5.4.4 **VERIFY WRAPPING MATERIAL REMOVAL:** Ensure protective wrapping applied in section 4.6, has been removed prior to this checkpoint.
- 5.4.5 **CONDUCTIVITY MEASUREMENTS LIMITS:** The contractor shall measure soluble salts on the prepared surface.
  - 5.4.5.1 **Frequency of measurements:** Accomplish three (3) measurements per 100 sq. ft. over the first 500 sq. ft. and one (1) measurement per 1,000 sq. ft. on the remainder of the surface area.
  - 5.4.5.2 **Take measurements on surfaces representative of the surfaces on the zone,** such as surfaces with previous corrosion activity, bulkheads, deck plate, structural members and hard to reach surfaces such as the backside of stiffeners. Record conductivity values on APPENDIX 5.
  - 5.4.5.3 **Accomplish soluble salt measurements on the surface by cross-referencing conductivity values and sample temperatures IAW APPENDIX 6.** Use the OAKTON TDSTestr® Model CD-2508 to determine soluble salt levels on the test surface. Using a 12.5 cm<sup>2</sup> Bresle Sampler™, fill with 3 ml of distilled water and determine surfaces conductivity IAW instructions provided in APPENDIX 6.
- 5.4.6 **CONDUCTIVITY LIMITS:**

**CONDUCTIVITY** measurements shall not exceed 7.0 millisiemens per meter.

  - 5.4.6.1 **If conductivity measurements exceed 5 ug/cm<sup>2</sup> then solvent wipe those areas with solvent and clean white rag, then retest.**
  - 5.4.6.2 **If the conductivity measurements exceed the limits, Low-Pressure Water Clean (LP WC), wet rag wipe down (effective when removing conductivity from localized surface areas or when water canopy is required) or solvent wipe (not as effective as water) the affected surface(s).**
  - 5.4.6.3 **Accomplish surface conductivity tests on affected areas, repeating corrective action listed in subsection 5.4.6.2 until levels specified in subsection 5.4.6 are achieved. Record conductivity values on APPENDIX 5.**

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

- 5.4.6.3 When subsection 5.4.6.2 corrective actions are required, the surface shall be restored to the surface preparation standard specified in subsection 5.3 before the surface(s) can pass this checkpoint.
- 5.4.7 **VERIFY SURFACES & AREA READY FOR PAINTING:** All surfaces, and equipment in the work area must be clean and free of ALL debris and dust.
- 5.4.8 **FRICITION LEVEL TEST:** Test surface friction levels using procedure, “MINIMUM AVERAGE GRIP TESTER FRICTION TEST” IAW NSTM 634.3.36. (Ref. 2.9). Any significant area (i.e., more than 30 square feet) that falls below 0.89 for Type I and 0.79 for Types II, III and IV can not be coated with TRAX coat. Before proceeding further, test results must be reviewed by implementing authority.
- 5.4.9 **CHECKPOINT COMPLETION:** Record all checkpoints in APPENDIX 9 and final acceptance in APPENDIX 10 of this TGI.
- 5.5 **GENERAL PAINTING REQUIREMENTS:**
  - 5.5.1 Paint the surfaces within the scope of this TGI in accordance with the requirements of this document and the coating manufacturer's instructions. In the event of a conflict between this document and the coating manufacturer's instructions, this document shall take precedence.
  - 5.5.2 Environmental conditions shall be monitored IAW subsection 4.5 and immediately prior to all checkpoints. Readings shall be measured and posted at the job site. Readings shall be recorded and a copy of completed readings presented to QA.
  - 5.5.3 All material and equipment used shall be monitored and recorded in APPENDIX 2.
- NOTE:** APPENDIX 2 will be submitted to the implementing authority when completed.
- 5.5.4 Ensure the ambient air temperature is within the limits set by the manufacturer of the material being applied.
- 5.5.5 Quantity of deck temperature readings shall reflect all areas subject to temperature changes: i.e. exposed to direct sunlight, shaded areas, area with and without spaces located below.
- 5.5.6 Store paint for a minimum of 24 hours prior to use at 40° - 100°F IAW Ref. 2.4 and manufacturer's instructions.

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	



- 5.5.7 MASKING FOR PAINT APPLICATION:** All surfaces not being coated shall be masked using suitable masking materials.
- 5.5.7.1 Masking taped boundaries shall be neat and tightly adherent to the surface. Loose tape shall be replaced as needed during the service life of the masking.
- 5.5.7.2 Masking material (moisture absorbing) shall be taped firmly in place (loose masking often becomes lodged in wet paint resulting in touch up coating).
- 5.5.7.3 Masking and the maintenance (subsection 5.5.7.1 – 5.5.7.2) of masking shall be accomplished prior to checkpoints in which paint is being applied.
- 5.5.7.4 When masking 304 or 316 stainless steel or other corrosion resistant materials (CRM), neatly mask at least one inch beyond welds into the CRM substrate.
- 5.5.7.5 Masking for painting shall be neat, only covering surfaces or items not being painted. Over masking into surfaces that should be painted will result in additional touch up coating after masking is removed.
- 5.5.8 At beginning of application, monitor coverage rate per gallon IAW APPENDIX 11.
- 5.5.9 Ensure proper DFT for the trax-coat and any touch up coated areas. To achieve the specified DFT refer to APPENDIX 11 for coverage rate per gallon.
- 5.5.10 SURFACE CLEANLINESS:**
- 5.5.10.1 All personnel entering the area shall wear clean coveralls and clean rubber booties to minimize contamination of the coated surfaces. An area shall be provided to put on clean booties.
- 5.5.10.2 Inclusion such as frayed bootie material and debris shall be removed prior to the application of the trax-coat. Inclusion in the trax-coat may require a touch up coat to the affected area. This shall be accomplished to the satisfaction of the responsible implementing authority.
- 5.5.11 Store the paint in a cool and dry place. *Storage and application temperatures of the paint are separate issues. For application and drying times consult product data sheet (Ref. 2.4), for DRYING and OVERCOATING times.* Stored paint shall not be exposed to freezing temperatures or direct sunlight. Paint shall be stored in tightly sealed containers.
- 5.5.12 Trax-Coat checkpoints shall be performed with sufficient time for touch up coating prior to the expiration of the finish coat re-coating period.

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

5.5.13 Unless work is stopped due to circumstances beyond the control of the applicator, i.e., other craft activities etc., the applicator is responsible to ensure the re-coat periods are not exceeded and for additional actions required associated with exceeding re-coat periods.

**5.5.14 MIXING:**

5.5.14.1 TRAX-COAT: Mix thoroughly for 3 – 5 minutes so that all material is uniform.

5.5.14.2 Drill type mixers shall be used to mix the paint.

5.5.14.3 Thinning of paint is prohibited.

**5.6 TRAX-COAT APPLICATION:**

**NOTE: Clean rubber booties are required for application and checkpoints.**

5.6.1 Application of the trax-coat shall be accomplished immediately after the surface preparation checkpoint (subsection 5.4).

5.6.2 At beginning of application, monitor coverage rate per gallon to achieve the specified DFT IAW APPENDIX 11.

5.6.3 The scope of the trax-coat includes all surfaces IAW subsection 1.1.

5.6.4 Remove masking material prior to checkpoint.

**5.7 CHECKPOINT TRAX-COAT APPLICATION:**

**The purpose of this checkpoint is to confirm the listed checkpoint criteria is accomplished as directed in this document. At the discretion of the responsible implementing authority, the checkpoint shall be terminated and rescheduled if the requirements of this checkpoint are not accomplished.**

**5.7.1 ENVIRONMENTAL CONDITIONS: Ensure environmental conditions have been measured, posted at the job site, reviewed and comply with subsection 4.5.1. Measurements shall be recorded in APPENDIX 1.**

**5.7.2 Provide an updated copy of APPENDIX 1 with environmental readings filled in as directed in subsection 4.5.1 to QA.**

**5.7.3 TOUCH UP COATING: Due to the possibility of touch up coating, the Trax-Coat shall be within the manufacturer's re-coating periods as directed in APPENDIX 11.**

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

- 5.7.4 **CONTAMINATION:** Ensure the surface is free of surface contamination and contaminant inclusion in the film as directed in subsection 5.5.10.
- 5.7.5 **FRICITION LEVEL TEST:** To ensure surface friction levels are within limits conduct “MINIMUM AVERAGE GRIP TESTER FRICTION TEST” IAW procedures in NSTM 634.3.36. (Ref. 2.9). Any significant area (i.e., more than 30 square feet) that falls below 0.84 for Type I and 0.74 for Types II, III and IV must be resurfaced. Test results must be reviewed by implementing authority.
- 5.7.6 **CHECKPOINT COMPLETION:** Record all checkpoints in APPENDIX 9 and final acceptance in APPENDIX 10 of this TGI.
- 5.7.7 **CURE TIMES:** See product data sheets for cure times, Ref. 2.4.

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

**APPENDIX 1**

**ENVIRONMENTAL READINGS  
TRAX-COAT APPLICATION**

**Date** \_\_\_\_\_, **20** \_\_\_\_\_

Inspector \_\_\_\_\_

Time \_\_\_\_\_

Pre-Inspection

Comments \_\_\_\_\_

Trax-Coat Manufacturer \_\_\_\_\_ AMERICAN SAFETY TECHNOLOGIES \_\_\_\_\_

Product Name \_\_\_\_\_

Batch Number \_\_\_\_\_

Storage Temperature \_\_\_\_\_

Induction Time \_\_\_\_\_ N/A \_\_\_\_\_

<b>Time</b>	<b>Air Temp</b>	<b>Wet Bulb</b>	<b>Relative Humidity</b>	<b>Deck Temp</b>	<b>Dew Point</b>	<b>Inspector</b>
Start						
Stop						

Application Method: Sprayed, Rolled, Brushed

Comments \_\_\_\_\_

Signature of Inspector \_\_\_\_\_

Date \_\_\_\_\_

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

## APPENDIX 2

### EQUIPMENT TYPE AND MATERIAL USED LOG

SPACE LOCATION OR WORK LOCATION	
PAINT HOSE SIZE	
PAINT HOSE LENGTH	
SPRAY TIP SIZE USED	
AIRLESS PUMP USED	
AIRLESS PUMP RATIO	
BRAND & PART NUMBER OF PAINT	
BATCH NUMBER OF TRAX-COAT	
TRAX-COAT COLOR	
QUANTITY TRAX-COAT USED	

Provide an updated copy of APPENDIX 2 with all information completed except total paint usage filled in, to QA at each checkpoint.

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

**APPENDIX 5**

DATE	LOCATION	CONDUCTIVITY millisiemens/m

**QA SURFACE CONDUCTIVITY LOG**

Signature of Inspector \_\_\_\_\_  
Date \_\_\_\_\_

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

## APPENDIX 6

### WATER SOLUBLE SALTS CONDUCTIVITY MEASUREMENTS

Conversion Table Used For The Temperature Conversion of Conductivity Measurements (OAKTON TDSTestr 4 values are displayed in mS/m)										
Measured Conductivity mS/m	Sample Water Temperature									
	15.0 °C 59.0 °F	17.5 °C 63.5 °F	20.0 °C 68.0 °F	22.5 °C 72.5 °F	25.0 °C 77.0 °F	26.5 °C 79.7 °F	28.0 °C 82.4 °F	29.5 °C 85.1 °F	31.0 °C 87.8 °F	32.5 °C 90.5 °F
<b>The Conductivity Limit for Immersion Service Is 3 Millisiemens Per Meter (mS/m)</b>										
<b>1.5</b>	1.65	1.58	1.50	1.43	1.35	1.31	1.26	1.22	1.17	1.13
<b>2.0</b>	2.20	2.10	2.00	1.90	1.80	1.74	1.68	1.62	1.56	1.50
<b>2.1</b>	2.31	2.21	2.10	2.00	1.89	1.83	1.76	1.70	1.64	1.58
<b>2.2</b>	2.42	2.31	2.20	2.09	1.98	1.91	1.85	1.78	1.72	1.65
<b>2.3</b>	2.53	2.42	2.30	2.19	2.07	2.00	1.93	1.86	1.79	1.73
<b>2.4</b>	2.64	2.52	2.40	2.28	2.16	2.09	2.02	1.94	1.87	1.80
<b>2.5</b>	2.75	2.63	2.50	2.38	2.25	2.18	2.10	2.03	1.95	1.88
<b>2.6</b>	2.86	2.73	2.60	2.47	2.34	2.26	2.18	2.11	2.03	1.95
<b>2.7</b>	2.97	2.84	2.70	2.57	2.43	2.35	2.27	2.19	2.11	2.03
<b>2.8</b>	3.08	2.94	2.80	2.66	2.52	2.44	2.35	2.27	2.18	2.10
<b>2.9</b>	3.19	3.05	2.90	2.76	2.61	2.52	2.44	2.35	2.26	2.18
<b>3.0</b>	3.30	3.15	3.00	2.85	2.70	2.61	2.52	2.43	2.34	2.25
<b>A Conductivity Up To 3 mS/m are Permitted For Immersion Service, Conductivity Up To 7 mS/m Are Permitted For Non-Immersion. Use Of Values Below This Line Are Limited To Non-Immersion Service Only</b>										
<b>3.1</b>	3.41	3.26	3.10	2.95	2.79	2.70	2.60	2.51	2.42	2.33
<b>3.2</b>	3.52	3.36	3.20	3.04	2.88	2.78	2.69	2.59	2.50	2.40
<b>3.3</b>	3.63	3.47	3.30	3.14	2.97	2.87	2.77	2.67	2.57	2.48
<b>3.4</b>	3.74	3.57	3.40	3.23	3.06	2.96	2.86	2.75	2.65	2.55
<b>3.5</b>	3.85	3.68	3.50	3.33	3.15	3.05	2.94	2.84	2.73	2.63
<b>3.6</b>	3.96	3.78	3.60	3.42	3.24	3.13	3.02	2.92	2.81	2.70
<b>3.7</b>	4.07	3.89	3.70	3.52	3.33	3.22	3.11	3.00	2.89	2.78
<b>3.8</b>	4.18	3.99	3.80	3.61	3.42	3.31	3.19	3.08	2.96	2.85
<b>3.9</b>	4.29	4.10	3.90	3.71	3.51	3.39	3.28	3.16	3.04	2.93
<b>4.0</b>	4.40	4.20	4.00	3.80	3.60	3.48	3.36	3.24	3.12	3.00
<b>4.1</b>	4.51	4.31	4.10	3.90	3.69	3.57	3.44	3.32	3.20	3.08
<b>4.2</b>	4.62	4.41	4.20	3.99	3.78	3.65	3.53	3.40	3.28	3.15
<b>4.3</b>	4.73	4.52	4.30	4.09	3.87	3.74	3.61	3.48	3.35	3.23
<b>4.4</b>	4.84	4.62	4.40	4.18	3.96	3.83	3.70	3.56	3.43	3.30
<b>4.5</b>	4.95	4.73	4.50	4.28	4.05	3.92	3.78	3.65	3.51	3.38
<b>4.6</b>	5.06	4.83	4.60	4.37	4.14	4.00	3.86	3.73	3.59	3.45
<b>4.7</b>	5.17	4.94	4.70	4.47	4.23	4.09	3.95	3.81	3.67	3.53

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

Measured Conductivity mS/m	Sample Water Temperature									
	15.0 °C	17.5 °C	20.0 °C	22.5 °C	25.0 °C	26.5 °C	28.0 °C	29.5 °C	31.0 °C	32.5 °C
	59.0 °F	63.5 °F	68.0 °F	72.5 °F	77.0 °F	79.7 °F	82.4 °F	85.1 °F	87.8 °F	90.5 °F
4.8	5.28	5.04	4.80	4.56	4.32	4.18	4.03	3.89	3.74	3.60
4.9	5.39	5.15	4.90	4.66	4.41	4.26	4.12	3.97	3.82	3.68
5.0	5.50	5.25	5.00	4.75	4.50	4.35	4.20	4.05	3.90	3.75
5.1	5.61	5.36	5.10	4.85	4.59	4.44	4.28	4.13	3.98	3.83
5.2	5.72	5.46	5.20	4.94	4.68	4.52	4.37	4.21	4.06	3.90
5.3	5.83	5.57	5.30	5.04	4.77	4.61	4.45	4.29	4.13	3.98
5.4	5.94	5.67	5.40	5.13	4.86	4.70	4.54	4.37	4.21	4.05
5.5	6.05	5.78	5.50	5.23	4.95	4.79	4.62	4.46	4.29	4.13
5.6	6.16	5.88	5.60	5.32	5.04	4.87	4.70	4.54	4.37	4.20
5.7	6.27	5.99	5.70	5.42	5.13	4.96	4.79	4.62	4.45	4.28
5.8	6.38	6.09	5.80	5.51	5.22	5.05	4.87	4.70	4.52	4.35
5.9	6.49	6.19	5.90	5.61	5.31	5.13	4.96	4.78	4.60	4.43
6.0	6.60	6.30	6.00	5.70	5.40	5.22	5.04	4.86	4.68	4.50
6.1	6.71	6.40	6.10	5.79	5.49	5.31	5.12	4.94	4.76	4.58
6.2	6.82	6.51	6.20	5.89	5.58	5.39	5.21	5.02	4.84	4.65
6.3	6.93	6.61	6.30	5.98	5.67	5.48	5.29	5.10	4.91	4.73
6.4	7.04	6.72	6.40	6.08	5.76	5.57	5.38	5.18	4.99	4.80
6.5	7.15	6.82	6.50	6.17	5.85	5.65	5.46	5.26	5.07	4.87
6.6	7.26	6.93	6.60	6.27	5.94	5.74	5.54	5.35	5.15	4.95
6.7	7.37	7.03	6.70	6.36	6.03	5.83	5.63	5.43	5.23	5.02
6.8	7.48	7.14	6.80	6.46	6.12	5.92	5.71	5.51	5.30	5.10
6.9	7.59	7.24	6.90	6.55	6.21	6.00	5.80	5.59	5.38	5.17
7.0	7.70	7.35	7.00	6.65	6.30	6.09	5.88	5.67	5.46	5.25
7.1	7.81	7.45	7.10	6.74	6.39	6.18	5.96	5.75	5.54	5.32
7.2	7.92	7.56	7.20	6.84	6.48	6.26	6.05	5.83	5.62	5.40

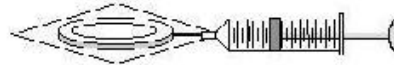
GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	



## HOW TO DETERMINE CONDUCTIVITY ON A STEEL SURFACE USING THE BRESLE SAMPLER PATCH



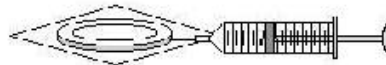
Remove the protective backing and foam center from the Sampler patch and attach the patch to a clean dry surface. Press firmly around the edges of the patch to create a tight seal.



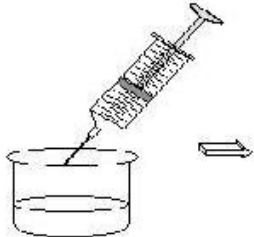
Fill syringe with 3 ml of distilled water. Insert syringe into patch through the spongy foam perimeter and inject 1.5 ml of the water into the patch. With syringe still in the patch, reposition the needle to evacuate all air from the patch. Once the air has been removed, inject the remaining 1.5 ml of water into the patch.



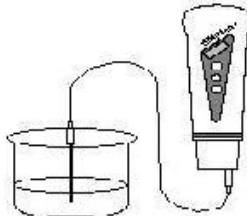
Remove syringe from the patch and gently rub the top surface of the patch for 10 - 15 seconds to allow the water to dissolve any surface contaminants.



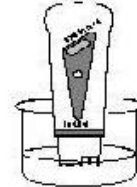
Reinsert the syringe into the patch. Withdraw all of the water into the syringe and reinject once. Again withdraw the water into the syringe and remove syringe from the patch.



Empty the contents of the syringe into a clean container.



Measure the temperature of the water to the nearest 1 degree F and record temperature reading.



Immediately measure conductivity of the water using a digital conductivity gauge with a minimum resolution of 0.10 mS and record reading.

Using the correction factors for conductivity at varying temperatures determine the true conductivity reading.

**EQUIPMENT NEEDED:**

- Bresle Sample Patches (12.5 cm)
- Syringe w/needle (5 ml)
- Digital temperature gauge\*
- Conductivity gauge\*\*
- Plastic cup
- Distilled water, high purity

\* Temperature gauge equivalent to OaktonTempTestr Model WD-35620.  
\*\* Conductivity gauge equivalent to Oakton TDSTestr 4 Series.

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

# **MOISTURE, AIR & TEMPERATURE**

## **OAKTON®TempTestr®**

- °F or °C selectable scale
- Accurate
  - ±1°C throughout the range
  - ±1°F 20° to 160°F.
  - ±1%FS (°F) above & below
- Pushbutton calibration
  - calibration adjustment through keypad—no screwdriver needed!
- Sturdy pocket clip
- Fast plug-in probe attachment
  - no stripped or worn threads
- Self Diagnostic Error Messages
  - low battery
  - over/under range
- HOLD function
- AUTO-off
- Membrane keypad that is splashproof and raised control buttons that give positive "clicks" confirming your activity signal
- Larger LCD display
- Flip-up battery compartment



### **SPECIFICATIONS**

Range	-20 to 220°F, -28 to 105°C
Resolution	1°F, 1°C
Accuracy	±1°C throughout the range; ±1°F from 20° to 160°F, ±1%FS above and below
Calibration	Factory calibrated, fine adjustment through keypad
Operating Temperature	32 to 122°F; 0 to 50°C
Special Functions	On/Off or Auto-Off after 8.5 minutes; HOLD; °F or °C scale selectable, defaults to °F scale when turned on; factory calibration is maintained when batteries are replaced.
Power and Battery Life	Three 1.5V mercury batteries (supplied) 100 hrs. continuous use; Eveready A76BP for replacement, or substitute model 303 Silver Oxide, 70 hrs. continuous use.
Dimensions	8.4"L x 2.6"W x 1.3"H (boxed) 5.9"L x 1.6"W x 0.94"H (unit only)
Case Material	Glass reinforced thermoplastic polyester.
Dimensions Probe	Stem 4.5"L(150mm) Overall 6.6"L(168mm) Stem Dia. 0.125"(3.1mm)
Probe Material	316 SS
Weight with probe	4.25 oz. (119 gm) (boxed), 3 oz. (84 gm) (meter and probe only)

Ideal for any application that requires measuring or monitoring the temperature of any liquid, semisolid or gel that is chemically compatible with the 316 stainless steel probe stem. It is a very practical substitute for mercury-in-glass or liquid-in-glass thermometers for quality assurance checks in food processing, photo developing, chemical and plating industries where the danger of product contamination exists and a durable, reliable temperature tester is indispensable. It is warranted to be free from defects of material or workmanship for a period of 6 months after purchase and comes complete with batteries, a foam-lined protective box, operating instructions and specifications. The temperature probe is not replaceable.

### **PRICES**

TH-2502	TempTestr, range -20 to 220°F and -28 to 105°C .....	\$44.95
TH-2521	Belt loop vinyl carrying case—holds one tester .....	4.55
TH-2522	Belt loop vinyl carrying case—holds two testers .....	6.50
TH-2523	Belt loop vinyl carrying case—holds three testers .....	8.50
TH-2529	Replacement Batteries, 6/pk. A76BP.....	11.00

### **Paul N. Gardner Company, Inc.**

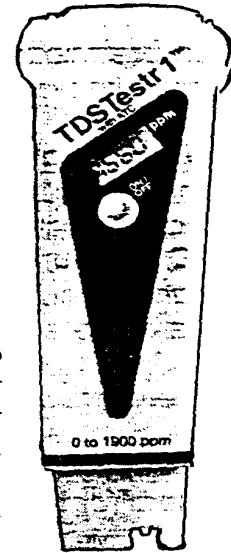
316 NE 1st ST, POMPANO BCH, FL 33060  
 1-800-762-2478 • (954) 946-9454 • FAX (954) 946-9309

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REVISION 00	

# **pH & CONDUCTIVITY**

## **OAKTON™ TDSTestr SERIES™**

- Full reading displayed -eliminates the need to apply multiplier to determine actual reading
- ATC - automatic temperature compensation
- Sturdy pocket clip
- Large LCD display with actual value of reading displayed in ppm, ppt,  $\mu$ S or mS.
- Outlasts test kits many times over
- $\pm 2\%$  FS accuracy
- Flip-up battery compartment
- 316 stainless steel electrode system



Monitor dissolved solids or conductivity levels quickly and easily to identify problems BEFORE they become BIG problems. Applications for TDSTestr 1 and TDSTestr 3 include testing pollution controls, water treatment and testing for water hardness, water in aquariums, fish farms, hydroponics, and fertilizer/chemical concentrations. The TDSTestr 2 and TDSTestr 4 are ideal for checking cooling towers, boiler water, font solutions for printing operations, brines, swimming pools, whirlpools and rinse tanks. The TDSTestr Series is warranted to be free from defects of material or workmanship for a period of 6 months after purchase. Furnished complete with batteries, a foam-lined protective box, operating instructions and specifications.

### **SPECIFICATIONS**

MODEL	TDSTestr 1	TDSTestr 2	TDSTestr 3	TDSTestr 4
Range	1990 ppm	10.00 ppt	1990 $\mu$ S	19.90 mS
Resolution	10 ppm	0.10 ppt	10 $\mu$ S	0.10 mS
Accuracy	$\pm 2\%$ FS	$\pm 2\%$ FS	$\pm 2\%$ FS	$\pm 2\%$ FS
Calibration	Against appropriate calibrating solutions			
Operating Temperature	32 to 122°F; 0 to 50°C			
Temperature Compensation	Automatic (ATC), 0 to 50°C			
Power and Battery Life	Four 1.5V mercury batteries (supplied) 200 hrs. continuous use; Eveready			
A76BP for replacement				
Dimensions	8.5"L x 2.75"W x 1.3"H (boxed) 5.9"L x 1.6"W x 0.94"H (unit only)			
Wetted Materials	316 Stainless Steel and glass reinforced thermoplastic polyester.			
Weight	4.5 ounces/125 gms (boxed) 3.25 ounces/90 gms (unit only)			
ATC Coefficient	Beta $\pm 2\%$ per °C 1.11% per °F			

### **PRICES**

CD-2502	TDSTestr 1, 0 to 1990 ppm Dissolved Solids .....	\$55.50
CD-2504	TDSTestr 2, 0 to 10.00 ppt Dissolved Solids .....	55.50
CD-2506	TDSTestr 3, 0 to 1990 $\mu$ S Conductivity .....	55.50
CD-2508	TDSTestr 4, 0 to 19.90 mS Conductivity .....	55.50
CD-2587	OAKTON Singles: 1413 $\mu$ S (1000 ppm) std pouches, 20/box .	18.00
CD-2588	OAKTON Singles: 15.000 $\mu$ S (13.45 ppt) std pouches.20/box	18.00
CD-2520	Trimpot screwdriver for calibration—92 mm .....	1.50
CD-2521	Belt loop vinyl carrying case—holds one tester .....	4.55
CD-2529	Replacement Batteries, 6/pk. A76BP .....	11.00

CONDUCTIVITY STANDARD SOLUTIONS AVAILABLE

### **Paul N. Gardner Company, Inc.**

316 NE 1st ST., POMPANO BCH, FL 33060  
 1-800-762-2478 • (954) 946-9454 • FAX (954) 946-9309

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REVISION 00	

**APPENDIX 9**

**QA CHECKPOINT & MILESTONE COMPLETION LOG**

ACTIVITY	LOCATION AND NOTES
Date Degreasing Begins	
Date of Degreasing Checkpoint	
Date Surface Preparation Begins	
Date of Surface Preparation Checkpoint	
Date Trax-Coat is Applied	
Date of Trax-Coat Checkpoint	
Date of Final Acceptance / Closure	

(ONE SHEET FOR EACH AREA)

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

**APPENDIX 10**

**QA INSPECTION & ACCEPTANCE LOG**

Degreasing Inspected and Accepted:            By: \_\_\_\_\_            Date: \_\_\_\_\_

Surface Preparation Inspected and Accepted:            By: \_\_\_\_\_            Date: \_\_\_\_\_

Trax-Coat Inspected and Accepted:            By: \_\_\_\_\_            Date: \_\_\_\_\_

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	

**APPENDIX 11**

**COATING SYSTEM:**

Coating Sequence							
PRODUCT & COLOR	TYPE OF COAT	SPEC. DFT	SPEC. WFT	CLEANING SOLVENT	COVERAGE RATE	MINIMUM OVERCOATING TIME @ 70°F (Surface)	MAXIMUM OVERCOATING TIME @ 70°F (Surface)
ASTI LSA DARK GREY	TRAX	1.5	4 -5	Propylene Glycol Based Ether	320 – 400 SQ. FT. PER GALLON	2.5 Hrs.	Indefinite

GENERAL COLOR TOPPING OF NONSKID AREAS LSA TRAX-COAT	06/02/00
REVISION 00	