Accepted for Use

TEST REPORT

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RENDERED TO

AREVA NP Inc.
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AREVA NP Inc.
58-9224230-000

PRODUCTS EVALUATED: **Unifrax Fiberfrax® Durablanket® S, Dow Corning® Sylgard® 170 Silicone Elastomer , Quantum Silicones QSil 5558MC Silicone Elastomer, Dow Corning® 732 Multi-Purpose Sealant and Dow Corning® 790 Silicone Building Sealant**

EVALUATION PROPERTY: Seismic Pressure Resistance (Seismic Pressure Test 5)

Report of Testing pressure resistance capabilities for compliance with the applicable requirements of AREVA NP Inc. Test Plan, Document No. 51-9209291-000

1 Table of Contents

2 Introduction

Intertek Testing Services NA (Intertek) has conducted testing for AREVA NP Inc., on the seismic pressure resistance capabilities of Unifrax Fiberfrax® Durablanket® S (Durablanket), Dow Corning® Sylgard® 170 Silicone Elastomer (DC-170), Quantum Silicones QSil 5558MC Silicone Elastomer (QSil 5558MC), Dow Corning® 732 Multi-Purpose Sealant (DC-732) and Dow Corning® 790 Silicone Building Sealant (DC-790) through a 12" thick concrete deck for compliance with the applicable requirements of and in accordance with AREVA NP Inc. Document No. 51-9209291-000, *Detailed Test Plan for Conducting MOX Seismic Pressure Test 5.* This test took place on October 1, 2013.

This project was undertaken to evaluate the seismic pressure resistance capabilities of the test assemblies using alternating pressures at the air pressure increments above atmospheric pressure.

NOTE: The test assembly used in this seismic pressure test was the same test assembly that was constructed and tested in Pressure Test 7 without any changes. Refer to AREVA Doc. 58-9223086-000 or Intertek Test Report No. 101276459SAT-001C for details on Pressure Test 7.

3 Test Samples

3.1. SAMPLE SELECTION

The sealant materials were not independently selected for testing; they were supplied by AREVA NP Inc., and were received in several shipments from June 13 to September 10, 2013. The samples were received with Certificates of Conformance and are considered traceable. Basic information on sealant material(s) is presented in the table below.

Sealant Material	Lot /Batch#	Expiration Date
DC-170	063B02	6/30/2014
QSil 5558MC	130606	6/14/2014
Durablanket	32039	N/A
DC-732	0007251823	5/29/2015
DC-790	0007390959	4/24/2014

Information regarding receiving dates and origin of all the materials in the test assembly can be found in Appendix F: Quality Documents of Pressure Test 7 (Intertek Test Report No.101276459SAT-001C; AREVA document 58-9223086-000). All samples were received in good condition at the Evaluation Center.

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

The test assembly used in this test was the same assembly tested first as Pressure Test 7. A detailed description of the test assembly can be found in AREVA NP Inc. Engineering Record 51-9209291-000, *Detailed Test Plan for Conducting Seismic Pressure Test 5* which is contained in Appendix D. For drawings of the concrete deck and penetrations please refer to Appendix A

of Pressure Test 7 (Intertek Report No. 101276459SAT-001C; AREVA document 58-9223086-000). The test assembly consisted of a 12" thick concrete slab measuring approximately 96" x 96" (8' x 8'). Within this slab there were four 1" x 36" gaps, beveled on one side, and each gap was sealed with different configuration of materials. The installation and documentation of penetration seal assemblies contained within the test slab was performed by AREVA under AREVA's Quality Assurance Program (Reference 12.4 in the test plan found in Appendix D).

4 Testing and Evaluation Methods

The Test Plan in Appendix D defines the test methods, acceptance criteria and test report documentation requirements for penetration seal Seismic Pressure Test 5. Additionally, this detailed test plan defines the roles and responsibilities of MOX Services, AREVA, the selected testing laboratory, and any other subcontracted entity engaged in support of seismic pressure testing efforts.

The detailed test plan also describes the procurement plan for materials associated with penetration seal Seismic Pressure Test 5 and identifies the entities responsible for procuring the various components of the test assembly based on the quality level assigned to each component.

The Test Plan also establishes minimum quality requirements for the penetration seal materials used in the test assembly and links quality requirements in the AREVA QA program to customer/project quality requirements.

4.1. TEST APPARATUS

In the absence of any consensus codes or standards related to the pressure testing of penetration seal assemblies for seismic qualification purposes, the MOX Penetration Seal Program has developed a standardized method for conducting seismic pressure testing of MOX penetration seal designs. Specifically, seismic pressure testing will be used to evaluate the seismic inertia of the self-weight of the seal assembly by applying an equivalent pressure to alternating sides of a penetration seal assembly. In support of this effort, Intertek assisted in the design and construction of a pressure test apparatus to be use in the conduct of MOX penetration seal pressure tests.

The pressure chamber apparatus consists of two hemispherical 72" diameter steel pressure vessels, calibrated equipment and a data acquisition system. The apparatus accurately maintains the desired air pressure, using one of two sensitive, manually adjustable pressure regulators; a high (0-15 psi) and a low (0-2 psi) range. The sealed collection chamber feeds any leakage air back to the test device, where it is channeled through one of two calibrated flow meters, once again, a high (0-200 L/min) and a low (0-20 L/min) range. A calibrated electronic pressure transducer (0-5 psi) measures the differential pressure between the two chambers and the data acquisition software determines the net pressure drop across the test seal and the leakage through the seal. The chambers are interchangeable and the direction can be reversed very quickly so both can serve as the pressure or the collection chamber.

The primary components described above include the devices described on the following pages:

Pressure Chamber	2-piece hemispherical 72” diameter steel vessel 3 connection ports per piece 16 flange attachment points per piece Flange attachment via 3/8” diameter holes @ 22-1/2° spacing

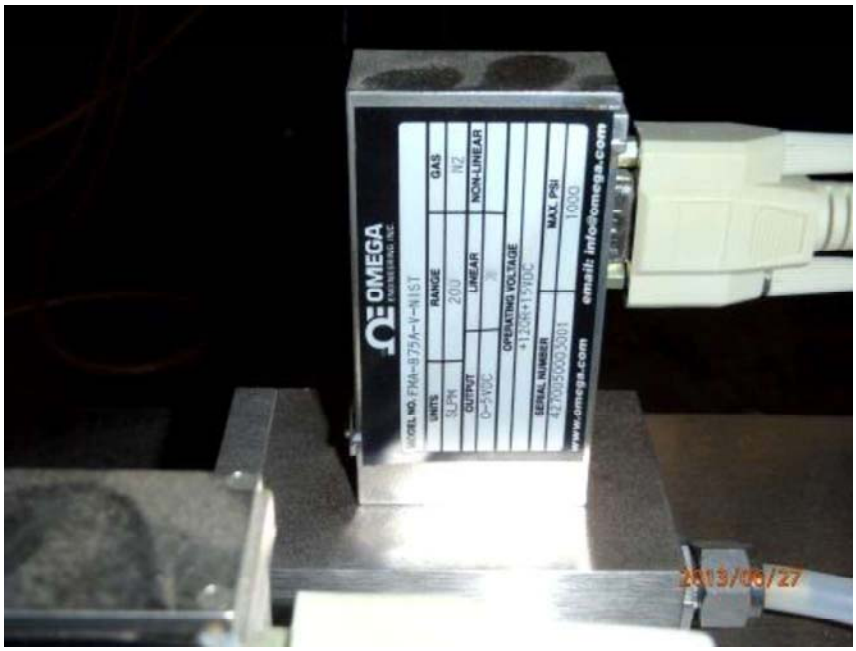
Pressure Cart	Stainless steel rolling cart with control equipment and associated Data Acquisition System

Regulator (low) Control Air, Inc., Amherst, NH
Type 700
0-2 psi

Regulator (high) Control Air, Inc., Amherst, NH
Type 700
0-15 psi

Mass Flow Meter Omega Engineering, Inc., Stamford, CT
Model No. FMA-872A-V-NIST
Serial No. 4270050001001
0-20 lpm

Mass Flow Meter Omega Engineering, Inc., Stamford, CT
Model No. FMA-875A-V-NIST
Serial No. 4270050003001
0-200 lpm



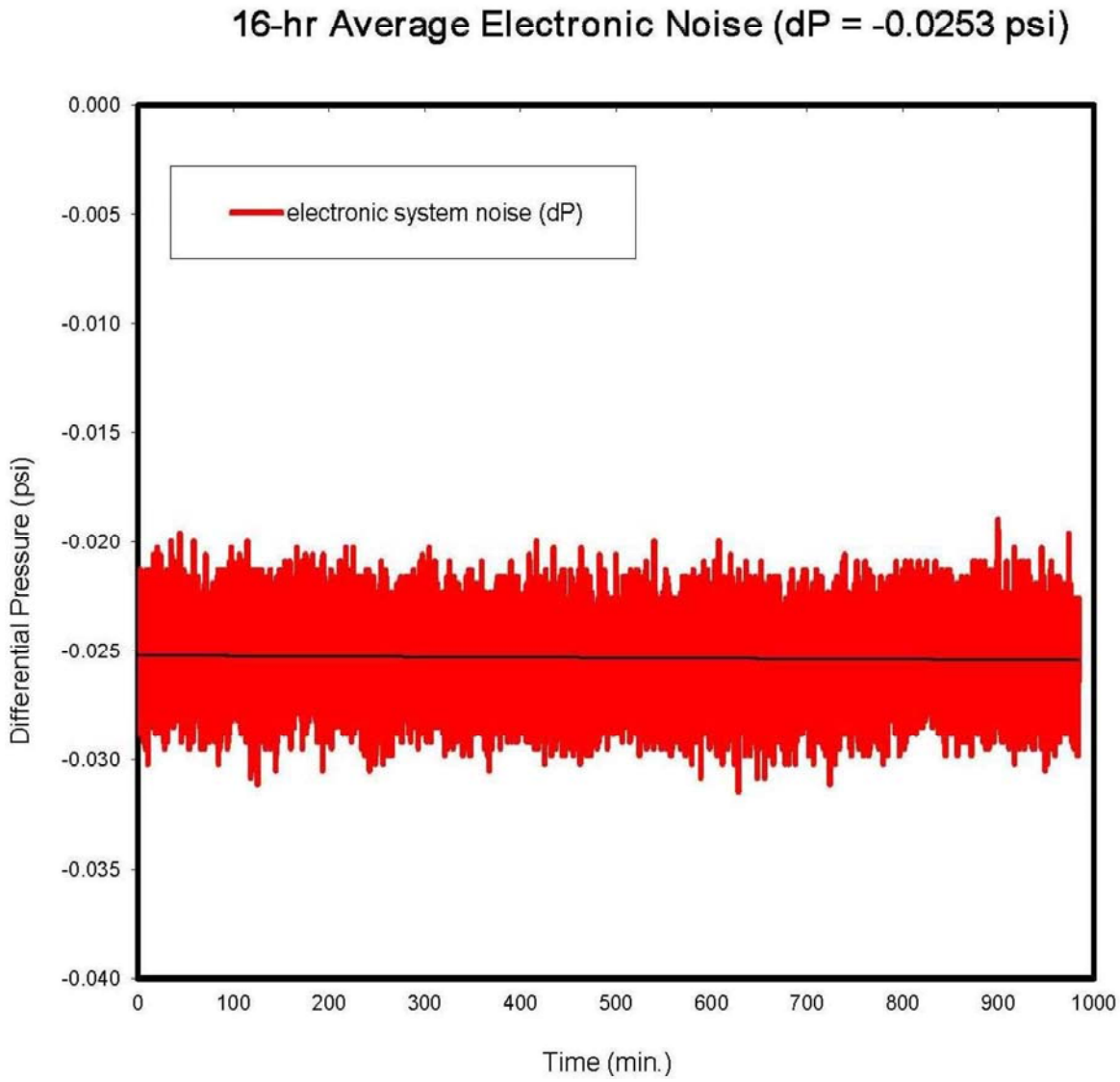
Pressure Transducer Omegadyne Inc., Sunbury, OH
Model No. PX409-005 DWUV
Serial No. 406707
Pressure Range: 0-5 psi
Input 0-100mVdc

Power Supply	Omega Engineering, Inc., Stamford, CT Model No. PSS-10 +10V @ 400 mA Input 115 VAC 50/60 Hz
Multifunction DAQ	National Instruments, Model No. NI USB-6210 16 Input, 16-bit, 250 kS/s, Multifunction I/O

Dedicated CPU

HP Compaq Pro-6300 Microtower
Serial No. MXL3090LN6
OS Windows 7 Pro

Additionally, during initial system start-up testing and verification, it was discovered that the data acquisition system (DAQ) was so sensitive that "signal noise" resulted in data fluctuations for reported differential pressure even when the system was at equilibrium (i.e., both high side and low side pressure chambers were at atmospheric conditions). After collecting data for 16 hours overnight, the average fluctuation was -0.025 psi.



As seen above, the average data fluctuation due to "signal noise" was -0.025 psi. For this test, the Test Plan required pressure was applied and maintained using the DAQ reported differential pressure without consideration for any "signal noise". Since the "signal noise" always reported some level of negative pressure at the beginning of the test, this method assured that the tests were conducted with additional margin, as the actual differential pressure that the test specimen was subjected to was equal to the DAQ reported differential pressure plus the additional pressure needed to overcome the negative "signal noise" reported at the beginning of the test when both pressure chambers were at atmospheric conditions.

4.2. TEST STANDARD

AREVA NP Inc. Document No. 51-920921-000

Seismically qualified penetration seals at the MOX facility are required to remain in the opening (penetration) during and after a Design Earthquake seismic event. In order demonstrate that a penetration seal will remain in place, the seal has to be evaluated for two conditions: 1) The seismic inertia of the self-weight of the seal has to be evaluated; and 2) The seismic deflection of the commodities penetrating the seal has to be considered.

Seismic pressure testing will be used to evaluate the seismic inertia of the self-weight of the seal assembly. This will be accomplished by applying a pressure to alternating sides of the penetration seal to demonstrate that the seal will not become dislodged from the opening due to the seismic inertia of the self-weight of the seal. The seismic deflection of commodities that penetrate the seal is normally addressed by a separate analysis for MOX penetration seal designs. However, MOX typical penetration seal designs for gap/joint seals, similar to those being tested, do not allow any penetrating items to pass through the gap/joint. Therefore, no additional analysis is required beyond this seismic pressure test to seismically qualify the gap/joint seal designs being tested.

The acceptance criterion for evaluating the seismic inertia of the seal self-weight is calculated in MOX Services Calculation "Penetration Seal Seismic Requirements" [Test Plan Reference 12.1] and expressed as an equivalent pressure. Testing at this equivalent pressure will qualify that a penetration seal assembly will remain in place (i.e., the penetration seal cannot become dislodged from the opening or otherwise catastrophically fail such that a substantial leakage path is created) during the design earthquake seismic event.

No pressure inducing events are required to be considered concurrently with a seismic event.

The table below identifies the differential pressure levels (stages) for conducting this seismic pressure test, as well as, the acceptance criteria in order for the penetration seal assemblies to meet the seismic pressure testing requirements.

Differential Seismic Pressure Test Levels

Test Stage	Differential Pressure (inch w.g.)	Required Hold Time (minutes)	Acceptance Criteria	Basis for the Selected Differential Pressure
1-4	11 (Note 1)	5	Penetration Seal Remains in Opening (Does not become dislodged)	Testing at this differential pressure meets the seismic demand expressed as a pressure [Test Plan Reference 12.1]

Note 1: For the two silicone elastomer seal materials contained in Seismic Pressure Test 5 (DC-170 and QSil 5558MC), a nominal density of 85 pcf was used for the purposes of determining the test penetration seal's weight per square foot. 85 pcf bounds both the DC-170 and QSil 5558MC silicone elastomer seal materials with margin. 2" of Unifrax Fiberfrax® Durablanket® S will be

installed as permanent damming behind the silicone elastomer seal (1" on each side of the penetration). 12 pcf was used for the purposes of determining the test penetrations seal weight per square foot of Durablanket based on the use of 6 pcf blanket material installed at 50% compression as outlined in the Installation Instruction Manual [Test Plan Reference 12.5].

85 pcf times a seal depth of 0.75" on each side of the penetration yields a seal weight of approximately 10.6 psf. 12 pcf times a seal depth of 2" (1" thickness on each side of the penetration) yields a seal weight of approximately 2.0 psf. Approximately 10.6 psf plus 2.0 psf yields a total seal weight of approximately 12.6 psf. Based on Figure B-2.1 of Test Plan Reference 12.1, the corresponding seismic pressure for a seal weight of 12.6 psf is approximately 10 inches w.g. (9.94 inches w.g.).

An approximate density of 65 pcf was determined for Dow Corning 732 based on its published specific gravity of 1.04 (64.8 pcf using specific gravity of 1.04 and water at 70 degrees F). This approximate density was confirmed as being conservative by filling a P35A 3.5 oz sample cup full to the top with Dow Corning 732, weighing the sample, subtracting the weight of the empty cup to ascertain the sample material weight (mass), and then using formulas used to derive Table 8-1 of AREVA Document 51-9201312-001 [Test Plan Reference12.9] to obtain the density of Dow Corning 732. The sample material weight (mass) was measured as 107.6 grams, which correlates to a material density of 60.7 pcf. 65 pcf times a seal depth of 0.75" on each side of the penetration yields a seal weight of approximately 8.2 psf. 12 pcf times a seal depth of 2" (1" thickness on each side of the penetration) yields a seal weight of approximately 2.0 psf. Approximately 8.2 psf plus 2.0 psf yields a total seal weight of approximately 10.2 psf. Based on Figure B-2.1 of Test Plan Reference 12.1, the corresponding seismic pressure for a seal weight of 10.2 psf is approximately 8 inches w.g. (8.04 inches w.g.).

Dow Corning 790 does not have a published specific gravity, so the sample cup method described above was used to determine the density of Dow Corning 790. The sample material weight (mass) was measured as 153.7 grams, which correlates to a material density of 86.7 pcf. To be conservative, a density value of 90 pcf is being used for Dow Corning 790. 90 pcf times a seal depth of 0.75" on each side of the penetration yields a seal weight of approximately 11.3 psf. 12 pcf times a seal depth of 2" (1" thickness on each side of the penetration) yields a seal weight of approximately 2.0 psf. Approximately 11.3 psf plus 2.0 psf yields a total seal weight of approximately 13.3 psf. Based on Figure B-2.1 of Test Plan Reference 12.1, the corresponding seismic pressure for a seal weight of 13.3 psf is approximately 11 inches w.g. (10.49 inches w.g.).

Refer to Appendix C of the Test Plan for additional details associated with the density samples for Dow Corning 732 and 790 sealants.

Because the Dow Corning 790 material has the highest density of the seal materials contained in Seismic Pressure Test 5, the seismic pressure for Dow Corning 790 will be used as the bounding pressure for all seal assemblies being tested in Seismic Pressure Test 5. Therefore, 11 inches w.g. shall be used as the test pressure for Seismic Pressure Test 5.

The test assembly was attached to the seismic pressure test apparatus and subjected to the pressures identified in the table above.

For Stage 1, the test assembly was attached to the pressure test apparatus and subjected to air pressure at the select pressure level identified in the table. Once this pressure was obtained, the pressure was maintained for the hold time specified in the table. If the penetration seal catastrophically failed during this time, the time of failure was to be noted and the test stopped.

Once the designated hold time for Stage 1 had been achieved, the pressure was vented from the test chamber. Next, the pressure identified for Stage 2 was applied to the opposite side of the penetration seal and held for the designated hold time. If the penetration seal

catastrophically failed during this time, the time of failure was noted and the test stopped.

Once the designated hold time for Stage 2 had been achieved, the pressure was vented from the test chamber. Next, the pressure identified in the table for Stage 3 was applied to the original side of the penetration seal and held for the designated hold time. If the penetration seal catastrophically failed during this time, the time of failure was to be noted and the test stopped.

Once the designated hold time for Stage 3 had been achieved, the pressure was vented from the test chamber. Finally, the pressure identified in the Table for Stage 4 was applied to the opposite side of the penetration seal and held for the designated hold time. If the penetration seal catastrophically failed during this time, the time of failure was noted and the test stopped.

Following completion of Stage 4 pressure testing, the pressure was vented from the test chamber. At this point, the test was continued at the discretion of the AREVA test engineer and the testing laboratory manager in charge. Subsequent pressures, and hold times were recorded as directed by the AREVA test engineer.

NOTE:	The pressure used for the testing performed above is based on a seal material depth of 3/4" inch for the primary sealant and a 1" depth for damming material with a similar configuration installed on both side of the barriers. Since the test was successful, a recommended subsequent testing pressure of 17 inches w.g. was attempted. These tests were designated Stages 1a-4a. Success at the 17 inch w.g. pressure seismically qualifies 1-1/2 times the installed seal and damming depths (i.e., up to a 1-1/8" thick seal with 1-1/2" of damming in each side of the penetration)

If at any pressure level (or test stage) the penetration seal became dislodged from the opening or otherwise catastrophically failed, the seismic pressure test was to be terminated and the time to failure and pressure at which the failure occurred was to be recorded.

5 Testing and Evaluation Results

5.1. RESULTS AND OBSERVATIONS

The test was initiated at 2:06 p.m. on October 1, 2013. Scott Groesbeck, representing AREVA NP, Inc. was present to witness the test. The ambient temperature at the start of the test was 93°F, with a relative humidity of 47%.

The test procedure followed that presented in Section 9.0 of the Test Plan, except that at the completion of Stage 4 the pressure was not vented from the bottom chamber. In lieu of this, the bottom chamber pressure was increased to the Stage 1a level of 17" w.g. and the test continued. This resulted in Stage 4a concluding with the pressure being applied to the top side of the test assembly. This minor deviation from the prescribed test method was conducted with the verbal approval of the AREVA Test Engineer and is deemed to have had no adverse impact on the outcome of the test results.

The graphs and table on the following page(s) provide a summary of results and observations for the various pressure stages; any observed leakage, and whether the seal remained in place. Appendix B of this test report contains the raw data for this test.

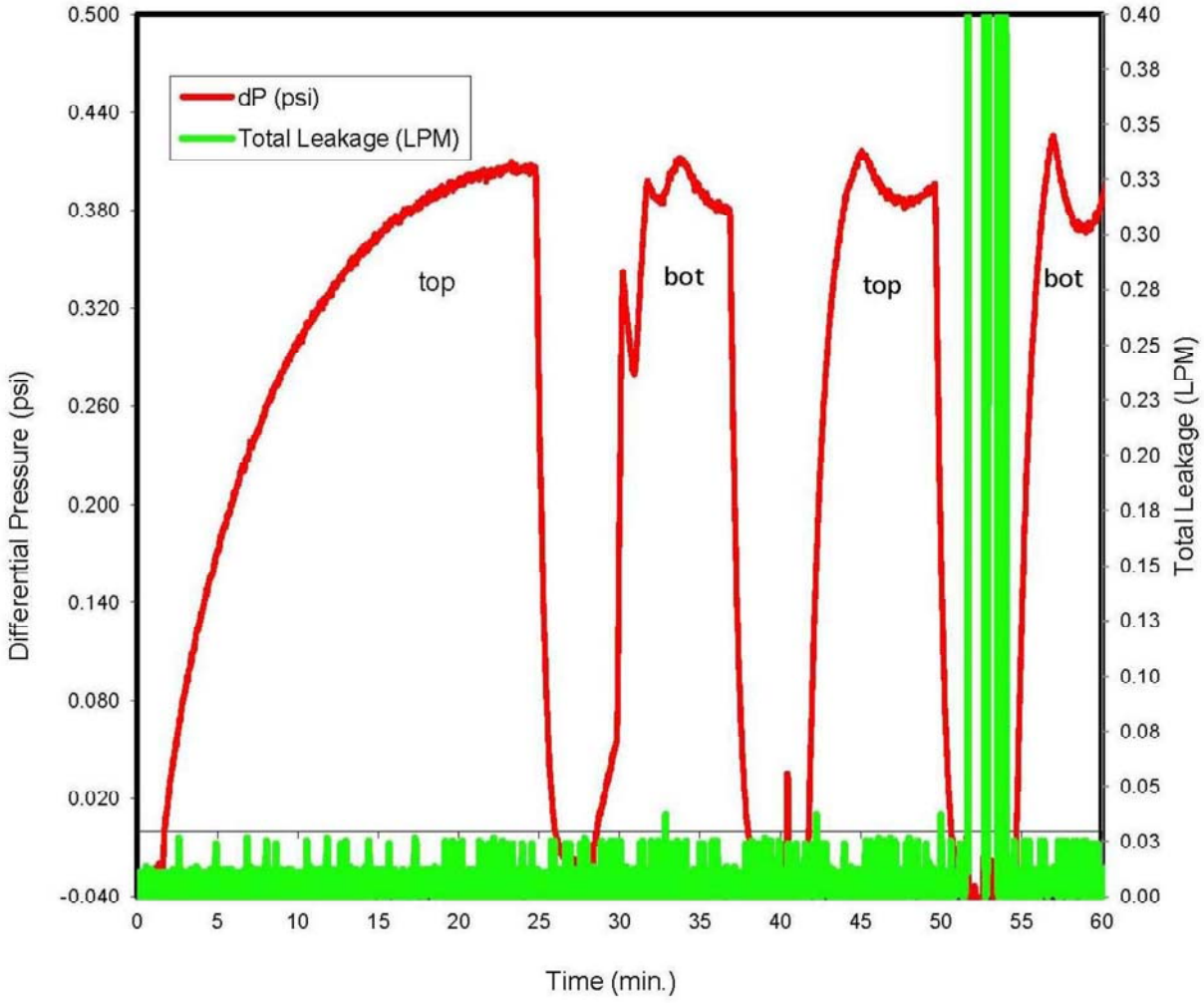
The graphs are based on data collected throughout the entire test process, including the time periods between stages when the pressure chamber was being vented and refilled. Pressure spikes and leakage rates displayed for time periods between stages should not be misinterpreted, as recorded leakage may have been caused by intentional venting of the pressure chamber though a mass flow meter.

Additionally, it should be noted that when changing between mass flowmeters during a pressure a test, valve lineups and flowpath routes are changed. The time it takes to manipulate the valves, differences in tubing sizes, orifice sizes and mass flowmeter throughput capacity all affect bonnet pressure on the leakage side of the test assembly which can affect recorded leakage values. Generally, the input air on the opposite side of the test assembly remains constant during this time period, since manipulation of the input pressure regulator would require additional operator action. This results in reported differential pressure fluctuations which typically show up as pressure spikes when the raw data is graphed. Within a few minutes of mass flowmeter switchover, the system stabilizes to the new lineup and the data results in a more uniform graph.

Therefore, it is important to analyze the data compiled during the hold times for each pressure stage and not the data before, after or in between pressure stages. The summary table presented after the graphs identifies the approximate start time and stop times for each pressure stage of this test. These times can be correlated to the data under the “Time (min)” heading for the raw data contained in Appendix B of this report. The official start and stop times for each pressure stage were timed using a traceable, calibrated stopwatch.

Stage 1-4

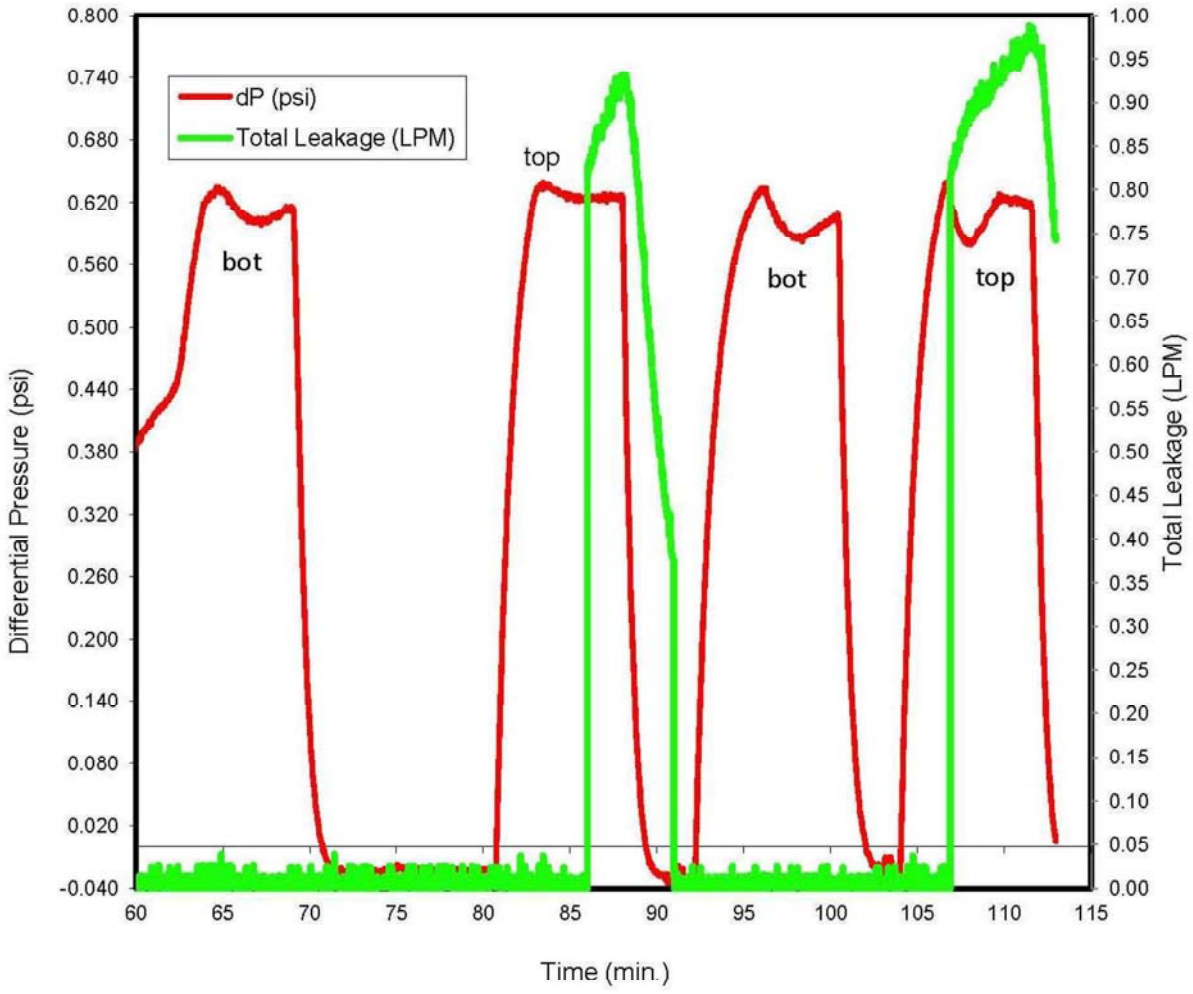
Chamber Differential Pressure and Seal Leakage
Seismic Pressure Test 5 - 11-in w.g.



Note: The long duration shown to build up to the initial test pressure (Stage 1) was due to two factors; 1) The air supply hose was kinked when the test was initiated, and 2) The pressure regulator on the air compressor had been dialed down to 10 psi. Both of these conditions were identified and corrected prior to proceeding with Stages 2-4.

Stage 1a-4a

Chamber Differential Pressure and Seal Leakage
Seismic Pressure Test 5 - 17-in w.g.



Test Results and Observations

Test Stage	Pressurized Side	Differential Pressure (inch w.g.)	Start Time (min)	Required Hold Time (minutes)	Acceptance Criteria	PASS/FAIL
1	TOP	11	19.4	5	Seal Remains In Place	PASS
2	BOTTOM	11	31.7	5	Seal Remains In Place	PASS
3	TOP	11	44.4	5	Seal Remains In Place	PASS
4	BOTTOM	11	56.5	5	Seal Remains In Place	PASS
1a	BOTTOM	17	63.9	5	Seal Remains In Place	PASS
2a	TOP	17	82.8	5	Seal Remains In Place	PASS
3a	BOTTOM	17	95.3	5	Seal Remains In Place	PASS
4a	TOP	17	106	5	Seal Remains In Place	PASS

5.2. POST TEST EXAMINATION

Following completion of Seismic Pressure Test 5, the test assembly remained attached to the pressure test apparatus, and the assembly was re-purposed back to Pressure Test 7 for completion of the remain pressure test stages. Refer to the final test report for Pressure Test 7, Intertek Report No. 101276459SAT-001C (AREVA document 58-9223086-000) for post-test observations related to this test assembly.

6 Conclusion

Intertek Testing Services NA (Intertek) has conducted testing for AREVA NP Inc., on the seismic pressure resistance capabilities of Unifrax Fiberfrax® Durablanket® S (Durablanket), Dow Corning® Sylgard® 170 Silicone Elastomer (DC-170), Quantum Silicones QSil 5558MC Silicone Elastomer (QSil 5558MC), Dow Corning® 732 Multi-Purpose Sealant (DC-732) and Dow Corning® 790 Silicone Building Sealant (DC-790) in a 12" thick concrete deck for compliance with the applicable requirements of and in accordance with AREVA NP Inc. Document No. 51-9209291-000, *Detailed Test Plan for Conducting MOX Seismic Pressure Test 5.* This evaluation took plane on October 1, 2013.

The seals in Seismic Pressure Test 5 met the acceptance criteria as defined in the Test Plan.

This project was undertaken to evaluate the seismic pressure resistance capabilities of the test assembly using alternating pressures at the air pressure increments above atmospheric pressure.

The conclusions of this test report may not be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

INTERTEK TESTING SERVICES NA

Reported by: [redacted]

Mike Dey
Staff Engineer

Reviewed by: [redacted]

Project Engineer, Fire Resistance

Reviewed by: [redacted]

Michael A. Brown
Quality Supervisor

APPENDIX A
Assembly Drawings

The test assembly used in Seismic Pressure Test 5 was the same assembly tested in Pressure Test 7. A detailed description of the assembly is presented in the Test Plan in Appendix D of this report. For drawings of the assembly, please refer to the final test report for Pressure Test 7 (Intertek Report No. 101276459SAT-001C; AREVA document 58-9223086-000).

APPENDIX B
Test Data

Areva NP, Inc. Project No. G101276459SAT-006 October 1, 2013

Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
0	-0.0279	0	0	0
0.0333	-0.0279	0	0	0
0.0667	-0.0255	0.0109	0	0.0109
0.1	-0.0282	0	0	0
0.1333	-0.0298	0.0109	0	0.0109
0.1667	-0.0255	0.0109	0	0.0109
0.2	-0.0249	0	0	0
0.2333	-0.0265	0	0	0
0.2667	-0.0259	0	0.0013	0.0013
0.3	-0.0275	0	0	0
0.3333	-0.0272	0	0.0013	0.0013
0.3667	-0.0255	0	0.0013	0.0013
0.4	-0.0259	0	0	0
0.4333	-0.0265	0.0109	0	0.0109
0.4667	-0.0272	0.0109	0	0.0109
0.5	-0.0272	0	0.0013	0.0013
0.5333	-0.0279	0.0109	0.0026	0.0135
0.5667	-0.0265	0	0	0
0.6	-0.0265	0	0	0
0.6333	-0.0259	0	0	0
0.6667	-0.0288	0	0.0013	0.0013
0.7	-0.0282	0	0.0013	0.0013
0.7333	-0.0272	0	0	0
0.7667	-0.0259	0	0	0
0.8	-0.0275	0	0	0
0.8333	-0.0269	0	0	0
0.8667	-0.0272	0.0109	0.0013	0.0122
0.9	-0.0259	0	0	0
0.9333	-0.0255	0.0109	0	0.0109
0.9667	-0.0232	0	0	0
1	-0.0252	0	0	0
1.0333	-0.0236	0	0	0
1.0667	-0.0252	0	0.0013	0.0013
1.1	-0.0226	0	0.0013	0.0013
1.1333	-0.0249	0	0.0013	0.0013
1.1667	-0.0259	0.0109	0	0.0109
1.2	-0.0232	0.0109	0	0.0109
1.2333	-0.0232	0.0109	0	0.0109
1.2667	-0.0259	0	0	0
1.3	-0.0239	0	0.0026	0.0026
1.3333	-0.02	0.0109	0	0.0109
1.3667	-0.0249	0.0109	0	0.0109
1.4	-0.0223	0.0109	0	0.0109

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1.4333	-0.0223	0.0109	0	0.0109
1.4667	-0.0229	0.0109	0	0.0109
1.5	-0.0203	0	0	0
1.5333	-0.0223	0	0	0
1.5667	-0.0229	0	0	0
1.6	-0.0213	0	0.0013	0.0013
1.6333	-0.016	0	0	0
1.6667	-0.0002	0	0.0013	0.0013
1.7	0.0024	0.0109	0	0.0109
1.7333	0.0034	0	0	0
1.7667	0.0087	0	0	0
1.8	0.011	0	0.0013	0.0013
1.8333	0.0103	0	0	0
1.8667	0.0136	0	0.0013	0.0013
1.9	0.0176	0.0109	0	0.0109
1.9333	0.0218	0.0109	0	0.0109
1.9667	0.0225	0	0	0
2	0.0274	0.0109	0	0.0109
2.0333	0.0301	0.0109	0	0.0109
2.0667	0.0337	0	0	0
2.1	0.0344	0	0	0
2.1333	0.0376	0	0	0
2.1667	0.0376	0	0	0
2.2	0.0393	0.0109	0	0.0109
2.2333	0.0436	0.0109	0.0013	0.0122
2.2667	0.0439	0.0109	0	0.0109
2.3	0.0472	0.0109	0	0.0109
2.3333	0.0495	0	0	0
2.3667	0.0538	0	0	0
2.4	0.0534	0	0	0
2.4333	0.0521	0	0	0
2.4667	0.0567	0	0.0013	0.0013
2.5	0.059	0	0	0
2.5333	0.0627	0	0	0
2.5667	0.0633	0.0241	0.0026	0.0267
2.6	0.065	0	0	0
2.6333	0.0689	0.0109	0	0.0109
2.6667	0.0676	0	0	0
2.7	0.0706	0.0109	0.0013	0.0122
2.7333	0.0732	0	0.0013	0.0013
2.7667	0.0765	0	0	0
2.8	0.0798	0.0109	0	0.0109
2.8333	0.0788	0	0	0
2.8667	0.0817	0	0	0
2.9	0.0824	0	0	0
2.9333	0.085	0	0.0013	0.0013
2.9667	0.086	0	0.0013	0.0013

3	0.0854	0	0	0
3.0333	0.0893	0.0109	0	0.0109
3.0667	0.0943	0	0	0
3.1	0.0952	0	0	0
3.1333	0.0913	0	0.0013	0.0013
3.1667	0.0956	0	0	0
3.2	0.0985	0.0109	0	0.0109
3.2333	0.0989	0.0109	0	0.0109
3.2667	0.0999	0	0	0
3.3	0.1008	0	0	0
3.3333	0.1054	0.0109	0.0013	0.0122
3.3667	0.1091	0.0109	0	0.0109
3.4	0.1041	0.0109	0	0.0109
3.4333	0.1084	0	0.0013	0.0013
3.4667	0.1104	0	0.0026	0.0026
3.5	0.1101	0	0	0
3.5333	0.1107	0.0109	0.0013	0.0122
3.5667	0.1147	0.0109	0.0013	0.0122
3.6	0.1166	0	0.0013	0.0013
3.6333	0.1186	0	0.0013	0.0013
3.6667	0.1212	0.0109	0.0026	0.0135
3.7	0.1216	0	0.0013	0.0013
3.7333	0.1242	0	0	0
3.7667	0.1229	0	0	0
3.8	0.1259	0.0109	0.0013	0.0122
3.8333	0.1272	0	0	0
3.8667	0.1262	0	0	0
3.9	0.1291	0.0109	0	0.0109
3.9333	0.1331	0	0	0
3.9667	0.1305	0	0	0
4	0.1341	0.0109	0	0.0109
4.0333	0.1338	0.0109	0	0.0109
4.0667	0.1351	0	0.0013	0.0013
4.1	0.137	0.0109	0	0.0109
4.1333	0.1387	0.0109	0	0.0109
4.1667	0.1397	0	0	0
4.2	0.141	0	0	0
4.2333	0.144	0	0	0
4.2667	0.1449	0.0109	0	0.0109
4.3	0.1482	0	0	0
4.3333	0.1446	0	0	0
4.3667	0.1472	0	0	0
4.4	0.1505	0.0109	0	0.0109
4.4333	0.1512	0	0	0
4.4667	0.1532	0	0	0
4.5	0.1555	0	0	0
4.5333	0.1542	0.0109	0.0013	0.0122

4.5667	0.1561	0	0	0
4.6	0.1558	0	0	0
4.6333	0.1568	0.0109	0.0013	0.0122
4.6667	0.1571	0	0	0
4.7	0.1581	0.0109	0	0.0109
4.7333	0.1611	0	0	0
4.7667	0.1617	0.0109	0.0013	0.0122
4.8	0.1663	0	0	0
4.8333	0.1644	0	0	0
4.8667	0.1667	0.0109	0	0.0109
4.9	0.1693	0.0241	0	0.0241
4.9333	0.1703	0	0.0013	0.0013
4.9667	0.1719	0	0	0
5	0.1709	0.0109	0.0013	0.0122
5.0333	0.1706	0.0109	0	0.0109
5.0667	0.1723	0.0109	0	0.0109
5.1	0.1775	0.0109	0.0013	0.0122
5.1333	0.1742	0	0	0
5.1667	0.1808	0.0109	0	0.0109
5.2	0.1802	0	0	0
5.2333	0.1795	0	0	0
5.2667	0.1802	0	0	0
5.3	0.1841	0	0	0
5.3333	0.1838	0	0	0
5.3667	0.1861	0	0	0
5.4	0.1864	0	0.0013	0.0013
5.4333	0.1858	0.0109	0.0013	0.0122
5.4667	0.1881	0.0109	0	0.0109
5.5	0.1861	0.0109	0	0.0109
5.5333	0.1881	0.0109	0	0.0109
5.5667	0.1933	0.0109	0	0.0109
5.6	0.1937	0	0	0
5.6333	0.1917	0	0	0
5.6667	0.1927	0.0109	0.0013	0.0122
5.7	0.196	0	0	0
5.7333	0.1943	0	0	0
5.7667	0.1956	0	0	0
5.8	0.2002	0.0109	0	0.0109
5.8333	0.1983	0	0	0
5.8667	0.1996	0.0109	0.0013	0.0122
5.9	0.1996	0	0	0
5.9333	0.2025	0	0	0
5.9667	0.2062	0	0.0013	0.0013
6	0.2029	0	0	0
6.0333	0.2075	0	0	0
6.0667	0.2052	0.0109	0	0.0109
6.1	0.2062	0	0.0013	0.0013

6.1333	0.2091	0.0109	0	0.0109
6.1667	0.2101	0	0.0013	0.0013
6.2	0.2118	0	0	0
6.2333	0.2118	0	0	0
6.2667	0.2141	0	0	0
6.3	0.2124	0	0	0
6.3333	0.2141	0	0	0
6.3667	0.216	0.0109	0	0.0109
6.4	0.2203	0	0.0013	0.0013
6.4333	0.2187	0.0109	0	0.0109
6.4667	0.2213	0	0	0
6.5	0.222	0	0.0013	0.0013
6.5333	0.2233	0.0109	0	0.0109
6.5667	0.2246	0	0	0
6.6	0.2229	0	0	0
6.6333	0.2203	0	0	0
6.6667	0.2236	0.0109	0.0013	0.0122
6.7	0.222	0	0	0
6.7333	0.2279	0	0	0
6.7667	0.2272	0	0	0
6.8	0.2279	0	0	0
6.8333	0.2295	0.0241	0.0026	0.0267
6.8667	0.2276	0.0109	0.0013	0.0122
6.9	0.2295	0	0	0
6.9333	0.2308	0.0109	0	0.0109
6.9667	0.2335	0	0.0013	0.0013
7	0.2345	0.0109	0	0.0109
7.0333	0.2381	0	0.0013	0.0013
7.0667	0.2358	0.0109	0.0026	0.0135
7.1	0.2361	0	0	0
7.1333	0.2348	0	0	0
7.1667	0.2381	0	0	0
7.2	0.2384	0	0	0
7.2333	0.2404	0.0109	0	0.0109
7.2667	0.2387	0.0109	0.0013	0.0122
7.3	0.2397	0	0	0
7.3333	0.2414	0	0	0
7.3667	0.2407	0	0	0
7.4	0.2437	0.0109	0.0013	0.0122
7.4333	0.2427	0.0109	0	0.0109
7.4667	0.244	0	0	0
7.5	0.2463	0.0109	0.0013	0.0122
7.5333	0.243	0	0.0013	0.0013
7.5667	0.2457	0	0	0
7.6	0.247	0.0109	0	0.0109
7.6333	0.2476	0	0	0
7.6667	0.2486	0	0.0013	0.0013

7.7	0.2509	0	0	0
7.7333	0.2503	0.0109	0	0.0109
7.7667	0.2536	0	0	0
7.8	0.2529	0.0109	0	0.0109
7.8333	0.2526	0	0.0013	0.0013
7.8667	0.2549	0	0.0013	0.0013
7.9	0.2542	0.0109	0	0.0109
7.9333	0.2592	0.0109	0.0026	0.0135
7.9667	0.2585	0	0.0013	0.0013
8	0.2575	0.0109	0	0.0109
8.0333	0.2605	0.0241	0.0013	0.0254
8.0667	0.2601	0.0109	0	0.0109
8.1	0.2615	0	0	0
8.1333	0.2618	0	0	0
8.1667	0.2634	0.0109	0.0013	0.0122
8.2	0.2624	0	0	0
8.2333	0.2647	0	0	0
8.2667	0.2628	0	0	0
8.3	0.2654	0	0	0
8.3333	0.2687	0	0	0
8.3667	0.2647	0	0.0026	0.0026
8.4	0.268	0	0	0
8.4333	0.2677	0.0109	0	0.0109
8.4667	0.27	0.0109	0.0013	0.0122
8.5	0.2717	0.0109	0	0.0109
8.5333	0.2707	0.0109	0	0.0109
8.5667	0.2726	0	0	0
8.6	0.2733	0.0109	0	0.0109
8.6333	0.272	0.0241	0	0.0241
8.6667	0.2733	0	0	0
8.7	0.2723	0.0109	0.0013	0.0122
8.7333	0.2759	0	0	0
8.7667	0.2736	0	0	0
8.8	0.2769	0	0.0013	0.0013
8.8333	0.2786	0	0.0013	0.0013
8.8667	0.2789	0	0.0026	0.0026
8.9	0.2759	0.0109	0.0013	0.0122
8.9333	0.2812	0.0109	0	0.0109
8.9667	0.2809	0	0	0
9	0.2812	0	0	0
9.0333	0.2809	0	0	0
9.0667	0.2809	0	0	0
9.1	0.2829	0.0109	0	0.0109
9.1333	0.2832	0.0109	0	0.0109
9.1667	0.2832	0	0	0
9.2	0.2865	0	0.0013	0.0013
9.2333	0.2848	0	0	0

9.2667	0.2865	0.0109	0.0013	0.0122
9.3	0.2865	0.0109	0.0013	0.0122
9.3333	0.2855	0	0.0026	0.0026
9.3667	0.2894	0	0	0
9.4	0.2894	0.0109	0	0.0109
9.4333	0.2891	0.0109	0.0013	0.0122
9.4667	0.2898	0	0.0013	0.0013
9.5	0.2884	0.0109	0	0.0109
9.5333	0.2927	0	0	0
9.5667	0.2907	0	0	0
9.6	0.2917	0.0109	0.0013	0.0122
9.6333	0.294	0	0	0
9.6667	0.2934	0	0	0
9.7	0.2931	0	0.0013	0.0013
9.7333	0.2947	0	0	0
9.7667	0.2977	0	0.0013	0.0013
9.8	0.2947	0	0	0
9.8333	0.2947	0.0109	0	0.0109
9.8667	0.297	0	0	0
9.9	0.2973	0	0	0
9.9333	0.2996	0	0	0
9.9667	0.2973	0.0109	0	0.0109
10	0.3003	0.0109	0	0.0109
10.0333	0.298	0	0	0
10.0667	0.3023	0	0.0026	0.0026
10.1	0.3026	0.0109	0	0.0109
10.1333	0.2993	0	0	0
10.1667	0.301	0.0109	0	0.0109
10.2	0.3033	0	0.0013	0.0013
10.2333	0.3036	0	0	0
10.2667	0.2996	0	0	0
10.3	0.3036	0	0.0013	0.0013
10.3333	0.3059	0	0	0
10.3667	0.3059	0.0109	0	0.0109
10.4	0.3042	0	0.0013	0.0013
10.4333	0.3056	0	0	0
10.4667	0.3075	0.0109	0.0013	0.0122
10.5	0.3105	0.0109	0	0.0109
10.5333	0.3105	0.0241	0.0013	0.0254
10.5667	0.3115	0.0109	0	0.0109
10.6	0.3082	0.0109	0.0013	0.0122
10.6333	0.3092	0	0	0
10.6667	0.3102	0.0109	0.0013	0.0122
10.7	0.3095	0.0109	0	0.0109
10.7333	0.3121	0	0.0026	0.0026
10.7667	0.3102	0.0109	0.0026	0.0135
10.8	0.3108	0	0	0

10.8333	0.3138	0	0	0
10.8667	0.3144	0	0	0
10.9	0.3174	0	0	0
10.9333	0.3138	0.0109	0.0013	0.0122
10.9667	0.3135	0	0	0
11	0.3151	0.0109	0	0.0109
11.0333	0.3158	0	0	0
11.0667	0.3161	0	0	0
11.1	0.3181	0	0	0
11.1333	0.3171	0.0109	0	0.0109
11.1667	0.3194	0.0109	0	0.0109
11.2	0.3171	0.0109	0.0013	0.0122
11.2333	0.3194	0	0.0013	0.0013
11.2667	0.3191	0	0.0026	0.0026
11.3	0.321	0.0109	0	0.0109
11.3333	0.3233	0.0109	0.0013	0.0122
11.3667	0.3207	0	0.0013	0.0013
11.4	0.3214	0.0109	0	0.0109
11.4333	0.3217	0	0	0
11.4667	0.3227	0	0	0
11.5	0.3243	0	0	0
11.5333	0.32	0.0109	0	0.0109
11.5667	0.3237	0	0	0
11.6	0.326	0	0.0013	0.0013
11.6333	0.3253	0.0109	0	0.0109
11.6667	0.3233	0.0109	0.0026	0.0135
11.7	0.3233	0.0109	0.0013	0.0122
11.7333	0.3266	0.0109	0	0.0109
11.7667	0.3256	0.0109	0	0.0109
11.8	0.3263	0.0241	0.0026	0.0267
11.8333	0.3283	0	0	0
11.8667	0.3283	0.0109	0	0.0109
11.9	0.3293	0	0.0013	0.0013
11.9333	0.3293	0.0109	0	0.0109
11.9667	0.3289	0.0109	0	0.0109
12	0.3286	0.0109	0	0.0109
12.0333	0.3312	0	0.0013	0.0013
12.0667	0.3316	0	0	0
12.1	0.3273	0	0	0
12.1333	0.3312	0.0109	0.0013	0.0122
12.1667	0.3339	0	0.0013	0.0013
12.2	0.3349	0.0109	0	0.0109
12.2333	0.3339	0	0.0013	0.0013
12.2667	0.3335	0.0109	0	0.0109
12.3	0.3325	0	0	0
12.3333	0.3335	0	0	0
12.3667	0.3329	0.0109	0	0.0109

12.4	0.3342	0	0.0013	0.0013
12.4333	0.3345	0.0109	0	0.0109
12.4667	0.3349	0.0109	0.0013	0.0122
12.5	0.3368	0	0	0
12.5333	0.3375	0	0	0
12.5667	0.3368	0	0	0
12.6	0.3391	0	0	0
12.6333	0.3395	0.0109	0	0.0109
12.6667	0.3395	0.0241	0	0.0241
12.7	0.3385	0	0	0
12.7333	0.3375	0.0109	0	0.0109
12.7667	0.3408	0.0109	0	0.0109
12.8	0.3414	0	0	0
12.8333	0.3418	0	0	0
12.8667	0.3411	0	0	0
12.9	0.3434	0.0109	0.0013	0.0122
12.9333	0.3431	0	0	0
12.9667	0.3437	0.0241	0.0013	0.0254
13	0.3424	0	0.0013	0.0013
13.0333	0.3431	0	0.0013	0.0013
13.0667	0.3444	0	0.0026	0.0026
13.1	0.3434	0	0	0
13.1333	0.3464	0	0.0013	0.0013
13.1667	0.3467	0	0	0
13.2	0.347	0	0.0026	0.0026
13.2333	0.349	0.0109	0.0026	0.0135
13.2667	0.3437	0	0.0013	0.0013
13.3	0.3464	0	0	0
13.3333	0.3497	0	0.0013	0.0013
13.3667	0.351	0	0.0026	0.0026
13.4	0.3467	0	0.0026	0.0026
13.4333	0.348	0	0	0
13.4667	0.348	0	0.0013	0.0013
13.5	0.348	0	0.0013	0.0013
13.5333	0.3483	0.0109	0.0013	0.0122
13.5667	0.3497	0	0.0013	0.0013
13.6	0.3523	0	0	0
13.6333	0.3474	0.0109	0.0013	0.0122
13.6667	0.3513	0	0	0
13.7	0.3523	0.0109	0	0.0109
13.7333	0.351	0	0	0
13.7667	0.3536	0	0.0013	0.0013
13.8	0.3546	0	0	0
13.8333	0.3533	0	0	0
13.8667	0.3559	0	0	0
13.9	0.3543	0	0	0
13.9333	0.3556	0	0.0013	0.0013

13.9667	0.3556	0	0	0
14	0.3526	0	0	0
14.0333	0.3562	0.0109	0.0013	0.0122
14.0667	0.3579	0	0.0013	0.0013
14.1	0.3539	0	0	0
14.1333	0.3543	0	0	0
14.1667	0.3559	0.0109	0.0026	0.0135
14.2	0.3549	0	0.0013	0.0013
14.2333	0.3566	0.0109	0	0.0109
14.2667	0.3592	0	0.0013	0.0013
14.3	0.3562	0	0.0013	0.0013
14.3333	0.3553	0	0.0026	0.0026
14.3667	0.3566	0.0109	0.0013	0.0122
14.4	0.3562	0.0241	0.0013	0.0254
14.4333	0.3576	0.0109	0.0013	0.0122
14.4667	0.3605	0	0	0
14.5	0.3595	0.0109	0	0.0109
14.5333	0.3609	0	0.0013	0.0013
14.5667	0.3609	0	0.0013	0.0013
14.6	0.3589	0	0	0
14.6333	0.3599	0.0109	0	0.0109
14.6667	0.3622	0	0	0
14.7	0.3615	0	0.0013	0.0013
14.7333	0.3648	0	0.0026	0.0026
14.7667	0.3651	0.0109	0.0013	0.0122
14.8	0.3648	0	0.0013	0.0013
14.8333	0.3632	0	0.0026	0.0026
14.8667	0.3605	0.0109	0	0.0109
14.9	0.3638	0	0.0013	0.0013
14.9333	0.3641	0.0109	0.0013	0.0122
14.9667	0.3638	0.0109	0	0.0109
15	0.3628	0.0109	0	0.0109
15.0333	0.3638	0.0109	0	0.0109
15.0667	0.3641	0	0	0
15.1	0.3661	0	0.0013	0.0013
15.1333	0.3668	0	0.0013	0.0013
15.1667	0.3648	0.0109	0.0013	0.0122
15.2	0.3655	0	0.0013	0.0013
15.2333	0.3665	0	0	0
15.2667	0.3681	0	0	0
15.3	0.3678	0	0	0
15.3333	0.3668	0.0109	0.0013	0.0122
15.3667	0.3674	0	0.0013	0.0013
15.4	0.3674	0.0109	0.0013	0.0122
15.4333	0.3711	0.0109	0.0013	0.0122
15.4667	0.3707	0	0.0013	0.0013
15.5	0.3694	0	0	0

15.5333	0.3681	0	0	0
15.5667	0.3678	0.0109	0.0013	0.0122
15.6	0.3688	0.0109	0	0.0109
15.6333	0.3707	0.0109	0	0.0109
15.6667	0.372	0.0241	0	0.0241
15.7	0.3711	0	0.0013	0.0013
15.7333	0.3737	0.0109	0	0.0109
15.7667	0.3704	0.0109	0.0013	0.0122
15.8	0.3711	0	0.0026	0.0026
15.8333	0.373	0.0109	0.0013	0.0122
15.8667	0.372	0	0.0013	0.0013
15.9	0.3743	0	0.0013	0.0013
15.9333	0.373	0.0109	0.0013	0.0122
15.9667	0.3734	0.0109	0.0013	0.0122
16	0.375	0	0	0
16.0333	0.3727	0	0	0
16.0667	0.3767	0	0	0
16.1	0.3727	0.0109	0	0.0109
16.1333	0.3747	0	0	0
16.1667	0.3743	0.0109	0	0.0109
16.2	0.3753	0	0.0013	0.0013
16.2333	0.372	0.0109	0	0.0109
16.2667	0.372	0	0	0
16.3	0.3724	0	0	0
16.3333	0.372	0	0	0
16.3667	0.375	0	0	0
16.4	0.3747	0	0	0
16.4333	0.3767	0.0109	0	0.0109
16.4667	0.375	0	0	0
16.5	0.379	0.0109	0.0013	0.0122
16.5333	0.377	0	0.0013	0.0013
16.5667	0.376	0	0.0013	0.0013
16.6	0.3809	0	0.0013	0.0013
16.6333	0.3767	0	0	0
16.6667	0.3793	0	0	0
16.7	0.3803	0	0.0026	0.0026
16.7333	0.3783	0	0.0013	0.0013
16.7667	0.379	0.0109	0	0.0109
16.8	0.3813	0	0	0
16.8333	0.3816	0.0109	0	0.0109
16.8667	0.378	0	0	0
16.9	0.3803	0.0109	0	0.0109
16.9333	0.378	0	0.0013	0.0013
16.9667	0.3806	0	0	0
17	0.3776	0.0109	0.0013	0.0122
17.0333	0.3799	0.0109	0	0.0109
17.0667	0.3816	0.0109	0	0.0109

17.1	0.3813	0.0109	0.0013	0.0122
17.1333	0.3796	0	0	0
17.1667	0.3809	0	0.0013	0.0013
17.2	0.3803	0	0	0
17.2333	0.3819	0.0109	0	0.0109
17.2667	0.3826	0.0241	0.0026	0.0267
17.3	0.3826	0.0109	0	0.0109
17.3333	0.3809	0.0241	0	0.0241
17.3667	0.3826	0	0	0
17.4	0.3806	0	0.0013	0.0013
17.4333	0.3842	0.0109	0	0.0109
17.4667	0.3849	0.0109	0	0.0109
17.5	0.3836	0.0109	0.0013	0.0122
17.5333	0.3819	0.0109	0.0013	0.0122
17.5667	0.3852	0	0.0013	0.0013
17.6	0.3813	0.0109	0	0.0109
17.6333	0.3846	0.0109	0.0013	0.0122
17.6667	0.3839	0	0.0013	0.0013
17.7	0.3865	0	0	0
17.7333	0.3849	0	0.0013	0.0013
17.7667	0.3875	0.0109	0	0.0109
17.8	0.3846	0	0.0013	0.0013
17.8333	0.3852	0	0.0013	0.0013
17.8667	0.3842	0	0.0013	0.0013
17.9	0.3859	0	0	0
17.9333	0.3865	0.0109	0.0013	0.0122
17.9667	0.3842	0.0109	0	0.0109
18	0.3878	0	0.0013	0.0013
18.0333	0.3869	0.0109	0.0013	0.0122
18.0667	0.3865	0.0109	0	0.0109
18.1	0.3901	0	0.0013	0.0013
18.1333	0.3855	0	0.0013	0.0013
18.1667	0.3878	0	0.0013	0.0013
18.2	0.3908	0.0109	0.0013	0.0122
18.2333	0.3892	0	0.0013	0.0013
18.2667	0.3872	0.0109	0	0.0109
18.3	0.3885	0.0109	0.0013	0.0122
18.3333	0.3865	0	0.0013	0.0013
18.3667	0.3869	0	0	0
18.4	0.3872	0	0.0013	0.0013
18.4333	0.3882	0.0109	0	0.0109
18.4667	0.3885	0.0109	0	0.0109
18.5	0.3908	0.0109	0.0026	0.0135
18.5333	0.3901	0.0109	0	0.0109
18.5667	0.3872	0	0	0
18.6	0.3921	0.0109	0	0.0109
18.6333	0.3892	0	0	0

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18.6667	0.3878	0	0	0
18.7	0.3921	0.0109	0.0013	0.0122
18.7333	0.3885	0	0	0
18.7667	0.3895	0	0.0026	0.0026
18.8	0.3908	0	0.0013	0.0013
18.8333	0.3938	0	0.0013	0.0013
18.8667	0.3911	0	0.0013	0.0013
18.9	0.3934	0.0109	0	0.0109
18.9333	0.3948	0	0.0026	0.0026
18.9667	0.3898	0.0109	0.0013	0.0122
19	0.3921	0	0.0013	0.0013
19.0333	0.3941	0	0.0013	0.0013
19.0667	0.3941	0	0	0
19.1	0.3892	0.0109	0.0013	0.0122
19.1333	0.3901	0	0	0
19.1667	0.3921	0.0241	0.0013	0.0254
19.2	0.3931	0	0	0
19.2333	0.3921	0	0	0
19.2667	0.3908	0.0109	0.0013	0.0122
19.3	0.3925	0	0	0
19.3333	0.3948	0	0.0026	0.0026
19.3667	0.3938	0	0.0013	0.0013
19.4	0.3971	0	0	0
19.4333	0.3957	0	0	0
19.4667	0.3948	0	0	0
19.5	0.3974	0	0.0013	0.0013
19.5333	0.3974	0	0	0
19.5667	0.3925	0.0109	0	0.0109
19.6	0.3928	0.0241	0.0013	0.0254
19.6333	0.3918	0.0109	0	0.0109
19.6667	0.3954	0	0	0
19.7	0.3944	0	0	0
19.7333	0.3944	0	0	0
19.7667	0.3938	0	0	0
19.8	0.3938	0.0109	0	0.0109
19.8333	0.3954	0.0109	0.0013	0.0122
19.8667	0.3957	0.0241	0	0.0241
19.9	0.3971	0.0109	0	0.0109
19.9333	0.3977	0	0.0013	0.0013
19.9667	0.3957	0.0109	0.0013	0.0122
20	0.3948	0.0241	0	0.0241
20.0333	0.399	0.0109	0	0.0109
20.0667	0.3984	0.0109	0	0.0109
20.1	0.3997	0	0	0
20.1333	0.3964	0	0	0
20.1667	0.3964	0	0	0
20.2	0.3974	0.0241	0.0013	0.0254

20.2333	0.3957	0	0.0026	0.0026
20.2667	0.3974	0.0109	0	0.0109
20.3	0.3957	0.0109	0	0.0109
20.3333	0.398	0	0.0013	0.0013
20.3667	0.3984	0	0	0
20.4	0.3987	0.0109	0	0.0109
20.4333	0.3977	0	0.0013	0.0013
20.4667	0.4013	0	0.0013	0.0013
20.5	0.3984	0.0109	0	0.0109
20.5333	0.399	0	0	0
20.5667	0.4	0.0109	0	0.0109
20.6	0.399	0	0	0
20.6333	0.402	0.0109	0.0013	0.0122
20.6667	0.402	0.0109	0	0.0109
20.7	0.3984	0	0	0
20.7333	0.399	0	0	0
20.7667	0.3997	0.0109	0	0.0109
20.8	0.3977	0.0109	0.0013	0.0122
20.8333	0.3987	0	0.0013	0.0013
20.8667	0.399	0	0.0013	0.0013
20.9	0.3987	0.0109	0.0013	0.0122
20.9333	0.402	0	0	0
20.9667	0.3997	0.0109	0	0.0109
21	0.4	0.0109	0.0013	0.0122
21.0333	0.4007	0	0	0
21.0667	0.3997	0.0109	0	0.0109
21.1	0.4017	0	0	0
21.1333	0.4013	0	0	0
21.1667	0.403	0	0.0013	0.0013
21.2	0.4023	0	0	0
21.2333	0.4007	0	0	0
21.2667	0.3987	0.0241	0.0013	0.0254
21.3	0.4007	0	0.0013	0.0013
21.3333	0.4023	0	0.0013	0.0013
21.3667	0.4027	0.0241	0	0.0241
21.4	0.4013	0.0241	0	0.0241
21.4333	0.404	0	0.0026	0.0026
21.4667	0.4017	0	0.0013	0.0013
21.5	0.4027	0	0.0013	0.0013
21.5333	0.4036	0	0.0013	0.0013
21.5667	0.4046	0.0109	0	0.0109
21.6	0.402	0	0	0
21.6333	0.401	0.0109	0.0013	0.0122
21.6667	0.403	0	0.0013	0.0013
21.7	0.3974	0	0	0
21.7333	0.4027	0	0	0
21.7667	0.4007	0	0	0

21.8	0.402	0.0109	0	0.0109
21.8333	0.4036	0.0109	0.0013	0.0122
21.8667	0.4036	0.0241	0	0.0241
21.9	0.4033	0	0	0
21.9333	0.4004	0	0.0013	0.0013
21.9667	0.4043	0.0109	0	0.0109
22	0.4027	0.0109	0	0.0109
22.0333	0.4046	0	0	0
22.0667	0.4013	0	0	0
22.1	0.4036	0	0.0013	0.0013
22.1333	0.4007	0.0241	0	0.0241
22.1667	0.4013	0.0241	0.0026	0.0267
22.2	0.4033	0.0109	0	0.0109
22.2333	0.4043	0.0241	0	0.0241
22.2667	0.4023	0	0	0
22.3	0.4046	0.0109	0.0013	0.0122
22.3333	0.403	0.0109	0.0013	0.0122
22.3667	0.4046	0.0109	0	0.0109
22.4	0.4043	0.0109	0	0.0109
22.4333	0.4059	0.0109	0.0013	0.0122
22.4667	0.4033	0	0	0
22.5	0.4053	0	0	0
22.5333	0.405	0	0	0
22.5667	0.4013	0	0	0
22.6	0.4046	0.0109	0	0.0109
22.6333	0.403	0	0	0
22.6667	0.4027	0.0241	0	0.0241
22.7	0.4027	0.0241	0.0013	0.0254
22.7333	0.4046	0	0.0013	0.0013
22.7667	0.4059	0	0	0
22.8	0.4063	0.0109	0.0013	0.0122
22.8333	0.4063	0	0.0013	0.0013
22.8667	0.4053	0	0	0
22.9	0.4046	0	0	0
22.9333	0.4043	0.0109	0	0.0109
22.9667	0.4053	0	0	0
23	0.405	0.0241	0	0.0241
23.0333	0.4053	0.0109	0	0.0109
23.0667	0.4069	0	0.0026	0.0026
23.1	0.4053	0	0	0
23.1333	0.4063	0	0	0
23.1667	0.4053	0	0.0013	0.0013
23.2	0.4056	0	0	0
23.2333	0.4063	0	0	0
23.2667	0.4096	0	0.0026	0.0026
23.3	0.4069	0.0109	0.0013	0.0122
23.3333	0.4033	0.0241	0	0.0241

23.3667	0.4043	0	0.0013	0.0013
23.4	0.4046	0	0	0
23.4333	0.4043	0	0.0013	0.0013
23.4667	0.4033	0	0	0
23.5	0.403	0	0	0
23.5333	0.4076	0.0109	0.0013	0.0122
23.5667	0.4027	0.0109	0	0.0109
23.6	0.4046	0	0	0
23.6333	0.4056	0	0.0013	0.0013
23.6667	0.403	0	0.0013	0.0013
23.7	0.4043	0.0109	0	0.0109
23.7333	0.4033	0.0109	0	0.0109
23.7667	0.4043	0	0	0
23.8	0.4053	0.0109	0.0013	0.0122
23.8333	0.4053	0	0	0
23.8667	0.405	0	0.0013	0.0013
23.9	0.4059	0.0109	0.0013	0.0122
23.9333	0.4053	0.0241	0	0.0241
23.9667	0.4059	0	0.0013	0.0013
24	0.4043	0.0109	0.0013	0.0122
24.0333	0.4053	0.0109	0.0026	0.0135
24.0667	0.4063	0.0109	0.0013	0.0122
24.1	0.4069	0.0109	0	0.0109
24.1333	0.4053	0.0109	0	0.0109
24.1667	0.4069	0	0	0
24.2	0.4053	0.0109	0	0.0109
24.2333	0.4036	0	0	0
24.2667	0.4056	0.0109	0.0013	0.0122
24.3	0.4059	0	0	0
24.3333	0.4063	0.0109	0	0.0109
24.3667	0.404	0.0109	0.0013	0.0122
24.4	0.402	0.0109	0.0013	0.0122
24.4333	0.405	0	0	0
24.4667	0.4076	0	0.0013	0.0013
24.5	0.4059	0	0.0013	0.0013
24.5333	0.404	0.0241	0	0.0241
24.5667	0.4046	0	0	0
24.6	0.4066	0	0.0013	0.0013
24.6333	0.4056	0	0.0013	0.0013
24.6667	0.4066	0.0109	0.0013	0.0122
24.7	0.4066	0	0	0
24.7333	0.4063	0.0109	0	0.0109
24.7667	0.4056	0.0109	0	0.0109
24.8	0.4013	0	0	0
24.8333	0.3747	0	0	0
24.8667	0.351	0	0.0013	0.0013
24.9	0.3273	0	0	0

24.9333	0.3026	0.0109	0.0013	0.0122
24.9667	0.2799	0.0109	0	0.0109
25	0.2611	0	0	0
25.0333	0.2407	0.0109	0	0.0109
25.0667	0.2236	0	0	0
25.1	0.2098	0	0.0013	0.0013
25.1333	0.196	0.0109	0	0.0109
25.1667	0.1821	0	0	0
25.2	0.1644	0	0	0
25.2333	0.1525	0	0	0
25.2667	0.1384	0	0	0
25.3	0.1272	0.0109	0	0.0109
25.3333	0.1163	0.0109	0	0.0109
25.3667	0.1064	0	0.0013	0.0013
25.4	0.0975	0	0	0
25.4333	0.086	0	0.0013	0.0013
25.4667	0.0755	0	0	0
25.5	0.0706	0.0109	0	0.0109
25.5333	0.063	0	0.0013	0.0013
25.5667	0.0544	0	0	0
25.6	0.0472	0	0	0
25.6333	0.0393	0	0.0013	0.0013
25.6667	0.036	0	0.0013	0.0013
25.7	0.0307	0	0	0
25.7333	0.0261	0.0241	0.0013	0.0254
25.7667	0.0218	0	0.0026	0.0026
25.8	0.0189	0	0.0013	0.0013
25.8333	0.013	0.0109	0	0.0109
25.8667	0.0107	0	0.0013	0.0013
25.9	0.008	0.0109	0.0026	0.0135
25.9333	0.0018	0.0241	0.0013	0.0254
25.9667	0.0008	0	0.0013	0.0013
26	-0.0005	0	0.0013	0.0013
26.0333	-0.0025	0	0	0
26.0667	-0.0038	0.0109	0.0013	0.0122
26.1	-0.0058	0	0	0
26.1333	-0.0048	0.0109	0	0.0109
26.1667	-0.0061	0	0	0
26.2	-0.0084	0	0	0
26.2333	-0.0124	0.0109	0	0.0109
26.2667	-0.0134	0	0	0
26.3	-0.0134	0	0.0013	0.0013
26.3333	-0.013	0	0	0
26.3667	-0.0144	0.0109	0.0013	0.0122
26.4	-0.0111	0	0	0
26.4333	-0.0137	0.0109	0	0.0109
26.4667	-0.016	0.0109	0.0013	0.0122

26.5	-0.014	0.0109	0.0013	0.0122
26.5333	-0.0163	0.0109	0	0.0109
26.5667	-0.0153	0	0	0
26.6	-0.0186	0	0	0
26.6333	-0.018	0.0241	0	0.0241
26.6667	-0.0157	0	0	0
26.7	-0.0176	0	0	0
26.7333	-0.0167	0	0.0013	0.0013
26.7667	-0.02	0	0	0
26.8	-0.019	0	0	0
26.8333	-0.0173	0	0	0
26.8667	-0.0176	0	0.0013	0.0013
26.9	-0.0176	0.0241	0	0.0241
26.9333	-0.0157	0.0109	0.0013	0.0122
26.9667	-0.0163	0	0	0
27	-0.016	0	0.0013	0.0013
27.0333	-0.019	0	0	0
27.0667	-0.0193	0	0	0
27.1	-0.019	0	0.0013	0.0013
27.1333	-0.017	0.0109	0.0013	0.0122
27.1667	-0.0173	0	0	0
27.2	-0.0206	0	0.0013	0.0013
27.2333	-0.0196	0.0109	0	0.0109
27.2667	-0.018	0.0109	0	0.0109
27.3	-0.0209	0	0.0013	0.0013
27.3333	-0.0203	0.0109	0.0013	0.0122
27.3667	-0.0219	0	0	0
27.4	-0.017	0	0.0013	0.0013
27.4333	-0.02	0	0.0013	0.0013
27.4667	-0.0203	0.0109	0	0.0109
27.5	-0.0196	0	0.0013	0.0013
27.5333	-0.0176	0	0.0013	0.0013
27.5667	-0.0173	0.0241	0	0.0241
27.6	-0.0219	0.0109	0.0013	0.0122
27.6333	-0.0183	0	0	0
27.6667	-0.0229	0.0109	0	0.0109
27.7	-0.0193	0	0	0
27.7333	-0.0209	0	0	0
27.7667	-0.0216	0.0109	0.0013	0.0122
27.8	-0.015	0.0109	0	0.0109
27.8333	-0.017	0.0241	0.0026	0.0267
27.8667	-0.0176	0.0109	0.0013	0.0122
27.9	-0.0153	0.0109	0	0.0109
27.9333	-0.019	0.0109	0	0.0109
27.9667	-0.0176	0.0241	0	0.0241
28	-0.0193	0	0	0
28.0333	-0.0275	0	0	0

28.0667	-0.0269	0.0109	0	0.0109
28.1	-0.0259	0.0109	0	0.0109
28.1333	-0.0292	0	0	0
28.1667	-0.0262	0.0109	0	0.0109
28.2	-0.0252	0.0109	0.0013	0.0122
28.2333	-0.0232	0	0.0013	0.0013
28.2667	-0.0269	0	0	0
28.3	-0.0242	0	0	0
28.3333	-0.0239	0.0109	0.0026	0.0135
28.3667	-0.015	0.0109	0.0013	0.0122
28.4	-0.0074	0.0109	0.0013	0.0122
28.4333	-0.0084	0	0	0
28.4667	-0.0068	0	0	0
28.5	-0.0055	0	0.0013	0.0013
28.5333	-0.0009	0	0.0013	0.0013
28.5667	-0.0022	0.0109	0	0.0109
28.6	0.0011	0.0109	0.0013	0.0122
28.6333	0.0051	0.0109	0.0013	0.0122
28.6667	0.0037	0	0	0
28.7	0.0093	0.0109	0	0.0109
28.7333	0.01	0	0.0013	0.0013
28.7667	0.012	0	0.0026	0.0026
28.8	0.0126	0	0.0013	0.0013
28.8333	0.0103	0	0.0013	0.0013
28.8667	0.0143	0.0241	0.0013	0.0254
28.9	0.0143	0.0109	0	0.0109
28.9333	0.0169	0.0109	0.0013	0.0122
28.9667	0.0166	0	0	0
29	0.0212	0	0	0
29.0333	0.0199	0	0.0013	0.0013
29.0667	0.0238	0	0.0013	0.0013
29.1	0.0242	0	0	0
29.1333	0.0274	0	0	0
29.1667	0.0297	0	0	0
29.2	0.0284	0	0	0
29.2333	0.0317	0.0109	0.0013	0.0122
29.2667	0.0344	0.0109	0	0.0109
29.3	0.0314	0.0241	0	0.0241
29.3333	0.0344	0	0	0
29.3667	0.037	0.0109	0.0026	0.0135
29.4	0.0367	0	0	0
29.4333	0.0373	0.0241	0.0013	0.0254
29.4667	0.0396	0.0241	0.0013	0.0254
29.5	0.0449	0	0.0013	0.0013
29.5333	0.0423	0.0109	0	0.0109
29.5667	0.0475	0	0	0
29.6	0.0455	0.0109	0	0.0109

29.6333	0.0485	0.0109	0	0.0109
29.6667	0.0498	0.0241	0.0013	0.0254
29.7	0.0498	0.0109	0.0026	0.0135
29.7333	0.0518	0.0109	0.0013	0.0122
29.7667	0.0525	0.0109	0.0013	0.0122
29.8	0.0548	0.0109	0	0.0109
29.8333	0.0567	0.0109	0.0013	0.0122
29.8667	0.0729	0.0109	0	0.0109
29.9	0.1087	0.0109	0	0.0109
29.9333	0.142	0.0109	0	0.0109
29.9667	0.1736	0	0	0
30	0.2032	0.0109	0.0013	0.0122
30.0333	0.2312	0.0241	0.0013	0.0254
30.0667	0.2631	0	0	0
30.1	0.2914	0	0.0013	0.0013
30.1333	0.3174	0	0.0026	0.0026
30.1667	0.3368	0.0109	0.0013	0.0122
30.2	0.3424	0.0109	0	0.0109
30.2333	0.3391	0	0	0
30.2667	0.3309	0.0109	0	0.0109
30.3	0.3309	0.0109	0	0.0109
30.3333	0.324	0	0	0
30.3667	0.321	0	0	0
30.4	0.3194	0	0.0013	0.0013
30.4333	0.3171	0.0109	0.0026	0.0135
30.4667	0.3105	0	0.0013	0.0013
30.5	0.3105	0	0	0
30.5333	0.3065	0	0	0
30.5667	0.3042	0	0	0
30.6	0.3019	0	0.0013	0.0013
30.6333	0.2963	0	0.0013	0.0013
30.6667	0.2954	0	0	0
30.7	0.2927	0	0	0
30.7333	0.2907	0	0	0
30.7667	0.2825	0	0	0
30.8	0.2858	0	0.0013	0.0013
30.8333	0.2829	0.0109	0.0013	0.0122
30.8667	0.2812	0	0.0013	0.0013
30.9	0.2796	0.0109	0	0.0109
30.9333	0.2805	0.0109	0.0013	0.0122
30.9667	0.2819	0.0109	0	0.0109
31	0.2894	0	0	0
31.0333	0.2881	0	0	0
31.0667	0.297	0	0.0013	0.0013
31.1	0.3026	0	0	0
31.1333	0.3089	0.0109	0.0013	0.0122
31.1667	0.3164	0.0109	0.0026	0.0135

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31.2	0.3197	0.0109	0	0.0109
31.2333	0.3256	0	0.0013	0.0013
31.2667	0.3293	0.0241	0	0.0241
31.3	0.3395	0.0241	0	0.0241
31.3333	0.3451	0	0	0
31.3667	0.3483	0	0	0
31.4	0.3543	0	0	0
31.4333	0.3602	0.0241	0.0013	0.0254
31.4667	0.3678	0	0	0
31.5	0.3691	0	0.0013	0.0013
31.5333	0.372	0	0	0
31.5667	0.3793	0.0109	0	0.0109
31.6	0.3855	0	0	0
31.6333	0.3885	0	0	0
31.6667	0.3948	0	0.0013	0.0013
31.7	0.3964	0.0109	0	0.0109
31.7333	0.398	0.0109	0.0013	0.0122
31.7667	0.3967	0.0109	0	0.0109
31.8	0.3941	0	0.0013	0.0013
31.8333	0.3957	0	0.0013	0.0013
31.8667	0.3931	0.0109	0	0.0109
31.9	0.3941	0	0.0013	0.0013
31.9333	0.3921	0	0	0
31.9667	0.3928	0.0241	0.0013	0.0254
32	0.3908	0	0	0
32.0333	0.3918	0	0	0
32.0667	0.3882	0.0109	0.0013	0.0122
32.1	0.3895	0	0.0026	0.0026
32.1333	0.3882	0.0109	0.0013	0.0122
32.1667	0.3878	0	0	0
32.2	0.3878	0.0109	0.0026	0.0135
32.2333	0.3875	0.0109	0	0.0109
32.2667	0.3869	0	0	0
32.3	0.3865	0	0	0
32.3333	0.3875	0	0	0
32.3667	0.3865	0	0	0
32.4	0.3855	0.0241	0.0013	0.0254
32.4333	0.3882	0	0	0
32.4667	0.3869	0.0109	0	0.0109
32.5	0.3852	0	0	0
32.5333	0.3882	0	0.0026	0.0026
32.5667	0.3855	0	0.0013	0.0013
32.6	0.3842	0	0.0013	0.0013
32.6333	0.3855	0.0109	0.0013	0.0122
32.6667	0.3865	0	0.0013	0.0013
32.7	0.3842	0	0.0013	0.0013
32.7333	0.3875	0	0	0

32.7667	0.3908	0	0.0013	0.0013
32.8	0.3898	0.0109	0	0.0109
32.8333	0.3915	0.0241	0.0026	0.0267
32.8667	0.3918	0.0372	0	0.0372
32.9	0.3908	0	0	0
32.9333	0.3934	0	0	0
32.9667	0.3948	0	0	0
33	0.3954	0	0.0013	0.0013
33.0333	0.399	0	0.0013	0.0013
33.0667	0.4	0.0109	0.0013	0.0122
33.1	0.4027	0	0	0
33.1333	0.4027	0.0109	0.0013	0.0122
33.1667	0.399	0	0	0
33.2	0.4007	0.0241	0	0.0241
33.2333	0.404	0	0	0
33.2667	0.404	0	0	0
33.3	0.404	0	0	0
33.3333	0.403	0.0109	0	0.0109
33.3667	0.4053	0	0.0013	0.0013
33.4	0.4059	0	0.0013	0.0013
33.4333	0.4063	0.0241	0	0.0241
33.4667	0.404	0.0109	0	0.0109
33.5	0.4106	0	0	0
33.5333	0.4083	0.0109	0	0.0109
33.5667	0.4086	0.0241	0.0013	0.0254
33.6	0.4109	0.0109	0.0026	0.0135
33.6333	0.4089	0.0109	0	0.0109
33.6667	0.4083	0.0109	0	0.0109
33.7	0.4122	0	0.0013	0.0013
33.7333	0.4102	0	0.0013	0.0013
33.7667	0.4112	0.0109	0.0013	0.0122
33.8	0.4119	0	0	0
33.8333	0.4079	0.0241	0	0.0241
33.8667	0.4086	0	0	0
33.9	0.4089	0	0.0013	0.0013
33.9333	0.4112	0.0109	0.0013	0.0122
33.9667	0.4102	0	0.0013	0.0013
34	0.4099	0	0	0
34.0333	0.4086	0.0109	0.0013	0.0122
34.0667	0.4076	0.0109	0.0013	0.0122
34.1	0.4086	0	0.0013	0.0013
34.1333	0.4066	0.0241	0.0013	0.0254
34.1667	0.4056	0	0	0
34.2	0.405	0.0109	0	0.0109
34.2333	0.4066	0.0109	0	0.0109
34.2667	0.4063	0.0109	0	0.0109
34.3	0.4027	0	0	0

34.3333	0.404	0	0.0013	0.0013
34.3667	0.4027	0.0109	0	0.0109
34.4	0.4	0	0	0
34.4333	0.4007	0	0.0013	0.0013
34.4667	0.3997	0	0.0026	0.0026
34.5	0.4004	0	0	0
34.5333	0.3987	0	0	0
34.5667	0.401	0	0.0013	0.0013
34.6	0.3961	0	0.0013	0.0013
34.6333	0.3974	0.0109	0.0013	0.0122
34.6667	0.3918	0	0.0026	0.0026
34.7	0.3941	0	0.0013	0.0013
34.7333	0.3944	0.0109	0	0.0109
34.7667	0.3974	0	0.0013	0.0013
34.8	0.3925	0	0.0013	0.0013
34.8333	0.3928	0	0	0
34.8667	0.3938	0	0.0013	0.0013
34.9	0.3961	0	0	0
34.9333	0.3918	0	0	0
34.9667	0.3918	0.0241	0	0.0241
35	0.3928	0.0109	0.0013	0.0122
35.0333	0.3905	0	0	0
35.0667	0.3915	0.0241	0	0.0241
35.1	0.3918	0	0	0
35.1333	0.3882	0	0	0
35.1667	0.3892	0	0.0013	0.0013
35.2	0.3905	0.0241	0	0.0241
35.2333	0.3885	0	0.0013	0.0013
35.2667	0.3888	0	0	0
35.3	0.3865	0.0109	0	0.0109
35.3333	0.3855	0	0	0
35.3667	0.3846	0.0109	0.0013	0.0122
35.4	0.3905	0.0109	0	0.0109
35.4333	0.3885	0	0.0013	0.0013
35.4667	0.3849	0	0	0
35.5	0.3862	0.0109	0	0.0109
35.5333	0.3842	0.0109	0	0.0109
35.5667	0.3839	0.0109	0	0.0109
35.6	0.3832	0	0	0
35.6333	0.3862	0	0	0
35.6667	0.3859	0.0109	0.0013	0.0122
35.7	0.3832	0.0109	0	0.0109
35.7333	0.3839	0	0	0
35.7667	0.3839	0.0241	0.0013	0.0254
35.8	0.3822	0	0	0
35.8333	0.3829	0	0	0
35.8667	0.3842	0	0	0

35.9	0.3826	0	0	0
35.9333	0.3829	0	0	0
35.9667	0.3806	0	0.0026	0.0026
36	0.3799	0	0	0
36.0333	0.3819	0	0	0
36.0667	0.3836	0.0241	0.0013	0.0254
36.1	0.3836	0.0109	0	0.0109
36.1333	0.3852	0	0.0013	0.0013
36.1667	0.3852	0	0	0
36.2	0.3803	0	0.0013	0.0013
36.2333	0.3819	0.0109	0	0.0109
36.2667	0.3829	0.0109	0	0.0109
36.3	0.3799	0.0109	0.0013	0.0122
36.3333	0.3806	0	0	0
36.3667	0.3806	0	0	0
36.4	0.3813	0.0109	0.0013	0.0122
36.4333	0.3809	0	0.0013	0.0013
36.4667	0.3799	0.0109	0	0.0109
36.5	0.3826	0	0.0013	0.0013
36.5333	0.3816	0.0109	0.0013	0.0122
36.5667	0.3813	0.0109	0	0.0109
36.6	0.3786	0	0.0013	0.0013
36.6333	0.3813	0.0109	0	0.0109
36.6667	0.3822	0.0109	0.0026	0.0135
36.7	0.3806	0.0109	0	0.0109
36.7333	0.3806	0.0109	0	0.0109
36.7667	0.379	0	0	0
36.8	0.3809	0.0109	0.0013	0.0122
36.8333	0.3806	0	0.0013	0.0013
36.8667	0.3776	0.0109	0	0.0109
36.9	0.3539	0	0.0026	0.0026
36.9333	0.3299	0	0	0
36.9667	0.3065	0.0109	0.0013	0.0122
37	0.2888	0.0109	0.0013	0.0122
37.0333	0.2674	0	0.0013	0.0013
37.0667	0.2457	0.0109	0	0.0109
37.1	0.2289	0.0109	0	0.0109
37.1333	0.2131	0.0109	0.0026	0.0135
37.1667	0.1979	0	0.0026	0.0026
37.2	0.1815	0	0	0
37.2333	0.1663	0	0	0
37.2667	0.1499	0	0.0026	0.0026
37.3	0.1367	0	0	0
37.3333	0.1278	0	0.0013	0.0013
37.3667	0.1166	0.0109	0	0.0109
37.4	0.1048	0.0109	0	0.0109
37.4333	0.0939	0.0109	0	0.0109

37.4667	0.0854	0	0	0
37.5	0.0765	0.0109	0	0.0109
37.5333	0.0669	0	0	0
37.5667	0.0623	0.0109	0	0.0109
37.6	0.0541	0	0.0013	0.0013
37.6333	0.0472	0	0	0
37.6667	0.0406	0	0.0013	0.0013
37.7	0.036	0	0	0
37.7333	0.0261	0	0	0
37.7667	0.0245	0.0109	0.0013	0.0122
37.8	0.0205	0.0109	0	0.0109
37.8333	0.0186	0.0241	0	0.0241
37.8667	0.01	0	0	0
37.9	0.0051	0	0	0
37.9333	0.0057	0.0109	0.0013	0.0122
37.9667	0.0014	0	0.0013	0.0013
38	-0.0015	0	0	0
38.0333	-0.0032	0	0	0
38.0667	-0.0051	0	0	0
38.1	-0.0094	0.0109	0	0.0109
38.1333	-0.0084	0	0.0013	0.0013
38.1667	-0.0163	0	0	0
38.2	-0.0137	0	0.0013	0.0013
38.2333	-0.0153	0.0241	0.0013	0.0254
38.2667	-0.0153	0.0241	0	0.0241
38.3	-0.014	0	0	0
38.3333	-0.014	0	0	0
38.3667	-0.015	0	0	0
38.4	-0.017	0.0109	0.0013	0.0122
38.4333	-0.0203	0	0.0013	0.0013
38.4667	-0.0193	0	0	0
38.5	-0.0209	0.0109	0.0013	0.0122
38.5333	-0.0223	0.0241	0	0.0241
38.5667	-0.018	0	0	0
38.6	-0.0265	0.0109	0	0.0109
38.6333	-0.0229	0.0109	0	0.0109
38.6667	-0.0226	0	0.0013	0.0013
38.7	-0.0229	0.0109	0	0.0109
38.7333	-0.0213	0.0109	0	0.0109
38.7667	-0.0275	0	0	0
38.8	-0.0272	0.0241	0	0.0241
38.8333	-0.0269	0	0.0013	0.0013
38.8667	-0.0236	0	0	0
38.9	-0.0255	0	0.0026	0.0026
38.9333	-0.0255	0	0.0026	0.0026
38.9667	-0.0239	0	0.0013	0.0013
39	-0.0236	0.0109	0	0.0109

39.0333	-0.0255	0.0241	0.0026	0.0267
39.0667	-0.0295	0	0	0
39.1	-0.0246	0	0	0
39.1333	-0.0229	0.0241	0	0.0241
39.1667	-0.0249	0	0.0013	0.0013
39.2	-0.0232	0	0	0
39.2333	-0.0282	0.0241	0	0.0241
39.2667	-0.0285	0	0	0
39.3	-0.0193	0	0	0
39.3333	-0.0163	0	0	0
39.3667	-0.0216	0	0	0
39.4	-0.0173	0	0	0
39.4333	-0.0196	0.0241	0.0013	0.0254
39.4667	-0.0176	0	0	0
39.5	-0.0193	0	0	0
39.5333	-0.0255	0	0	0
39.5667	-0.0226	0	0	0
39.6	-0.0249	0	0.0013	0.0013
39.6333	-0.0229	0.0109	0.0013	0.0122
39.6667	-0.0213	0	0	0
39.7	-0.0219	0	0	0
39.7333	-0.02	0	0	0
39.7667	-0.019	0	0.0013	0.0013
39.8	-0.0209	0	0	0
39.8333	-0.0196	0.0109	0	0.0109
39.8667	-0.0216	0.0109	0	0.0109
39.9	-0.0328	0.0241	0.0013	0.0254
39.9333	-0.0344	0.0109	0.0026	0.0135
39.9667	-0.0295	0.0109	0	0.0109
40	-0.0348	0.0109	0	0.0109
40.0333	-0.0334	0.0109	0.0013	0.0122
40.0667	-0.0351	0	0.0026	0.0026
40.1	-0.0325	0	0	0
40.1333	-0.0348	0	0.0013	0.0013
40.1667	-0.0331	0.0109	0	0.0109
40.2	-0.0318	0	0	0
40.2333	-0.0325	0	0.0013	0.0013
40.2667	-0.0334	0	0	0
40.3	-0.0311	0.0109	0.0013	0.0122
40.3333	-0.0074	0	0	0
40.3667	-0.0229	0.0109	0.0013	0.0122
40.4	0.0353	0	0	0
40.4333	0.0353	0	0.0013	0.0013
40.4667	0.0334	0.0241	0	0.0241
40.5	-0.0219	0	0	0
40.5333	-0.0242	0.0241	0	0.0241
40.5667	-0.0265	0	0	0

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40.6	-0.0275	0	0	0
40.6333	-0.0318	0	0	0
40.6667	-0.0295	0	0.0013	0.0013
40.7	-0.0295	0.0109	0	0.0109
40.7333	-0.0321	0	0.0013	0.0013
40.7667	-0.0331	0	0	0
40.8	-0.0308	0	0.0026	0.0026
40.8333	-0.0321	0.0109	0.0013	0.0122
40.8667	-0.0325	0	0.0013	0.0013
40.9	-0.0321	0	0	0
40.9333	-0.0305	0.0109	0.0013	0.0122
40.9667	-0.0315	0.0241	0	0.0241
41	-0.0328	0.0109	0	0.0109
41.0333	-0.0292	0.0109	0.0013	0.0122
41.0667	-0.0341	0.0109	0.0013	0.0122
41.1	-0.0351	0	0	0
41.1333	-0.0331	0	0.0013	0.0013
41.1667	-0.0344	0	0	0
41.2	-0.0302	0	0	0
41.2333	-0.0325	0.0109	0.0026	0.0135
41.2667	-0.0302	0.0109	0.0013	0.0122
41.3	-0.0331	0.0109	0	0.0109
41.3333	-0.0302	0	0	0
41.3667	-0.0308	0	0	0
41.4	-0.0338	0.0109	0	0.0109
41.4333	-0.0308	0	0	0
41.4667	-0.0305	0.0109	0	0.0109
41.5	-0.0298	0.0109	0	0.0109
41.5333	-0.0295	0.0241	0	0.0241
41.5667	-0.0288	0	0	0
41.6	-0.0292	0	0.0013	0.0013
41.6333	-0.0288	0.0109	0	0.0109
41.6667	-0.0305	0	0	0
41.7	-0.0249	0	0	0
41.7333	-0.0097	0	0	0
41.7667	0.0018	0	0.0013	0.0013
41.8	0.0176	0.0109	0	0.0109
41.8333	0.0314	0	0	0
41.8667	0.0449	0	0.0013	0.0013
41.9	0.0594	0	0.0013	0.0013
41.9333	0.0689	0.0109	0	0.0109
41.9667	0.0817	0.0109	0.0026	0.0135
42	0.092	0.0241	0	0.0241
42.0333	0.1041	0	0.0013	0.0013
42.0667	0.115	0.0109	0	0.0109
42.1	0.1268	0.0109	0.0026	0.0135
42.1333	0.1364	0.0241	0	0.0241

42.1667	0.1469	0.0109	0	0.0109
42.2	0.1548	0	0	0
42.2333	0.1644	0.0372	0	0.0372
42.2667	0.1732	0.0109	0	0.0109
42.3	0.1795	0	0	0
42.3333	0.189	0.0109	0.0013	0.0122
42.3667	0.1953	0	0.0013	0.0013
42.4	0.2068	0	0	0
42.4333	0.2114	0	0	0
42.4667	0.2203	0	0	0
42.5	0.2262	0.0109	0	0.0109
42.5333	0.2328	0	0.0013	0.0013
42.5667	0.2374	0	0	0
42.6	0.2443	0.0241	0	0.0241
42.6333	0.2522	0	0.0013	0.0013
42.6667	0.2582	0.0109	0	0.0109
42.7	0.2631	0	0.0026	0.0026
42.7333	0.2651	0	0.0013	0.0013
42.7667	0.272	0	0.0013	0.0013
42.8	0.2776	0.0241	0	0.0241
42.8333	0.2819	0.0241	0	0.0241
42.8667	0.2875	0.0109	0	0.0109
42.9	0.2911	0.0109	0.0013	0.0122
42.9333	0.2947	0.0109	0	0.0109
42.9667	0.3013	0.0109	0.0013	0.0122
43	0.3029	0.0109	0	0.0109
43.0333	0.3082	0.0109	0.0026	0.0135
43.0667	0.3115	0	0	0
43.1	0.3168	0	0	0
43.1333	0.3197	0	0.0013	0.0013
43.1667	0.3237	0	0	0
43.2	0.3263	0	0	0
43.2333	0.3319	0	0.0013	0.0013
43.2667	0.3312	0.0109	0.0013	0.0122
43.3	0.3385	0	0	0
43.3333	0.3381	0	0	0
43.3667	0.3441	0	0	0
43.4	0.3434	0	0.0013	0.0013
43.4333	0.349	0	0	0
43.4667	0.347	0	0	0
43.5	0.351	0	0	0
43.5333	0.3562	0	0	0
43.5667	0.3572	0	0	0
43.6	0.3602	0	0.0013	0.0013
43.6333	0.3615	0.0109	0	0.0109
43.6667	0.3605	0	0.0013	0.0013
43.7	0.3668	0	0	0

43.7333	0.3691	0	0.0026	0.0026
43.7667	0.3707	0	0	0
43.8	0.3734	0.0109	0	0.0109
43.8333	0.3734	0.0109	0	0.0109
43.8667	0.3737	0	0	0
43.9	0.3793	0	0	0
43.9333	0.3819	0.0109	0.0013	0.0122
43.9667	0.3826	0.0241	0	0.0241
44	0.3813	0.0109	0	0.0109
44.0333	0.3892	0	0.0026	0.0026
44.0667	0.3855	0	0	0
44.1	0.3898	0.0109	0	0.0109
44.1333	0.3908	0	0.0026	0.0026
44.1667	0.3921	0	0	0
44.2	0.3931	0	0	0
44.2333	0.3951	0	0	0
44.2667	0.3938	0	0.0013	0.0013
44.3	0.3964	0	0.0013	0.0013
44.3333	0.3957	0	0	0
44.3667	0.3977	0	0	0
44.4	0.3987	0.0109	0.0026	0.0135
44.4333	0.398	0	0.0013	0.0013
44.4667	0.3984	0	0.0013	0.0013
44.5	0.4013	0	0	0
44.5333	0.403	0.0109	0.0013	0.0122
44.5667	0.402	0	0	0
44.6	0.405	0	0	0
44.6333	0.4056	0	0.0013	0.0013
44.6667	0.4066	0	0	0
44.7	0.4083	0	0.0013	0.0013
44.7333	0.4079	0.0109	0.0013	0.0122
44.7667	0.4063	0	0	0
44.8	0.4122	0	0	0
44.8333	0.4112	0	0	0
44.8667	0.4122	0	0	0
44.9	0.4142	0.0109	0.0013	0.0122
44.9333	0.4119	0	0.0013	0.0013
44.9667	0.4129	0	0	0
45	0.4125	0.0109	0	0.0109
45.0333	0.4148	0	0.0013	0.0013
45.0667	0.4165	0.0109	0	0.0109
45.1	0.4145	0	0	0
45.1333	0.4148	0	0	0
45.1667	0.4129	0	0	0
45.2	0.4129	0.0109	0	0.0109
45.2333	0.4125	0.0109	0	0.0109
45.2667	0.4129	0.0109	0.0026	0.0135

45.3	0.4119	0.0241	0.0013	0.0254
45.3333	0.4138	0	0	0
45.3667	0.4109	0	0	0
45.4	0.4112	0	0.0013	0.0013
45.4333	0.4106	0	0.0013	0.0013
45.4667	0.4106	0.0109	0	0.0109
45.5	0.4066	0	0.0013	0.0013
45.5333	0.4083	0	0	0
45.5667	0.4083	0.0241	0.0013	0.0254
45.6	0.4076	0.0241	0.0013	0.0254
45.6333	0.404	0	0	0
45.6667	0.405	0.0109	0	0.0109
45.7	0.4046	0.0109	0	0.0109
45.7333	0.4027	0	0	0
45.7667	0.4043	0.0109	0.0013	0.0122
45.8	0.4	0	0	0
45.8333	0.399	0.0109	0	0.0109
45.8667	0.4	0.0109	0	0.0109
45.9	0.399	0	0.0013	0.0013
45.9333	0.4004	0	0.0013	0.0013
45.9667	0.3961	0.0109	0	0.0109
46	0.3987	0	0	0
46.0333	0.3961	0	0	0
46.0667	0.3994	0	0	0
46.1	0.3974	0.0241	0.0026	0.0267
46.1333	0.3938	0	0.0013	0.0013
46.1667	0.3977	0.0109	0	0.0109
46.2	0.3948	0	0.0013	0.0013
46.2333	0.3948	0	0.0026	0.0026
46.2667	0.3908	0	0	0
46.3	0.3934	0	0.0013	0.0013
46.3333	0.3948	0	0.0013	0.0013
46.3667	0.3934	0	0	0
46.4	0.3925	0	0.0013	0.0013
46.4333	0.3928	0.0241	0.0013	0.0254
46.4667	0.3921	0	0.0026	0.0026
46.5	0.3908	0.0109	0.0013	0.0122
46.5333	0.3908	0	0.0013	0.0013
46.5667	0.3888	0.0109	0.0013	0.0122
46.6	0.3872	0	0.0013	0.0013
46.6333	0.3918	0	0	0
46.6667	0.3888	0.0109	0	0.0109
46.7	0.3882	0	0	0
46.7333	0.3921	0.0109	0	0.0109
46.7667	0.3911	0.0109	0	0.0109
46.8	0.3892	0	0	0
46.8333	0.3898	0.0241	0.0026	0.0267

46.8667	0.3892	0.0241	0	0.0241
46.9	0.3869	0.0109	0.0013	0.0122
46.9333	0.3885	0	0	0
46.9667	0.3885	0.0241	0.0013	0.0254
47	0.3859	0.0109	0.0013	0.0122
47.0333	0.3855	0.0109	0.0013	0.0122
47.0667	0.3878	0	0	0
47.1	0.3882	0.0241	0.0013	0.0254
47.1333	0.3842	0.0109	0.0026	0.0135
47.1667	0.3849	0.0109	0	0.0109
47.2	0.3846	0.0241	0	0.0241
47.2333	0.3872	0.0109	0	0.0109
47.2667	0.3882	0	0	0
47.3	0.3869	0.0109	0.0013	0.0122
47.3333	0.3872	0.0109	0.0013	0.0122
47.3667	0.3882	0.0109	0	0.0109
47.4	0.3855	0.0109	0.0013	0.0122
47.4333	0.3859	0	0	0
47.4667	0.3865	0	0	0
47.5	0.3869	0	0	0
47.5333	0.3869	0.0109	0	0.0109
47.5667	0.3849	0	0.0013	0.0013
47.6	0.3859	0.0109	0.0013	0.0122
47.6333	0.3872	0.0109	0	0.0109
47.6667	0.3829	0	0	0
47.7	0.3813	0	0.0013	0.0013
47.7333	0.3832	0	0	0
47.7667	0.3859	0	0.0013	0.0013
47.8	0.3846	0	0	0
47.8333	0.3849	0.0241	0	0.0241
47.8667	0.3849	0	0.0013	0.0013
47.9	0.3829	0	0.0013	0.0013
47.9333	0.3855	0	0	0
47.9667	0.3839	0	0	0
48	0.3849	0.0241	0.0026	0.0267
48.0333	0.3842	0.0109	0	0.0109
48.0667	0.3875	0	0.0013	0.0013
48.1	0.3862	0.0241	0.0013	0.0254
48.1333	0.3878	0.0109	0	0.0109
48.1667	0.3859	0.0109	0	0.0109
48.2	0.3865	0	0	0
48.2333	0.3839	0	0	0
48.2667	0.3849	0	0	0
48.3	0.3855	0.0241	0	0.0241
48.3333	0.3855	0.0109	0.0026	0.0135
48.3667	0.3852	0.0109	0.0026	0.0135
48.4	0.3872	0	0.0013	0.0013

48.4333	0.3862	0.0109	0.0013	0.0122
48.4667	0.3865	0.0109	0	0.0109
48.5	0.3875	0.0241	0	0.0241
48.5333	0.3882	0.0241	0.0013	0.0254
48.5667	0.3869	0	0.0013	0.0013
48.6	0.3855	0	0.0013	0.0013
48.6333	0.3882	0.0109	0.0013	0.0122
48.6667	0.3878	0	0	0
48.7	0.3878	0	0.0013	0.0013
48.7333	0.3885	0.0109	0.0013	0.0122
48.7667	0.3895	0.0109	0.0013	0.0122
48.8	0.3885	0	0	0
48.8333	0.3892	0.0109	0	0.0109
48.8667	0.3885	0.0109	0	0.0109
48.9	0.3885	0	0	0
48.9333	0.3895	0.0109	0.0013	0.0122
48.9667	0.3895	0	0.0013	0.0013
49	0.3895	0	0.0026	0.0026
49.0333	0.3905	0	0.0013	0.0013
49.0667	0.3925	0.0241	0	0.0241
49.1	0.3905	0	0.0013	0.0013
49.1333	0.3911	0	0	0
49.1667	0.3895	0	0.0013	0.0013
49.2	0.3898	0.0109	0.0053	0.0162
49.2333	0.3938	0.0109	0	0.0109
49.2667	0.3921	0.0109	0	0.0109
49.3	0.3911	0.0109	0.0026	0.0135
49.3333	0.3921	0.0109	0.0013	0.0122
49.3667	0.3921	0	0.0013	0.0013
49.4	0.3905	0.0109	0.0026	0.0135
49.4333	0.3938	0.0109	0.0013	0.0122
49.4667	0.3934	0	0	0
49.5	0.3944	0	0	0
49.5333	0.3951	0	0	0
49.5667	0.3957	0	0	0
49.6	0.3964	0.0109	0.0013	0.0122
49.6333	0.3925	0	0	0
49.6667	0.3717	0	0	0
49.7	0.3457	0	0.0013	0.0013
49.7333	0.3194	0	0.0013	0.0013
49.7667	0.3006	0	0.0013	0.0013
49.8	0.2759	0	0	0
49.8333	0.2545	0	0	0
49.8667	0.2325	0	0	0
49.9	0.2141	0	0.0013	0.0013
49.9333	0.196	0.0109	0	0.0109
49.9667	0.1798	0.0372	0	0.0372

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50	0.1657	0	0.0013	0.0013
50.0333	0.1479	0.0241	0.0013	0.0254
50.0667	0.1354	0	0.0013	0.0013
50.1	0.1226	0	0	0
50.1333	0.1084	0	0	0
50.1667	0.0995	0	0	0
50.2	0.0864	0.0109	0	0.0109
50.2333	0.0752	0	0.0026	0.0026
50.2667	0.0679	0	0.0026	0.0026
50.3	0.0594	0	0	0
50.3333	0.0495	0	0	0
50.3667	0.0459	0	0	0
50.4	0.0347	0.0109	0	0.0109
50.4333	0.0317	0	0	0
50.4667	0.0251	0	0	0
50.5	0.0192	0.0109	0.0013	0.0122
50.5333	0.0139	0.0109	0.0013	0.0122
50.5667	0.007	0.0109	0.0013	0.0122
50.6	0.0034	0.0241	0.0013	0.0254
50.6333	-0.0022	0	0	0
50.6667	-0.0038	0.0109	0	0.0109
50.7	-0.0051	0.0109	0	0.0109
50.7333	-0.0081	0.0109	0	0.0109
50.7667	-0.0101	0	0.0013	0.0013
50.8	-0.0153	0	0	0
50.8333	-0.0153	0	0.0013	0.0013
50.8667	-0.0173	0	0.0026	0.0026
50.9	-0.0213	0	0.0013	0.0013
50.9333	-0.0213	0	0.0013	0.0013
50.9667	-0.0219	0	0.0013	0.0013
51	-0.0242	0.0109	0	0.0109
51.0333	-0.0242	0.0109	0	0.0109
51.0667	-0.0226	0.0109	0	0.0109
51.1	-0.0239	0	0.0013	0.0013
51.1333	-0.0272	0.0109	0.0013	0.0122
51.1667	-0.0252	0.0241	0	0.0241
51.2	-0.0249	0.0109	0	0.0109
51.2333	-0.0236	0.0109	0.0013	0.0122
51.2667	-0.0255	0	0.0013	0.0013
51.3	-0.0321	0.0109	0	0.0109
51.3333	-0.0321	0.0109	0.0026	0.0135
51.3667	-0.0341	0	0	0
51.4	-0.0315	0.0109	0.0013	0.0122
51.4333	-0.0203	0	0	0
51.4667	-0.0209	0	0.0013	0.0013
51.5	-0.0153	0.0241	0	0.0241
51.5333	-0.0038	0.0109	0	0.0109

51.5667	-0.0071	0.0109	0	0.0109
51.6	-0.0094	0.0241	0.0013	0.0254
51.6333	-0.0097	0.0241	0.0013	0.0254
51.6667	-0.0101	0.0109	0	0.0109
51.7	-0.0377	0.0109	0.8245	0.8354
51.7333	-0.0371	0.0109	0.7903	0.8012
51.7667	-0.0413	0.0241	0.7693	0.7933
51.8	-0.0407	0.0109	0.7574	0.7683
51.8333	-0.0417	0	0.7561	0.7561
51.8667	-0.042	0.0109	0.7587	0.7696
51.9	-0.0436	0.0109	0.7561	0.767
51.9333	-0.0433	0	0.764	0.764
51.9667	-0.0433	0.0109	0.7653	0.7762
52	-0.0446	0.0109	0.7745	0.7854
52.0333	-0.042	0.0109	0.7719	0.7828
52.0667	-0.0334	0.0109	0.7758	0.7867
52.1	-0.0344	0.0109	0.7771	0.788
52.1333	-0.0397	0.0241	0.7824	0.8065
52.1667	-0.0387	0.0109	0.7758	0.7867
52.2	-0.0394	0	0.7758	0.7758
52.2333	-0.0407	0.0109	0.7771	0.788
52.2667	-0.043	0.0109	0.7758	0.7867
52.3	-0.0436	0	0.7811	0.7811
52.3333	-0.0463	0	0.7732	0.7732
52.3667	-0.0453	0	0.7732	0.7732
52.4	-0.045	0	0.7693	0.7693
52.4333	-0.0413	0	0.7679	0.7679
52.4667	-0.0427	0	0.7627	0.7627
52.5	-0.044	0	0.7601	0.7601
52.5333	-0.0479	0.0109	0.7535	0.7644
52.5667	-0.0469	0.0109	0.7522	0.7631
52.6	-0.0443	0	0.7456	0.7456
52.6333	-0.0157	0.0109	0.7443	0.7552
52.6667	-0.0223	0	0.7403	0.7403
52.7	-0.0203	0.0109	0.0026	0.0135
52.7333	-0.0193	0.0109	0	0.0109
52.7667	-0.0186	0	0	0
52.8	-0.0209	0.0241	0.0013	0.0254
52.8333	-0.0196	0	0.0013	0.0013
52.8667	-0.019	0.0109	0	0.0109
52.9	-0.0173	0.0109	0	0.0109
52.9333	-0.02	0	0.4247	0.4247
52.9667	-0.02	0.0241	0.8718	0.8959
53	-0.0226	0	0.8271	0.8271
53.0333	-0.0206	0.0109	0.785	0.7959
53.0667	-0.0213	0	0.7587	0.7587
53.1	-0.018	0	0.7364	0.7364

53.1333	-0.0216	0	0.7193	0.7193
53.1667	-0.0216	0.0109	0.7101	0.721
53.2	-0.02	0	0.693	0.693
53.2333	-0.0417	0.0109	0.6785	0.6894
53.2667	-0.0558	0	0.6733	0.6733
53.3	-0.0407	0	0.6654	0.6654
53.3333	-0.0423	0	0.6535	0.6535
53.3667	-0.0446	0	0.6496	0.6496
53.4	-0.0407	0.0109	0.6378	0.6487
53.4333	-0.0423	0	0.6325	0.6325
53.4667	-0.0374	0.0109	0.6194	0.6303
53.5	-0.039	0	0.6128	0.6128
53.5333	-0.0433	0	0.0013	0.0013
53.5667	-0.0397	0	0	0
53.6	-0.0394	0.0109	0	0.0109
53.6333	-0.0427	0	0.0013	0.0013
53.6667	-0.0404	0.0109	0	0.0109
53.7	-0.0413	0	0	0
53.7333	-0.04	0	0	0
53.7667	-0.0413	0	0	0
53.8	-0.042	0	0	0
53.8333	-0.0427	0	0.0013	0.0013
53.8667	-0.043	0	0	0
53.9	-0.0427	0	0.0013	0.0013
53.9333	-0.0423	0	0	0
53.9667	-0.0427	0.0241	0.8113	0.8354
54	-0.0423	0	0.7469	0.7469
54.0333	-0.0394	0.0241	0.0013	0.0254
54.0667	-0.0423	0	0	0
54.1	-0.042	0	0.0013	0.0013
54.1333	-0.042	0	0.0013	0.0013
54.1667	-0.0423	0	0.0026	0.0026
54.2	-0.0453	0	0.0013	0.0013
54.2333	-0.045	0.0109	0.0013	0.0122
54.2667	-0.0318	0	0	0
54.3	-0.0242	0	0	0
54.3333	-0.0209	0	0.0013	0.0013
54.3667	-0.0209	0.0109	0.0013	0.0122
54.4	-0.0259	0	0.0013	0.0013
54.4333	-0.0236	0.0109	0	0.0109
54.4667	-0.0236	0.0109	0.0026	0.0135
54.5	-0.0226	0.0109	0.0013	0.0122
54.5333	-0.0252	0.0241	0.0013	0.0254
54.5667	-0.0242	0.0109	0	0.0109
54.6	-0.0252	0.0109	0	0.0109
54.6333	-0.0242	0	0.0013	0.0013
54.6667	-0.0121	0	0	0

54.7	0.0064	0	0.0013	0.0013
54.7333	0.0159	0.0109	0.0013	0.0122
54.7667	0.0334	0.0109	0.0013	0.0122
54.8	0.0465	0.0109	0	0.0109
54.8333	0.063	0	0	0
54.8667	0.0778	0.0109	0.0013	0.0122
54.9	0.0896	0.0109	0	0.0109
54.9333	0.0992	0	0	0
54.9667	0.1143	0	0	0
55	0.1265	0.0109	0.0013	0.0122
55.0333	0.1364	0.0109	0	0.0109
55.0667	0.1482	0	0	0
55.1	0.1568	0	0	0
55.1333	0.17	0.0241	0.0013	0.0254
55.1667	0.1818	0.0109	0	0.0109
55.2	0.1917	0	0	0
55.2333	0.1956	0	0	0
55.2667	0.2058	0.0109	0	0.0109
55.3	0.2187	0.0241	0	0.0241
55.3333	0.2256	0.0109	0.0013	0.0122
55.3667	0.2315	0.0109	0.0013	0.0122
55.4	0.2407	0.0109	0	0.0109
55.4333	0.2476	0.0109	0.0026	0.0135
55.4667	0.2562	0.0241	0.0013	0.0254
55.5	0.2661	0.0109	0.0013	0.0122
55.5333	0.27	0	0	0
55.5667	0.2779	0	0	0
55.6	0.2822	0	0	0
55.6333	0.2917	0.0109	0	0.0109
55.6667	0.2967	0	0.0026	0.0026
55.7	0.3019	0.0109	0	0.0109
55.7333	0.3089	0.0109	0.0013	0.0122
55.7667	0.3115	0.0109	0.0013	0.0122
55.8	0.3144	0.0109	0	0.0109
55.8333	0.3217	0	0	0
55.8667	0.3279	0	0	0
55.9	0.3329	0	0	0
55.9333	0.3368	0.0109	0.0013	0.0122
55.9667	0.3421	0	0.0013	0.0013
56	0.3467	0.0109	0	0.0109
56.0333	0.349	0	0.0013	0.0013
56.0667	0.3543	0	0	0
56.1	0.3582	0.0109	0.0013	0.0122
56.1333	0.3618	0	0	0
56.1667	0.3681	0.0241	0.0013	0.0254
56.2	0.3681	0.0109	0	0.0109
56.2333	0.3727	0.0109	0.0013	0.0122

56.2667	0.378	0.0109	0	0.0109
56.3	0.3829	0	0.0013	0.0013
56.3333	0.3816	0.0109	0.0013	0.0122
56.3667	0.3865	0.0109	0.0013	0.0122
56.4	0.3905	0.0241	0.0013	0.0254
56.4333	0.3905	0.0109	0.0013	0.0122
56.4667	0.3951	0.0109	0	0.0109
56.5	0.399	0.0109	0.0013	0.0122
56.5333	0.3977	0.0109	0.0013	0.0122
56.5667	0.402	0.0109	0.0013	0.0122
56.6	0.4043	0.0109	0	0.0109
56.6333	0.4102	0	0	0
56.6667	0.4096	0	0.0013	0.0013
56.7	0.4145	0	0.0013	0.0013
56.7333	0.4175	0	0.0026	0.0026
56.7667	0.4155	0.0109	0.0013	0.0122
56.8	0.4181	0.0109	0.0013	0.0122
56.8333	0.4231	0.0109	0.0013	0.0122
56.8667	0.4208	0.0109	0	0.0109
56.9	0.4211	0.0109	0	0.0109
56.9333	0.4214	0.0109	0.0013	0.0122
56.9667	0.4257	0.0109	0.0013	0.0122
57	0.4244	0.0109	0.0013	0.0122
57.0333	0.4208	0.0109	0.0026	0.0135
57.0667	0.4214	0	0.0013	0.0013
57.1	0.4198	0.0109	0	0.0109
57.1333	0.4181	0.0109	0.0013	0.0122
57.1667	0.4161	0	0.0013	0.0013
57.2	0.4142	0.0109	0.0013	0.0122
57.2333	0.4109	0.0109	0	0.0109
57.2667	0.4106	0	0	0
57.3	0.4056	0.0241	0.0013	0.0254
57.3333	0.405	0	0.0013	0.0013
57.3667	0.4023	0	0	0
57.4	0.4033	0.0109	0.0013	0.0122
57.4333	0.3977	0	0	0
57.4667	0.399	0.0109	0	0.0109
57.5	0.398	0.0109	0.0013	0.0122
57.5333	0.3977	0	0.0026	0.0026
57.5667	0.3944	0	0.0013	0.0013
57.6	0.3921	0.0241	0.0013	0.0254
57.6333	0.3892	0	0.0013	0.0013
57.6667	0.3918	0	0.0013	0.0013
57.7	0.3875	0	0.0013	0.0013
57.7333	0.3855	0	0.0013	0.0013
57.7667	0.3872	0	0.0013	0.0013
57.8	0.3865	0.0241	0.0013	0.0254

57.8333	0.3849	0.0109	0	0.0109
57.8667	0.3803	0	0	0
57.9	0.3829	0	0	0
57.9333	0.3816	0.0109	0.0013	0.0122
57.9667	0.3806	0.0109	0	0.0109
58	0.3776	0.0109	0.0013	0.0122
58.0333	0.3786	0	0.0013	0.0013
58.0667	0.3786	0	0	0
58.1	0.376	0	0.0013	0.0013
58.1333	0.3763	0	0	0
58.1667	0.3734	0	0	0
58.2	0.3714	0.0109	0	0.0109
58.2333	0.373	0.0241	0.0013	0.0254
58.2667	0.3707	0.0109	0	0.0109
58.3	0.3714	0	0.0013	0.0013
58.3333	0.3727	0	0.0013	0.0013
58.3667	0.3707	0	0	0
58.4	0.3684	0.0241	0.0013	0.0254
58.4333	0.3717	0.0109	0	0.0109
58.4667	0.3707	0.0109	0.0026	0.0135
58.5	0.3727	0.0109	0	0.0109
58.5333	0.3711	0	0.0013	0.0013
58.5667	0.3674	0	0.0013	0.0013
58.6	0.3717	0.0109	0.0013	0.0122
58.6333	0.3681	0.0109	0	0.0109
58.6667	0.3681	0.0109	0	0.0109
58.7	0.3678	0	0.0013	0.0013
58.7333	0.3707	0	0	0
58.7667	0.3674	0.0109	0	0.0109
58.8	0.3684	0.0241	0	0.0241
58.8333	0.3681	0.0241	0.0013	0.0254
58.8667	0.3691	0	0	0
58.9	0.3707	0	0.0013	0.0013
58.9333	0.3707	0	0	0
58.9667	0.3678	0	0	0
59	0.3661	0.0241	0.0013	0.0254
59.0333	0.3711	0	0	0
59.0667	0.3681	0	0	0
59.1	0.3674	0	0.0013	0.0013
59.1333	0.3674	0	0	0
59.1667	0.3691	0.0109	0.0013	0.0122
59.2	0.3724	0.0109	0	0.0109
59.2333	0.3681	0	0	0
59.2667	0.3704	0.0109	0	0.0109
59.3	0.3678	0.0241	0	0.0241
59.3333	0.3714	0	0	0
59.3667	0.372	0	0.0026	0.0026

59.4	0.3714	0	0.0013	0.0013
59.4333	0.3714	0	0	0
59.4667	0.372	0	0.0026	0.0026
59.5	0.3724	0.0109	0	0.0109
59.5333	0.373	0	0	0
59.5667	0.3727	0.0109	0	0.0109
59.6	0.3783	0.0241	0	0.0241
59.6333	0.3727	0.0109	0.0013	0.0122
59.6667	0.3747	0	0.0026	0.0026
59.7	0.3753	0.0109	0	0.0109
59.7333	0.3773	0.0241	0	0.0241
59.7667	0.378	0.0109	0	0.0109
59.8	0.3783	0	0	0
59.8333	0.3806	0.0109	0	0.0109
59.8667	0.3826	0.0109	0	0.0109
59.9	0.3816	0	0.0013	0.0013
59.9333	0.3829	0.0109	0	0.0109
59.9667	0.3872	0.0109	0	0.0109
60	0.3872	0	0	0
60.0333	0.3882	0	0	0
60.0667	0.3878	0	0.0013	0.0013
60.1	0.3905	0	0.0013	0.0013
60.1333	0.3895	0.0109	0.0013	0.0122
60.1667	0.3911	0	0	0
60.2	0.3941	0	0.0013	0.0013
60.2333	0.3934	0.0109	0	0.0109
60.2667	0.3911	0.0109	0	0.0109
60.3	0.3977	0.0109	0.0026	0.0135
60.3333	0.3971	0	0	0
60.3667	0.3997	0.0109	0	0.0109
60.4	0.4007	0.0109	0	0.0109
60.4333	0.399	0	0	0
60.4667	0.401	0.0109	0.0013	0.0122
60.5	0.3994	0.0109	0	0.0109
60.5333	0.4027	0.0109	0.0013	0.0122
60.5667	0.4017	0	0.0013	0.0013
60.6	0.4046	0	0.0013	0.0013
60.6333	0.4046	0.0109	0.0013	0.0122
60.6667	0.403	0	0.0013	0.0013
60.7	0.405	0	0.0026	0.0026
60.7333	0.4092	0	0.0013	0.0013
60.7667	0.4076	0	0.0013	0.0013
60.8	0.4089	0.0109	0	0.0109
60.8333	0.4083	0	0	0
60.8667	0.4063	0.0241	0	0.0241
60.9	0.4109	0.0109	0.0013	0.0122
60.9333	0.4132	0	0.0026	0.0026

60.9667	0.4129	0	0.0013	0.0013
61	0.4138	0	0	0
61.0333	0.4158	0	0	0
61.0667	0.4148	0	0	0
61.1	0.4171	0	0	0
61.1333	0.4175	0.0109	0	0.0109
61.1667	0.4181	0	0	0
61.2	0.4185	0.0109	0.0013	0.0122
61.2333	0.4201	0.0109	0.0013	0.0122
61.2667	0.4181	0.0241	0.0026	0.0267
61.3	0.4201	0.0109	0.0013	0.0122
61.3333	0.4224	0.0241	0.0013	0.0254
61.3667	0.4208	0	0.0013	0.0013
61.4	0.4204	0.0109	0	0.0109
61.4333	0.424	0.0109	0.0013	0.0122
61.4667	0.4217	0.0109	0	0.0109
61.5	0.4247	0	0.0013	0.0013
61.5333	0.4244	0	0	0
61.5667	0.426	0	0	0
61.6	0.426	0	0.0013	0.0013
61.6333	0.4244	0.0109	0.0013	0.0122
61.6667	0.4264	0.0109	0.0013	0.0122
61.7	0.4277	0.0109	0.0013	0.0122
61.7333	0.4303	0	0	0
61.7667	0.4303	0	0	0
61.8	0.4303	0.0109	0	0.0109
61.8333	0.4287	0.0109	0.0026	0.0135
61.8667	0.4303	0.0109	0.0013	0.0122
61.9	0.4313	0.0109	0.0026	0.0135
61.9333	0.4336	0.0241	0	0.0241
61.9667	0.4346	0	0	0
62	0.4336	0.0109	0	0.0109
62.0333	0.4343	0	0	0
62.0667	0.4379	0.0109	0.0026	0.0135
62.1	0.4366	0.0109	0	0.0109
62.1333	0.4405	0	0	0
62.1667	0.4412	0	0.0013	0.0013
62.2	0.4382	0	0.0013	0.0013
62.2333	0.4448	0	0.0013	0.0013
62.2667	0.4418	0.0109	0.0013	0.0122
62.3	0.4451	0.0109	0	0.0109
62.3333	0.4448	0	0	0
62.3667	0.4477	0.0109	0	0.0109
62.4	0.451	0.0241	0.0013	0.0254
62.4333	0.4537	0.0109	0	0.0109
62.4667	0.4576	0.0109	0.0013	0.0122
62.5	0.4586	0.0109	0	0.0109

62.5333	0.4612	0.0109	0	0.0109
62.5667	0.4658	0.0109	0.0013	0.0122
62.6	0.4682	0	0	0
62.6333	0.4731	0	0.0013	0.0013
62.6667	0.4754	0.0109	0	0.0109
62.7	0.4823	0.0109	0.0013	0.0122
62.7333	0.4905	0.0109	0.0013	0.0122
62.7667	0.4895	0	0.0013	0.0013
62.8	0.4971	0	0	0
62.8333	0.4994	0.0109	0.0013	0.0122
62.8667	0.5037	0	0	0
62.9	0.5106	0.0109	0	0.0109
62.9333	0.5129	0.0109	0.0026	0.0135
62.9667	0.5205	0	0.0013	0.0013
63	0.5234	0.0109	0.0026	0.0135
63.0333	0.5274	0.0109	0.0013	0.0122
63.0667	0.534	0	0	0
63.1	0.5369	0	0	0
63.1333	0.5425	0	0.0013	0.0013
63.1667	0.5429	0	0	0
63.2	0.5498	0	0	0
63.2333	0.5541	0.0109	0.0013	0.0122
63.2667	0.5583	0	0.0013	0.0013
63.3	0.5603	0	0	0
63.3333	0.5649	0	0.0013	0.0013
63.3667	0.5656	0	0.0013	0.0013
63.4	0.5718	0.0109	0.0013	0.0122
63.4333	0.5758	0.0109	0.0013	0.0122
63.4667	0.5781	0.0109	0.0013	0.0122
63.5	0.5827	0.0109	0.0013	0.0122
63.5333	0.5827	0.0241	0.0013	0.0254
63.5667	0.5909	0.0109	0.0013	0.0122
63.6	0.5936	0	0	0
63.6333	0.5945	0	0.0013	0.0013
63.6667	0.5975	0	0.0013	0.0013
63.7	0.6031	0	0.0026	0.0026
63.7333	0.6041	0	0	0
63.7667	0.6067	0.0109	0.0013	0.0122
63.8	0.6094	0.0241	0.0013	0.0254
63.8333	0.6123	0.0241	0.0026	0.0267
63.8667	0.6186	0	0.0013	0.0013
63.9	0.6173	0	0.0013	0.0013
63.9333	0.6192	0	0	0
63.9667	0.6196	0.0109	0.0013	0.0122
64	0.6202	0	0	0
64.0333	0.6205	0.0109	0	0.0109
64.0667	0.6235	0.0241	0	0.0241

64.1	0.6245	0	0	0
64.1333	0.6238	0	0.0026	0.0026
64.1667	0.6222	0.0109	0.0013	0.0122
64.2	0.6251	0.0241	0.0026	0.0267
64.2333	0.6265	0	0.0026	0.0026
64.2667	0.6284	0.0109	0	0.0109
64.3	0.6281	0	0	0
64.3333	0.6291	0.0109	0	0.0109
64.3667	0.6275	0.0109	0	0.0109
64.4	0.6291	0.0109	0	0.0109
64.4333	0.6261	0.0241	0	0.0241
64.4667	0.6288	0.0241	0.0026	0.0267
64.5	0.6304	0.0109	0	0.0109
64.5333	0.6311	0	0.0013	0.0013
64.5667	0.6304	0	0	0
64.6	0.6298	0.0109	0	0.0109
64.6333	0.634	0.0109	0	0.0109
64.6667	0.6317	0	0.0013	0.0013
64.7	0.6327	0.0109	0.0013	0.0122
64.7333	0.6344	0	0	0
64.7667	0.6311	0	0	0
64.8	0.6314	0.0241	0	0.0241
64.8333	0.6314	0	0	0
64.8667	0.6294	0.0109	0.0013	0.0122
64.9	0.6314	0.0372	0.0013	0.0385
64.9333	0.6307	0	0.0013	0.0013
64.9667	0.6317	0.0109	0	0.0109
65	0.6314	0.0109	0.0026	0.0135
65.0333	0.6321	0.0241	0.0013	0.0254
65.0667	0.6291	0.0109	0	0.0109
65.1	0.6278	0	0	0
65.1333	0.6288	0.0109	0.0013	0.0122
65.1667	0.6291	0	0.0013	0.0013
65.2	0.6261	0.0109	0	0.0109
65.2333	0.6258	0.0109	0.0013	0.0122
65.2667	0.6278	0.0109	0	0.0109
65.3	0.6205	0	0	0
65.3333	0.6228	0.0109	0.0013	0.0122
65.3667	0.6235	0.0241	0	0.0241
65.4	0.6242	0.0241	0.0026	0.0267
65.4333	0.6199	0	0.0026	0.0026
65.4667	0.6215	0.0109	0	0.0109
65.5	0.6212	0.0109	0	0.0109
65.5333	0.6192	0.0241	0	0.0241
65.5667	0.6189	0	0.0013	0.0013
65.6	0.6146	0	0.0013	0.0013
65.6333	0.6182	0.0109	0	0.0109

65.6667	0.6169	0.0109	0	0.0109
65.7	0.6159	0.0109	0.0013	0.0122
65.7333	0.6153	0	0	0
65.7667	0.6136	0.0109	0.0013	0.0122
65.8	0.6149	0	0	0
65.8333	0.6146	0	0.0013	0.0013
65.8667	0.6103	0	0	0
65.9	0.6113	0	0	0
65.9333	0.6087	0.0109	0.0026	0.0135
65.9667	0.6097	0	0.0013	0.0013
66	0.6087	0.0109	0.0013	0.0122
66.0333	0.6107	0	0.0013	0.0013
66.0667	0.611	0.0109	0	0.0109
66.1	0.6061	0	0	0
66.1333	0.6084	0	0.0026	0.0026
66.1667	0.6077	0.0109	0.0013	0.0122
66.2	0.609	0.0109	0.0013	0.0122
66.2333	0.6051	0	0.0013	0.0013
66.2667	0.6084	0	0	0
66.3	0.6061	0	0.0013	0.0013
66.3333	0.6047	0.0241	0	0.0241
66.3667	0.607	0.0109	0.0013	0.0122
66.4	0.6067	0.0109	0	0.0109
66.4333	0.6051	0	0.0013	0.0013
66.4667	0.6011	0.0109	0	0.0109
66.5	0.6041	0	0.0026	0.0026
66.5333	0.6057	0	0	0
66.5667	0.6021	0	0.0026	0.0026
66.6	0.6028	0.0109	0.0013	0.0122
66.6333	0.6021	0.0109	0	0.0109
66.6667	0.6008	0.0109	0	0.0109
66.7	0.6005	0.0109	0	0.0109
66.7333	0.6038	0.0241	0	0.0241
66.7667	0.6005	0.0241	0.0026	0.0267
66.8	0.6018	0.0109	0.0013	0.0122
66.8333	0.6001	0	0.0013	0.0013
66.8667	0.6005	0	0.0013	0.0013
66.9	0.6011	0	0.0026	0.0026
66.9333	0.6038	0	0	0
66.9667	0.6008	0	0	0
67	0.6005	0	0	0
67.0333	0.6044	0	0	0
67.0667	0.6011	0	0	0
67.1	0.6021	0	0	0
67.1333	0.6024	0.0109	0.0013	0.0122
67.1667	0.6034	0.0109	0	0.0109
67.2	0.5982	0	0.0013	0.0013

67.2333	0.6038	0	0.0013	0.0013
67.2667	0.6015	0	0	0
67.3	0.6044	0.0109	0	0.0109
67.3333	0.6024	0.0109	0.0013	0.0122
67.3667	0.6031	0.0109	0.0026	0.0135
67.4	0.6038	0	0	0
67.4333	0.6034	0	0.0013	0.0013
67.4667	0.6021	0.0109	0	0.0109
67.5	0.6008	0	0	0
67.5333	0.6005	0	0.0013	0.0013
67.5667	0.6015	0	0.0013	0.0013
67.6	0.6047	0	0	0
67.6333	0.6041	0	0	0
67.6667	0.6021	0	0	0
67.7	0.6024	0	0.0013	0.0013
67.7333	0.6044	0.0109	0	0.0109
67.7667	0.6054	0.0109	0.0013	0.0122
67.8	0.6064	0	0	0
67.8333	0.6074	0	0	0
67.8667	0.6077	0.0109	0.0013	0.0122
67.9	0.6074	0.0109	0	0.0109
67.9333	0.608	0	0	0
67.9667	0.608	0	0.0013	0.0013
68	0.6067	0	0	0
68.0333	0.6054	0	0	0
68.0667	0.6054	0	0.0013	0.0013
68.1	0.6077	0.0109	0	0.0109
68.1333	0.6077	0	0	0
68.1667	0.6061	0	0.0013	0.0013
68.2	0.6054	0.0109	0.0013	0.0122
68.2333	0.6094	0.0109	0.0026	0.0135
68.2667	0.611	0	0	0
68.3	0.6087	0	0.0013	0.0013
68.3333	0.6084	0.0109	0	0.0109
68.3667	0.6094	0.0109	0	0.0109
68.4	0.61	0.0109	0	0.0109
68.4333	0.611	0.0109	0.0013	0.0122
68.4667	0.611	0	0	0
68.5	0.612	0.0109	0	0.0109
68.5333	0.6136	0	0	0
68.5667	0.6123	0.0109	0.0013	0.0122
68.6	0.6136	0.0109	0.0013	0.0122
68.6333	0.6159	0.0109	0.0013	0.0122
68.6667	0.6117	0	0.0013	0.0013
68.7	0.6136	0.0109	0.0013	0.0122
68.7333	0.6126	0	0.0013	0.0013
68.7667	0.6126	0	0	0

68.8	0.6146	0	0	0
68.8333	0.612	0.0109	0	0.0109
68.8667	0.6136	0.0241	0	0.0241
68.9	0.6163	0.0109	0.0026	0.0135
68.9333	0.6113	0.0241	0	0.0241
68.9667	0.6149	0.0109	0.0013	0.0122
69	0.6153	0	0.0013	0.0013
69.0333	0.6146	0.0109	0.0026	0.0135
69.0667	0.6133	0	0	0
69.1	0.5939	0.0109	0.0013	0.0122
69.1333	0.5712	0.0109	0	0.0109
69.1667	0.5491	0	0	0
69.2	0.5274	0.0109	0	0.0109
69.2333	0.51	0.0109	0.0013	0.0122
69.2667	0.4915	0.0109	0	0.0109
69.3	0.4629	0.0109	0.0013	0.0122
69.3333	0.4392	0.0241	0	0.0241
69.3667	0.4112	0.0109	0	0.0109
69.4	0.3898	0	0.0013	0.0013
69.4333	0.3655	0	0.0026	0.0026
69.4667	0.3467	0	0	0
69.5	0.3266	0	0.0013	0.0013
69.5333	0.3062	0.0109	0.0013	0.0122
69.5667	0.2871	0	0.0013	0.0013
69.6	0.268	0.0109	0.0013	0.0122
69.6333	0.2522	0	0	0
69.6667	0.2358	0	0	0
69.7	0.2206	0.0109	0.0013	0.0122
69.7333	0.2035	0	0.0026	0.0026
69.7667	0.1927	0.0109	0.0013	0.0122
69.8	0.1798	0	0.0013	0.0013
69.8333	0.1627	0	0.0013	0.0013
69.8667	0.1515	0	0	0
69.9	0.1423	0	0.0013	0.0013
69.9333	0.1318	0	0.0013	0.0013
69.9667	0.1222	0	0.0013	0.0013
70	0.111	0	0.0013	0.0013
70.0333	0.1012	0.0241	0	0.0241
70.0667	0.0929	0.0241	0.0013	0.0254
70.1	0.086	0.0109	0.0013	0.0122
70.1333	0.0801	0	0.0013	0.0013
70.1667	0.0679	0.0109	0	0.0109
70.2	0.064	0	0	0
70.2333	0.0571	0	0.0013	0.0013
70.2667	0.0511	0	0.0013	0.0013
70.3	0.0455	0	0	0
70.3333	0.0399	0.0109	0.0013	0.0122

70.3667	0.0357	0.0109	0.0013	0.0122
70.4	0.033	0.0109	0.0013	0.0122
70.4333	0.0261	0	0.0013	0.0013
70.4667	0.0215	0.0109	0.0013	0.0122
70.5	0.0205	0.0109	0.0013	0.0122
70.5333	0.0116	0.0109	0.0026	0.0135
70.5667	0.01	0.0109	0.0013	0.0122
70.6	0.009	0.0109	0.0013	0.0122
70.6333	0.0051	0.0109	0.0013	0.0122
70.6667	0.0037	0.0109	0.0013	0.0122
70.7	0.0018	0	0.0013	0.0013
70.7333	-0.0002	0	0	0
70.7667	-0.0051	0	0	0
70.8	-0.0032	0.0109	0.0013	0.0122
70.8333	-0.0068	0.0109	0	0.0109
70.8667	-0.0071	0	0	0
70.9	-0.0101	0.0109	0.0026	0.0135
70.9333	-0.0104	0.0109	0.0026	0.0135
70.9667	-0.0124	0.0241	0.0013	0.0254
71	-0.016	0	0.0013	0.0013
71.0333	-0.0153	0.0109	0	0.0109
71.0667	-0.0163	0	0.0013	0.0013
71.1	-0.0157	0.0109	0.0013	0.0122
71.1333	-0.0163	0.0109	0.0013	0.0122
71.1667	-0.0183	0	0	0
71.2	-0.0196	0	0.0013	0.0013
71.2333	-0.0173	0	0	0
71.2667	-0.0196	0	0.0026	0.0026
71.3	-0.0206	0.0109	0	0.0109
71.3333	-0.0196	0.0241	0	0.0241
71.3667	-0.0193	0.0109	0.0013	0.0122
71.4	-0.0213	0.0372	0.0013	0.0385
71.4333	-0.0229	0.0109	0.0013	0.0122
71.4667	-0.0223	0.0109	0.0013	0.0122
71.5	-0.0196	0.0109	0	0.0109
71.5333	-0.0236	0.0109	0	0.0109
71.5667	-0.0249	0	0.0013	0.0013
71.6	-0.0239	0.0109	0.0013	0.0122
71.6333	-0.0249	0	0.0026	0.0026
71.6667	-0.0226	0	0.0013	0.0013
71.7	-0.0265	0	0	0
71.7333	-0.0236	0.0109	0	0.0109
71.7667	-0.0216	0	0	0
71.8	-0.0203	0	0	0
71.8333	-0.0242	0	0	0
71.8667	-0.0259	0	0.0013	0.0013
71.9	-0.0265	0	0.0013	0.0013

71.9333	-0.0232	0.0109	0.0013	0.0122
71.9667	-0.0242	0	0	0
72	-0.0236	0.0109	0.0013	0.0122
72.0333	-0.0223	0.0109	0	0.0109
72.0667	-0.0242	0	0	0
72.1	-0.0232	0	0.0013	0.0013
72.1333	-0.0232	0.0109	0.0013	0.0122
72.1667	-0.0269	0.0109	0	0.0109
72.2	-0.0223	0.0109	0.0013	0.0122
72.2333	-0.0223	0	0	0
72.2667	-0.0249	0.0241	0.0013	0.0254
72.3	-0.0265	0	0.0013	0.0013
72.3333	-0.0252	0.0109	0	0.0109
72.3667	-0.0249	0	0	0
72.4	-0.0229	0.0241	0.0013	0.0254
72.4333	-0.0259	0.0109	0	0.0109
72.4667	-0.0265	0.0109	0	0.0109
72.5	-0.0226	0.0109	0.0013	0.0122
72.5333	-0.0229	0.0109	0.0026	0.0135
72.5667	-0.0239	0.0241	0	0.0241
72.6	-0.0236	0.0109	0.0013	0.0122
72.6333	-0.0259	0.0109	0	0.0109
72.6667	-0.0232	0	0.0013	0.0013
72.7	-0.0265	0	0	0
72.7333	-0.0262	0	0	0
72.7667	-0.0226	0.0109	0.0013	0.0122
72.8	-0.0262	0.0109	0	0.0109
72.8333	-0.0275	0.0109	0.0013	0.0122
72.8667	-0.0252	0	0.0026	0.0026
72.9	-0.0219	0	0.0013	0.0013
72.9333	-0.0269	0	0.0013	0.0013
72.9667	-0.0265	0.0241	0	0.0241
73	-0.0226	0	0	0
73.0333	-0.0275	0	0	0
73.0667	-0.0239	0	0	0
73.1	-0.0259	0.0241	0.0013	0.0254
73.1333	-0.0255	0.0109	0.0013	0.0122
73.1667	-0.0265	0	0	0
73.2	-0.0216	0.0109	0.0013	0.0122
73.2333	-0.0255	0.0241	0.0013	0.0254
73.2667	-0.0203	0.0109	0.0013	0.0122
73.3	-0.0252	0.0109	0.0013	0.0122
73.3333	-0.0246	0.0109	0.0013	0.0122
73.3667	-0.0239	0	0	0
73.4	-0.0249	0.0241	0	0.0241
73.4333	-0.0249	0.0109	0	0.0109
73.4667	-0.0269	0	0	0

73.5	-0.0236	0.0241	0	0.0241
73.5333	-0.0265	0	0	0
73.5667	-0.0223	0	0	0
73.6	-0.0242	0.0109	0.0013	0.0122
73.6333	-0.0242	0	0	0
73.6667	-0.0219	0.0109	0.0013	0.0122
73.7	-0.0236	0	0	0
73.7333	-0.0219	0	0.0013	0.0013
73.7667	-0.0236	0	0	0
73.8	-0.0249	0	0.0013	0.0013
73.8333	-0.0236	0	0	0
73.8667	-0.0252	0	0	0
73.9	-0.0262	0.0109	0.0013	0.0122
73.9333	-0.0239	0	0.0013	0.0013
73.9667	-0.0242	0	0.0026	0.0026
74	-0.0249	0	0.0013	0.0013
74.0333	-0.0226	0	0.0013	0.0013
74.0667	-0.0239	0	0.0013	0.0013
74.1	-0.0249	0.0109	0	0.0109
74.1333	-0.0223	0	0.0026	0.0026
74.1667	-0.0226	0	0.0026	0.0026
74.2	-0.0239	0	0.0039	0.0039
74.2333	-0.0246	0	0.0013	0.0013
74.2667	-0.0232	0.0109	0	0.0109
74.3	-0.0209	0.0109	0.0013	0.0122
74.3333	-0.0213	0	0.0013	0.0013
74.3667	-0.0209	0.0109	0	0.0109
74.4	-0.0249	0	0.0013	0.0013
74.4333	-0.0236	0.0109	0.0013	0.0122
74.4667	-0.0249	0.0109	0	0.0109
74.5	-0.0239	0	0.0013	0.0013
74.5333	-0.0236	0	0.0013	0.0013
74.5667	-0.0196	0.0241	0.0013	0.0254
74.6	-0.0229	0.0109	0	0.0109
74.6333	-0.0219	0.0241	0.0013	0.0254
74.6667	-0.0209	0	0	0
74.7	-0.0232	0.0241	0	0.0241
74.7333	-0.0239	0	0.0026	0.0026
74.7667	-0.0246	0	0	0
74.8	-0.0239	0.0109	0.0013	0.0122
74.8333	-0.0249	0	0.0013	0.0013
74.8667	-0.02	0	0	0
74.9	-0.0223	0	0.0013	0.0013
74.9333	-0.019	0.0109	0.0013	0.0122
74.9667	-0.0193	0.0109	0	0.0109
75	-0.0229	0.0109	0	0.0109
75.0333	-0.0173	0	0.0013	0.0013

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75.0667	-0.019	0.0109	0.0013	0.0122
75.1	-0.0193	0	0	0
75.1333	-0.0219	0	0	0
75.1667	-0.0193	0	0.0039	0.0039
75.2	-0.0206	0.0109	0	0.0109
75.2333	-0.0213	0.0109	0.0013	0.0122
75.2667	-0.0216	0	0	0
75.3	-0.0193	0	0.0013	0.0013
75.3333	-0.0213	0	0.0013	0.0013
75.3667	-0.019	0	0.0013	0.0013
75.4	-0.0206	0.0109	0.0026	0.0135
75.4333	-0.0236	0	0.0013	0.0013
75.4667	-0.0219	0	0	0
75.5	-0.0216	0.0109	0	0.0109
75.5333	-0.0232	0	0	0
75.5667	-0.02	0.0109	0	0.0109
75.6	-0.0196	0.0109	0	0.0109
75.6333	-0.0219	0.0109	0.0013	0.0122
75.6667	-0.0183	0.0241	0.0013	0.0254
75.7	-0.0229	0.0109	0	0.0109
75.7333	-0.0209	0	0.0013	0.0013
75.7667	-0.0219	0	0.0013	0.0013
75.8	-0.019	0.0109	0.0013	0.0122
75.8333	-0.019	0.0109	0.0013	0.0122
75.8667	-0.0223	0	0.0013	0.0013
75.9	-0.0242	0	0	0
75.9333	-0.0203	0	0	0
75.9667	-0.0213	0.0241	0.0013	0.0254
76	-0.0219	0.0241	0.0013	0.0254
76.0333	-0.0236	0	0.0013	0.0013
76.0667	-0.0249	0	0	0
76.1	-0.0226	0	0	0
76.1333	-0.02	0	0	0
76.1667	-0.0226	0	0	0
76.2	-0.0226	0	0	0
76.2333	-0.0203	0.0109	0	0.0109
76.2667	-0.0209	0.0109	0.0013	0.0122
76.3	-0.0232	0.0109	0.0013	0.0122
76.3333	-0.0203	0	0	0
76.3667	-0.0196	0	0	0
76.4	-0.0219	0.0109	0.0013	0.0122
76.4333	-0.0229	0	0	0
76.4667	-0.0242	0	0	0
76.5	-0.0229	0.0241	0	0.0241
76.5333	-0.0232	0.0109	0.0013	0.0122
76.5667	-0.0196	0.0109	0.0026	0.0135
76.6	-0.0249	0	0.0013	0.0013

76.6333	-0.0213	0	0.0013	0.0013
76.6667	-0.0203	0	0.0013	0.0013
76.7	-0.0239	0	0.0013	0.0013
76.7333	-0.0252	0.0109	0	0.0109
76.7667	-0.0223	0	0.0013	0.0013
76.8	-0.0226	0	0	0
76.8333	-0.0249	0.0109	0	0.0109
76.8667	-0.0226	0.0109	0	0.0109
76.9	-0.0223	0.0109	0.0013	0.0122
76.9333	-0.0229	0.0241	0.0013	0.0254
76.9667	-0.0236	0	0	0
77	-0.0223	0	0.0013	0.0013
77.0333	-0.0229	0	0.0013	0.0013
77.0667	-0.0223	0	0	0
77.1	-0.0255	0	0.0013	0.0013
77.1333	-0.0226	0.0109	0	0.0109
77.1667	-0.0213	0.0109	0.0013	0.0122
77.2	-0.0282	0.0109	0	0.0109
77.2333	-0.0242	0	0.0013	0.0013
77.2667	-0.0236	0	0	0
77.3	-0.0246	0	0.0013	0.0013
77.3333	-0.0242	0	0.0013	0.0013
77.3667	-0.0216	0	0.0026	0.0026
77.4	-0.0262	0.0241	0.0013	0.0254
77.4333	-0.0249	0	0	0
77.4667	-0.0223	0	0	0
77.5	-0.0196	0.0109	0	0.0109
77.5333	-0.0239	0.0109	0	0.0109
77.5667	-0.0226	0.0109	0.0013	0.0122
77.6	-0.0203	0	0	0
77.6333	-0.0229	0.0109	0.0013	0.0122
77.6667	-0.0255	0.0109	0.0013	0.0122
77.7	-0.0219	0.0241	0.0013	0.0254
77.7333	-0.0246	0.0109	0.0013	0.0122
77.7667	-0.0239	0.0109	0	0.0109
77.8	-0.0226	0.0109	0	0.0109
77.8333	-0.0232	0	0.0013	0.0013
77.8667	-0.0232	0.0241	0.0013	0.0254
77.9	-0.0232	0	0.0013	0.0013
77.9333	-0.0219	0.0109	0	0.0109
77.9667	-0.0229	0.0109	0	0.0109
78	-0.0216	0	0.0013	0.0013
78.0333	-0.0236	0.0109	0	0.0109
78.0667	-0.0229	0.0109	0	0.0109
78.1	-0.0236	0.0109	0	0.0109
78.1333	-0.0223	0.0109	0	0.0109
78.1667	-0.0226	0.0109	0.0013	0.0122

78.2	-0.0246	0.0241	0	0.0241
78.2333	-0.0246	0	0	0
78.2667	-0.0219	0	0.0013	0.0013
78.3	-0.0223	0.0109	0.0026	0.0135
78.3333	-0.0272	0	0.0013	0.0013
78.3667	-0.0259	0.0109	0.0013	0.0122
78.4	-0.0223	0.0109	0.0013	0.0122
78.4333	-0.0206	0.0109	0	0.0109
78.4667	-0.0259	0	0.0013	0.0013
78.5	-0.0259	0.0109	0.0026	0.0135
78.5333	-0.0206	0.0109	0	0.0109
78.5667	-0.0272	0	0	0
78.6	-0.0213	0.0109	0	0.0109
78.6333	-0.0246	0	0.0013	0.0013
78.6667	-0.0242	0	0	0
78.7	-0.0239	0.0109	0.0013	0.0122
78.7333	-0.0223	0.0109	0	0.0109
78.7667	-0.0232	0.0241	0.0013	0.0254
78.8	-0.0226	0.0241	0.0013	0.0254
78.8333	-0.0213	0.0109	0	0.0109
78.8667	-0.0236	0	0	0
78.9	-0.0252	0.0109	0	0.0109
78.9333	-0.0219	0	0.0026	0.0026
78.9667	-0.0236	0	0.0013	0.0013
79	-0.0259	0	0	0
79.0333	-0.0223	0	0	0
79.0667	-0.0255	0.0109	0	0.0109
79.1	-0.0219	0	0	0
79.1333	-0.0229	0.0109	0.0013	0.0122
79.1667	-0.0229	0.0109	0	0.0109
79.2	-0.0226	0	0.0013	0.0013
79.2333	-0.0216	0.0109	0	0.0109
79.2667	-0.0219	0	0	0
79.3	-0.0219	0	0	0
79.3333	-0.0232	0.0241	0.0013	0.0254
79.3667	-0.0229	0	0.0013	0.0013
79.4	-0.0246	0	0.0013	0.0013
79.4333	-0.0226	0.0109	0.0013	0.0122
79.4667	-0.0209	0.0109	0.0013	0.0122
79.5	-0.0216	0	0	0
79.5333	-0.0209	0.0109	0	0.0109
79.5667	-0.0226	0.0109	0	0.0109
79.6	-0.0209	0	0	0
79.6333	-0.0209	0	0	0
79.6667	-0.0249	0.0241	0	0.0241
79.7	-0.0216	0.0109	0	0.0109
79.7333	-0.0219	0.0109	0.0013	0.0122

79.7667	-0.0219	0	0	0
79.8	-0.0216	0.0109	0	0.0109
79.8333	-0.0223	0.0109	0.0013	0.0122
79.8667	-0.0242	0	0.0013	0.0013
79.9	-0.0249	0	0	0
79.9333	-0.0229	0.0109	0	0.0109
79.9667	-0.0209	0	0.0013	0.0013
80	-0.0219	0	0	0
80.0333	-0.0206	0.0109	0.0013	0.0122
80.0667	-0.0229	0	0.0013	0.0013
80.1	-0.0223	0	0	0
80.1333	-0.0236	0.0109	0	0.0109
80.1667	-0.0229	0	0	0
80.2	-0.0213	0.0109	0	0.0109
80.2333	-0.0242	0.0109	0	0.0109
80.2667	-0.0219	0.0109	0.0013	0.0122
80.3	-0.0249	0	0.0013	0.0013
80.3333	-0.0223	0	0	0
80.3667	-0.0255	0	0.0013	0.0013
80.4	-0.0255	0.0109	0.0013	0.0122
80.4333	-0.0236	0.0241	0	0.0241
80.4667	-0.0255	0	0.0013	0.0013
80.5	-0.0252	0.0109	0	0.0109
80.5333	-0.0226	0.0109	0.0013	0.0122
80.5667	-0.0229	0.0109	0.0013	0.0122
80.6	-0.0226	0	0.0026	0.0026
80.6333	-0.0249	0.0109	0	0.0109
80.6667	-0.0242	0.0109	0	0.0109
80.7	-0.0236	0.0241	0	0.0241
80.7333	-0.018	0	0.0013	0.0013
80.7667	0.0057	0.0109	0.0013	0.0122
80.8	0.0304	0	0.0013	0.0013
80.8333	0.0544	0.0109	0.0013	0.0122
80.8667	0.0748	0	0.0013	0.0013
80.9	0.0933	0.0241	0	0.0241
80.9333	0.118	0	0	0
80.9667	0.1367	0	0.0026	0.0026
81	0.1571	0	0.0013	0.0013
81.0333	0.1742	0.0109	0	0.0109
81.0667	0.1933	0	0.0013	0.0013
81.1	0.2078	0	0	0
81.1333	0.2236	0	0	0
81.1667	0.2391	0	0.0013	0.0013
81.2	0.2536	0	0.0013	0.0013
81.2333	0.269	0	0.0013	0.0013
81.2667	0.2852	0	0.0013	0.0013
81.3	0.2983	0.0109	0.0013	0.0122

81.3333	0.3121	0.0109	0.0013	0.0122
81.3667	0.3247	0.0241	0	0.0241
81.4	0.3385	0	0.0013	0.0013
81.4333	0.3483	0	0.0013	0.0013
81.4667	0.3602	0	0.0013	0.0013
81.5	0.3714	0	0	0
81.5333	0.3806	0.0109	0.0013	0.0122
81.5667	0.3918	0	0	0
81.6	0.3994	0.0109	0	0.0109
81.6333	0.4096	0.0109	0	0.0109
81.6667	0.4208	0.0109	0	0.0109
81.7	0.4303	0	0	0
81.7333	0.4402	0	0.0013	0.0013
81.7667	0.4504	0.0109	0.0013	0.0122
81.8	0.457	0.0109	0	0.0109
81.8333	0.4652	0.0109	0	0.0109
81.8667	0.4728	0	0	0
81.9	0.4793	0	0.0013	0.0013
81.9333	0.4876	0.0109	0.0013	0.0122
81.9667	0.4945	0	0	0
82	0.5021	0.0109	0.0026	0.0135
82.0333	0.5086	0	0	0
82.0667	0.5126	0	0.0026	0.0026
82.1	0.5208	0.0109	0.0026	0.0135
82.1333	0.5284	0.0372	0	0.0372
82.1667	0.5323	0.0109	0	0.0109
82.2	0.5353	0	0	0
82.2333	0.5422	0.0109	0.0013	0.0122
82.2667	0.5445	0	0	0
82.3	0.5501	0	0.0013	0.0013
82.3333	0.559	0.0109	0.0013	0.0122
82.3667	0.5629	0	0	0
82.4	0.5676	0.0241	0.0013	0.0254
82.4333	0.5676	0	0	0
82.4667	0.5761	0	0.0013	0.0013
82.5	0.5787	0.0109	0	0.0109
82.5333	0.5853	0.0109	0.0013	0.0122
82.5667	0.5876	0.0109	0	0.0109
82.6	0.5939	0	0	0
82.6333	0.5949	0.0109	0	0.0109
82.6667	0.6031	0	0.0013	0.0013
82.7	0.6015	0	0.0013	0.0013
82.7333	0.6064	0.0109	0.0039	0.0148
82.7667	0.6117	0	0	0
82.8	0.6143	0	0	0
82.8333	0.6179	0	0	0
82.8667	0.6219	0	0.0013	0.0013

82.9	0.6222	0	0.0013	0.0013
82.9333	0.6261	0	0.0013	0.0013
82.9667	0.6271	0.0109	0	0.0109
83	0.6281	0	0.0026	0.0026
83.0333	0.6301	0.0109	0	0.0109
83.0667	0.6301	0	0	0
83.1	0.6334	0	0	0
83.1333	0.634	0.0109	0	0.0109
83.1667	0.6327	0	0	0
83.2	0.6334	0.0241	0.0026	0.0267
83.2333	0.6334	0.0109	0.0013	0.0122
83.2667	0.634	0.0109	0.0013	0.0122
83.3	0.636	0	0.0013	0.0013
83.3333	0.6373	0.0109	0	0.0109
83.3667	0.6373	0.0109	0.0013	0.0122
83.4	0.6327	0.0109	0	0.0109
83.4333	0.639	0.0372	0	0.0372
83.4667	0.6357	0	0.0013	0.0013
83.5	0.637	0	0	0
83.5333	0.635	0.0109	0	0.0109
83.5667	0.6367	0.0109	0.0013	0.0122
83.6	0.6354	0.0109	0	0.0109
83.6333	0.6344	0	0	0
83.6667	0.6347	0	0	0
83.7	0.638	0	0.0013	0.0013
83.7333	0.6357	0.0241	0	0.0241
83.7667	0.6363	0.0109	0	0.0109
83.8	0.6363	0.0109	0.0013	0.0122
83.8333	0.634	0	0	0
83.8667	0.6344	0	0.0013	0.0013
83.9	0.6327	0.0109	0.0026	0.0135
83.9333	0.6327	0.0109	0	0.0109
83.9667	0.633	0	0.0013	0.0013
84	0.6321	0.0109	0	0.0109
84.0333	0.6321	0.0109	0	0.0109
84.0667	0.6311	0	0	0
84.1	0.6327	0	0.0013	0.0013
84.1333	0.6301	0	0	0
84.1667	0.6304	0	0.0013	0.0013
84.2	0.6324	0	0	0
84.2333	0.6301	0.0109	0	0.0109
84.2667	0.6298	0.0109	0.0013	0.0122
84.3	0.6314	0.0109	0.0013	0.0122
84.3333	0.6291	0.0109	0.0013	0.0122
84.3667	0.6278	0.0109	0.0013	0.0122
84.4	0.6275	0	0	0
84.4333	0.6291	0	0.0013	0.0013

84.4667	0.6275	0.0109	0	0.0109
84.5	0.6278	0	0	0
84.5333	0.6278	0.0109	0.0013	0.0122
84.5667	0.6288	0	0	0
84.6	0.6288	0	0	0
84.6333	0.6275	0.0241	0	0.0241
84.6667	0.6284	0	0.0013	0.0013
84.7	0.6261	0.0109	0.0013	0.0122
84.7333	0.6278	0	0.0013	0.0013
84.7667	0.6284	0	0	0
84.8	0.6258	0	0.0013	0.0013
84.8333	0.6232	0	0	0
84.8667	0.6255	0	0	0
84.9	0.6251	0	0	0
84.9333	0.6281	0	0	0
84.9667	0.6248	0.0109	0	0.0109
85	0.6242	0.0109	0	0.0109
85.0333	0.6255	0.0109	0.0013	0.0122
85.0667	0.6268	0	0	0
85.1	0.6242	0	0	0
85.1333	0.6265	0	0	0
85.1667	0.6248	0	0.0026	0.0026
85.2	0.6238	0.0109	0	0.0109
85.2333	0.6248	0.0109	0	0.0109
85.2667	0.6219	0	0	0
85.3	0.6242	0	0	0
85.3333	0.6222	0	0.0013	0.0013
85.3667	0.6261	0.0109	0	0.0109
85.4	0.6238	0	0.0013	0.0013
85.4333	0.6235	0.0109	0	0.0109
85.4667	0.6258	0	0.0013	0.0013
85.5	0.6212	0	0	0
85.5333	0.6248	0	0	0
85.5667	0.6258	0	0	0
85.6	0.6228	0.0109	0	0.0109
85.6333	0.6235	0	0.0013	0.0013
85.6667	0.6242	0.0109	0	0.0109
85.7	0.6225	0	0.0013	0.0013
85.7333	0.6228	0.0109	0.0026	0.0135
85.7667	0.6235	0	0	0
85.8	0.6215	0	0.0013	0.0013
85.8333	0.6248	0.0109	0	0.0109
85.8667	0.6228	0	0	0
85.9	0.6219	0.0109	0.0013	0.0122
85.9333	0.6255	0	0.0013	0.0013
85.9667	0.6265	0	0	0
86	0.6219	0	0.8153	0.8153

86.0333	0.6222	0.0109	0.8179	0.8288
86.0667	0.6225	0.0109	0.8219	0.8328
86.1	0.6238	0	0.8245	0.8245
86.1333	0.6248	0.0109	0.8232	0.8341
86.1667	0.6225	0.0109	0.8284	0.8393
86.2	0.6232	0	0.8297	0.8297
86.2333	0.6235	0	0.8363	0.8363
86.2667	0.6255	0.0109	0.8363	0.8472
86.3	0.6261	0	0.839	0.839
86.3333	0.6255	0	0.8376	0.8376
86.3667	0.6245	0	0.8429	0.8429
86.4	0.6238	0	0.8442	0.8442
86.4333	0.6248	0.0109	0.8508	0.8617
86.4667	0.6255	0	0.8521	0.8521
86.5	0.6248	0.0109	0.856	0.8669
86.5333	0.6238	0	0.8613	0.8613
86.5667	0.6258	0.0109	0.8613	0.8722
86.6	0.6238	0.0109	0.86	0.8709
86.6333	0.6225	0	0.8626	0.8626
86.6667	0.6219	0	0.8587	0.8587
86.7	0.6248	0	0.8639	0.8639
86.7333	0.6242	0	0.8679	0.8679
86.7667	0.6235	0	0.8626	0.8626
86.8	0.6258	0	0.8587	0.8587
86.8333	0.6225	0	0.8692	0.8692
86.8667	0.6242	0	0.8679	0.8679
86.9	0.6255	0.0109	0.8731	0.884
86.9333	0.6232	0.0109	0.8666	0.8775
86.9667	0.6281	0	0.8718	0.8718
87	0.6242	0	0.8745	0.8745
87.0333	0.6222	0.0109	0.8731	0.884
87.0667	0.6255	0	0.8797	0.8797
87.1	0.6209	0	0.8771	0.8771
87.1333	0.6251	0	0.8784	0.8784
87.1667	0.6261	0	0.881	0.881
87.2	0.6248	0.0241	0.8797	0.9038
87.2333	0.6248	0	0.8823	0.8823
87.2667	0.6235	0	0.881	0.881
87.3	0.6275	0.0109	0.885	0.8959
87.3333	0.6255	0.0109	0.8876	0.8985
87.3667	0.6261	0	0.8902	0.8902
87.4	0.6251	0	0.885	0.885
87.4333	0.6265	0.0241	0.8929	0.9169
87.4667	0.6235	0	0.8968	0.8968
87.5	0.6261	0.0109	0.8929	0.9038
87.5333	0.6268	0	0.9021	0.9021
87.5667	0.6258	0.0109	0.8968	0.9077

87.6	0.6251	0.0241	0.9034	0.9274
87.6333	0.6255	0.0109	0.9021	0.913
87.6667	0.6251	0.0109	0.9034	0.9143
87.7	0.6258	0.0109	0.9034	0.9143
87.7333	0.6228	0	0.906	0.906
87.7667	0.6251	0.0241	0.9034	0.9274
87.8	0.6261	0	0.9073	0.9073
87.8333	0.6245	0	0.9047	0.9047
87.8667	0.6268	0.0109	0.9073	0.9182
87.9	0.6245	0.0109	0.91	0.9209
87.9333	0.6271	0.0109	0.9126	0.9235
87.9667	0.6265	0.0109	0.9205	0.9314
88	0.6255	0	0.9244	0.9244
88.0333	0.5968	0.0109	0.9179	0.9288
88.0667	0.5629	0.0109	0.9205	0.9314
88.1	0.5313	0	0.9231	0.9231
88.1333	0.4991	0	0.9205	0.9205
88.1667	0.4708	0	0.9218	0.9218
88.2	0.4435	0.0109	0.9205	0.9314
88.2333	0.4142	0.0109	0.9152	0.9261
88.2667	0.3882	0	0.9152	0.9152
88.3	0.3655	0	0.91	0.91
88.3333	0.3404	0	0.906	0.906
88.3667	0.3191	0	0.8994	0.8994
88.4	0.298	0.0109	0.8994	0.9103
88.4333	0.2776	0.0109	0.8955	0.9064
88.4667	0.2582	0	0.8837	0.8837
88.5	0.2374	0.0241	0.8784	0.9025
88.5333	0.2236	0.0109	0.8679	0.8788
88.5667	0.2055	0	0.8666	0.8666
88.6	0.1917	0	0.86	0.86
88.6333	0.1756	0.0109	0.8534	0.8643
88.6667	0.1617	0	0.8429	0.8429
88.7	0.1456	0.0109	0.8482	0.8591
88.7333	0.1334	0.0109	0.8376	0.8485
88.7667	0.1219	0.0109	0.8311	0.842
88.8	0.1094	0	0.8258	0.8258
88.8333	0.0989	0	0.8192	0.8192
88.8667	0.09	0	0.8113	0.8113
88.9	0.0801	0	0.8034	0.8034
88.9333	0.0706	0.0109	0.7942	0.8051
88.9667	0.064	0	0.7837	0.7837
89	0.0571	0	0.7758	0.7758
89.0333	0.0469	0	0.7627	0.7627
89.0667	0.0403	0	0.7587	0.7587
89.1	0.0344	0	0.7482	0.7482
89.1333	0.0288	0	0.7351	0.7351

89.1667	0.0235	0.0109	0.7351	0.746
89.2	0.0179	0	0.7246	0.7246
89.2333	0.0143	0.0109	0.7193	0.7302
89.2667	0.0093	0.0109	0.7075	0.7184
89.3	0.0064	0	0.6904	0.6904
89.3333	0.0018	0	0.6864	0.6864
89.3667	-0.0015	0	0.6746	0.6746
89.4	-0.0038	0	0.668	0.668
89.4333	-0.0068	0	0.6601	0.6601
89.4667	-0.0078	0.0109	0.6549	0.6658
89.5	-0.0111	0	0.6391	0.6391
89.5333	-0.0157	0	0.6312	0.6312
89.5667	-0.0157	0.0109	0.6286	0.6395
89.6	-0.0147	0.0109	0.6154	0.6263
89.6333	-0.0167	0.0109	0.6101	0.621
89.6667	-0.0173	0.0109	0.6009	0.6118
89.7	-0.0216	0	0.5983	0.5983
89.7333	-0.0183	0	0.5878	0.5878
89.7667	-0.0223	0	0.5799	0.5799
89.8	-0.0236	0	0.5733	0.5733
89.8333	-0.0223	0	0.5681	0.5681
89.8667	-0.0252	0	0.5575	0.5575
89.9	-0.0255	0	0.5497	0.5497
89.9333	-0.0232	0	0.5444	0.5444
89.9667	-0.0232	0	0.5352	0.5352
90	-0.0269	0	0.526	0.526
90.0333	-0.0279	0	0.5168	0.5168
90.0667	-0.0282	0.0241	0.5155	0.5395
90.1	-0.0282	0	0.5049	0.5049
90.1333	-0.0269	0	0.501	0.501
90.1667	-0.0275	0	0.4957	0.4957
90.2	-0.0275	0.0109	0.4905	0.5014
90.2333	-0.0275	0.0109	0.4813	0.4922
90.2667	-0.0272	0	0.4787	0.4787
90.3	-0.0285	0	0.4694	0.4694
90.3333	-0.0282	0.0109	0.4668	0.4777
90.3667	-0.0285	0	0.4576	0.4576
90.4	-0.0279	0	0.4563	0.4563
90.4333	-0.0298	0	0.4471	0.4471
90.4667	-0.0315	0.0109	0.4379	0.4488
90.5	-0.0275	0	0.4379	0.4379
90.5333	-0.0292	0	0.4353	0.4353
90.5667	-0.0272	0	0.4261	0.4261
90.6	-0.0354	0.0109	0.4221	0.433
90.6333	-0.0334	0.0109	0.4195	0.4304
90.6667	-0.0318	0.0109	0.4116	0.4225
90.7	-0.0334	0	0.405	0.405

90.7333	-0.0315	0.0241	0.405	0.4291
90.7667	-0.0344	0.0109	0.3958	0.4067
90.8	-0.0344	0	0.3879	0.3879
90.8333	-0.0311	0	0.384	0.384
90.8667	-0.0344	0	0.38	0.38
90.9	-0.0321	0	0.3774	0.3774
90.9333	-0.018	0	0.3774	0.3774
90.9667	-0.0206	0.0241	0	0.0241
91	-0.0209	0	0	0
91.0333	-0.0216	0.0241	0	0.0241
91.0667	-0.0213	0.0109	0.0013	0.0122
91.1	-0.0196	0	0	0
91.1333	-0.018	0.0109	0	0.0109
91.1667	-0.018	0.0109	0	0.0109
91.2	-0.018	0	0.0013	0.0013
91.2333	-0.0196	0.0109	0.0013	0.0122
91.2667	-0.0209	0.0109	0.0013	0.0122
91.3	-0.0216	0	0	0
91.3333	-0.0203	0	0	0
91.3667	-0.0213	0.0109	0	0.0109
91.4	-0.0219	0.0109	0	0.0109
91.4333	-0.0206	0	0	0
91.4667	-0.0206	0	0.0013	0.0013
91.5	-0.0351	0	0	0
91.5333	-0.0377	0	0	0
91.5667	-0.0381	0	0.0013	0.0013
91.6	-0.0371	0.0109	0	0.0109
91.6333	-0.0367	0	0.0013	0.0013
91.6667	-0.0384	0	0.0013	0.0013
91.7	-0.039	0.0109	0	0.0109
91.7333	-0.039	0	0.0013	0.0013
91.7667	-0.0384	0.0109	0	0.0109
91.8	-0.0381	0.0109	0.0013	0.0122
91.8333	-0.0381	0	0.0013	0.0013
91.8667	-0.039	0	0	0
91.9	-0.0381	0	0.0013	0.0013
91.9333	-0.039	0	0.0013	0.0013
91.9667	-0.0381	0	0.0013	0.0013
92	-0.0371	0	0	0
92.0333	-0.0361	0.0241	0.0013	0.0254
92.0667	-0.0381	0.0109	0	0.0109
92.1	-0.0348	0	0	0
92.1333	-0.0361	0	0	0
92.1667	-0.0367	0	0.0013	0.0013
92.2	-0.0209	0	0	0
92.2333	0.0005	0	0.0013	0.0013
92.2667	0.0258	0.0109	0.0013	0.0122

92.3	0.0413	0	0	0
92.3333	0.0653	0	0	0
92.3667	0.0801	0	0	0
92.4	0.0989	0.0109	0.0013	0.0122
92.4333	0.1147	0.0109	0	0.0109
92.4667	0.1331	0	0.0013	0.0013
92.5	0.1499	0.0241	0	0.0241
92.5333	0.165	0	0.0013	0.0013
92.5667	0.1772	0	0	0
92.6	0.1966	0.0109	0.0013	0.0122
92.6333	0.2088	0	0	0
92.6667	0.2253	0	0.0026	0.0026
92.7	0.2332	0.0109	0	0.0109
92.7333	0.2496	0	0.0026	0.0026
92.7667	0.2618	0	0.0013	0.0013
92.8	0.2723	0.0109	0	0.0109
92.8333	0.2848	0	0	0
92.8667	0.296	0.0109	0	0.0109
92.9	0.3062	0	0	0
92.9333	0.3164	0	0	0
92.9667	0.3233	0.0109	0.0013	0.0122
93	0.3381	0	0	0
93.0333	0.3464	0.0109	0	0.0109
93.0667	0.3543	0	0.0013	0.0013
93.1	0.3632	0	0.0013	0.0013
93.1333	0.3691	0	0	0
93.1667	0.3776	0	0.0013	0.0013
93.2	0.3872	0.0109	0	0.0109
93.2333	0.3971	0	0	0
93.2667	0.4046	0	0.0026	0.0026
93.3	0.4083	0.0109	0	0.0109
93.3333	0.4178	0.0109	0.0013	0.0122
93.3667	0.4244	0.0109	0	0.0109
93.4	0.4273	0	0.0013	0.0013
93.4333	0.4372	0.0109	0.0013	0.0122
93.4667	0.4422	0	0	0
93.5	0.4481	0	0.0013	0.0013
93.5333	0.4553	0	0.0013	0.0013
93.5667	0.4603	0.0109	0	0.0109
93.6	0.4626	0	0.0013	0.0013
93.6333	0.4728	0	0.0013	0.0013
93.6667	0.4774	0	0	0
93.7	0.4826	0.0109	0.0013	0.0122
93.7333	0.4872	0	0.0026	0.0026
93.7667	0.4912	0.0109	0	0.0109
93.8	0.4935	0.0109	0.0013	0.0122
93.8333	0.5011	0	0.0013	0.0013

93.8667	0.503	0	0.0013	0.0013
93.9	0.5103	0.0109	0.0013	0.0122
93.9333	0.5123	0	0.0013	0.0013
93.9667	0.5146	0.0109	0	0.0109
94	0.5195	0	0	0
94.0333	0.5225	0	0	0
94.0667	0.5287	0.0109	0	0.0109
94.1	0.5323	0	0.0013	0.0013
94.1333	0.536	0	0.0013	0.0013
94.1667	0.5383	0.0109	0	0.0109
94.2	0.5422	0.0109	0.0013	0.0122
94.2333	0.5448	0	0.0013	0.0013
94.2667	0.5501	0.0109	0	0.0109
94.3	0.5494	0	0	0
94.3333	0.5534	0.0241	0.0013	0.0254
94.3667	0.5603	0	0	0
94.4	0.561	0	0	0
94.4333	0.5649	0	0	0
94.4667	0.562	0.0109	0	0.0109
94.5	0.5682	0	0	0
94.5333	0.5699	0	0.0013	0.0013
94.5667	0.5722	0	0.0013	0.0013
94.6	0.5741	0	0	0
94.6333	0.5764	0.0109	0	0.0109
94.6667	0.5774	0.0109	0.0013	0.0122
94.7	0.5827	0	0	0
94.7333	0.585	0	0.0013	0.0013
94.7667	0.5843	0	0	0
94.8	0.5896	0	0.0013	0.0013
94.8333	0.5899	0	0	0
94.8667	0.5932	0.0109	0.0013	0.0122
94.9	0.5949	0.0109	0.0013	0.0122
94.9333	0.5968	0	0	0
94.9667	0.5945	0	0.0013	0.0013
95	0.5985	0.0109	0.0013	0.0122
95.0333	0.6011	0.0109	0	0.0109
95.0667	0.5988	0	0	0
95.1	0.6041	0.0109	0.0013	0.0122
95.1333	0.6051	0.0109	0.0013	0.0122
95.1667	0.6087	0.0109	0	0.0109
95.2	0.6097	0.0109	0.0013	0.0122
95.2333	0.6061	0	0.0013	0.0013
95.2667	0.6097	0.0109	0	0.0109
95.3	0.6126	0.0109	0.0026	0.0135
95.3333	0.6143	0	0.0013	0.0013
95.3667	0.612	0	0	0
95.4	0.6133	0	0.0013	0.0013

95.4333	0.6143	0.0109	0	0.0109
95.4667	0.6182	0	0	0
95.5	0.6192	0.0109	0.0013	0.0122
95.5333	0.6199	0	0	0
95.5667	0.6209	0.0109	0.0013	0.0122
95.6	0.6235	0	0	0
95.6333	0.6245	0.0241	0	0.0241
95.6667	0.6248	0	0.0026	0.0026
95.7	0.6278	0.0241	0	0.0241
95.7333	0.6248	0	0	0
95.7667	0.6275	0.0109	0	0.0109
95.8	0.6265	0	0.0013	0.0013
95.8333	0.6281	0	0	0
95.8667	0.6288	0.0109	0.0013	0.0122
95.9	0.6304	0.0109	0	0.0109
95.9333	0.6321	0	0.0013	0.0013
95.9667	0.633	0	0.0026	0.0026
96	0.6321	0	0	0
96.0333	0.6317	0.0109	0	0.0109
96.0667	0.6334	0	0	0
96.1	0.633	0	0	0
96.1333	0.6301	0	0	0
96.1667	0.6301	0.0109	0.0039	0.0148
96.2	0.6301	0.0109	0	0.0109
96.2333	0.6284	0	0.0039	0.0039
96.2667	0.6334	0.0109	0	0.0109
96.3	0.6278	0	0	0
96.3333	0.6268	0	0.0013	0.0013
96.3667	0.6245	0	0	0
96.4	0.6222	0	0	0
96.4333	0.6219	0.0109	0.0026	0.0135
96.4667	0.6192	0.0109	0	0.0109
96.5	0.6196	0.0109	0.0013	0.0122
96.5333	0.6163	0.0109	0.0013	0.0122
96.5667	0.6179	0	0.0013	0.0013
96.6	0.6186	0.0109	0	0.0109
96.6333	0.6159	0.0109	0.0013	0.0122
96.6667	0.6117	0.0109	0	0.0109
96.7	0.6103	0.0109	0	0.0109
96.7333	0.6084	0	0.0013	0.0013
96.7667	0.611	0.0109	0.0013	0.0122
96.8	0.6094	0	0	0
96.8333	0.6074	0	0	0
96.8667	0.6028	0	0.0026	0.0026
96.9	0.6011	0.0241	0.0013	0.0254
96.9333	0.6051	0	0	0
96.9667	0.6031	0.0109	0	0.0109

97	0.6015	0.0109	0.0013	0.0122
97.0333	0.5978	0.0109	0	0.0109
97.0667	0.6001	0.0109	0.0013	0.0122
97.1	0.5985	0	0	0
97.1333	0.5995	0	0	0
97.1667	0.5959	0	0.0013	0.0013
97.2	0.5998	0.0109	0.0013	0.0122
97.2333	0.5939	0.0109	0	0.0109
97.2667	0.5945	0.0109	0	0.0109
97.3	0.5978	0	0.0013	0.0013
97.3333	0.5942	0	0	0
97.3667	0.5932	0	0	0
97.4	0.5922	0.0109	0.0013	0.0122
97.4333	0.5916	0.0109	0	0.0109
97.4667	0.5903	0.0109	0.0013	0.0122
97.5	0.5903	0	0	0
97.5333	0.5893	0	0.0013	0.0013
97.5667	0.5896	0	0.0013	0.0013
97.6	0.5886	0	0	0
97.6333	0.5893	0.0109	0.0013	0.0122
97.6667	0.5893	0	0	0
97.7	0.5893	0.0241	0	0.0241
97.7333	0.5886	0	0.0013	0.0013
97.7667	0.5866	0	0	0
97.8	0.587	0.0109	0	0.0109
97.8333	0.5853	0	0.0026	0.0026
97.8667	0.5883	0.0109	0.0013	0.0122
97.9	0.586	0	0	0
97.9333	0.5873	0	0.0013	0.0013
97.9667	0.5863	0	0.0013	0.0013
98	0.5866	0.0109	0.0013	0.0122
98.0333	0.584	0.0109	0	0.0109
98.0667	0.5847	0	0.0013	0.0013
98.1	0.5857	0.0241	0	0.0241
98.1333	0.587	0	0.0013	0.0013
98.1667	0.5847	0.0109	0	0.0109
98.2	0.588	0.0109	0.0013	0.0122
98.2333	0.5843	0	0.0013	0.0013
98.2667	0.584	0.0109	0	0.0109
98.3	0.5866	0.0109	0.0013	0.0122
98.3333	0.5847	0	0	0
98.3667	0.582	0	0	0
98.4	0.5863	0	0.0013	0.0013
98.4333	0.5863	0	0	0
98.4667	0.588	0	0	0
98.5	0.5863	0.0109	0	0.0109
98.5333	0.5866	0.0109	0	0.0109

98.5667	0.5889	0.0109	0.0026	0.0135
98.6	0.5889	0.0109	0.0013	0.0122
98.6333	0.588	0	0.0013	0.0013
98.6667	0.5876	0.0109	0.0026	0.0135
98.7	0.5889	0.0109	0	0.0109
98.7333	0.5876	0	0.0013	0.0013
98.7667	0.5886	0	0	0
98.8	0.5912	0	0	0
98.8333	0.5893	0	0.0013	0.0013
98.8667	0.5893	0.0109	0	0.0109
98.9	0.5899	0.0109	0.0013	0.0122
98.9333	0.5906	0	0.0013	0.0013
98.9667	0.5929	0	0	0
99	0.5899	0.0109	0.0026	0.0135
99.0333	0.5893	0.0109	0	0.0109
99.0667	0.5916	0.0109	0.0013	0.0122
99.1	0.5919	0.0109	0	0.0109
99.1333	0.5949	0.0109	0.0026	0.0135
99.1667	0.5932	0	0	0
99.2	0.5906	0	0	0
99.2333	0.5945	0	0	0
99.2667	0.5949	0	0	0
99.3	0.5972	0	0	0
99.3333	0.5962	0.0109	0.0013	0.0122
99.3667	0.5985	0	0	0
99.4	0.5982	0.0109	0.0013	0.0122
99.4333	0.5965	0	0.0013	0.0013
99.4667	0.5952	0	0	0
99.5	0.5962	0.0241	0	0.0241
99.5333	0.5978	0.0109	0.0013	0.0122
99.5667	0.5978	0.0109	0	0.0109
99.6	0.5991	0	0.0013	0.0013
99.6333	0.5975	0.0109	0.0026	0.0135
99.6667	0.5978	0	0	0
99.7	0.6018	0	0.0026	0.0026
99.7333	0.6024	0.0109	0.0013	0.0122
99.7667	0.5985	0.0241	0	0.0241
99.8	0.6021	0.0241	0.0013	0.0254
99.8333	0.6008	0	0	0
99.8667	0.5998	0.0109	0	0.0109
99.9	0.6018	0.0109	0	0.0109
99.9333	0.6015	0	0.0013	0.0013
99.9667	0.6034	0.0109	0.0013	0.0122
100	0.6044	0	0	0
100.0333	0.6024	0	0	0
100.0667	0.6024	0	0.0013	0.0013
100.1	0.6031	0	0.0013	0.0013

100.1333	0.6061	0	0	0
100.1667	0.6028	0	0.0013	0.0013
100.2	0.6074	0	0	0
100.2333	0.6067	0.0109	0	0.0109
100.2667	0.6054	0.0109	0	0.0109
100.3	0.6067	0	0	0
100.3333	0.6054	0	0.0026	0.0026
100.3667	0.608	0	0	0
100.4	0.609	0	0	0
100.4333	0.6077	0	0	0
100.4667	0.5975	0.0109	0.0013	0.0122
100.5	0.5646	0.0109	0.0013	0.0122
100.5333	0.533	0	0.0026	0.0026
100.5667	0.5057	0	0.0026	0.0026
100.6	0.4761	0	0	0
100.6333	0.4497	0.0109	0.0013	0.0122
100.6667	0.4214	0	0.0013	0.0013
100.7	0.3984	0.0241	0	0.0241
100.7333	0.3763	0.0109	0	0.0109
100.7667	0.3543	0.0109	0.0013	0.0122
100.8	0.3325	0.0109	0.0013	0.0122
100.8333	0.3115	0.0109	0.0013	0.0122
100.8667	0.296	0.0109	0	0.0109
100.9	0.2779	0	0	0
100.9333	0.2575	0.0109	0	0.0109
100.9667	0.2437	0	0	0
101	0.2279	0	0	0
101.0333	0.2134	0	0	0
101.0667	0.1979	0	0.0026	0.0026
101.1	0.1848	0	0.0013	0.0013
101.1333	0.1736	0.0109	0	0.0109
101.1667	0.1594	0.0109	0.0013	0.0122
101.2	0.1469	0.0109	0	0.0109
101.2333	0.137	0.0109	0.0013	0.0122
101.2667	0.1262	0.0109	0	0.0109
101.3	0.1173	0	0.0013	0.0013
101.3333	0.1081	0	0.0013	0.0013
101.3667	0.0979	0.0109	0	0.0109
101.4	0.0903	0	0	0
101.4333	0.0811	0	0	0
101.4667	0.0762	0.0109	0	0.0109
101.5	0.0666	0.0109	0	0.0109
101.5333	0.0584	0	0	0
101.5667	0.0541	0	0	0
101.6	0.0462	0.0109	0.0026	0.0135
101.6333	0.0442	0	0.0013	0.0013
101.6667	0.0363	0.0109	0	0.0109

101.7	0.0321	0.0109	0	0.0109
101.7333	0.0281	0	0	0
101.7667	0.0265	0	0	0
101.8	0.0205	0	0	0
101.8333	0.0156	0.0109	0.0013	0.0122
101.8667	0.0133	0	0.0013	0.0013
101.9	0.0123	0.0109	0	0.0109
101.9333	0.0077	0	0	0
101.9667	0.006	0	0	0
102	0.0037	0.0109	0.0013	0.0122
102.0333	-0.0015	0	0.0013	0.0013
102.0667	-0.0061	0.0109	0	0.0109
102.1	-0.0061	0	0.0013	0.0013
102.1333	-0.0071	0.0109	0.0026	0.0135
102.1667	-0.0068	0	0.0013	0.0013
102.2	-0.0084	0.0109	0	0.0109
102.2333	-0.0097	0	0.0013	0.0013
102.2667	-0.0114	0.0109	0	0.0109
102.3	-0.0134	0	0	0
102.3333	-0.0144	0.0109	0.0013	0.0122
102.3667	-0.018	0.0109	0.0013	0.0122
102.4	-0.0153	0.0109	0	0.0109
102.4333	-0.0186	0	0	0
102.4667	-0.0173	0	0.0013	0.0013
102.5	-0.0193	0.0109	0	0.0109
102.5333	-0.018	0	0	0
102.5667	-0.0213	0	0	0
102.6	-0.0226	0	0	0
102.6333	-0.0203	0.0241	0	0.0241
102.6667	-0.0236	0	0	0
102.7	-0.0206	0.0241	0	0.0241
102.7333	-0.0239	0	0.0013	0.0013
102.7667	-0.0167	0.0241	0	0.0241
102.8	-0.0213	0.0109	0.0013	0.0122
102.8333	-0.0239	0	0	0
102.8667	-0.0236	0.0109	0	0.0109
102.9	-0.0242	0	0	0
102.9333	-0.0242	0	0	0
102.9667	-0.0249	0	0.0013	0.0013
103	-0.0242	0	0	0
103.0333	-0.0262	0.0109	0	0.0109
103.0667	-0.0203	0	0	0
103.1	-0.0167	0	0	0
103.1333	-0.0104	0.0109	0	0.0109
103.1667	-0.0176	0	0.0026	0.0026
103.2	-0.016	0	0	0
103.2333	-0.0203	0.0109	0.0013	0.0122

103.2667	-0.0223	0.0109	0.0013	0.0122
103.3	-0.0183	0.0241	0	0.0241
103.3333	-0.0249	0.0109	0.0026	0.0135
103.3667	-0.0101	0.0109	0.0013	0.0122
103.4	-0.0101	0	0.0013	0.0013
103.4333	-0.0117	0.0109	0.0026	0.0135
103.4667	-0.0104	0.0109	0	0.0109
103.5	-0.016	0	0.0013	0.0013
103.5333	-0.019	0	0	0
103.5667	-0.0203	0.0109	0	0.0109
103.6	-0.0236	0	0	0
103.6333	-0.0252	0	0	0
103.6667	-0.0285	0	0	0
103.7	-0.0279	0.0241	0.0013	0.0254
103.7333	-0.0265	0.0109	0	0.0109
103.7667	-0.0315	0	0	0
103.8	-0.0321	0.0109	0	0.0109
103.8333	-0.0311	0	0	0
103.8667	-0.0338	0.0109	0	0.0109
103.9	-0.0308	0	0	0
103.9333	-0.0321	0	0	0
103.9667	-0.0305	0.0109	0.0013	0.0122
104	-0.0279	0	0.0026	0.0026
104.0333	-0.0025	0	0.0013	0.0013
104.0667	0.0232	0	0	0
104.1	0.0426	0.0109	0	0.0109
104.1333	0.0636	0.0109	0	0.0109
104.1667	0.0841	0.0109	0.0013	0.0122
104.2	0.1045	0	0.0013	0.0013
104.2333	0.1268	0.0109	0	0.0109
104.2667	0.1433	0	0.0013	0.0013
104.3	0.1601	0.0109	0	0.0109
104.3333	0.1815	0.0109	0.0013	0.0122
104.3667	0.1963	0	0.0013	0.0013
104.4	0.2104	0.0241	0.0013	0.0254
104.4333	0.2262	0	0.0013	0.0013
104.4667	0.2404	0.0109	0	0.0109
104.5	0.2542	0.0109	0	0.0109
104.5333	0.2697	0.0109	0	0.0109
104.5667	0.2861	0	0	0
104.6	0.3	0	0.0013	0.0013
104.6333	0.3082	0.0241	0	0.0241
104.6667	0.3253	0	0	0
104.7	0.3352	0	0.0013	0.0013
104.7333	0.346	0.0372	0	0.0372
104.7667	0.3553	0	0	0
104.8	0.3688	0.0109	0	0.0109

104.8333	0.3776	0	0.0013	0.0013
104.8667	0.3875	0.0241	0.0013	0.0254
104.9	0.3977	0.0109	0.0013	0.0122
104.9333	0.4083	0	0	0
104.9667	0.4138	0.0109	0	0.0109
105	0.4254	0	0	0
105.0333	0.4319	0	0.0026	0.0026
105.0667	0.4398	0	0	0
105.1	0.4494	0.0241	0	0.0241
105.1333	0.4589	0	0	0
105.1667	0.4649	0.0109	0.0026	0.0135
105.2	0.4754	0.0241	0	0.0241
105.2333	0.4777	0.0109	0	0.0109
105.2667	0.484	0.0109	0	0.0109
105.3	0.4899	0	0	0
105.3333	0.4974	0.0109	0.0013	0.0122
105.3667	0.505	0.0241	0.0013	0.0254
105.4	0.51	0	0.0013	0.0013
105.4333	0.5155	0	0.0026	0.0026
105.4667	0.5221	0.0241	0	0.0241
105.5	0.5287	0	0	0
105.5333	0.5346	0.0109	0	0.0109
105.5667	0.5353	0	0.0013	0.0013
105.6	0.5399	0.0109	0.0026	0.0135
105.6333	0.5485	0	0	0
105.6667	0.5541	0.0109	0	0.0109
105.7	0.555	0	0	0
105.7333	0.561	0	0	0
105.7667	0.5662	0	0	0
105.8	0.5682	0	0.0013	0.0013
105.8333	0.5722	0	0	0
105.8667	0.5755	0	0	0
105.9	0.581	0	0	0
105.9333	0.583	0.0109	0.0013	0.0122
105.9667	0.5893	0	0	0
106	0.5896	0	0	0
106.0333	0.5909	0	0	0
106.0667	0.5936	0	0	0
106.1	0.5978	0.0109	0.0026	0.0135
106.1333	0.6021	0.0109	0	0.0109
106.1667	0.607	0	0	0
106.2	0.6087	0.0109	0	0.0109
106.2333	0.609	0.0109	0.0013	0.0122
106.2667	0.6133	0	0.0013	0.0013
106.3	0.6166	0.0109	0.0013	0.0122
106.3333	0.6173	0.0109	0	0.0109
106.3667	0.6225	0.0241	0	0.0241

106.4	0.6232	0	0	0
106.4333	0.6268	0	0.0026	0.0026
106.4667	0.6284	0	0	0
106.5	0.6298	0.0109	0	0.0109
106.5333	0.6321	0.0241	0.0013	0.0254
106.5667	0.6367	0	0	0
106.6	0.638	0.0241	0	0.0241
106.6333	0.6367	0.0109	0.0013	0.0122
106.6667	0.6393	0.0241	0.0013	0.0254
106.7	0.635	0	0.0013	0.0013
106.7333	0.634	0.0109	0.0013	0.0122
106.7667	0.6307	0	0	0
106.8	0.6301	0	0	0
106.8333	0.6255	0.0109	0	0.0109
106.8667	0.6232	0	0	0
106.9	0.6235	0	0.8153	0.8153
106.9333	0.6186	0	0.8179	0.8179
106.9667	0.6166	0	0.8245	0.8245
107	0.6136	0.0109	0.8219	0.8328
107.0333	0.6094	0	0.8245	0.8245
107.0667	0.6087	0.0109	0.8258	0.8367
107.1	0.61	0	0.8271	0.8271
107.1333	0.6028	0	0.8311	0.8311
107.1667	0.6047	0.0109	0.8297	0.8406
107.2	0.5988	0.0109	0.8403	0.8512
107.2333	0.5998	0.0109	0.8403	0.8512
107.2667	0.5988	0	0.839	0.839
107.3	0.5972	0	0.8442	0.8442
107.3333	0.5945	0	0.8442	0.8442
107.3667	0.5932	0.0109	0.8429	0.8538
107.4	0.5916	0	0.8455	0.8455
107.4333	0.5919	0	0.8534	0.8534
107.4667	0.5899	0.0109	0.8547	0.8656
107.5	0.5886	0	0.8574	0.8574
107.5333	0.588	0.0109	0.8587	0.8696
107.5667	0.5866	0.0109	0.8613	0.8722
107.6	0.5853	0	0.8626	0.8626
107.6333	0.5873	0	0.8653	0.8653
107.6667	0.5866	0	0.8626	0.8626
107.7	0.581	0.0109	0.8692	0.8801
107.7333	0.5827	0.0109	0.8639	0.8748
107.7667	0.583	0.0109	0.8718	0.8827
107.8	0.5814	0	0.8705	0.8705
107.8333	0.582	0	0.8731	0.8731
107.8667	0.584	0	0.8771	0.8771
107.9	0.5791	0.0109	0.8797	0.8906
107.9333	0.583	0	0.8758	0.8758

107.9667	0.5827	0	0.8837	0.8837
108	0.5817	0.0109	0.8876	0.8985
108.0333	0.5827	0	0.8837	0.8837
108.0667	0.5787	0.0109	0.8863	0.8972
108.1	0.5824	0.0109	0.8863	0.8972
108.1333	0.5827	0	0.8823	0.8823
108.1667	0.5824	0	0.885	0.885
108.2	0.581	0.0109	0.8889	0.8998
108.2333	0.584	0.0109	0.8929	0.9038
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108.7333	0.5968	0	0.8994	0.8994
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108.8	0.5988	0.0109	0.8981	0.909
108.8333	0.5991	0	0.906	0.906
108.8667	0.5985	0	0.8968	0.8968
108.9	0.6015	0.0109	0.9047	0.9156
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109	0.6074	0.0109	0.9034	0.9143
109.0333	0.6067	0	0.8994	0.8994
109.0667	0.6084	0.0109	0.906	0.9169
109.1	0.608	0.0109	0.9113	0.9222
109.1333	0.6074	0.0109	0.9073	0.9182
109.1667	0.6113	0.0109	0.91	0.9209
109.2	0.6107	0	0.9047	0.9047
109.2333	0.6107	0.0109	0.9113	0.9222
109.2667	0.6133	0.0109	0.9139	0.9248
109.3	0.6123	0.0109	0.9126	0.9235
109.3333	0.6146	0	0.9126	0.9126
109.3667	0.6156	0	0.9179	0.9179
109.4	0.6146	0.0241	0.9192	0.9432
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109.4667	0.6219	0.0109	0.9192	0.9301
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109.5333	0.6199	0	0.9205	0.9205
109.5667	0.6209	0.0109	0.9231	0.934
109.6	0.6235	0.0109	0.9244	0.9353
109.6333	0.6238	0	0.931	0.931
109.6667	0.6219	0.0109	0.9244	0.9353
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109.7333	0.6205	0.0109	0.9257	0.9366
109.7667	0.6228	0	0.9218	0.9218
109.8	0.6238	0	0.9271	0.9271
109.8333	0.6265	0	0.9297	0.9297
109.8667	0.6225	0.0109	0.9284	0.9393
109.9	0.6232	0.0109	0.9271	0.938
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109.9667	0.6238	0	0.9271	0.9271
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110.7667	0.6238	0.0241	0.9481	0.9721
110.8	0.6235	0	0.9389	0.9389
110.8333	0.6212	0.0109	0.9481	0.959
110.8667	0.6199	0	0.9468	0.9468
110.9	0.6209	0.0109	0.9494	0.9603
110.9333	0.6222	0.0109	0.9494	0.9603
110.9667	0.6219	0	0.9468	0.9468
111	0.6189	0	0.952	0.952
111.0333	0.6205	0.0109	0.956	0.9669
111.0667	0.6192	0	0.956	0.956

111.1	0.6199	0	0.9573	0.9573
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111.5333	0.6166	0.0109	0.9691	0.98
111.5667	0.6166	0.0109	0.9599	0.9708
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111.7333	0.5119	0	0.9612	0.9612
111.7667	0.4938	0.0109	0.9652	0.9761
111.8	0.4718	0	0.9626	0.9626
111.8333	0.453	0	0.956	0.956
111.8667	0.4339	0	0.956	0.956
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112.1333	0.2509	0	0.9349	0.9349
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112.3667	0.142	0	0.8889	0.8889
112.4	0.1255	0.0109	0.8837	0.8946
112.4333	0.1173	0.0109	0.8679	0.8788
112.4667	0.1035	0	0.8587	0.8587
112.5	0.0949	0	0.856	0.856
112.5333	0.0857	0.0109	0.8468	0.8577
112.5667	0.0729	0	0.8376	0.8376
112.6	0.0643	0	0.8324	0.8324
112.6333	0.0604	0.0109	0.8192	0.8301

112.6667	0.0508	0	0.8113	0.8113
112.7	0.0449	0.0109	0.8048	0.8157
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112.7667	0.0278	0	0.7798	0.7798
112.8	0.0235	0	0.7679	0.7679
112.8333	0.0192	0.0109	0.7653	0.7762
112.8667	0.0146	0	0.7508	0.7508
112.9	0.0126	0	0.7443	0.7443
112.9333	0.006	0.0109	0.7377	0.7486
112.9667	0.0044	0.0109	0.7311	0.742

APPENDIX C
Photographs

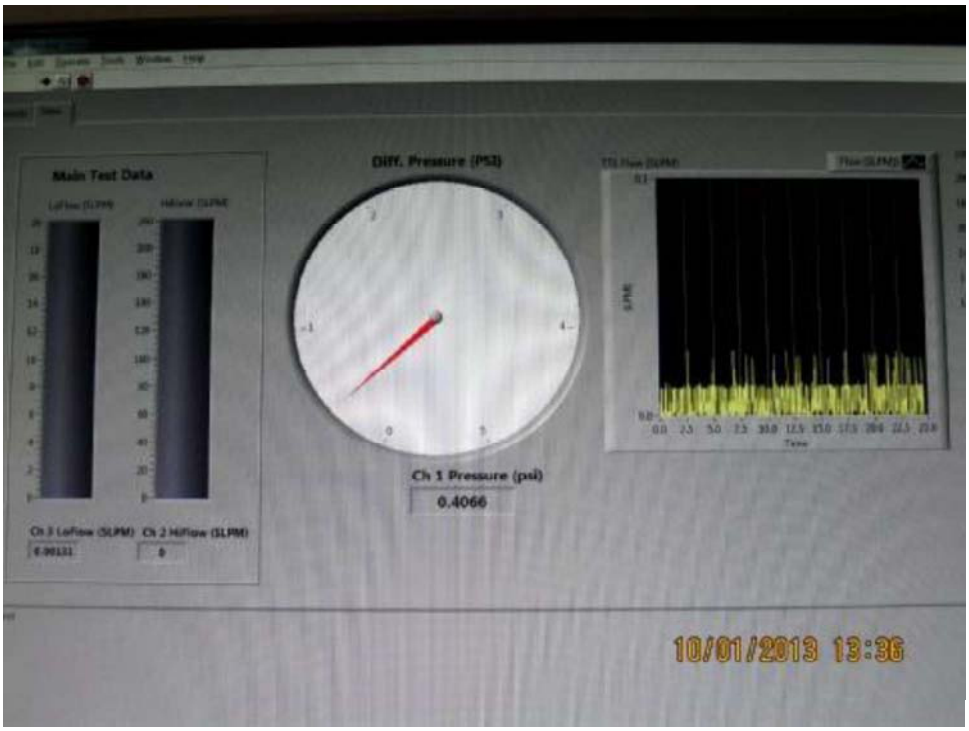

09/03/2013 13:11


09/03/2013 13:13


-170
QS:1
DC-732
9206196
2013/09/25


9206196
PRESSURE TEST "?
2013/09/27


2013/09/27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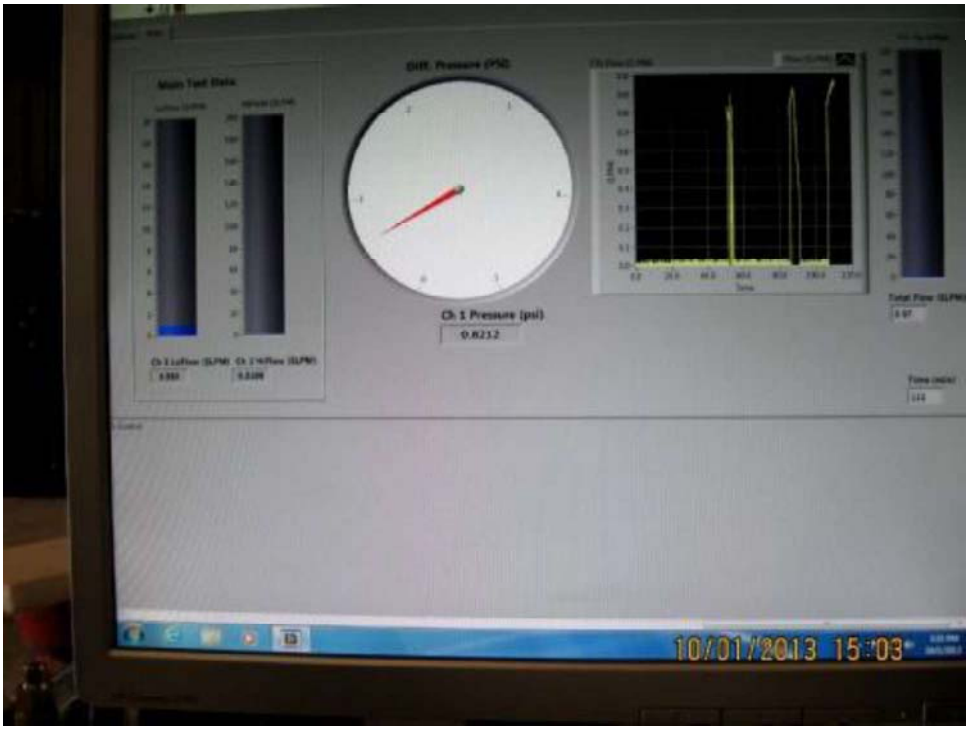
10/01/2013 13:36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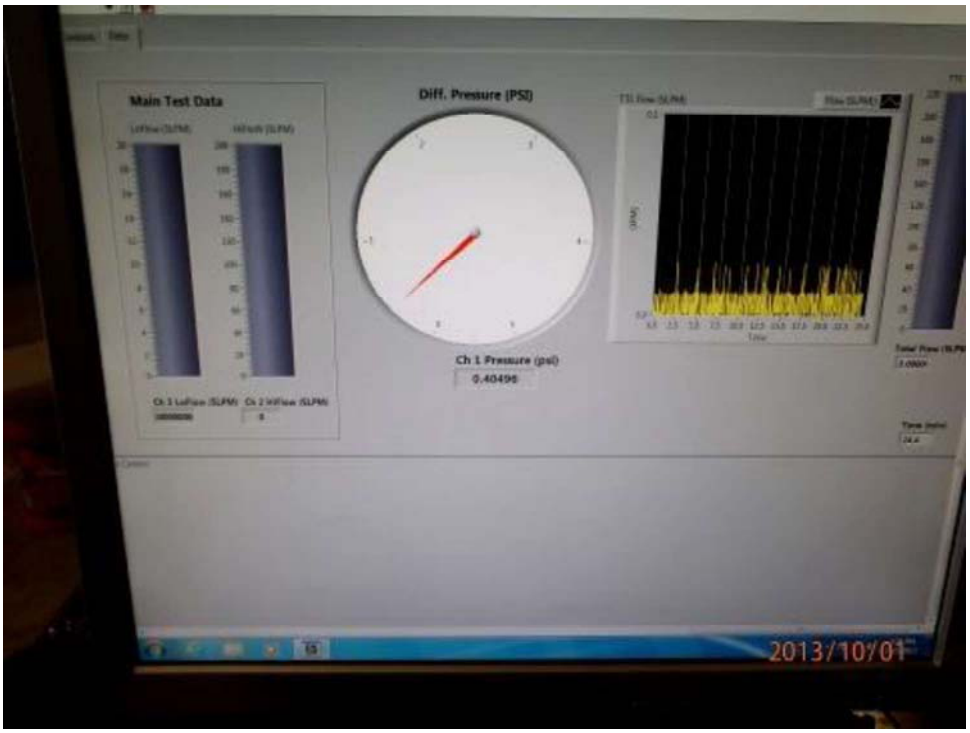
Ch 1 Pressure (psi)
10/01/2013 15:03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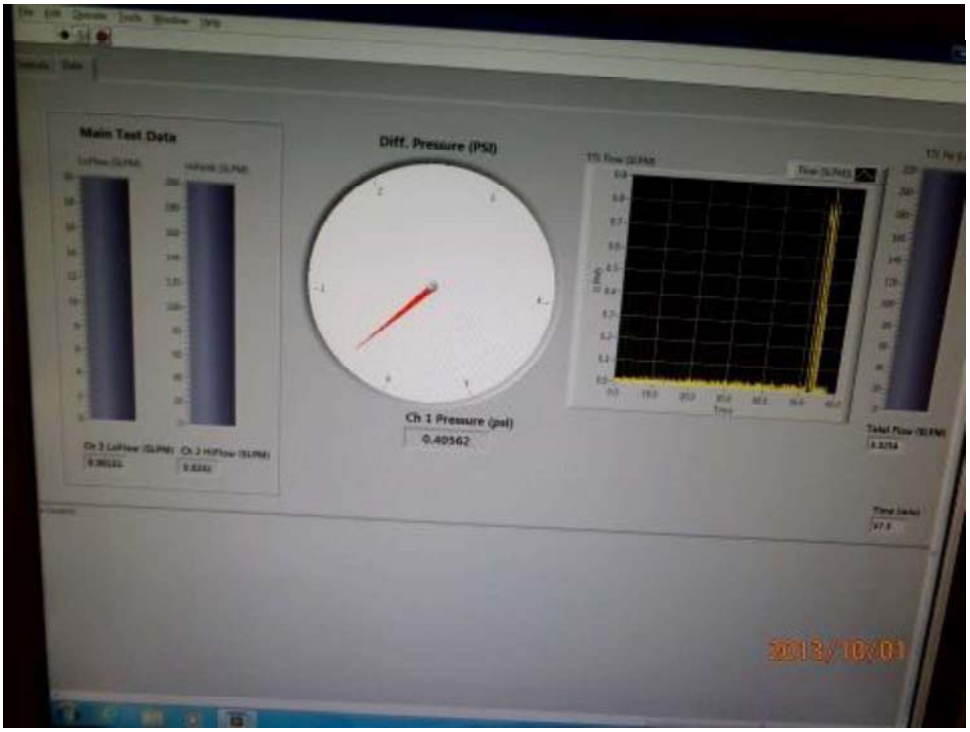
Ch 1 Pressure (psi)
2013/10/01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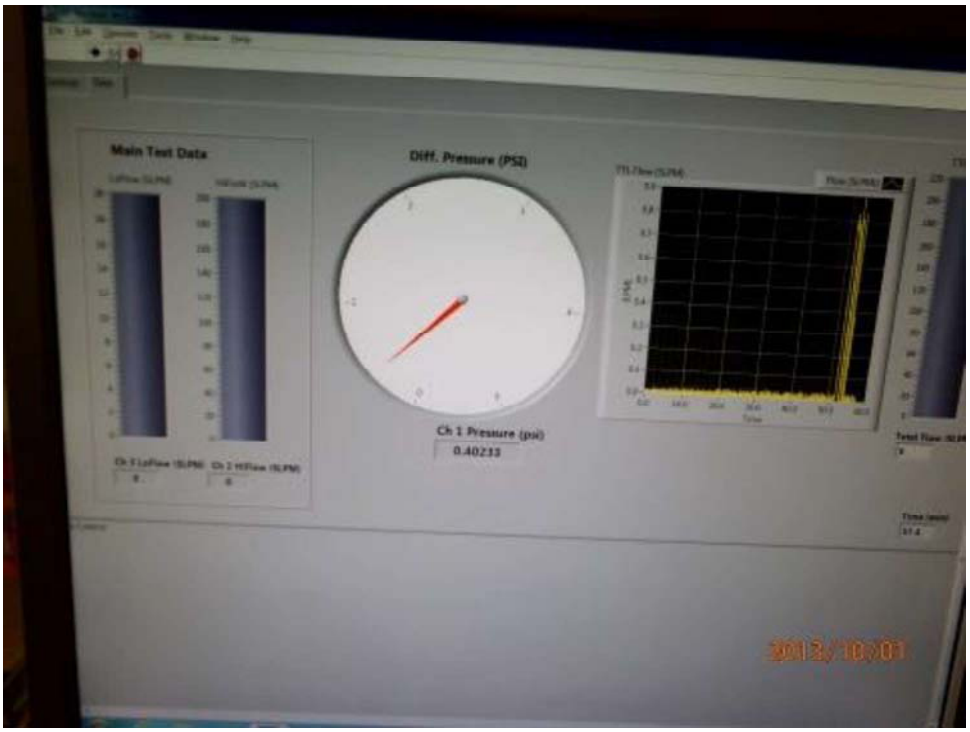
2013/10/01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Ch 1 Pressure (psi)
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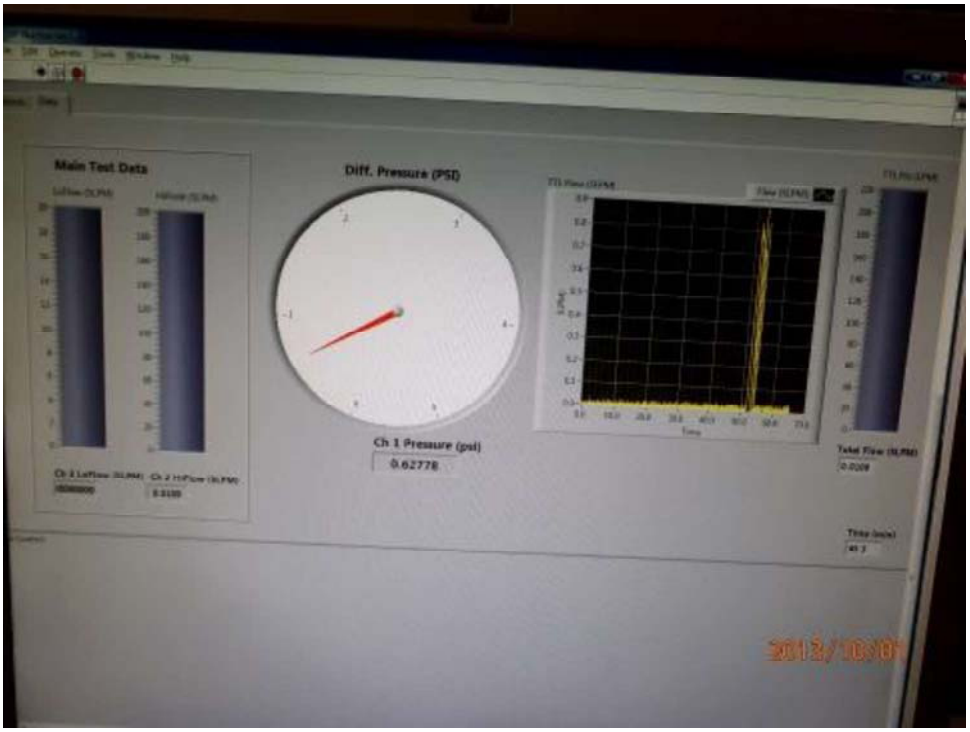
2013/10/01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Ch 1 Pressure (psi)
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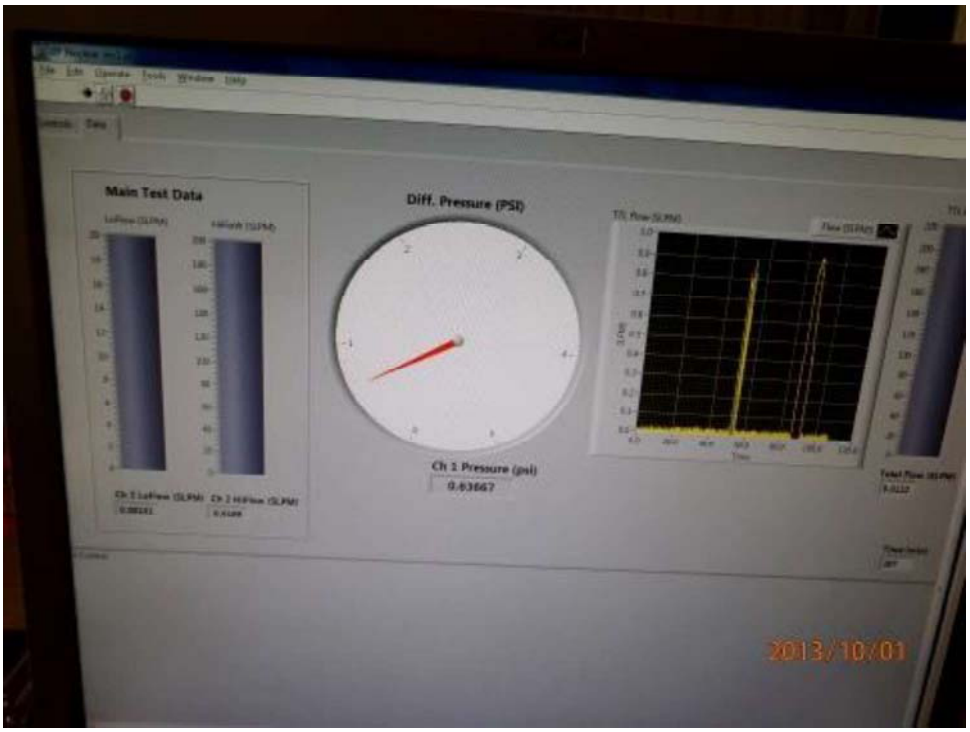
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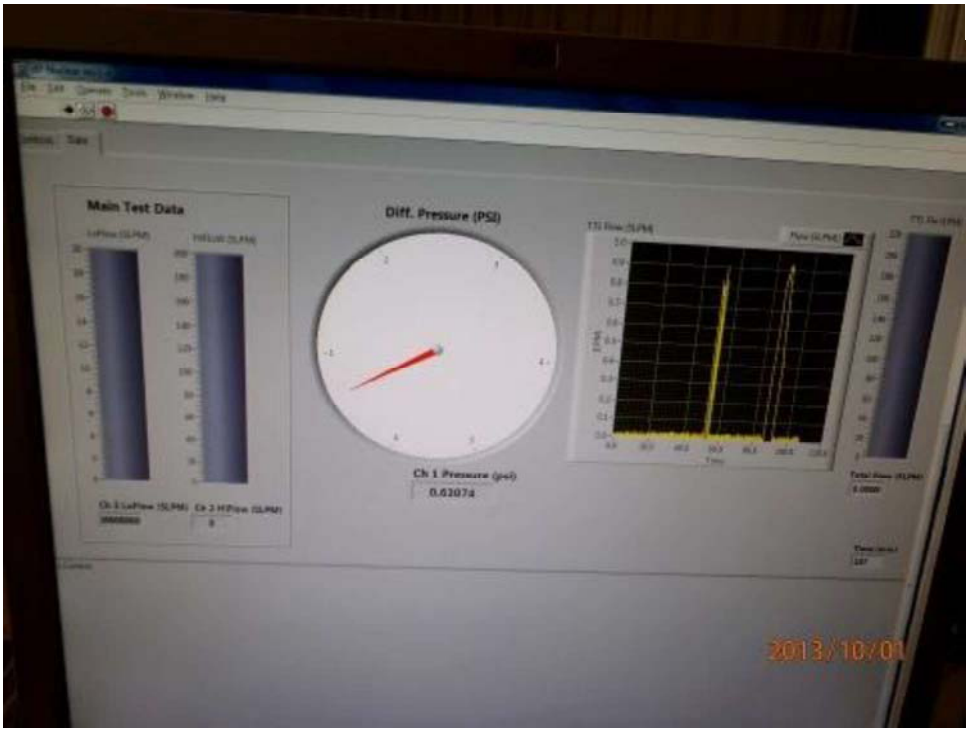
2013/10/01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Ch 1 Pressure (psi)
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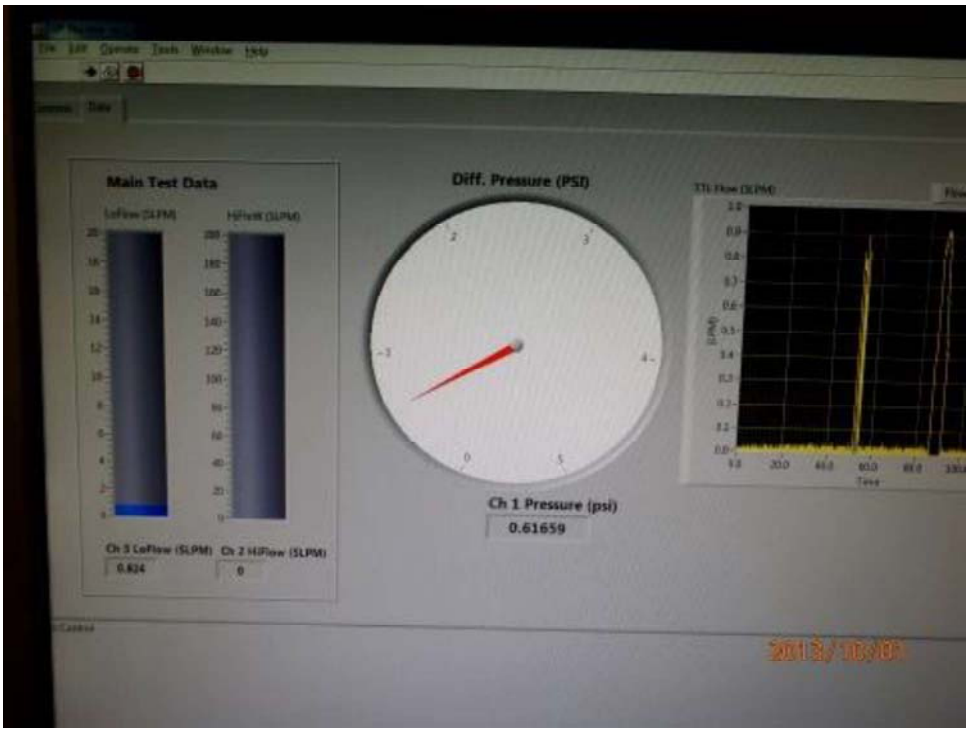
2013/10/01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Ch 1 Pressure (psi)
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Ch 2 HiFlow (SLPM)
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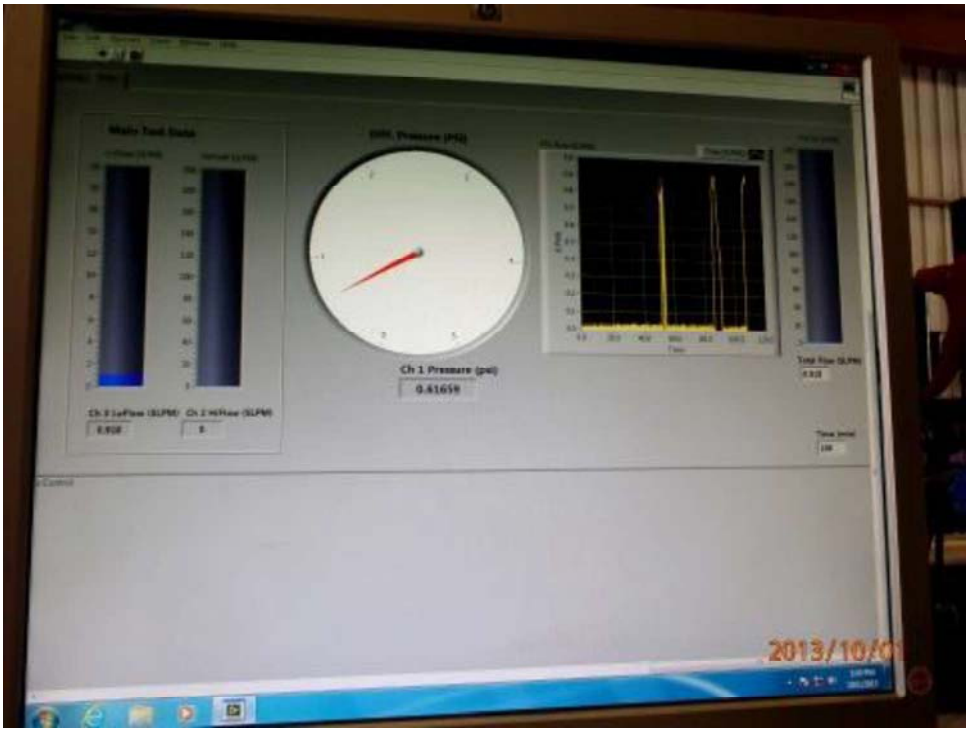
Ch 1 Pressure (psi)
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2013/10/01

APPENDIX D
Test Plan

20004-019 (11/20/2012)

AREVA

AREVA NP Inc.

Engineering Information Record

Document No.: 51 - 9209291 - 000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 5

[redacted]
Mike Dey
Staff Engineer

[redacted]
Michael A. Brown
Quality Supervisor

Page 1 of 27

AREVA

20004-019 (11/20/2012)
Document No.: 51-9209291-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 5

Safety Related? ☒ YES ☐ NO

Does this document establish design or technical requirements? ☐ YES ☒ NO

Does this document contain assumptions requiring verification? ☐ YES ☒ NO

Does this document contain Customer Required Format? ☐ YES ☒ NO

Signature Block

Name and Title/Discipline	Signature	P/LP, R/LR, A-CRF, A	Date	Pages/Sections Prepared/Reviewed/ Approved or Comments
Aaron Adrian Princ Des Eng Spec II / PEYFI-A	[redacted]	P	9-26-13	All
Victor Kaldenbach Princ Des Eng Spec II / PEYFI-A	[redacted]	R	09/27/2013	All
Scott Groesbeck Manager Tech Ops / PEYFI-A	[redacted]	A	9/27/13	All
Perry Calos Project Manager / IBL-A	[redacted]	A	9/27/13	All

Note: P/LP designates Preparer (P), Lead Preparer (LP)
R/LR designates Reviewer (R), Lead Reviewer (LR)
A-CRF designates Project Manager Approver of Customer Required Format (A-CRF)
A designates Approver/RTM – Verification of Reviewer Independence

MOX Services concurrence: [redacted] 27Sep13
Name / Title Date

AREVA

20004-019 (11/20/2012)
Document No.: 51-9209291-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 5

Record of Revision

Revision No.	Pages/Sections/ Paragraphs Changed	Brief Description / Change Authorization
000	All	Initial Issue. This document contains the main body of the report (pages 1-19), Appendix A (1 page), Appendix B (4 pages),Appendix C (1 page), and Appendix D (2 pages) for a total of 27 pages.

AREVA

Document No.: 51-9209291-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 5

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(continued)

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ACRONYMS

CGD	Commercial Grade Dedication
CGI	Commercial Grade Item
IROFS	Items Relied On For Safety
MOX	Mixed Oxide
MFFF	Mixed Oxide Fuel Fabrication Facility
QL	Quality Level
pcf	pounds per cubic foot
psf	pounds per square foot
SSC	Structures, Systems and Components
w.g.	Water Gauge

Penetration Seal Materials

DC 170	Dow Corning Sylgard® 170 Silicone Elastomer
QSil 5558MC	Quantum Silicones QSil 5558MC Silicone Elastomer

AREVA

Document No.: 51-9209291-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 5

BACKGROUND

AREVA NP (AREVA) is assisting Shaw AREVA MOX Services (MOX Services) in the development and implementation of a penetration seal program for the Mixed Oxide Fuel Fabrication Facility (MFFF). One aspect of the MOX penetration seal program includes conducting various types of qualification tests of penetration seal assemblies to substantiate the performance capabilities of specific penetration seal designs. Seismic pressure testing is one type of qualification testing that needs to be performed in order to demonstrate the capability of MOX penetration seal designs to survive a seismic event. Other types of qualification testing, such as fire testing and pressure testing of penetration seal assemblies, are addressed by other test plans.

1.0 PURPOSE

The purpose of this test plan is to define the test assembly, test methods and acceptance criteria for conducting seismic pressure tests in support of the MOX penetration seal program.

This test plan defines the test methods, acceptance criteria and test report documentation requirements for penetration seal Seismic Pressure Test 5. Additionally, this detailed test plan defines the roles and responsibilities of MOX Services, AREVA, the selected testing laboratory, and any other subcontracted entity engaged in support of seismic pressure testing efforts.

This detailed test plan also describes the procurement plan for materials associated with penetration seal Seismic Pressure Test 5 and identifies the entities responsible for procuring the various components of the test assembly based on the quality level assigned to each component. This test plan also establishes minimum quality requirements for the penetration seal materials used in the test assembly and links quality requirements in the AREVA QA program to customer/project quality requirements.

The configuration being tested by Seismic Pressure Test 5 is the same assembly that was tested under Pressure Test 7 (51-9206196) [Reference 12.8]. This configuration is four 1" x 36" gaps, beveled on one side, and each gap sealed with different configuration of materials as described in Section 2.2.

2.0 OBJECTIVE

The primary objective of this test plan is to evaluate the seismic resistance capabilities of the test assemblies using alternating pressures at the air pressure increments above atmospheric pressure provided in Section 9.2.

The specific configurations to be tested are described below. Critical characteristics and the associated limiting parameters that will be substantiated by a successful test are also provided.

2.1 Test Deck Description

The test deck will consist of a 12" thick concrete slab measuring approximately 96" x 96" (8' x 8') [Note: Final test slab size to be determined by Intertek and documented in the final test report]. Within this slab will be four parallel 1" x 36" gaps, beveled on one side sized to replicate penetrations found in the MOX facility. The test deck will be horizontally oriented with a hemispherical 72" diameter steel pressure vessel mounted above and below the precast openings in the slab.

> Note: It is anticipated that the slab with the four (4) separate penetration seal designs installed and evaluated under Pressure Test 7 will not be damaged during Pressure Test 7 and will be available for reuse in this seismic pressure test. For the purpose of Seismic Pressure Test 5, no changes will be made to the seal assemblies installed for Pressure Test 7 (51-9206196) [Reference 12.8].

Additionally, most of the openings (penetrations) in the MOX facility have been cast with a ¾" bevel on both sides of the opening. For testing and qualification purposes, this feature is considered aesthetic, and it has no adverse effect on the functional performance of the penetration seal designs being tested. In fact for some applications, such as in the case of seismically qualified penetrations seals, the bevel provides a benefit over non-beveled openings. However, for the purposes of this penetration seal test, the bevel feature will be included on one side of the slab so both a beveled and unbeveled edge can be evaluated in the seismic pressure test covered in this test plan.

Drawings showing the general layout of the test deck (test slab) for this seismic pressure test can be found in Appendix A.

> Note: If the slab from Pressure Test 7 was damaged during testing or is otherwise not available, this test plan will require revision.

2.2 Test Description

Seismic Pressure Test 5 is four 1" x 36" empty gaps (i.e., contain no penetrating items), beveled on one side. All sides of the openings (gaps) will be unlined, bare concrete (i.e., no liners, coatings or sleeve materials).

Using alternating pressure, this test will evaluate seismic resistance capabilities of the following four gap/joint seal configurations:

- Penetration P1: This penetration is to be a 36" x 1" precast opening. One side of the opening will have a 3/4" bevel, the other side of the opening will not be beveled. Both sides of the opening will be sealed using 3/4" depth Dow Corning Sylgard® 170 Silicone Elastomer (DC-170) backed by 1" depth of Unifrax Fiberfrax® Durablanket® S.
- Penetration P2: This penetration is to be a 36" x 1" precast opening. One side of the opening will have a 3/4" bevel, the other side of the opening will not be beveled. Both sides of the opening will be sealed using 3/4" depth Quantum Siliconee QSil 5558MC Silicone Elastomer (QSil 5558MC) backed by 1" depth of Unifrax Fiberfrax® Durablanket® S.
- Penetration P3: This penetration is to be a 36" x 1" precast opening. One side of the opening will have a 3/4" bevel, the other side of the opening will not be beveled. Both sides of the opening will be sealed using 3/4" depth Dow Corning 732 Multi-Purpose Sealant backed by 1" depth of Unifrax Fiberfrax® Durablanket® S.
- Penetration P4: This penetration is to be a 36" x 1" precast opening. One side of the opening will have a 3/4" bevel, the other side of the opening will not be beveled. Both sides of the opening will be sealed using 3/4" depth Dow Corning 790 Silicone Building Sealant backed by 1" depth of Unifrax Fiberfrax® Durablanket® S.

2.3 Critical Characteristics and Limiting Parameters Being Tested

Each of the materials (DC-170, QSil 5558MC, Dow Corning® 732 and Dow Corning® 790) will be tested against an unlined opening to ensure their bonding characteristics along the "bond area".

The specific critical characteristics and associated limiting parameters being tested for Seismic Pressure Test 5 are as follows:

- Unlined openings with no penetrants.

- On the top of the slab (no bevel) penetration seal to concrete surface interface of 74 lineal inches, which equates to a total bond area of 55.5 sq. in. for the 3/4" thick seal.
- On the bottom of the slab (bevel) penetration seal to concrete surface interface of 74 lineal inches (72 lineal inches at a 45 degree bevel plus 2 inches at the ends of the gaps), which equates to a total bond area of approximately 78.9 sq. in. for the 3/4" thick seal.
- A relationship of "pressurized area" to "bond area" of 36:55.5 (or 0.65:1) when pressurized from above.
- A relationship of "pressurized area" to "bond area" of 90:78.9 (or 1.14:1) when pressurized from below.

3.0 ACCEPTANCE CRITERIA

Seismically qualified penetration seals at the MOX facility are required to remain in the opening (penetration) during and after a Design Earthquake seismic event. In order demonstrate that a penetration seal will remain in place, the seal will have to be evaluated for two conditions: 1) The seismic inertia of the self-weight of the seal will have to be evaluated; and 2) The seismic deflection of the commodities penetrating the seal will have to be considered.

Seismic pressure testing will be used to evaluate the seismic inertia of the self-weight of the seal assembly. This will be accomplished by applying a pressure to alternating sides of the penetration seal to demonstrate that the seal will not become dislodged from the opening due to the seismic inertia of the self-weight of the seal. The seismic deflection of commodities that penetrate the seal is normally addressed by a separate analysis for MOX penetration seal designs. However, MOX typical penetration seal designs for gap/joint seals, similar to those being tested, do not allow any penetrating items to pass through the gap/joint. Therefore, no additional analysis is required beyond this seismic pressure test to seismically qualify the gap/joint seal designs being tested.

The acceptance criterion for evaluating the seismic inertia of the seal self-weight is calculated in MOX Services Calculation "Penetration Seal Seismic Requirements" [Reference 12.1] and expressed as an equivalent pressure. Testing at this equivalent pressure will qualify that a penetration seal assembly will remain in place (i.e., the penetration seal cannot become dislodged from the opening or otherwise catastrophically fail such that a substantial leakage path is created) during the design earthquake seismic event.

No pressure inducing events are required to be considered concurrently with a seismic event.

Table 9-1 identifies the differential pressure levels (stages) for conducting seismic pressure tests, as well as, the acceptance criteria in order for the penetration seal assemblies to meet the seismic pressure testing requirements.

4.0 RESPONSIBILITIES

The following roles and responsibilities apply to this seismic pressure test plan.

4.1 MOX Services

4.1.1 Provide review and concurrence of detailed seismic pressure test plans.

4.1.2 Provide concurrence for any revisions made to detailed seismic pressure test plans during test specimen construction activities.

4.1.3 Provide some of the materials for test assembly construction from MOX Services surplus or scrap (if available).

4.1.4 Reserves the right to witness seismic pressure tests.

4.2 AREVA

4.2.1 Develop detailed seismic pressure test plans.

4.2.2 Provide management and oversight of all aspects of the MOX penetration seal test program.

4.2.3 Select the seismic pressure testing facility and establish sub-contract agreements.

4.2.4 Provide engineering instructions to the testing laboratory for performance of the test including test parameters, acceptance criteria, requirements for documenting the test results in a final test report, etc.

4.2.5 Procure any penetration seal materials, devices or components required to be Safety Related (QL-1) as designated in the procurement plan section of the test plan.

4.2.6 Notify MOX Services at least 10 days prior to test date to facilitate MOX Services decision to witness the seismic pressure test.

4.2.7 Witness seismic pressure tests.

4.2.8 Perform post-test examinations.

4.2.9 Review, approve and issue final test reports.

4.3 Testing Laboratory

4.3.1 Notify AREVA at least 5 days prior to the start of test assembly construction activities.

4.3.2 Construct test deck in accordance with the detailed test plan and AREVA direction.

4.3.3 Procure test deck materials and any other test assembly components identified under the Testing Laboratory scope in the procurement plan section of the detailed test plan.

4.3.4 Procure testing equipment necessary for seismic pressure testing services in accordance with the detailed seismic pressure test plans and verify that the testing equipment is properly calibrated.

4.3.5 Provide seismic pressure testing services in accordance with the approved detailed seismic pressure test plan.

4.3.6 Assist AREVA, as necessary, in conducting detailed post-test destructive examinations of the test assemblies.

4.3.7 Dispose of test assemblies upon completion of the seismic pressure test.

4.3.8 Generate final test reports in accordance with test plan requirements.

4.4 Other Subcontracted Entities

There are no other Subcontractors for this seismic pressure test plan.

5.0 PROCUREMENT PLAN

Penetration seal seismic pressure testing involves many elements beyond the penetration seal material being qualified. Some of these elements include the test deck or test slab, several different types of penetrating items, supports for penetrating items, various fasteners for securing test articles and laboratory instrumentation to the test assembly, etc. Not all elements of the test program are required to be procured to the same quality level as the penetration seal material to satisfy the quality requirements of the end product (e.g., QL-1 qualified penetration seals). The following procurement plan takes into consideration the required quality level of the various materials envisioned to be required for a typical penetration seal seismic pressure test and prescribes an approach for material procurement which considers cost, schedule and quality requirements.

5.1 Penetration Seal Materials

The vast majority of penetration seals that will be installed throughout the MFFF are designated QL-1. MOX Services defines QL-1 in PP9-1, "SSC Quality Levels & Marking Design Documents" [Reference 12.2] as follows:

> *QL-1 SSCs are typically IROFS (all IROFS are QL-1 and may be either SSCs or Administrative Controls) credited in the Integrated Safety Analysis with a required function to prevent or mitigate design basis events such that high-consequence events are made highly unlikely; intermediate-consequence events are made unlikely; or to prevent criticality. For example, the failure of an IROFS item could cause:*
>
> 1. *Loss of a primary confinement feature leading to release of material resulting in exceeding 10CFR70.61 performance requirements;*
> 2. *Failure to satisfy the double contingency principle for the prevention of a criticality accident; or*
> 3. *Loss of other safety function required to meet 10CFR70.61 performance requirements.*

This definition correlates with the following definition of "Nuclear Safety Related" in AREVA Administrative Procedure (AP) 1702-25, "Assignment of Nuclear Safety Classification to Products and Services" [Reference 12.3]:

> *Definition of "Nuclear Safety Related"*
>
> *Company products and services are considered to be nuclear safety related if they involve the evaluation, specification, design or change in design, operation, or performance of structures, systems, and components which must function directly, or must support other systems which function, to ensure any of the following:*
>
> - *The integrity of the reactor coolant pressure boundary*
> - *The capability to shut down the reactor and maintain it in a safe shutdown condition*
> - *The capability to prevent or mitigate the consequences of accidents which could result in potential offsite radiation exposures greater than accepted limits.*

On this basis, permanent penetration seal materials used in this test program shall be procured by AREVA or supplied by MOX Services and suitably base-lined so that future procurements of the same commercial materials can undergo the commercial grade dedication process in support Nuclear Safety Related (i.e., MOX QL-1) plant installations. Only the primary seal material specified as a part of the final

seal design and which are left in place during testing become an integral part of the seal assembly and need to be base-lined for future dedication of similarly procured materials.

The quality level of the penetration seal materials procured for this test plan is **Non-Safety**.

Note: Commercial Grade Dedication (CGD) must be performed for Commercial Grade Items (CGIs) used in Safety Related applications when procured from suppliers where specific quality controls for nuclear applications cannot be imposed in a practical manner in accordance with 56-9141754-001, "AREVA NP Inc. Quality Assurance Program" [Reference 12.4]. However, none of the seal materials to be procured and used in the test program are intended or approved for installation in the MOX facility. Therefore, CGD of penetration seal materials used for test purposes is not required.

For these seismic pressure tests, the following materials shall be procured by AREVA and base-lined for future dedication activities.

1. Unifrax Fiberfrax® Durablanket® S
2. Dow Corning® 732 Multi-Purpose Sealant/Adhesive
3. Dow Corning® 790 Silicone Building Sealant
4. Dow Corning Sylgard 170 Silicone Elastomer
5. Quantum Silicones QSil 5558MC Silicone Elastomer

5.2 Test Deck/Test Slab

The test deck/test slab will be used to simulate a boundary in which the penetration seal assemblies may be installed. The test deck/test slab is not considered an integral part of the penetration seal assembly being tested and therefore is not intended to replicate MOX-specific plant conditions and not considered integral in bounding the performance of the penetration seal assemblies (e.g., concrete blend, compressive strength, rebar size and spacing). The test deck/test slab will be comprised of normal weight reinforced concrete.

Openings cast into the test deck/test slab will simulate certain features consistent with MOX penetrations (e.g., painted or coated interior finishes, etc.) as defined by detailed test plan drawings contained in Appendix A.

The testing laboratory shall be responsible for procuring all materials and components associated with the construction of the test deck/test slab, unless otherwise specified in the detailed test plan. The test deck shall comply with the requirements of the approved detailed test plan drawings contained in Appendix A, and shall be constructed in accordance with the testing facility's Quality Assurance Program.

The quality level of the test deck is **Non-safety**.

5.3 Penetrating Items

There are no penetrating items (e.g., conduits, cable trays and wire ways) associated with this seismic pressure test.

6.0 SPECIAL PRECAUTIONS

6.1 Precautions for Construction of Test Assemblies

Observe testing facilities safe work practices for construction, lifting, and moving of test assemblies.

6.2 Precautions for Installation of Seal Assemblies

Observe specific precautions recommended by seal material manufacturer as noted on product literature and material safety data sheets contained in AREVA NP Inc. Document 01-9198306, *Installation Instruction Manual for MOX Penetration Seal Test Program* [Reference 12.5].

6.3 Precautions for Conducting Seismic Pressure Tests

Proper safety precautions shall be exercised to preclude personnel from direct exposure to loss of pressure events, unexpected disengaging of testing equipment from the test deck, and all other related hazards.

7.0 PREREQUISITES

7.1 General Test Configuration Requirements

The test assembly, including slab layout and penetration seal configurations shall be as specified by AREVA and in accordance with the drawings and information contained in Appendix A of this test plan, and AREVA NP Inc. Document 01-9198306, *Installation Instruction Manual for MOX Penetration Seal Test Program* [Reference 12.5].

7.2 Safety Related Materials

Penetration seal materials that are purchased **Non-Safety** for this test program but are to be base-lined for future Nuclear Safety Related via the Commercial Grade Dedication process are indicated on the AREVA Bill of Materials (Appendix B.1).

7.3 Dimensioned Drawings

All test articles shall conform to the dimensioned drawings supplied by AREVA and contained in Appendix A of this test plan. Any differences between designed and constructed/tested assemblies shall be noted in final drawings contained within the test report.

7.4 Test Configuration

All test articles shall be securely fastened to the test apparatus by the laboratory. All openings shall be sealed in accordance with test plan instructions, drawings (Appendix A) and AREVA Document 01-9198306, *Installation Instruction Manual for MOX Penetration Seal Test Program* [Reference 12.5].

8.0 TEST ASSEMBLY CONSTRUCTION

8.1 Test Slab Construction

The Testing Laboratory shall construct the test slab, including location and size of openings and placement of penetrating items, in accordance with the drawings contained in Appendix A of this Test Plan.

AREVA QC (or approved designee) shall conduct an inspection of the test slab for compliance with the approved Test Plan drawings prior to installation of individual penetration seal test assemblies. Any differences between the approved Test Plan drawings and the as-built test slab configuration shall be corrected (if deemed necessary by the ARVEA Test Engineer) or noted by the QC Inspector (if correction is not required). Completion of this verification shall be documented as required by AREVA Document 01-9198306, *Installation Instruction Manual for MOX Penetration Seal Test Program* [Reference 12.5].

8.2 Penetration Seal Installation

AREVA (or approved designee) shall install the penetration seal test assemblies in accordance with the drawings contained in Appendix A of this detailed test plan and in accordance with AREVA Document 01-9198306, *Installation Instruction Manual for MOX Penetration Seal Test Program* [Reference 12.5].

QA/QC verification of penetration seal installations shall be documented as required by AREVA Document 01-9198306, *Installation Instruction Manual for MOX Penetration Seal Test Program* [Reference 12.5].

8.3 Pre-Test Verifications

Prior to conducting the seismic pressure test for each test assembly, the AREVA Test Engineer shall sign-off indicating that the test article (test penetration) is complete and ready for testing as required by AREVA Document 01-9198306, *Installation Instruction Manual for MOX Penetration Seal Test Program* [Reference 12.5].

9.0 PROCEDURE

9.1 Seismic Pressure Test Apparatus

The seismic pressure test apparatus to be used for this seismic pressure test shall be constructed and maintained by the testing laboratory. Two hemispherical 72" diameter steel pressure vessels shall be used to construct the assembly. One side shall be used to induce the testing pressures above atmospheric pressure based on Table 9-1, while the other side shall measure the pressure increase or "leakage" through the penetration. The test apparatus shall be "leak-tight" and substantial enough to withstand the pressures created for test purposes. Attachment shall be sufficient to withstand the forces imposed on the pressure vessels during the test.

9.2 Process

The differential pressures calculated for seismic pressure testing purposes, as they apply to MFFF penetration seal designs, are discussed in Calculation DCS01-ZEQ-EQ-CAL-M-10118-0 [Reference 12.1]. The seismic pressure testing will be performed using the requirements for the seal material being tested based upon the seal weight per square foot found in Calculation DCS01-ZEQ-EQ-CAL-M-10118-0 [Reference 12.1].

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The pressure used in each seismic pressure test is intended to bound a calculated differential pressure based on the penetration seal material's weight per square foot as detailed in the referenced calculation, with additional margin. The penetration seal seismic requirements in the referenced calculation are based upon the seal system type and the seal material. The bounding differential pressure to be used for each penetration seal seismic pressure test, the test hold time at each pressure, the acceptance criteria to meet the seismic pressure testing requirements, and the basis for each pressure are identified in Table 9-1.

A hold time of 5 minutes has been established for each test stage to ensure that sufficient time at pressure is maintained to confirm that the penetration seal will not catastrophically fail (i.e., will not become dislodged from the opening. This hold time provides reasonable assurance that the penetration seal meets the requirements stated in Calculation DCS01-ZEQ-EQ-CAL-M-10118-0 [Reference 12.1].

Table 9-1: Differential Seismic Pressure Test Levels

Test Stage	Differential Pressure (inch w.g.)	Required Hold Time (minutes)	Acceptance Criteria	Basis for the Selected Differential Pressure
1-4	11 (Note 1)	5	Penetration Seal Remains in Opening (Does not become dislodged)	Testing at this differential pressure meets the seismic demand expressed as a pressure [Reference 12.1]

Note 1: For the two silicone elastomer seal materials contained in Seismic Pressure Test 5 (DC-170 and QSil 5558MC), a nominal density of 85 pcf was used for the purposes of determining the test penetration seal's weight per square foot. 85 pcf bounds both the DC-170 and QSil 5558MC silicone elastomer seal materials with margin. 2" of Unifrax Fiberfrax® Durablanket® S will be installed as permanent damming behind the silicone elastomer seal (1" on each side of the penetration). 12 pcf was used for the purposes of determining the test penetrations seal weight per square foot of Durablanket based on the use of 6 pcf blanket material installed at 50% compression as outlined in the Installation Instruction Manual [Reference 12.5].

85 pcf times a seal depth of 0.75" on each side of the penetration yields a seal weight of approximately 10.6 psf. 12 pcf times a seal depth of 2" (1" thickness on each side of the penetration) yields a seal weight of approximately 2.0 psf. Approximately 10.6 psf plus 2.0 psf yields a total seal weight of approximately 12.6 psf. Based on Figure B-2.1 of Reference 12.1, the corresponding seismic pressure for a seal weight of 12.6 psf is approximately 10 inches w.g. (9.94 inches w.g.).

An approximate density of 65 pcf was determined for Dow Corning 732 based on its published specific gravity of 1.04 (64.8 pcf using specific gravity of 1.04 and water at 70 degrees F). This approximate density was confirmed as being conservative by filling a P35A 3.5 oz sample cup full to the top with Dow Corning 732, weighing the sample, subtracting the weight of the empty cup to ascertain the sample material weight (mass), and then using formulas used to derive Table 8-1 of AREVA Document 51-9201312 [Reference12.9] to obtain the density of Dow Corning 732. The sample material weight (mass) was measured as 107.6 grams, which correlates to a material density of 60.7 pcf. 65 pcf times a seal depth of 0.75" on each side of the penetration yields a seal weight of approximately 8.2 psf. 12 pcf times a seal depth of 2" (1" thickness on each side of the penetration) yields a seal weight of approximately 2.0 psf. Approximately 8.2 psf plus 2.0 psf yields a total seal weight of approximately 10.2 psf. Based on Figure B-2.1 of Reference 12.1, the corresponding seismic pressure for a seal weight of 10.2 psf is approximately 8 inches w.g. (8.04 inches w.g.)

Dow Corning 790 does not have a published specific gravity, so the sample cup method described above was used to determine the density of Dow Corning 790. The sample material weight (mass) was measured as 153.7 grams, which correlates to a material density of 86.7 pcf. To be conservative, a density value of 90 pcf is being used for Dow Corning 790. 90 pcf times a seal depth of 0.75" on each side of the penetration yields a seal weight of approximately 11.3 psf. 12 pcf times a seal depth of 2" (1" thickness on each side of the penetration) yields a seal weight of approximately 2.0 psf. Approximately 11.3 psf plus 2.0 psf yields a total seal weight of approximately 13.3 psf. Based on Figure B-2.1 of Reference 12.1, the corresponding seismic pressure for a seal weight of 13.3 psf is approximately 11 inches w.g. (10.49 inches w.g.).

Refer to Appendix C for additional details associated with the density samples for Dow Corning 732 and 790 sealants.

Because the Dow Corning 790 material has the highest density of the seal materials contained in Seismic Pressure Test 5, the seismic pressure for Dow Corning 790 will be used as the bounding pressure for all seal assemblies being tested in Seismic Pressure Test 5. Therefore, 11 inches w.g. shall be used as the test pressure for Seismic Pressure Test 5.

The test assembly shall be attached to the seismic pressure test apparatus and subjected to the pressures identified in Table 9-1 as described below.

9.2.1 For Stage 1, the test assembly shall be attached to the pressure test apparatus and subjected to air pressure test at the select pressure level identified in Table 9-1. Once this pressure has been obtained, the pressure shall be maintained for the hold time specified in Table 9-1. If the penetration seal catastrophically fails during this time, the time of failure shall be noted and the test shall be stopped.

9.2.2 Once the designated hold time for Stage 1 has been achieved, the pressure shall be vented from the test chamber. Next, the pressure identified in Table 9-1 for Stage 2 shall be applied to the opposite side of the penetration seal and held for the designated hold time. If the penetration seal catastrophically fails during this time, the time of failure shall be noted and the test shall be stopped.

9.2.3 Once the designated hold time for Stage 2 has been achieved, the pressure shall be vented from the test chamber. Next, the pressure identified in Table 9-1 for Stage 3 shall be applied to the original side of the penetration seal and held for the designated hold time. If the penetration seal catastrophically fails during this time, the time of failure shall be noted and the test shall be stopped.

9.2.4 Once the designated hold time for Stage 3 has been achieved, the pressure shall be vented from the test chamber. Finally, the pressure identified in Table 9-1 for Stage 4 shall be applied to the opposite side of the penetration seal and held for the designated hold time. If the penetration seal catastrophically fails during this time, the time of failure shall be noted and the test shall be stopped.

9.2.5 Following completion of Stage 4 pressure testing, the pressure shall be vented from the test chamber. At this point, the test may continue at the discretion of the AREVA test engineer and the testing laboratory manager in charge. Subsequent pressures, and hold times shall be recorded as directed by the AREVA test engineer.

NOTE: The pressure used for the testing performed above is based on a seal material depth of 3/4" inch for the primary sealant and a 1" depth for damming material with a similar configuration installed on both side of the barriers. Should the test be successful, a recommended subsequent testing pressure of 17 inches w.g. should be attempted. Success at the 17 inch w.g. pressure seismically qualifies 1-1/2 times the installed seal and damming depths (i.e., up to a 1-1/8" thick seal with 1-1/2" of damming on each side of the penetration).

9.2.6 If at any pressure level (or test stage) the penetration seal becomes dislodged from the opening or otherwise catastrophically fails, the seismic pressure test shall be terminated and the time to failure and pressure at which the failure occurred shall be recorded.

9.3 Post Test Examination

Following completion of the seismic pressure test, visual and destructive (if deemed necessary) post-test examinations shall be performed. These examinations shall include, but not necessarily be limited to, the following:

Visual observations of penetration seal condition including:

- Integrity of seal and conditions on both sides of the penetration
- Location of greatest degradation
- Condition of seal to barrier interface
- Condition of any permanent damming materials (if visible)

No destructive examinations should be conducted if the test is successful because this test assembly will be re-used for MOX Fire-Pressure Test 3. If the test fails any portion of the seismic pressure test, then destructive examinations may be performed to gain insights into the failure mechanisms.

10.0 DATA SYSTEMS

During the seismic pressure test, the various data systems connected to the test apparatus (blowers, anemometers, manometers, etc.) shall be controlled and monitored by the testing laboratory. Data recorded for these components shall be compiled and contained in the seismic pressure test report.

11.0 TEST REPORT

The testing laboratory shall submit a report on the results of the test. The test report shall contain the collected data and required quality control documentation. The final test report shall be prepared in sufficient detail to summarize the total testing activity. The final report shall include as a minimum:

- Date of test
- Location of test
- Description of test apparatus and test articles
- Calibration documentation for all data systems connected to the test apparatus
- Test procedures used

- Acceptance criteria
- Provide quality control records
- Color digital photographs of the test project

12.0 REFERENCES

12.1 Shaw AREVA MOX Services Calculation DCS01-ZEQ-EQ-CAL-M-10118-0, *"Penetration Seal Seismic Requirements"*

12.2 Shaw AREVA MOX Services Procedure PP9-1, Revision 14, *"SSC Quality Levels & Marking Design Documents"*

12.3 AREVA NP Inc. Procedure 1702-25, Revision 018, *"Assignment of Nuclear Safety Classification to Products and Services"*

12.4 AREVA NP Inc. Document 56-9141754-001, *"AREVA NP Inc. Quality Assurance Program"*

12.5 AREVA NP Inc. Document 01-9198306-002, *"Installation Instruction Manual for MOX Penetration Seal Test Program"*

12.6 Shaw AREVA MOX Services Document DCS01-BRA-DS-TRD-B-01365-0, *"Technical Requirements Document for MFFF Penetration Seals"*

12.7 Shaw AREVA MOX Services Specification DCS01-ZMJ-DS-SPE-M-21402-2, *"Equipment Seismic Qualification Specification"*

12.8 AREVA NP Inc. Document 51-9206196-001, *"Detailed Test Plan for Conducting Pressure Test 7"*

12.9 AREVA NP Inc. Document 51 9201312 001, *"Sample Cup Verification and Material Density Table for MOX Penetration Seal Test Program"*

Retrieval of Reference Documents

References 12.1, 12.2, 12.6, and 12.7 of this document were not entered into the AREVA NP Records Management system because they can be retrieved using the Shaw AREVA MOX Services Records Management system. These documents have been authorized for use as design information in this document with the AREVA NP Project Manager's written authorization as indicated by the PM's signature on Page 2.

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APPENDIX A: TEST DECK/TEST SLAB DRAWINGS

It is anticipated that the slab with the silicone elastomer seal material used for Pressure Test 7 will not be damaged during Pressure Test 7 and will be available for reuse in this seismic pressure test. For the purpose of Seismic Pressure Test 5, no changes will be made to the silicone elastomer seal installed for Pressure Test 7. For test slab drawings see Pressure Test 7 drawings in Appendix A of Document 51-9206196, *"Detailed Test Plan for Conducting Pressure Test 7"* [Reference 12.8].

APPENDIX B: BILL OF MATERIALS

This appendix contains the Bill of Materials for this seismic pressure test. The Bill of Materials in Section B.1 identifies materials to be provided by AREVA. The Bill of Materials in Section B.2 identifies materials to be provided by MOX Services. The Bill of Materials in Section B.3 identifies materials to be provided by Intertek.

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B.1 Table Bill of Materials for AREVA Supplied Items

Bill of Material for AREVA Supplied Items					
Item	**Description**	**Part Number**	**Quantity**	**Units**	**Total**
	None*				

None* - Assuming a successful Pressure Test 7, the seals will already be in place, no additional materials will be necessary.

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B.2 Bill of Materials for MOX Services Supplied Items

Bill of Material for MOX Services Supplied Items					
Item	**Description**	**Part Number**	**Quantity**	**Units**	**Total**
	None				

B.3 Bill of Materials for Intertek Supplied Items

Bill of Material for Intertek Supplied Items*					
Item	**Description**	**Part Number**	**Quantity**	**Units**	**Total**
	None				

* *This BOM applies to Intertek Supplied Items other than materials required to construct the test slab. Construction of the test slab, including procurement of any materials required for the test slab, is the responsibility of Intertek.*

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APPENDIX C: DESIGN VERIFICATION CHECKLIST

Dow Corning 732
Lot # 0007251823
Expiration Date 05/29/2015
Cup Weight 3.6 grams
Total Weight 111.2 grams
Sample Weight 107.6 grams
Sample Density 60.7 pcf

Dow Corning 790
Lot# 000739059
Expiration Date 04/24/2014
Cup Weight 3.4 grams
Total Weight 157.1 grams
Sample Weight 153.7
Sample Density 86.7 pcf

Scale Used: Scout Pro Model SP 401
AREVA Calibration ID# VH-13639
Calibrated on 05/23/2013
Due on11/23/2013

Prepared By: [redacted] Aaron Adrian Date: 9-27-13

Checked By: [redacted] Derrick Risner Date: 9/27/2013

Approved By: [redacted] L.S. Groesbeck Date: 9/27/13

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APPENDIX D: DESIGN VERIFICATION CHECKLIST

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DESIGN VERIFICATION CHECKLIST

Document Identifier 51 - 9209291 - 000

Title Detailed Test Plan for Conducting MOX Seismic Pressure Test 5

1.	Were the inputs correctly selected and incorporated into design or analysis?	☒ Y	☐ N	☐ N/A
2.	Are assumptions necessary to perform the design or analysis activity adequately described and reasonable? Where necessary, are the assumptions identified for subsequent re-verifications when the detailed design activities are completed? Note: If there are no assumptions (of any type), then N/A shall be checked.	☐ Y	☐ N	☒ N/A
3.	Are the appropriate quality and quality assurance requirements specified? Or, for documents prepared per AREVA NP Inc. procedures, have the procedural requirements been met?	☒ Y	☐ N	☐ N/A
4.	If the design or analysis cites or is required to cite requirements or criteria based upon applicable codes, standards, specific regulatory requirements, including issue and addenda, are these properly identified, and are the requirements/criteria for design or analysis met?	☒ Y	☐ N	☐ N/A
5.	Have applicable construction and operating experience been considered?	☒ Y	☐ N	☐ N/A
6.	Have the design interface requirements been satisfied?	☒ Y	☐ N	☐ N/A
7.	Was an appropriate design or analytical method used?	☒ Y	☐ N	☐ N/A
8.	Is the output reasonable compared to inputs?	☒ Y	☐ N	☐ N/A
9.	Are the specified parts, equipment and processes suitable for the required application?	☒ Y	☐ N	☐ N/A
10.	Are the specified materials compatible with each other and the design environmental conditions to which the material will be exposed?	☒ Y	☐ N	☐ N/A
11.	Have adequate maintenance features and requirements been specified?	☐ Y	☐ N	☒ N/A
12.	Are accessibility and other design provisions adequate for performance of needed maintenance and repair?	☐ Y	☐ N	☒ N/A
13.	Has adequate accessibility been provided to perform the in-service inspection expected to be required during the plant life?	☐ Y	☐ N	☒ N/A
14.	Has the design properly considered radiation exposure to the public and plant personnel?	☐ Y	☐ N	☒ N/A
15.	Are the acceptance criteria incorporated in the design documents sufficient to allow verification that design requirements have been satisfactorily accomplished?	☒ Y	☐ N	☐ N/A
16.	Have adequate preoperational and subsequent periodic test requirements been appropriately specified?	☐ Y	☐ N	☒ N/A
17.	Are adequate handling, storage, cleaning and shipping requirements specified?	☒ Y	☐ N	☐ N/A
18.	Are adequate identification requirements specified?	☒ Y	☐ N	☐ N/A
19.	Is the document prepared and being released under the AREVA NP Inc. Quality Assurance Program? If not, are requirements for record preparation review, approval, retention, etc., adequately specified?	☒ Y	☐ N	☐ N/A

AREVA

Document No.: 51-9209291-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 5

22410-8 (02/25/2013) *Page 2 of 2*

AREVA

DESIGN VERIFICATION CHECKLIST

Document Identifier 51 - 9209291 - 000

Comments on the preceding responses:
N/A

Verified By: (First, MI, Last)	Victor E. Kaldenbach (Printed / Typed Name)	[redacted] (Signature)	09/26/2013 (Date)

APPENDIX E
Commercial Grade Dedication-Related Documents

The vast majority of penetration seals that will be installed throughout the MFFF will be designated as quality level QL-1. For this reason, permanent penetration seal materials used in this test program were procured by AREVA or supplied by MOX Services and suitably base-lined so that future procurements of the same commercial materials can undergo the Commercial Grade Dedication process in support Nuclear Safety Related (i.e., MOX QL-1) plant installations.

Only the primary seal material(s) that were specified as a part of the final penetration seal design and left in place during the test needed to be base-lined for future dedication of similarly procured materials. For this test, the following AREVA documents contain information associated with materials that underwent the base-lining process. These documents establish material critical characteristics as a baseline for future Commercial Grade Dedication.

- AREVA Document 51-9212659-000, "Dow Corning Sylgard 170 Silicone Elastomer Critical Characteristics"
- AREVA Document 51-9212663-000, "Quantum Silicones QSil 5558MC Silicone Elastomer Critical Characteristics"
- AREVA Document 51-9212666-000, "Dow Corning 732 Multi-Purpose Sealant Critical Characteristics"
- AREVA Document 51-9212668-000, "Dow Corning 790 Silicone Building Sealant Critical Characteristics"
- AREVA Document 51-9212670-000, "Unifrax Durablanket S Critical Characteristics"

These documents are available from the AREVA Records Management System or the MOX Records Management System.

APPENDIX F
Quality Documents

The test assembly used in Seismic Pressure Test 5 was the same assembly tested in Pressure Test 7. For Quality Records of installation, Certificates of Conformance of the sealant materials, and QA Receiving Documents of the penetration materials for this, assembly, please see the Appendices in Intertek Report No. 101276459SAT-001C (Pressure Test 7) [AREVA document 58-9223086-000].

LIST OF CALIBRATED EQUIPMENT

Description	Serial No.	Calibration Due Date
Thermo-Hygrometer	111901142	11/2/2013
Data Acquisition System	18041FE	1/16/2014*
Pressure Transducer	406707	7/16/2014*
Mass Flowmeter	4270050001001	2/1/2014*
Mass Flowmeter	4270050003001	2/7/2014*
Stop watch	122601005	10/23/2014

* See Intertek Corrective Action Request (CAR) 51-AMER-SAT-2014-INT and AREVA Contract Variation Approval Request (CVAR) 87-9224669-000

[redacted]

ilac-MRA A2LA ACCREDITED
Calibration
Certificate No. 1750.01

Calibration complies with ISO/IEC 17025, ANSI/NCSL Z540-1, and 9001

Cert. No.: 4094-3993529

Traceable® Certificate of Calibration for Digital Humidity/Temp. Meter

Manufactured for and distributed by: Fisher Scientific, 300 Industry Drive, Pittsburgh, PA 15275-1001

Instrument Identification:

Model Numbers: 11-661-11, FB61252, 255TB S/N: 111901142 Manufacturer: Control Company

Standards/Equipment:

Description	Serial Number	Due Date	NIST Traceable Reference
Chilled Mirror Hygrometer	31874/H2048MCR	5/12/12	9193
Digital Thermometer	90969500	9/14/12	4000-3893285

Certificate Information:

Technician: 104 Procedure: CAL-17 Cal Date: 11/02/11 **Cal Due: 11/02/13**
Test Conditions: 22.5°C 45.0 %RH 1017 mBar

Calibration Data: (New Instrument)

Unit(s)	Nominal	As Found	In Tol	Nominal	As Left	In Tol	Min	Max	±U	TUR
°C		N.A.		23.667	23	Y	23	25	0.590	1.7:1
%RH		N.A.		41.450	41	Y	37	45	0.000	0.0:1

This Instrument was calibrated using Instruments Traceable to National Institute of Standards and Technology.

A Test Uncertainty Ratio of at least 4:1 is maintained unless otherwise stated and is calculated using the expanded measurement uncertainty. Uncertainty evaluation includes the instrument under test and is calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor k=2 to approximate a 95% confidence level. In tolerance conditions are based on test results falling within specified limits with no reduction by the uncertainty of the measurement. The results contained herein relate only to the item calibrated. This certificate shall not be reproduced except in full, without written approval of Control Company.

Nominal=Standard's Reading; As Left=Instrument's Reading; In Tol=In Tolerance; Min/Max=Acceptance Range; ±U=Expanded Measurement Uncertainty; TUR=Test Uncertainty Ratio; Accuracy=±(Max-Min)/2; Min = Nominal(Rounded) - Tolerance; Max = Nominal(Rounded) + Tolerance; Date=MM/DD/YY

[redacted] Nicol Rodriguez, Quality Manager

[redacted] Wallace Berry, Technical Manager

Maintaining Accuracy:

In our opinion once calibrated your Digital Humidity/Temp. Meter should maintain its accuracy. There is no exact way to determine how long calibration will be maintained. Digital Humidity/Temp. Meters change little, if any at all, but can be affected by aging, temperature, shock, and contamination.

Recalibration:

For factory calibration and re-certification traceable to National Institute of Standards and Technology contact Control Company.

CONTROL COMPANY 4455 Rex Road Friendswood, TX 77546 USA
Phone 281 482-1714 Fax 281 482-9448 service@control3.com www.control3.com

Certificate of Calibration

Certificate Number:	2994344	**Date:**	28-MAY-2014
Serial Number: **Description:**	18041FE CCA,USB-6210	**Part Number:**	194710E-04L
Calibration Date:	06-DEC-2012	**Shelf Life:**	0 Days
Calibration Due Date*:	-	**Recommended Calibration Interval:**	12 Months
Temperature:	22.26 °C	**Humidity:**	40.7% RH

Standards Used

Manufacturer	Model	Tracking Number	Calibration Date	Calibration Due
NATIONAL INSTRUMENTS	PXI-4070	6712	26-JUN-12	26-JUN-13
NATIONAL INSTRUMENTS	PXI-6259	6871	27-JUN-12	27-JUN-13
NATIONAL INSTRUMENTS	PXI-5421	7591	25-JUN-12	25-JUN-13
VAISALA	HMT331	7885	24-MAY-12	24-MAY-13

National Instruments certifies that at the time of test, the above product was calibrated in accordance with applicable National Instruments procedures. Th procedures are designed to ensure that the product listed above meets or exceeds National Instruments specifications.

We further certify that the environment in which this product was calibrated is maintained within the operating specifications of the instrument(s) standards. The measurement standards used during calibration are traceable to NIST and/or other International Measurement Institutes (NMI's) that signatories of the International Committee of Weights and Measure (CIPM) Mutual Recognition Agreement (MRA).

The information shown on this certificate applies only to the instrument identified above and this certificate may not be reproduced, except in full, withou prior written consent of National Instruments.

*Optional field. ***Calibration Due Date***, may be established by combining the *Recommended Calibration Interval*, *Calibration Date* and, when applic accounting for *Shelf Life*. Shelf life defines how long an instrument may be stored, after calibration, without impact to its specifications.

The instrument's Calibration Due Date can be calculated using the following methods:

a) If date placed in service is within *Calibration Date + Shelf Life*: *Calibration Due Date* = date placed in service + *Recommended Calibration Interval*

b) If date placed in service is outside *Calibration Date + Shelf Life*: *Calibration Due Date* = *Calibration Date + Shelf Life + Recommended Calibration Interval*

For questions or comments, please contact National Instruments Technical Support.

[redacted]

Andrew Krupp
Vice President, Quality and Continuous Improvement

OMEGADYNE INC.
CERTIFICATE OF CALIBRATION

Model Number: PX409-005DWUV
Serial Number: 406707
Date: 7/15/2011
Job: R3274

Capacity: 5.00 PSID
Excitation: 10.00 Vdc
Technician: KAPOME

Pressure Connection: 1/4-18 NPT Male

WIRING CODE

Electrical Connection: Integral Cable 4-Cond
BLACK = - EXCITATION
WHITE = + SIGNAL
GREEN = - SIGNAL
RED = + EXCITATION

CALIBRATION WORKSHEET

NOTES

Pressure PSID	OUTPUT mVdc
0.00	0.007
2.50	50.008
5.00	100.016
2.50	50.007
0.00	0.007

NIST Traceable Number(s): C-1954, C-1289

Omegadyne Inc. certifies that the above instrumentation has been calibrated and tested to meet or to exceed the published specifications. This calibration was performed using instrumentation and standards that are traceable to the National Institute of Standards and Technology. This document also ensures that all testing performed complies with MIL-STD 45662-A, ISO 10012-1, and ANSI/NCSL Z540-1-1994 requirements. After Final Calibration our products are stored in an environmentally controlled stock room and are considered in bonded storage. Depending on environmental conditions and severity of use, factory calibration is recommended every one to three years after the initial service installation date.

[redacted]

Accepted and Certified By

7/15/2011
Date

OMEGA ENGINEERING, INC.
An OMEGA Technologies Company
ONE OMEGA DRIVE, BOX 4047, STAMFORD, CT, U.S.A. 06907-0047
(203) 359-1660 TELEX: 996404 CABLE: OMEGA FAX: (203) 359-7700
http://www.omega.com e-mail: info@omega.com

CERTIFICATE OF ACCURACY

This is to certify that meter serial number 4270050001001 is certified to an accuracy of +/- 1 % of 20 SCFM of N2 and has been calibrated using standards whose accuracies are traceable to the National Institute of Standards and Technology (N.I.S.T.) according to our procedures.

All traceable certifications and related procedures for the equipment used are on file.

Barometer Number:	n/a
Vol-U-Meter Number:	Base 1920 Cell 1898
Type of Gas:	N2
Gas Used for Calibration:	N2
Pressure Gauge Number:	1122
Timer Number:	n/a
Thermometer Number:	n/a
Voltmeter:	NA
Calibrated By:	[redacted]
Date Calibrated:	9-1-13

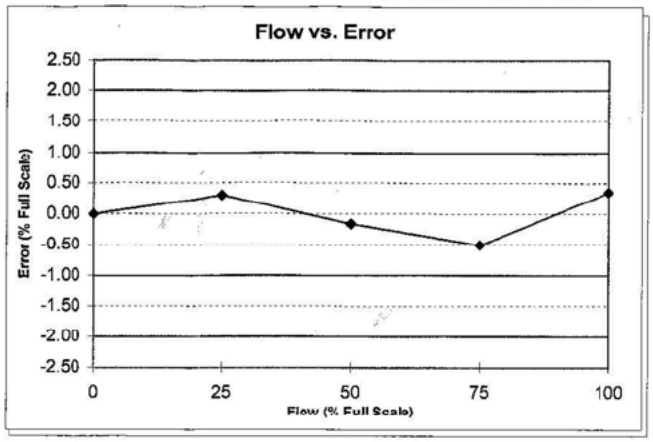
Uncertainty of measurements: +/- 0.3 % of reading

Calibrations were performed under a controlled Quality System Manual, which incorporates the requirements of ISO Guide 25, ISO 10012-1, ISO 9001 (1994) and ISO 13485. The released ISO 13485 registration (Medical Devices – Quality Management Systems – System Requirements for Regulatory Purposes) includes Design Controls and Metrology Systems.

0122220B FM-1011 REV B

OMEGA ENGINEERING, INC.
An OMEGA Technologies Company
ONE OMEGA DRIVE, BOX 4047, STAMFORD, CT, U.S.A. 06907-0047
(203) 359-1660 TELEX: 995404 CABLE OMEGA FAX: (203) 359-7700
http://www.omega.com e-mail: info@omega.com

Mass Flowmeter/Flow Controller Calibration Data Sheet



DATE	2/1/2013
TIME	7:59:59 AM
Shop Order No.	427005
Serial No.	4270050001001

Calibration Data

Setpoint (SLPM)	Flow Signal (Volts)	Device Flow (SLPM)	Actual Flow (SLPM)	% FS Error * (%)
00.00	0.000	00.00	00.00	0.00
05.00	1.253	05.01	05.07	0.30
10.00	2.502	10.01	09.98	-0.16
15.00	3.752	15.01	14.91	-0.50
20.00	5.000	20.00	20.07	0.35

* % Full Scale (FS) Error = (100)(Actual Flow - Device Flow) / Full Scale Flow

GAS

Nameplate (Actual)	Nitrogen
Surrogate (Calibration)	Nitrogen (N2)

STANDARD CONDITIONS

Std. Pressure	101.32 kPa (760 Torr)
Std. Temperature	21.1 °C

PRESSURE

Inlet (P_1)	20 PSIG
Outlet (P_2)	N/A

TEMPERATURE

Calib. Temperature	21.9 °C
Oper. Temperature	70 °F

Max. Flow Rate	20 SLPM
Gas Factor	1
Calibrator	MT
Flow Standard	PICO 1898-1
Unit Accuracy	1.0 FS & 0.0 Rate
Calib. Attitude	Horizontal (base down)

LEAK TEST DATA

Inboard (Externally Pressurized) Helium Leak Rate: < 1 x 10^{-8} atm cc/sec
Vacuum Pressure: < 5 milliTorr

Tested By: [redacted] **Date:** 1-1-13

FM-1119 Rev. K

OMEGA ENGINEERING, INC.
An OMEGA Technologies Company
ONE OMEGA DRIVE, BOX 4047, STAMFORD, CT, U.S.A. 06907-0047
(203) 359-1660 TELEX: 996404 CABLE: OMEGA FAX: (203) 359-7700
http://www.omega.com e-mail: info@omega.com

CERTIFICATE OF ACCURACY

This is to certify that meter serial number 4270050003001 is certified to an accuracy of +/- 1 % of 200 slpm of N2 and has been calibrated using standards whose accuracies are traceable to the National Institute of Standards and Technology (N.I.S.T.) according to our procedures.

All traceable certifications and related procedures for the equipment used are on file.

Barometer Number:	1667
Vol-U-Meter Number:	613
Type of Gas:	N2
Gas Used for Calibration:	N2
Pressure Gauge Number:	1950
Timer Number:	1876
Thermometer Number:	985
Voltmeter:	NA
Calibrated By:	[redacted]
Date Calibrated:	2-7-13

Uncertainty of measurements: +/- 0.3 % of reading

Calibrations were performed under a controlled Quality System Manual, which incorporates the requirements of ISO Guide 25, ISO 10012-1, ISO 9001 (1994) and ISO 13485. The released ISO 13485 registration (Medical Devices – Quality Management Systems – System Requirements for Regulatory Purposes) includes Design Controls and Metrology Systems.

0122220B FM-1011 REV B

OMEGA ENGINEERING, INC.
An OMEGA Technologies Company
ONE OMEGA DRIVE, BOX 4047, STAMFORD, CT, U.S.A. 06907-0047
(203) 359-1660 TELEX: 996404 CABLE: OMEGA FAX: (203) 359-7700
http://www.omega.com e-mail: info@omega.com

MASS FLOWMETER/FLOW CONTROLLER CALIBRATION DATA SHEET

SPECIFICATIONS

MODEL #: FMA-875A-V-NIST

SERIAL #: 4270050003001

FLOW RANGE: 200 SLPM

OPERATING TEMPERATURE: 70 F

NAMEPLATE (PROCESS) GAS: N2

SURROGATE (CALIBRATION) GAS: N2

STANDARD TEMPERATURE: 21.1 C

STANDARD PRESSURE: 101.32 kPa (760 Torr)

P1 (INLET PRESSURE): 20 PSIG

P2 (OUTLET PRESSURE): N/A

CALIBRATION TEMPERATURE: 18.7 C

CALIBRATION ATTITUDE (calibration attitude checked):

- ☒ Horizontal (base down)
- ☐ Horizontal (upside down)
- ☐ Horizontal (front down)
- ☐ Horizontal (back down)
- ☐ Vertical (inlet up)
- ☐ Vertical (inlet down)

CALIBRATION ACCURACY: ± 1 % OF FULL SCALE FLOW

CALIBRATION DATA

% FULL SCALE (Nominal)	FLOW SIGNAL OUTPUT (signal type checked) ☒ Vdc ☐ mAdc	STANDARD VOLUMETRIC FLOW (Units: SLPM)		ERROR * (% Full Scale)
		DEVICE	MEASURED	
100	5.000	200.000	200.079	.5395
75	3.750	150.000	149.317	-.3415
50	2.500	100.000	100.488	.2440
25	1.250	50.000	50.852	.4260
0	0.00	0.000	0.000	------

* % FULL SCALE ERROR = (100) (MEASURED FLOW - DEVICE FLOW) ÷ FULL SCALE FLOW

CALIBRATED BY: [redacted] DATE: 2-7-13

LEAK TEST DATA

INBOARD (EXTERNALLY-PRESSURIZED) HELIUM LEAK RATE: $\leq 1 \times 10^{-8}$ atm cc/sec

VACUUM PRESSURE: ≤5 millitorr

TESTED BY: [redacted] DATE: 2-1-13

FM-355-OE Rev. 0

[redacted]

Calibration complies with ISO 9001
ISO/IEC 17025 AND ANSI/NCSL Z540-1

ACCREDITED
Calibration
Certificate No. 1750.01

Cert. No.: 1042-4689088

Traceable® Certificate of Calibration for Waterproof Stopwatch

Manufactured for and distributed by: Fisher Scientific, 300 Industry Drive, Pittsburgh, PA 15275-1001

Instrument Identification:

Model Numbers: 0666256, FB70240 S/N: 122601005 Manufacturer: Control Company

Standards/Equipment:

Description	Serial Number	Due Date	NIST Traceable Reference
Non-contact Frequency Counter	26.6 2025	3/06/13	1000313632

Certificate Information:

Technician: 67 Procedure: CAL-01 Cal Date: 10/23/12 **Cal Due: 10/23/14**

Test Conditions: 22.5°C 45.0 %RH 1015 mBar

Calibration Data: (New Instrument)

Unit(s)	Nominal	As Found	In Tol	Nominal	As Left	In Tol	Min	Max	±U	TUR
Sec/24hr		N.A.		0.000	-0.600	Y	-8.640	8.640	0.130	>4:1

This Instrument was calibrated using Instruments Traceable to National Institute of Standards and Technology.

A Test Uncertainty Ratio of at least 4:1 is maintained unless otherwise stated and is calculated using the expanded measurement uncertainty. Uncertainty evaluation includes the instrument under test and is calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor k=2 to approximate a 95% confidence level. In tolerance conditions are based on test results falling within specified limits with no reduction by the uncertainty of the measurement. The results contained herein relate only to the item calibrated. This certificate shall not be reproduced except in full, without written approval of Control Company.

Nominal=Standard's Reading; As Left=Instrument's Reading; In Tol=In Tolerance; Min/Max=Acceptance Range; ±U=Expanded Measurement Uncertainty; TUR=Test Uncertainty Ratio; Accuracy=±(Max-Min)/2; Min = Nominal(Rounded) - Tolerance; Max = Nominal(Rounded) + Tolerance; Date=MM/DD/YY

[redacted]

[redacted]

Maintaining Accuracy:

In our opinion once calibrated your Waterproof Stopwatch should maintain its accuracy. There is no exact way to determine how long calibration will be maintained. Waterproof Stopwatchs change little, if any at all, but can be affected by aging, temperature, shock, and contamination.

Recalibration:

For factory calibration and re-certification traceable to National Institute of Standards and Technology contact Control Company.

CONTROL COMPANY 4455 Rex Road Friendswood, TX 77546 USA
Phone 281 482-1714 Fax 281 482-9448 service@control3.com www.control3.com

TEST ARTICLE ATTRIBUTE CHECKLIST

PROJECT NO: G101276459-006 **CLIENT:** AREVA

Project Description SEISMIC TEST #5
(USING PRESSURE #7 SLAB)

		SAT	UNSAT
I.	**ASSEMBLY**		
	Proper materials used	X	
	Material documentation complete	X	
	Configuration/dimensions in accordance w/ approved drawings	X	
	Description of assembly: SEISMIC #5		
II.	**ELECTRICAL CABLE**		
	Correct material used	N/A	
	Material documentation complete		
	Correct cable lay-in and fill requirements		
	Description of electrical cable:		
III.	**THERMOCOUPLES**		
	Correct thermocouple type, certs received	N/A	
	Thermocouples positioned in accordance with test plan		
	Adequately labeled and secured		
	Quality Assurance verification done		
	Description of thermocouples:		
IV.	**FIRE BARRIER**		
	Name or type of material K		
	INTERTEK received material documentation provided by Client	X	
	Materials provided by INTERTEK properly documented	X	
	Materials installed by INTERTEK in accordance with test plan	X	
	INTERTEK Quality Assurance responsibilities determined	X	
	QA responsibilities of Client installation determined		
	Moisture check required ..... Yes ___ No X		
	Special requirements		

V. FINAL PREBURN VERIFICATION

Final visual inspection & approval (initials) INTERTEK [redacted] Client [redacted]

CALIBRATION DOCUMENTATION (S/N and calibration due date)

Data Acquisition Equipment: SEE TEST DATA PACKAGE
Other Measurement Devices:

Temperature 93 Humidity 47 Date 9-30-13 10/1/13 Time of Test start 2:06 PM

INTERTEK pre-burn checklist performed by [redacted]

Client representative present to witness test [redacted]

Note: Verification to be made using initials by INTERTEK Quality Assurance or test personnel.

09-013-12/30/03

Intertek

TEST ACTIVITIES EVENT LOG

Note:
This Log is used to document the date and note the significant events during the completion of Test Project #G101276459SAT-006 for AREVA NP, Inc.

Page 1 of 1

ITEM	DATE	INIT'L
Concrete poured by Alamo Concrete	9/3/13	MD
Concrete conditioned	9/9/13	MD
Critical attributes of test slab verified	9/24/13	MD
Seals poured	9/24/13	MD
Completed seal assembly verified against the test plan	9/25/13	MD
Pressure Test #7 stage 1a-4a conducted on the top side	9/30/13	MD
Pressure Test #7 stage 5a conducted on the top side	10/1/13	MD
Seismic Test #5 conducted on re-purposed assembly used in Pressure Test #7	10/1/13	MD

9/12 NQAP-007.7.3

Certificate of Conformance

Client Name: AREVA NP Inc. Date: September 4, 2014

Project No: G101276459SAT-006

Intertek Testing Services NA (Intertek) has conducted testing for AREVA NP Inc., on the seismic pressure resistance capabilities of Unifrax Fiberfrax® Durablanket® S (Durablanket), Dow Corning® Sylgard® 170 Silicone Elastomer (DC-170), Quantum Silicones QSil 5558MC Silicone Elastomer (QSil 5558MC), Dow Corning® 732 Multi-Purpose Sealant (DC-732) and Dow Corning® 790 Silicone Building Sealant (DC-790) through a 12" thick concrete deck for compliance with the applicable requirements of and in accordance with AREVA NP Inc. Document No. 51-9209291-000, *Detailed Test Plan for Conducting MOX Seismic Pressure Test 5*. This test took place on October 1, 2013.

The materials, processes), and deliverable(s) in this project were managed under and conform to the test laboratory's 10CFR50 Appendix B Quality Assurance Program.

[redacted]

Michael A Brown
Quality Supervisor

September 4, 2014
Date

Intertek Testing Laboratory
16015 Shady Falls Road, Elmendorf TX 78112
210-635-8100

Quality Assurance Statement

Intertek is devoted to engineering, inspection, quality assurance and testing of building materials, products and assemblies. Intertek has developed and implemented a Quality Assurance Program designed to provide its clients with a planned procedure of order and document processing for inspection and testing services it provides to assure conformity to requirements, codes, standards and specifications. The Program is designed to meet the intent of ANSI 45.2 Quality Assurance Program Requirements for Nuclear Power Plants, and complies with the requirements of the ASME Code, SPPE, Military Standards and other less stringent programs. It is the Laboratory's intention to adhere strictly to this Program, to assure that the services offered to its clients remains of the highest quality and accuracy possible.

All QA Surveillance documents remain on file at the Laboratory, and are available for inspection by authorized personnel in the performance of an on-site QA Audit. All materials, services and supplies used herein were obtained with appropriate QA Certifications of Compliance.

REVISION SUMMARY

DATE	SUMMARY
September 4, 2014	Original Issue Date