



TRINITY INDUSTRIES, INC.
BUSINESS UNIT # 296

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Revised By: **Howard Abell**

Approved By: **Howard Abell**

DOCUMENT TYPE: Controlled Form List

TITLE: Piping Test Report

PIPING TEST REPORT

Customer / Contract E Squared / 96274
 Vessel Name E2MS 309
Hull Number 5280
 Official Number 1281202
 KEEL Date / COI Year 10/19/2017 / 2017

TESTING INFO

System	Method of Test	PSI or OK	Date	Witness By
Cargo Pipe	HYDRO	200	11/22/2017	GB
Pump Well	AIR	20	11/22/2017	GB
Fuel Oil Piping	AIR	92	11/22/2017	GB
Hot Oil Piping				
Steam Piping				
Air Piping	HYDRO	200	11/22/2017	GB
Stripping Piping	HYDRO	200	11/22/2017	GB
Hydraulic Piping				
Cargo Piping Relief Valve	HYDRO	125	11/22/2017	GB
Vapor Piping Relief Valve	AIR	1.5	11/22/2017	GB
Steam Piping Relief Valve				
Air Piping Relief Valve	HYDRO	125	11/22/2017	GB
Fuel Tank	HYDRO	5	11/22/2017	GB
Slop Tank	HYDRO	5	11/22/2017	GB
Cargo Pressure Gauge	AIR	120	11/22/2017	GB
Vapor Pressure Gauge	AIR	3	11/22/2017	GB
Air Pressure Gauge				
Hydraulic Pressure Gauge				
Emergency Shutdown	OPERATIONAL	OK	11/22/2017	GB
Pump Operational Test	OPERATIONAL	OK	11/22/2017	GB
Heater Operational Test				
Stripping Operational Test	OPERATIONAL	OK	11/22/2017	GB
Hydraulic Operational Test				

If a system is not applicable, leave that line blank

	Initial	Print	Signature
QA WITNESS	<u>GB</u>	<u>GERALD BROWN</u>	
QA WITNESS	<u> </u>	<u> </u>	<u> </u>



TRINITY INDUSTRIES, INC.
BUSINESS UNIT # 296

Document No.: QAF-904-296

Revision #: 00

Revision Date: 4/5/2017

Revised By: Howard Abell

Approved By: Howard Abell

DOCUMENT TYPE: Controlled Form List

TITLE: Vapor Tightness Test Report

VAPOR TIGHTNESS TEST REPORT

Note: Test Results are Valid for (1) One Year from Date of Test!

Vessel Name:	<u>E2MS 309</u>	Test Date:	<u>11/22/2017</u>
Testing Location:	<u>Ashland City, TN #296</u>	Maximum Load Rate: (BPH)	<u>6500</u>
Tanks Tested:	<u>All Cargo Tanks</u>	Pressure Indicator	<u>MANOMETER</u>

TEST RESULTS

Test Duration: 30 Minutes	Beginning Pressure	<u>40"</u>	Inches H2O
	Ending Pressure	<u>39 3/4"</u>	Inches H2O
	Total Pressure Loss	<u>1/4"</u>	Inches H2O
	Allowable Pressure Loss	<u>3.1097</u>	Inches H2O

Barge is Vapor Tight if "Total Pressure Loss" is LESS than "Allowable Pressure Loss"

- | | |
|---|--------------------------------------|
| (P1) - Beginning Pressure | (P2) - Ending Pressure |
| (Delta P) - Total Pressure Loss | (Delta PM) - Allowable Pressure Loss |
| (TP) - 14.7 plus Barge Test Pressure in PSI | (L) - Maximum Load Rate in BPH |
| (V) - Volume of Tank (s) | (Delta T) = Test Duration |
| .861 - PIA @ (P1) | |

$$.861 \times \frac{16.2}{(TP)} \times \frac{6500}{(L)} \div \frac{29,154.69}{(V)} = \frac{3.1097}{(Delta PM)}$$

This vessel has been tested in accordance with Section 61.304F and has been found to be vapor tight.

William E. Hester III 11-22-17
Signature of Trinity Marine Tester DATE
William E. Hester III
PRINT Name of Trinity Marine Tester

Gerald Brown 11/22/17
Signature of Trinity Marine Witness DATE
Gerald Brown
PRINT Name of Trinity Marine Witness