



AATCC Proficiency Testing Program Resistance and Repellency Module 2020-11 Results

About AATCC

AATCC is the world's largest technical and scientific society devoted to textiles. The Association has thousands of individual members and hundreds of corporate members in more than 50 countries.

Since its inception in 1921, the Association has been dedicated to three objectives.

Education: To promote increase of knowledge of the application of dyes and chemicals in the textile industry.

Research: To encourage in any practical way research work on chemical processes and materials of importance to the textile industry.

Communication: To establish for the members channels by which the interchange of professional knowledge among them may be increased.

www.aatcc.org

AATCC Proficiency Testing Programs (PTP)

AATCC PTPs allow laboratories to compare their test results to those of other laboratories around the world. The programs support lab certification and continuous improvement initiatives. Samples are selected to provide consistent results in a meaningful range for each test method or evaluation procedure.

www.aatcc.org/test/proficiency

Summary Report

This report is the compilation of data reported by each laboratory that participated in the indicated PTP module. Each laboratory was assigned a randomly-selected Lab Code. Results throughout this report are listed by these codes.

Labs may use the data tables and charts to compare their results to the mean, median, and mode of the compiled data for each test. Labs may also compare the standard deviation and range of their data to that of the larger population. Precision and accuracy are both components of lab proficiency.

The following statistics are provided separately for each lab, and for the complete data set of all labs.

Mode: The most frequently-occurring number in a sample set.

Median: The value separating the higher half of a sample set from the lower half (i.e. the number in the middle).

Mean: The average. It is calculated by summing all values in the sample set and dividing the sum by the count of values in the sample set.

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$$

Standard Deviation: The root-mean-square (RMS) deviation of the values from their mean or the square root of the variance. It is a measure of the dispersion of data from the mean or how much the data varies around the mean. The variance is first calculated as one divided by the count of values in the data set, multiplied by the sum of each value minus the mean, squared. Taking the square root of this calculation yields a measure of variability that is in the same scale as the average.

$$\sigma = \sqrt{\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2}$$

Minimum: The smallest value in the sample set.

Maximum: The largest value in the sample set.

Range: The length of the smallest interval which contains all of the values from the sample set. It is calculated by subtracting the minimum value from the maximum value.

Resistance and Repellency Module 2020-11

For this round, **samples of four fabrics** were provided to each laboratory.

Labs performed the following test methods and/or evaluation procedures.

AATCC TM22-2017e, Test Method for Water Repellency: Spray

AATCC TM35-2018e, Test Method for Water Resistance: Rain

AATCC TM42-2017e, Test Method for Water Resistance: Impact Penetration

AATCC TM127-2017(2018)e, Test Method for Water Resistance: Hydrostatic Pressure

AATCC TM118-2013e2, Test Method for Oil repellency: Hydrocarbon Resistance

Labs reported the following data, which is summarized in the following worksheets.

B: Spray Test Grade (AATCC TM22)

C: g Water Penetration (AATCC TM35)

D: g Water Penetration (AATCC TM42)

E: Tester (AATCC TM42)

F: mm H₂O (AATCC TM127)

G: Tester (AATCC TM127)

H: Repellency Grade (AATCC TM118)



**Spray Test
Grade (TM22)**

	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)
Lab Code	101	1234	1235	15849	165
Data1	75	75	—	75	80
Data2	75	75	—	75	80
Data3	75	75	—	75	75
Data4	75	75	—	75	80
Data5	75	75	—	75	80
Data6	75	75	—	75	80
Data7	—	75	—	75	80
Data8	—	75	—	75	75
Data9	—	75	—	75	80
Lab Mode	75	75	—	75	80
Lab Median	75	75	—	75	80
Lab Mean	75.0	75.0	—	75.0	78.9
Lab St. Dev.	0.00	0.0	—	0.0	2.2
Lab Max.	75	75	0	75	80
Lab Min.	75	75	0	75	75
Lab Range	0	0	0	0	5



**Spray Test
Grade (TM22)**

	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)
Lab Code	1494	20012	1758	1913	22587
Data1	75	75	—	75	75
Data2	75	75	—	75	75
Data3	75	75	—	80	75
Data4	75	75	—	70	75
Data5	75	75	—	75	75
Data6	75	75	—	75	75
Data7	75	75	—	75	75
Data8	75	75	—	80	75
Data9	75	75	—	75	75
Lab Mode	75	75	—	75	75
Lab Median	75	75	—	75	75
Lab Mean	75.0	75.0	—	75.6	75.0
Lab St. Dev.	0.0	0.0	—	3.0	0.0
Lab Max.	75	75	0	80	75
Lab Min.	75	75	0	70	75
Lab Range	0	0	0	10	0



**Spray Test
Grade (TM22)**

	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)
Lab Code	24686	25654	26449	27726	1517
Data1	80	75	80	80	80
Data2	80	75	80	80	80
Data3	80	75	80	80	80
Data4	80	70	–	80	80
Data5	80	75	–	80	80
Data6	80	75	–	80	80
Data7	80	75	–	80	75
Data8	80	75	–	80	75
Data9	80	75	–	80	75
Lab Mode	80	75	80	80	80
Lab Median	80	75	80	80	80
Lab Mean	80.0	74.4	80.0	80.0	78.3
Lab St. Dev.	0.0	1.7	0.0	0.0	2.5
Lab Max.	80	75	80	80	80
Lab Min.	80	70	80	80	75
Lab Range	0	5	0	0	5



**Spray Test
Grade (TM22)**

	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)
Lab Code	1807	1997	1471	31087	1707
Data1	75	—	70	75	75
Data2	75	—	70	75	75
Data3	75	—	70	75	75
Data4	75	—	70	75	75
Data5	75	—	70	75	75
Data6	75	—	70	75	75
Data7	75	—	70	75	75
Data8	75	—	70	75	75
Data9	75	—	70	75	75
Lab Mode	75	—	70	75	75
Lab Median	75	—	70	75	75
Lab Mean	75.0	—	70.0	75.0	75.0
Lab St. Dev.	0.0	—	0.0	0.00	0.00
Lab Max.	75	0	70	75	75
Lab Min.	75	0	70	75	75
Lab Range	0	0	0	0	0



**Spray Test
Grade (TM22)**

	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)
Lab Code	31090	31097	31146	31254	31604
Data1	75	80	75	70	75
Data2	75	80	75	70	75
Data3	75	80	75	70	75
Data4	75	–	75	70	80
Data5	75	–	75	70	80
Data6	75	–	75	70	80
Data7	75	–	75	70	80
Data8	75	–	75	70	80
Data9	75	–	75	70	80
Lab Mode	75	80	75	70	80
Lab Median	75	80	75	70	80
Lab Mean	75.0	80.0	75.0	70.0	78.3
Lab St. Dev.	0.00	0.00	0.00	0.00	2.50
Lab Max.	75	80	75	70	80
Lab Min.	75	80	75	70	75
Lab Range	0	0	0	0	5



**Spray Test
Grade (TM22)**

	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)
Lab Code	2021	37290	1814	426	43198
Data1	70	75	80	75	80
Data2	70	75	80	75	80
Data3	70	75	80	75	80
Data4	70	70	80	75	80
Data5	70	70	80	75	80
Data6	70	70	80	75	80
Data7	70	70	80	75	80
Data8	70	70	80	75	80
Data9	70	70	80	75	80
Lab Mode	70	70	80	75	80
Lab Median	70	70	80	75	80
Lab Mean	70.0	71.7	80.0	75.0	80.0
Lab St. Dev.	0.00	2.50	0.00	0.00	0.00
Lab Max.	70	75	80	75	80
Lab Min.	70	70	80	75	80
Lab Range	0	5	0	0	0



**Spray Test
Grade (TM22)**

	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)
Lab Code	43587	43848	1406	1938	45824
Data1	70	70	75	80	70
Data2	70	60	75	80	70
Data3	70	70	75	80	70
Data4	70	60	75	80	70
Data5	70	70	75	80	70
Data6	70	70	75	80	70
Data7	70	70	75	80	70
Data8	70	70	75	80	70
Data9	70	60	75	80	70
Lab Mode	70	70	75	80	70
Lab Median	70	70	75	80	70
Lab Mean	70.0	66.7	75.0	80.0	70.0
Lab St. Dev.	0.00	5.00	0.00	0.00	0.00
Lab Max.	70	70	75	80	70
Lab Min.	70	60	75	80	70
Lab Range	0	10	0	0	0



**Spray Test
Grade (TM22)**

	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)	Spray Test Grade (TM22)
Lab Code	1904	10-LAB-001	33680	5967	1437
Data1	75	80	—	75	70
Data2	75	80	—	75	70
Data3	75	80	—	80	70
Data4	—	—	—	80	70
Data5	—	—	—	80	70
Data6	—	—	—	75	70
Data7	—	—	—	80	70
Data8	—	—	—	80	70
Data9	—	—	—	80	70
Lab Mode	75	80	—	80	70
Lab Median	75	80	—	80	70
Lab Mean	75.0	80.0	—	78.3	70.0
Lab St. Dev.	0.00	0.00	—	2.50	0.00
Lab Max.	75	80	0	80	70
Lab Min.	75	80	0	75	70
Lab Range	0	0	0	5	0



**Spray Test
Grade (TM22)**

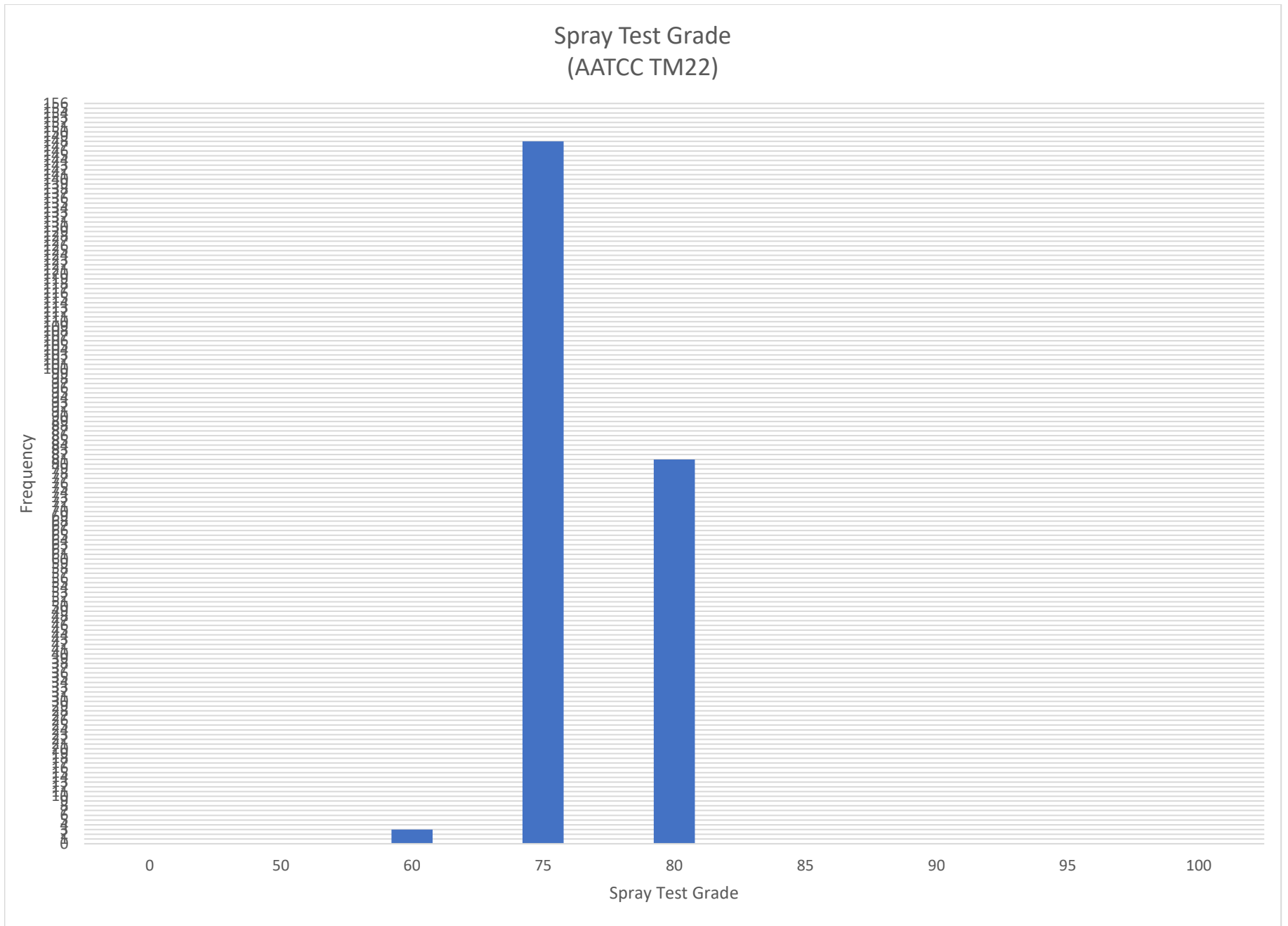
Spray Test Grade (TM22)

Lab Code	935
Data1	70
Data2	70
Data3	75
Data4	70
Data5	70
Data6	75
Data7	70
Data8	75
Data9	70
Lab Mode	70
Lab Median	70
Lab Mean	71.7
Lab St. Dev.	2.50
Lab Max.	75
Lab Min.	70
Lab Range	5



**Spray Test
Grade (TM22)**

Overall Mode	75
Overall Median	75
Overall Mean	75.0
Overall St. Dev.	3.85
Overall Min.	60.0
Overall Max.	80.0
Overall Range	20
Grade	Frequency
0	0
50	0
60	3
75	148
80	81
85	0
90	0
95	0
100	0





g Water Penetration (TM35)

	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)
Lab Code	101	1234	1235	15849
Data1	—	0.0	—	—
Data2	—	0.0	—	—
Data3	—	0.0	—	—
Data4	—	0.0	—	—
Data5	—	0.0	—	—
Data6	—	0.0	—	—
Data7	—	0.0	—	—
Data8	—	0.0	—	—
Data9	—	0.0	—	—
Lab Mode	—	0.0	—	—
Lab Median	—	0.0	—	—
Lab Mean	—	0.0	—	—
Lab St. Dev.	—	0.0	—	—
Lab Max.	0.0	0.0	0.0	0.0
Lab Min.	0.0	0.0	0.0	0.0
Lab Range	0.0	0.0	0.0	0.0



g Water Penetration (TM35)

	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)
Lab Code	165	1494	20012	1758
Data1	0.3	–	0.1	0.3
Data2	0.3	–	0.1	0.3
Data3	0.2	–	0.1	0.3
Data4	0.3	–	0.1	–
Data5	0.3	–	0.1	–
Data6	0.3	–	0.1	–
Data7	0.3	–	0.1	–
Data8	0.3	–	0.1	–
Data9	0.2	–	0.1	–
Lab Mode	0.3	–	0.1	0.3
Lab Median	0.3	–	0.1	0.3
Lab Mean	0.3	–	0.1	0.3
Lab St. Dev.	0.0	–	0.0	0.0
Lab Max.	0.3	0.0	0.1	0.3
Lab Min.	0.2	0.0	0.1	0.3
Lab Range	0.1	0.0	0.0	0.0



**g Water
Penetration
(TM35)**

	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)
Lab Code	1913	22587	24686	25654
Data1	—	0.2	0.2	0.2
Data2	—	0.2	0.2	0.2
Data3	—	0.2	0.2	0.2
Data4	—	0.2	0.2	0.2
Data5	—	0.2	0.2	0.2
Data6	—	0.2	0.2	0.2
Data7	—	0.2	0.2	0.2
Data8	—	0.2	0.2	0.2
Data9	—	0.2	0.2	0.2
Lab Mode	—	0.2	0.2	0.2
Lab Median	—	0.2	0.2	0.2
Lab Mean	—	0.2	0.2	0.2
Lab St. Dev.	—	0.0	0.0	0.0
Lab Max.	0.0	0.2	0.2	0.2
Lab Min.	0.0	0.2	0.2	0.2
Lab Range	0.0	0.0	0.0	0.0



g Water Penetration (TM35)

	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)
Lab Code	26449	27726	1517	1807
Data1	–	0.1	–	0.0
Data2	–	0.1	–	0.0
Data3	–	0.1	–	0.0
Data4	–	0.1	–	0.0
Data5	–	0.1	–	0.0
Data6	–	0.1	–	0.0
Data7	–	–	–	0.0
Data8	–	–	–	0.0
Data9	–	–	–	0.0
Lab Mode	–	0.1	–	0.0
Lab Median	–	0.1	–	0.0
Lab Mean	–	0.1	–	0.0
Lab St. Dev.	–	0.0	–	0.0
Lab Max.	0.0	0.1	0.0	0.0
Lab Min.	0.0	0.1	0.0	0.0
Lab Range	0.0	0.0	0.0	0.0



g Water Penetration (TM35)

	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)
Lab Code	1997	1471	31087	1707
Data1	—	—	0.0	0.1
Data2	—	—	0.0	0.1
Data3	—	—	0.0	0.1
Data4	—	—	0.0	0.1
Data5	—	—	0.0	0.1
Data6	—	—	0.0	0.1
Data7	—	—	0.0	0.1
Data8	—	—	0.0	0.1
Data9	—	—	0.0	0.1
Lab Mode	—	—	0.0	0.1
Lab Median	—	—	0.0	0.1
Lab Mean	—	—	0.0	0.1
Lab St. Dev.	—	—	0.0	0.0
Lab Max.	0.0	0.0	0.0	0.1
Lab Min.	0.0	0.0	0.0	0.1
Lab Range	0.0	0.0	0.0	0.0



g Water Penetration (TM35)

	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)
Lab Code	31090	31097	31146	31254
Data1	–	0.1	0.2	0.3
Data2	–	0.1	0.2	0.4
Data3	–	0.1	0.2	0.3
Data4	–	–	0.2	0.3
Data5	–	–	0.2	0.4
Data6	–	–	0.2	0.3
Data7	–	–	0.2	0.3
Data8	–	–	0.2	0.4
Data9	–	–	0.2	0.3
Lab Mode	–	0.1	0.2	–
Lab Median	–	0.1	0.2	0.3
Lab Mean	–	0.1	0.2	0.4
Lab St. Dev.	–	0.0	0.0	0.1
Lab Max.	0.0	0.1	0.2	0.4
Lab Min.	0.0	0.1	0.2	0.3
Lab Range	0.0	0.0	0.0	0.1



g Water Penetration (TM35)

	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)
Lab Code	31604	2021	37290	1814
Data1	—	—	—	0.1
Data2	—	—	—	0.1
Data3	—	—	—	0.1
Data4	—	—	—	0.1
Data5	—	—	—	0.1
Data6	—	—	—	0.1
Data7	—	—	—	0.1
Data8	—	—	—	0.1
Data9	—	—	—	0.1
Lab Mode	—	—	—	0.1
Lab Median	—	—	—	0.1
Lab Mean	—	—	—	0.1
Lab St. Dev.	—	—	—	0.0
Lab Max.	0.0	0.0	0.0	0.1
Lab Min.	0.0	0.0	0.0	0.1
Lab Range	0.0	0.0	0.0	0.0



g Water Penetration (TM35)

	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)
Lab Code	426	43198	43587	43848
Data1	0.1	—	0.1	0.1
Data2	0.1	—	0.1	0.1
Data3	0.1	—	0.1	0.1
Data4	0.1	—	0.1	0.2
Data5	0.1	—	0.3	0.3
Data6	0.1	—	0.2	0.3
Data7	0.1	—	0.1	0.1
Data8	0.1	—	0.2	0.1
Data9	0.1	—	0.2	0.1
Lab Mode	0.1	—	0.1	0.1
Lab Median	0.1	—	0.1	0.1
Lab Mean	0.1	—	0.2	0.2
Lab St. Dev.	0.0	—	0.1	0.1
Lab Max.	0.1	0.0	0.3	0.3
Lab Min.	0.1	0.0	0.1	0.1
Lab Range	0.0	0.0	0.2	0.2



g Water Penetration (TM35)

	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)
Lab Code	1406	1938	45824	1904
Data1	0.2	—	—	0.1
Data2	0.2	—	—	0.1
Data3	0.2	—	—	0.1
Data4	0.1	—	—	—
Data5	0.1	—	—	—
Data6	0.1	—	—	—
Data7	0.2	—	—	—
Data8	0.1	—	—	—
Data9	0.1	—	—	—
Lab Mode	0.1	—	—	0.1
Lab Median	0.1	—	—	0.1
Lab Mean	0.1	—	—	0.1
Lab St. Dev.	0.0	—	—	0.0
Lab Max.	0.2	0.0	0.0	0.1
Lab Min.	0.1	0.0	0.0	0.1
Lab Range	0.1	0.0	0.0	0.0



g Water Penetration (TM35)

	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)	g Water Penetration (TM35)
Lab Code	10-LAB-001	33680	5967	1437
Data1	—	—	0.2	—
Data2	—	—	0.2	—
Data3	—	—	0.2	—
Data4	—	—	0.2	—
Data5	—	—	0.2	—
Data6	—	—	0.2	—
Data7	—	—	0.2	—
Data8	—	—	0.2	—
Data9	—	—	0.2	—
Lab Mode	—	—	0.2	—
Lab Median	—	—	0.2	—
Lab Mean	—	—	0.2	—
Lab St. Dev.	—	—	0.0	—
Lab Max.	0.0	0.0	0.2	0.0
Lab Min.	0.0	0.0	0.2	0.0
Lab Range	0.0	0.0	0.0	0.0



**g Water
Penetration
(TM35)**

g Water Penetration (TM35)

Lab Code	935
Data1	0.1
Data2	0.1
Data3	0.1
Data4	0.1
Data5	0.1
Data6	0.1
Data7	0.1
Data8	0.1
Data9	0.1
Lab Mode	0.1
Lab Median	0.1
Lab Mean	0.1
Lab St. Dev.	0.0
Lab Max.	0.1
Lab Min.	0.1
Lab Range	0.1



g Water Penetration (TM35)

Overall Mode	0.1
Overall Median	0.1
Overall Mean	0
Mean (excluding highlighted outliers)	–
Overall St. Dev.	0.1
Overall Min.	0.0
Overall Max.	0.4
Overall Range	0.4
1st Quartile	0.1
3rd Quartile	0.2
IQR	0.1
Lower Bound	-0.1
Upper Bound	0.3

NOTE: Statistics are based on 5.1 representing all values > 5.0.



g Water Penetration (TM42)

	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)
Lab Code	101	1234	1235	15849
Tester	0	Type II	Type II	Type I
Data1	—	0.0	—	0.0
Data2	—	0.0	—	0.0
Data3	—	0.0	—	0.0
Data4	—	0.0	—	0.0
Data5	—	0.0	—	0.0
Data6	—	0.0	—	0.0
Data7	—	0.0	—	0.0
Data8	—	0.0	—	0.0
Data9	—	0.0	—	0.0
Lab Mode	—	0.0	—	0.0
Lab Median	—	0.0	—	0.0
Lab Mean	—	0.0	—	0.0
Lab St. Dev.	—	0.0	—	0.0
Lab Max.	0.0	0.0	0.0	0.0
Lab Min.	0.0	0.0	0.0	0.0
Lab Range	0.0	0.0	0.0	0.0



**g Water
Penetration
(TM42)**

	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)
Lab Code	165	1494	20012	1758
Tester	Type I	0	0	0
Data1	0.1	—	0.0	—
Data2	0.1	—	0.0	—
Data3	0.1	—	0.0	—
Data4	0.1	—	0.0	—
Data5	0.1	—	0.0	—
Data6	0.1	—	0.0	—
Data7	0.1	—	0.0	—
Data8	0.1	—	0.0	—
Data9	0.1	—	0.0	—
Lab Mode	0.1	—	0.0	—
Lab Median	0.1	—	0.0	—
Lab Mean	0.1	—	0.0	—
Lab St. Dev.	0.0	—	0.0	—
Lab Max.	0.1	0.0	0.0	0.0
Lab Min.	0.1	0.0	0.0	0.0
Lab Range	0.0	0.0	0.0	0.0



**g Water
Penetration
(TM42)**

	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)
Lab Code	1913	22587	24686	25654
Tester	0	Type II	Type I	Type I
Data1	—	0.1	0.0	0.0
Data2	—	0.1	0.0	0.0
Data3	—	0.1	0.0	0.1
Data4	—	0.1	0.0	0.0
Data5	—	0.1	0.0	0.0
Data6	—	0.1	0.0	0.1
Data7	—	0.1	0.0	0.1
Data8	—	0.1	0.0	0.1
Data9	—	0.1	0.0	0.1
Lab Mode	—	0.1	0.0	0.1
Lab Median	—	0.1	0.0	0.1
Lab Mean	—	0.1	0.0	0.1
Lab St. Dev.	—	0.0	0.0	0.0
Lab Max.	0.0	0.1	0.0	0.1
Lab Min.	0.0	0.1	0.0	0.0
Lab Range	0.0	0.0	0.0	0.1



**g Water
Penetration
(TM42)**

	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)
Lab Code	26449	27726	1517	1807
Tester	Type I	0	0	Type II
Data1	0.1	—	—	0.0
Data2	0.0	—	—	0.0
Data3	0.0	—	—	0.0
Data4	—	—	—	0.0
Data5	—	—	—	0.0
Data6	—	—	—	0.0
Data7	—	—	—	0.0
Data8	—	—	—	0.0
Data9	—	—	—	0.0
Lab Mode	0.0	—	—	0.0
Lab Median	0.0	—	—	0.0
Lab Mean	0.0	—	—	0.0
Lab St. Dev.	0.1	—	—	0.0
Lab Max.	0.1	0.0	0.0	0.0
Lab Min.	0.0	0.0	0.0	0.0
Lab Range	0.1	0.0	0.0	0.0



g Water Penetration (TM42)

	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)
Lab Code	1997	1471	31087	1707
Tester	0	0	0	0
Data1	—	—	—	0.0
Data2	—	—	—	0.0
Data3	—	—	—	0.0
Data4	—	—	—	0.0
Data5	—	—	—	0.0
Data6	—	—	—	0.0
Data7	—	—	—	0.0
Data8	—	—	—	0.0
Data9	—	—	—	0.0
Lab Mode	—	—	—	0.0
Lab Median	—	—	—	0.0
Lab Mean	—	—	—	0.0
Lab St. Dev.	—	—	—	0.0
Lab Max.	0.0	0.0	0.0	0.0
Lab Min.	0.0	0.0	0.0	0.0
Lab Range	0.0	0.0	0.0	0.0



**g Water
Penetration
(TM42)**

	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)
Lab Code	31090	31097	31146	31254
Tester	0	Type I	Type I	0
Data1	—	0.0	0.0	—
Data2	—	0.0	0.0	—
Data3	—	0.0	0.0	—
Data4	—	—	0.0	—
Data5	—	—	0.0	—
Data6	—	—	0.0	—
Data7	—	—	0.0	—
Data8	—	—	0.0	—
Data9	—	—	0.0	—
Lab Mode	—	0.0	0.0	—
Lab Median	—	0.0	0.0	—
Lab Mean	—	0.0	0.0	—
Lab St. Dev.	—	0.0	0.0	—
Lab Max.	0.0	0.0	0.0	0.0
Lab Min.	0.0	0.0	0.0	0.0
Lab Range	0.0	0.0	0.0	0.0



**g Water
Penetration
(TM42)**

	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)
Lab Code	31604	2021	37290	1814
Tester	Type I	Type I	Type I	0
Data1	0.0	0.1	0.0	0.0
Data2	0.0	0.1	0.0	0.0
Data3	0.0	0.0	0.0	0.0
Data4	0.0	0.1	0.0	0.0
Data5	0.0	0.0	0.0	0.0
Data6	0.0	0.1	0.0	0.0
Data7	0.0	0.1	0.0	0.0
Data8	0.0	0.1	0.0	0.0
Data9	0.0	0.0	0.0	0.0
Lab Mode	0.0	0.1	0.0	0.0
Lab Median	0.0	0.1	0.0	0.0
Lab Mean	0.0	0.1	0.0	0.0
Lab St. Dev.	0.0	0.1	0.0	0.0
Lab Max.	0.0	0.1	0.0	0.0
Lab Min.	0.0	0.0	0.0	0.0
Lab Range	0.0	0.1	0.0	0.0



**g Water
Penetration
(TM42)**

	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)
Lab Code	426	43198	43587	43848
Tester	Type II	0	0	combination
Data1	0.1	—	—	0.0
Data2	0.1	—	—	0.0
Data3	0.1	—	—	0.0
Data4	0.1	—	—	0.0
Data5	0.1	—	—	0.0
Data6	0.1	—	—	0.0
Data7	0.1	—	—	0.0
Data8	0.1	—	—	0.0
Data9	0.1	—	—	0.0
Lab Mode	0.1	—	—	0.0
Lab Median	0.1	—	—	0.0
Lab Mean	0.1	—	—	0.0
Lab St. Dev.	0.0	—	—	0.0
Lab Max.	0.1	0.0	0.0	0.0
Lab Min.	0.1	0.0	0.0	0.0
Lab Range	0.0	0.0	0.0	0.0



**g Water
Penetration
(TM42)**

	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)
Lab Code	1406	1938	45824	1904
Tester	Type I	0	Type I	Type I
Data1	0.1	0.0	0.2	0.1
Data2	0.1	0.0	0.2	0.1
Data3	0.1	0.0	0.0	0.1
Data4	0.1	0.0	0.1	–
Data5	0.1	0.0	0.2	–
Data6	0.1	0.0	0.2	–
Data7	0.1	0.0	–	–
Data8	0.1	0.0	–	–
Data9	0.1	0.0	–	–
Lab Mode	0.1	0.0	0.2	0.1
Lab Median	0.1	0.0	0.2	0.1
Lab Mean	0.1	0.0	0.2	0.1
Lab St. Dev.	0.0	0.0	0.1	0.0
Lab Max.	0.1	0.0	0.2	0.1
Lab Min.	0.1	0.0	0.0	0.1
Lab Range	0.0	0.0	0.2	0.0



**g Water
Penetration
(TM42)**

	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)	g Water Penetration (TM42)
Lab Code	10-LAB-001	33680	5967	1437
Tester	0	Type I	0	0
Data1	—	0.0	0.0	—
Data2	—	0.0	0.0	—
Data3	—	0.0	0.0	—
Data4	—	0.0	0.0	—
Data5	—	0.0	0.0	—
Data6	—	0.1	0.0	—
Data7	—	—	0.0	—
Data8	—	—	0.0	—
Data9	—	—	0.0	—
Lab Mode	—	0.0	0.0	—
Lab Median	—	0.0	0.0	—
Lab Mean	—	0.0	0.0	—
Lab St. Dev.	—	0.0	0.0	—
Lab Max.	0.0	0.1	0.0	0.0
Lab Min.	0.0	0.0	0.0	0.0
Lab Range	0.0	0.1	0.0	0.0



**g Water
Penetration
(TM42)**

g Water Penetration (TM42)

Lab Code	935
Tester	Type I
Data1	0.1
Data2	0.1
Data3	0.1
Data4	0.1
Data5	0.1
Data6	0.1
Data7	0.1
Data8	0.1
Data9	0.1
Lab Mode	0.1
Lab Median	0.1
Lab Mean	0.1
Lab St. Dev.	0.0
Lab Max.	0.1
Lab Min.	0.1
Lab Range	0.1



g Water Penetration (TM42)

Overall Mode	0.0
Overall Median	0.0
Overall Mean	0.0
Mean (excluding highlighted outliers)	0.0
Overall St. Dev.	0.05
Overall Min.	0.0
Overall Max.	0.2
Overall Range	0.2
1st Quartile	0.0
3rd Quartile	0.1
IQR	0.1
Lower Bound	-0.2
Upper Bound	0.2

NOTE: Statistics are based on 5.1 representing all values > 5.0.



Tester (TM42)

Impact Penetration Tester Used (TM42)

Impact Penetration Tester Used (TM42)

Lab Code	101
Data1	0.0
Type I	15
Type II	5
Not specified	20
Type I	37.5%
Type II	12.5%
Not specified	50.0%

1234

Type II



Tester (TM42)

Impact Penetration Tester Used (TM42)

Impact Penetration Tester Used (TM42)

Lab Code
Data1
Type I
Type II
Not specified
Type I
Type II
Not specified

1235

15849

Type II

Type I



Tester (TM42)

Lab Code	Impact Penetration Tester Used (TM42)	Impact Penetration Tester Used (TM42)
Data1	Type I	0.0
Type I		
Type II		
Not specified		
Type I		
Type II		
Not specified		



Tester (TM42)

	Impact Penetration Tester Used (TM42)	Impact Penetration Tester Used (TM42)
Lab Code	20012	1758
Data1	0.0	0.0
Type I		
Type II		
Not specified		
Type I		
Type II		
Not specified		



Tester (TM42)

Impact Penetration Tester Used (TM42)

Impact Penetration Tester Used (TM42)

Lab Code
Data1
0.0
Type I
Type II
Not specified
Type I
Type II
Not specified

1913

22587

Type II



Tester (TM42)

Impact Penetration Tester Used (TM42)

Impact Penetration Tester Used (TM42)

Lab Code
Data1
Type I
Type I
Type II
Not specified
Type I
Type II
Not specified

24686

25654

Type I

Type I



Tester (TM42)

Lab Code	Impact Penetration Tester Used (TM42)	Impact Penetration Tester Used (TM42)
Data1	Type I	0.0
Type I		
Type II		
Not specified		
Type I		
Type II		
Not specified		



Tester (TM42)

Lab Code	Impact Penetration Tester Used (TM42)	Impact Penetration Tester Used (TM42)
Data1	0.0	1807
		Type II
Type I		
Type II		
Not specified		
Type I		
Type II		
Not specified		



Tester (TM42)

Impact Penetration Tester Used (TM42)

Impact Penetration Tester Used (TM42)

Lab Code
Data1
Type I
Type II
Not specified
Type I
Type II
Not specified

0.0

1997

0.0

1471



Tester (TM42)

	Impact Penetration Tester Used (TM42)	Impact Penetration Tester Used (TM42)
Lab Code	31087	1707
Data1	0.0	0.0
Type I		
Type II		
Not specified		
Type I		
Type II		
Not specified		



Tester (TM42)

Lab Code	Impact Penetration Tester Used (TM42)	Impact Penetration Tester Used (TM42)
Data1	0.0	31090
		Type I
Type I		
Type II		
Not specified		
Type I		
Type II		
Not specified		31097



Tester (TM42)

Lab Code	Impact Penetration Tester Used (TM42)	Impact Penetration Tester Used (TM42)
Data1	Type I	0.0
Type I		
Type II		
Not specified		
Type I		
Type II		
Not specified		



Tester (TM42)

Impact Penetration Tester Used (TM42)

Impact Penetration Tester Used (TM42)

Lab Code
Data1
Type I
Type I
Type II
Not specified
Type I
Type II
Not specified

31604

2021

Type I

Type I



Tester (TM42)

Lab Code	Impact Penetration Tester Used (TM42)	Impact Penetration Tester Used (TM42)
Data1	Type I	0.0
Type I		
Type II		
Not specified		
Type I		
Type II		
Not specified		



Tester (TM42)

Lab Code	Impact Penetration Tester Used (TM42)	Impact Penetration Tester Used (TM42)
Data1	Type II	0.0
Type I		
Type II		
Not specified		
Type I		
Type II		
Not specified		



Tester (TM42)

Lab Code	Impact Penetration Tester Used (TM42)	Impact Penetration Tester Used (TM42)
Data1	0.0	43587
		43848
		combination
Type I		
Type II		
Not specified		
Type I		
Type II		
Not specified		



Tester (TM42)

Lab Code	Impact Penetration Tester Used (TM42)	Impact Penetration Tester Used (TM42)
Data1	Type I 1406	1938
	0.0	
Type I		
Type II		
Not specified		
Type I		
Type II		
Not specified		



Tester (TM42)

Impact Penetration Tester Used (TM42)

Impact Penetration Tester Used (TM42)

Lab Code
Data1
Type I
Type II
Not specified
Type I
Type II
Not specified

45824

1904

Type I

Type I



Tester (TM42)

Impact Penetration Tester Used (TM42)

Impact Penetration Tester Used (TM42)

Lab Code
Data1
0.0
Type I
Type II
Not specified
Type I
Type II
Not specified

10-LAB-001

33680

Type I



Tester (TM42)

Impact Penetration Tester Used (TM42)

Impact Penetration Tester Used (TM42)

Lab Code
Data1
Type I
Type II
Not specified
Type I
Type II
Not specified

0.0

5967

0.0

1437

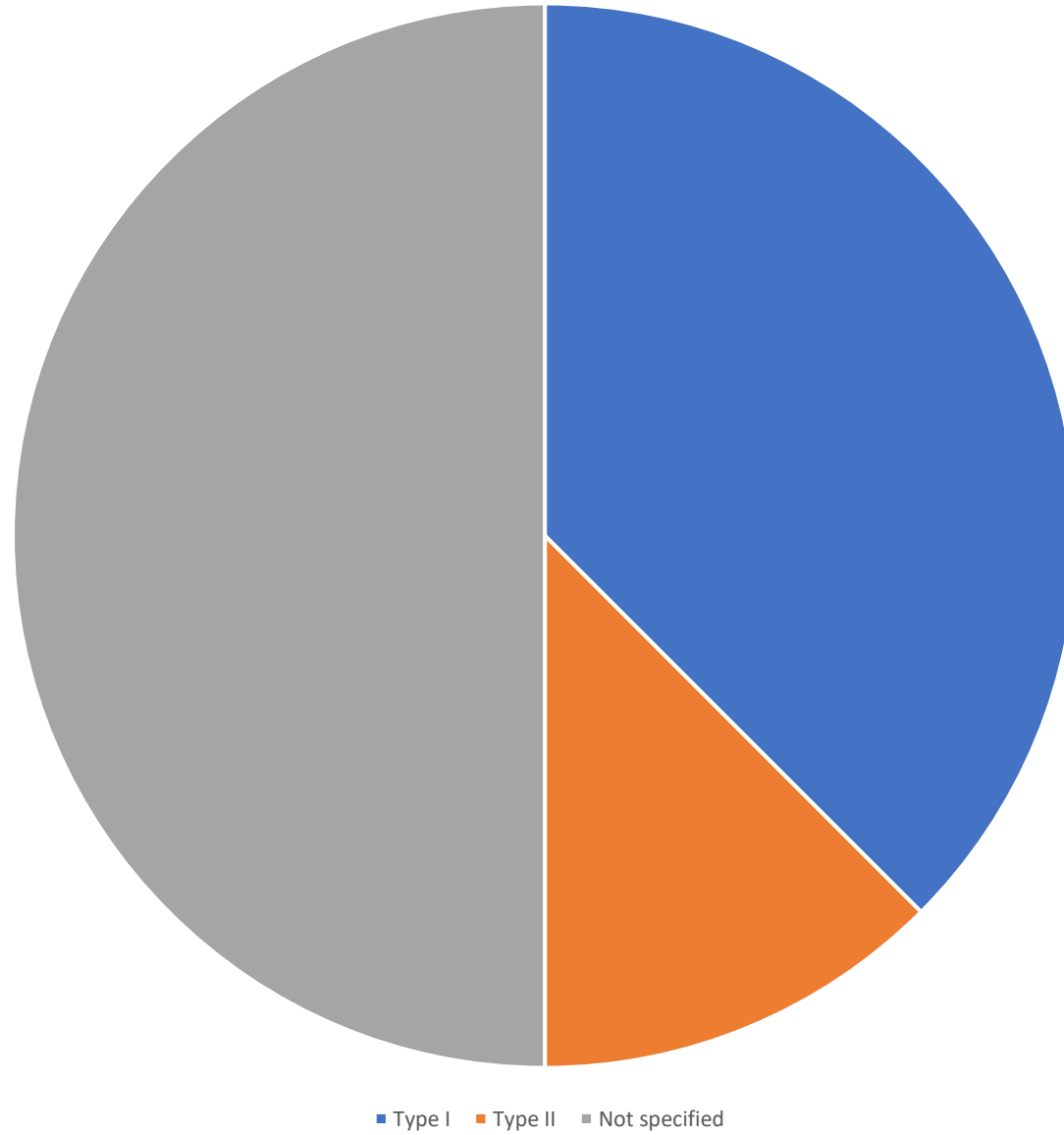


Tester (TM42)

Impact Penetration Tester Used (TM42)

Lab Code	935
Data1	Type I
Type I	
Type II	
Not specified	
Type I	
Type II	
Not specified	

Impact Penetration Tester Used
(AATCC TM42)





**mm H₂O
(TM127)**

	mm H ₂ O (TM127)	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂
Lab Code	101	1234	1235	15849	165	1494	20012	1758	1913	22587	24686	25654	26449	27726	1517	1807
Tester	0	Tester	Tester	Tester	Tester	0	Tester	0	Tester	0	Tester	Tester	Tester	Tester	Tester	Tester
Data1	–	236	–	230	229	–	216	251	255	225	202	312	260	208	226	230
Data2	–	226	–	230	233	–	219	251	260	220	209	305	253	203	220	233
Data3	–	232	–	220	232	–	224	251	249	223	211	317	238	204	220	227
Data4	–	235	–	230	244	–	212	–	245	220	217	293	–	207	221	236
Data5	–	235	–	220	239	–	219	–	260	223	208	286	–	205	219	230
Data6	–	239	–	230	229	–	224	–	255	226	214	286	–	200	228	233
Data7	–	233	–	220	228	–	226	–	255	221	214	313	–	205	218	230
Data8	–	235	–	230	235	–	220	–	250	221	217	297	–	206	224	235
Data9	–	–	–	230	218	–	227	–	260	220	208	301	–	204	226	233
Lab Mode	–	–	–	230	229	–	219	251	255	220	217	286	–	204	226	230
Lab Median	–	–	–	230	232	–	220	251	255	221	211	301	253	205	221	233
Lab Mean	–	–	–	230	232	–	221	251	254	222	211	301	250	205	222	232
Lab St. Dev.	–	–	–	5.0	7.4	–	4.9	0.0	5.4	2.3	4.9	11.5	11.2	2.3	3.6	2.8
Lab Max.	0	–	–	230	244	0	227	251	260	226	217	317	260	208	228	236
Lab Min.	0	–	–	220	218	0	212	251	245	220	202	286	238	200	218	227
Lab Range	0	–	–	10	26	0	15	0	15	6	15	31	22	8	10	9



**mm H₂O
(TM127)**

	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂	mm H ₂
Lab Code	1997	1471	31087	1707	31090	31097	31146	31254	31604	2021	37290	1814	426	43198	43587	43848	1406	1938
Tester	0	Tester	Tester	0	Tester	Tester	0	0	0	Tester	Tester	0	Tester	Tester	Tester	Tester	Tester	0
Data1	–	235	230	230	227	232	214	–	–	260	218	235	229	212	229	227	229	–
Data2	–	232	215	229	227	243	214	–	–	260	214	236	241	210	245	229	226	–
Data3	–	232	223	227	227	227	206	–	–	270	229	234	218	216	250	231	240	–
Data4	–	221	230	230	230	–	208	–	–	260	218	233	237	217	235	231	229	–
Data5	–	241	215	229	230	–	209	–	–	280	214	236	219	220	245	229	231	–
Data6	–	223	223	227	230	–	209	–	–	280	229	234	229	206	245	234	245	–
Data7	–	223	230	230	229	–	211	–	–	260	220	235	228	209	224	228	230	–
Data8	–	217	215	229	229	–	209	–	–	270	227	234	241	226	240	231	228	–
Data9	–	229	223	227	229	–	209	–	–	260	219	236	219	219	245	226	250	–
Lab Mode	–	232	230	230	227	–	209	–	–	260	218	236	229	–	245	231	229	–
Lab Median	–	229	223	229	229	232	209	–	–	260	219	235	229	216	245	229	230	–
Lab Mean	–	228	223	229	229	234	210	–	–	267	221	235	229	215	240	230	234	–
Lab St. Dev.	–	7.7	6.5	1.3	1.3	8.2	2.7	–	–	8.7	6.0	1.1	9.2	6.3	8.7	2.3	8.6	–
Lab Max.	0	241	230	230	230	243	214	0	0	280	229	236	241	226	250	234	250	0
Lab Min.	0	217	215	227	227	227	206	0	0	260	214	233	218	206	224	226	226	0
Lab Range	0	24	15	3	3	16	8	0	0	20	15	3	23	20	26	7	24	0



**mm H₂O
(TM127)**

mm H₂ mm H₂ mm H₂ mm H₂ mm H₂ mm H₂ mm H₂ mm H₂O (TM127)

Lab Code	45824	1904	\B-001	33680	5967	1437	935
Tester	Tester	0	0	Tester	Tester	Tester	Tester
Data1	24	238	—	209	234	230	210
Data2	25	237	—	223	231	225	210
Data3	24	231	—	205	225	220	200
Data4	23	—	—	206	254	230	200
Data5	24	—	—	206	231	215	210
Data6	22	—	—	232	242	220	200
Data7	22	—	—	—	228	235	210
Data8	23	—	—	—	247	235	210
Data9	22	—	—	—	252	240	200
Lab Mode	24	—	—	206	231	230	210
Lab Median	23	237	—	208	234	230	210
Lab Mean	23	235	—	214	238	228	206
Lab St. Dev.	1.1	3.8	—	11.3	10.8	8.3	5.3
Lab Max.	25	238	0	232	254	240	210
Lab Min.	22	231	0	205	225	215	200
Lab Range	3	7	0	27	29	25	10



mm H₂O (TM127)

Overall Mode	230
Overall Median	228
Overall Mean	217
Mean (excluding highlighted outliers)	—
Overall St. Dev.	56.5
Overall Max.	317
Overall Min.	22
Overall Range	295
1st Quartile	215.8
3rd Quartile	235.0
IQR	19.3
Lower Bound	186.9
Upper Bound	244.6



Tester (TM127)

Hydrostatic Tester Used (TM127)	
Lab Code	101
Data1	0.0
Option 1 (Pressure)	10
Option 2 (Head)	23
Not Specified	13
Option 1 (Pressure)	21.7%
Option 2 (Head)	50.0%
Not Specified	28.3%

Hydrostatic Tester Used (TM127)
1234
Option 2: Hydrostatic Head Tester

Hydrostatic Tester Used (TM127)
1235
Option 2: Hydrostatic Head Tester



Tester (TM127)

	Hydrostatic Tester Used (TM127)	Hydrostatic Tester Used (TM127)	Hydrostatic Tester Used (TM127)
Lab Code	15849	165	1494
Data1	Option 2: Hydrostatic Head Tester	Option 2: Hydrostatic Head Tester	0.0
Option 1 (Pressure)			
Option 2 (Head)			
Not Specified			
Option 1 (Pressure)			
Option 2 (Head)			
Not Specified			



Tester (TM127)

	Hydrostatic Tester Used (TM127)	Hydrostatic Tester Used (TM127)	Hydrostatic Tester Used (TM127)
Lab Code	20012	1758	1913
Data1	Option 2: Hydrostatic Head Tester	0.0	Option 2: Hydrostatic Head Tester
Option 1 (Pressure)			
Option 2 (Head)			
Not Specified			
Option 1 (Pressure)			
Option 2 (Head)			
Not Specified			



Tester (TM127)

	Hydrostatic Tester Used (TM127)	Hydrostatic Tester Used (TM127)	Hydrostatic Tester Used (TM127)
Lab Code	26449	27726	1517
Data1	Option 2: Hydrostatic Head Tester	Option 2: Hydrostatic Head Tester	Option 2: Hydrostatic Head Tester
Option 1 (Pressure)			
Option 2 (Head)			
Not Specified			
Option 1 (Pressure)			
Option 2 (Head)			
Not Specified			



Tester (TM127)

	Hydrostatic Tester Used (TM127)	Hydrostatic Tester Used (TM127)	Hydrostatic Tester Used (TM127)
Lab Code	1807	1997	1471
Data1	Option 1: Hydrostatic Pressure Tester	0.0	Option 2: Hydrostatic Head Tester
Option 1 (Pressure)			
Option 2 (Head)			
Not Specified			
Option 1 (Pressure)			
Option 2 (Head)			
Not Specified			



Tester (TM127)

	Hydrostatic Tester Used (TM127)	Hydrostatic Tester Used (TM127)	Hydrostatic Tester Used (TM127)
Lab Code	31087	1707	31090
Data1	Option 1: Hydrostatic Pressure Tester	0.0	Option 1: Hydrostatic Pressure Tester
Option 1 (Pressure)			
Option 2 (Head)			
Not Specified			
Option 1 (Pressure)			
Option 2 (Head)			
Not Specified			



Tester (TM127)

	Hydrostatic Tester Used (TM127)	Hydrostatic Tester Used (TM127)	Hydrostatic Tester Used (TM127)
Lab Code	31097	31146	31254
Data1	Option 2: Hydrostatic Head Tester	0.0	0.0
	Option 1 (Pressure)		
	Option 2 (Head)		
	Not Specified		
	Option 1 (Pressure)		
	Option 2 (Head)		
	Not Specified		



Tester (TM127)

	Hydrostatic Tester Used (TM127)	Hydrostatic Tester Used (TM127)	Hydrostatic Tester Used (TM127)
Lab Code	43587	43848	1406
Data1	Option 2: Hydrostatic Head Tester	Option 2: Hydrostatic Head Tester	Option 2: Hydrostatic Head Tester
Option 1 (Pressure)			
Option 2 (Head)			
Not Specified			
Option 1 (Pressure)			
Option 2 (Head)			
Not Specified			



Tester (TM127)

	Hydrostatic Tester Used (TM127)	Hydrostatic Tester Used (TM127)	Hydrostatic Tester Used (TM127)
Lab Code	1938	45824	1904
Data1	0.0	Option 2: Hydrostatic Head Tester	0.0
Option 1 (Pressure)			
Option 2 (Head)			
Not Specified			
Option 1 (Pressure)			
Option 2 (Head)			
Not Specified			



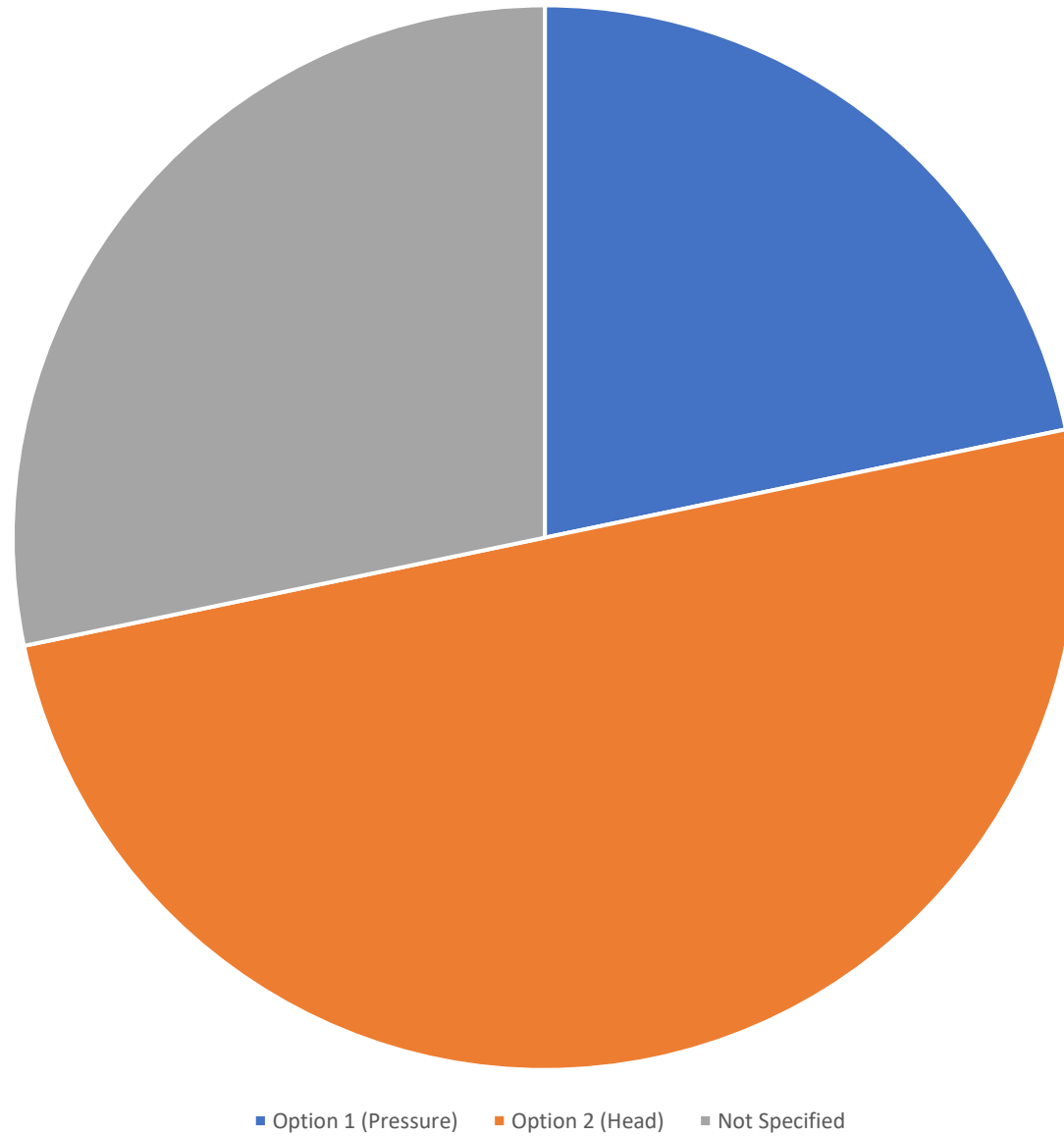
Tester (TM127)

Hydrostatic Tester Used (TM127)

Hydrostatic Tester Used (TM127)

Lab Code	1437	935
Data1	Option 2: Hydrostatic Head Tester	Option 2: Hydrostatic Head Tester
Option 1 (Pressure)		
Option 2 (Head)		
Not Specified		
Option 1 (Pressure)		
Option 2 (Head)		
Not Specified		

Hydrostatic Tester Used
(TM127)





**Oil Repellency
Grade (TM118)**

	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)
Lab Code	101	1234	1235
Data1	8.0	—	6.0
Data2	8.0	—	6.0
Data3	8.0	—	6.0
Data4	8.0	—	6.0
Data5	8.0	—	6.0
Data6	8.0	—	6.0
Data7	—	—	6.0
Data8	—	—	6.0
Data9	—	—	6.0
Lab Mode	8.0	—	6.0
Lab Median	8.0	—	6.0
Lab Mean	8.0	—	6.0
Lab St. Dev.	0.0	—	0.0
Lab Max.	8.0	0.0	6.0
Lab Min.	8.0	0.0	6.0
Lab Range	0.0	0.0	0.0



**Oil Repellency
Grade (TM118)**

	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)
Lab Code	15849	165	1494
Data1	6.5	6.5	—
Data2	6.5	6.5	—
Data3	6.5	6.5	—
Data4	6.5	6.5	—
Data5	6.5	6.5	—
Data6	6.5	6.5	—
Data7	6.5	6.5	—
Data8	6.5	6.5	—
Data9	6.5	6.5	—
Lab Mode	6.5	6.5	—
Lab Median	6.5	6.5	—
Lab Mean	6.5	6.5	—
Lab St. Dev.	0.0	0.0	—
Lab Max.	6.5	6.5	0.0
Lab Min.	6.5	6.5	0.0
Lab Range	0.0	0.0	0.0



**Oil Repellency
Grade (TM118)**

	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)
Lab Code	20012	1758	1913
Data1	5.5	—	—
Data2	5.5	—	—
Data3	5.5	—	—
Data4	5.5	—	—
Data5	5.5	—	—
Data6	5.5	—	—
Data7	5.5	—	—
Data8	5.5	—	—
Data9	5.5	—	—
Lab Mode	5.5	—	—
Lab Median	5.5	—	—
Lab Mean	5.5	—	—
Lab St. Dev.	0.0	—	—
Lab Max.	5.5	0.0	0.0
Lab Min.	5.5	0.0	0.0
Lab Range	0.0	0.0	0.0



**Oil Repellency
Grade (TM118)**

	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)
Lab Code	22587	24686	25654
Data1	6.5	5.5	6.0
Data2	6.5	5.5	6.0
Data3	6.5	5.5	6.0
Data4	6.5	5.5	6.0
Data5	6.5	5.5	6.0
Data6	6.5	5.5	6.0
Data7	6.5	5.5	6.0
Data8	6.5	5.5	6.0
Data9	6.5	5.5	6.0
Lab Mode	6.5	5.5	6.0
Lab Median	6.5	5.5	6.0
Lab Mean	6.5	5.5	6.0
Lab St. Dev.	0.0	0.0	0.0
Lab Max.	6.5	5.5	6.0
Lab Min.	6.5	5.5	6.0
Lab Range	0.0	0.0	0.0



**Oil Repellency
Grade (TM118)**

	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)
Lab Code	26449	27726	1517
Data1	6.5	—	7.5
Data2	6.5	—	7.5
Data3	6.5	—	7.5
Data4	—	—	8.0
Data5	—	—	8.0
Data6	—	—	8.0
Data7	—	—	8.0
Data8	—	—	8.0
Data9	—	—	8.0
Lab Mode	6.5	—	8.0
Lab Median	6.5	—	8.0
Lab Mean	6.5	—	7.8
Lab St. Dev.	0.0	—	0.3
Lab Max.	6.5	0.0	8.0
Lab Min.	6.5	0.0	7.5
Lab Range	0.0	0.0	0.5



**Oil Repellency
Grade (TM118)**

	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)
Lab Code	1807	1997	1471
Data1	—	7.0	6.0
Data2	—	7.0	6.0
Data3	—	7.0	6.0
Data4	—	6.5	6.0
Data5	—	7.0	6.0
Data6	—	6.5	6.0
Data7	—	7.0	6.0
Data8	—	6.5	6.0
Data9	—	7.0	6.0
Lab Mode	—	7.0	6.0
Lab Median	—	7.0	6.0
Lab Mean	—	6.8	6.0
Lab St. Dev.	—	0.3	0.0
Lab Max.	0.0	7.0	6.0
Lab Min.	0.0	6.5	6.0
Lab Range	0.0	0.5	0.0



**Oil Repellency
Grade (TM118)**

	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)
Lab Code	31087	1707	31090
Data1	—	6.5	—
Data2	—	6.5	—
Data3	—	6.5	—
Data4	—	6.5	—
Data5	—	6.5	—
Data6	—	6.5	—
Data7	—	6.5	—
Data8	—	6.5	—
Data9	—	6.5	—
Lab Mode	—	6.5	—
Lab Median	—	6.5	—
Lab Mean	—	6.5	—
Lab St. Dev.	—	0.0	—
Lab Max.	0.0	6.5	0.0
Lab Min.	0.0	6.5	0.0
Lab Range	0.0	0.0	0.0



**Oil Repellency
Grade (TM118)**

	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)
Lab Code	31097	31146	31254
Data1	—	6.0	5.5
Data2	—	6.0	6.5
Data3	—	6.0	6.5
Data4	—	6.0	5.5
Data5	—	6.0	6.5
Data6	—	6.0	6.5
Data7	—	6.0	5.5
Data8	—	6.0	6.5
Data9	—	6.0	6.5
Lab Mode	—	6.0	6.5
Lab Median	—	6.0	6.5
Lab Mean	—	6.0	6.2
Lab St. Dev.	—	0.0	0.5
Lab Max.	0.0	6.0	6.5
Lab Min.	0.0	6.0	5.5
Lab Range	0.0	0.0	1.0



**Oil Repellency
Grade (TM118)**

	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)
Lab Code	31604	2021	37290
Data1	8.0	—	7.0
Data2	8.0	—	6.5
Data3	8.0	—	7.0
Data4	8.0	—	7.0
Data5	8.0	—	7.0
Data6	8.0	—	7.0
Data7	8.0	—	7.0
Data8	8.0	—	7.0
Data9	8.0	—	6.0
Lab Mode	8.0	—	7.0
Lab Median	8.0	—	7.0
Lab Mean	8.0	—	6.8
Lab St. Dev.	0.0	—	0.4
Lab Max.	8.0	0.0	7.0
Lab Min.	8.0	0.0	6.0
Lab Range	0.0	0.0	1.0



**Oil Repellency
Grade (TM118)**

	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)
Lab Code	1814	426	43198
Data1	6.5	6.0	—
Data2	6.5	6.0	—
Data3	6.5	6.0	—
Data4	6.5	6.0	—
Data5	6.5	6.0	—
Data6	6.5	6.0	—
Data7	6.5	6.0	—
Data8	6.5	6.0	—
Data9	6.5	6.0	—
Lab Mode	6.5	6.0	—
Lab Median	6.5	6.0	—
Lab Mean	6.5	6.0	—
Lab St. Dev.	0.0	0.0	—
Lab Max.	6.5	6.0	0.0
Lab Min.	6.5	6.0	0.0
Lab Range	0.0	0.0	0.0



**Oil Repellency
Grade (TM118)**

	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)
Lab Code	43587	43848	1406
Data1	6.0	6.5	6.0
Data2	5.0	6.5	6.0
Data3	5.0	6.5	6.0
Data4	5.0	6.5	6.0
Data5	5.0	6.5	6.0
Data6	6.0	6.5	6.0
Data7	5.0	6.5	6.0
Data8	5.0	6.5	6.0
Data9	5.0	6.5	6.0
Lab Mode	5.0	6.5	6.0
Lab Median	5.0	6.5	6.0
Lab Mean	5.2	6.5	6.0
Lab St. Dev.	0.4	0.0	0.0
Lab Max.	6.0	6.5	6.0
Lab Min.	5.0	6.5	6.0
Lab Range	1.0	0.0	0.0



**Oil Repellency
Grade (TM118)**

	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)
Lab Code	1938	45824	1904
Data1	—	6.0	5.0
Data2	—	7.0	5.0
Data3	—	7.0	5.0
Data4	—	6.0	—
Data5	—	7.0	—
Data6	—	7.0	—
Data7	—	7.0	—
Data8	—	7.0	—
Data9	—	7.0	—
Lab Mode	—	7.0	5.0
Lab Median	—	7.0	5.0
Lab Mean	—	6.8	5.0
Lab St. Dev.	—	0.4	0.0
Lab Max.	0.0	7.0	5.0
Lab Min.	0.0	6.0	5.0
Lab Range	0.0	1.0	0.0



**Oil Repellency
Grade (TM118)**

	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)
Lab Code	10-LAB-001	33680	5967
Data1	—	—	6.5
Data2	—	—	6.5
Data3	—	—	6.5
Data4	—	—	6.5
Data5	—	—	6.5
Data6	—	—	6.5
Data7	—	—	6.5
Data8	—	—	6.5
Data9	—	—	6.5
Lab Mode	—	—	6.5
Lab Median	—	—	6.5
Lab Mean	—	—	6.5
Lab St. Dev.	—	—	0.0
Lab Max.	0.0	0.0	6.5
Lab Min.	0.0	0.0	6.5
Lab Range	0.0	0.0	0.0



**Oil Repellency
Grade (TM118)**

	Oil Repellency Grade (TM118)	Oil Repellency Grade (TM118)
Lab Code	1437	935
Data1	8.0	7.5
Data2	8.0	8.0
Data3	8.0	8.0
Data4	8.0	8.0
Data5	8.0	8.0
Data6	8.0	7.5
Data7	8.0	8.0
Data8	8.0	8.0
Data9	8.0	7.5
Lab Mode	8.0	8.0
Lab Median	8.0	8.0
Lab Mean	8.0	7.8
Lab St. Dev.	0.0	0.3
Lab Max.	8.0	8.0
Lab Min.	8.0	7.5
Lab Range	0.0	0.5



**Oil Repellency
Grade (TM118)**

Overall Mode	6.5
Overall Median	6.5
Overall Mean	6.5
Overall St. Dev.	0.81
Overall Min.	5.0
Overall Max.	8.0
Overall Range	3.0
Grade	Frequency
0	0
1.5	0
2.0	0
2.5	0
3.0	0
3.5	0
4.0	0
4.5	0
5.0	10
5.5	21
6.0	59
6.5	76
7.0	20
7.5	6
8.0	36

Oil Repellent Grade (AATCC TM118)

