Introduction

Vista was hired to gather environmental data, particulate matter (PM) data, and do the vibration and sound measurements on a planned construction site that Heidelberg Cement intends to use in the future.

Measurement period

On September 25 an AQMesh outdoor air quality monitoring system was installed near Þorlákshöfn (63°50'55.8"N 21°28'07.7"W).

Weather and PM measurements were taken from 26.09.2025 until 16.10.2024, and the following is a summary of the measurement data from the device.

AQMesh air quality station is equipped with meteorological sensors measuring wind speed (0-30m/s) and direction (0-359 degrees) as well as particulate matter (PM), temperature and humidity.

Convergence Instruments wireless vibration meter – data logger VSEW MK4 8G was used for vibration measurements.

Convergence Instruments sound level meter – data logger NSRT MK4 was used for sound measurements.

AQMesh outdoor air quality monitoring system

The weather station was located next to Suðurstrandarvegur, see the picture below:

During the measurements, a weather station from AQMesh was used, which measures environmental factors, PM, wind direction and wind strength.

For comparison, data from the air quality station in Þorlákshöfn will be shown. See the location of stations in the picture below:

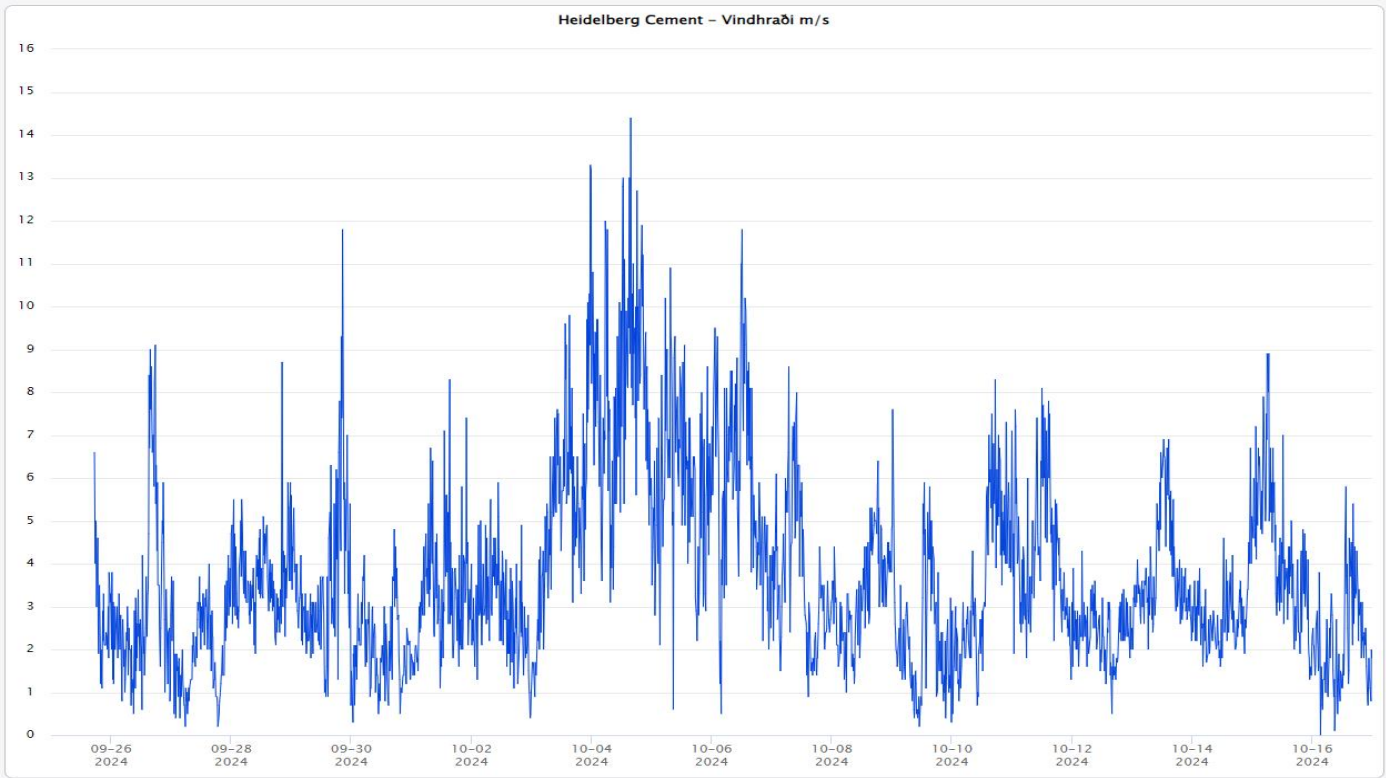
Measurement summary - weather

Date	Windspeed max [m/s]	Windspeed avg [m/s]	Dominant wind direction [°]	Temperature avg [°C]
2024-09-26	9,1	3,0	300	4.2
2024-09-27	4,7	1,9	30	6,4
2024-09-28	8,7	3,7	35	5,7
2024-09-29	11,8	3,6	5	6,8
2024-09-30	4,8	2,0	305	3,5
2024-10-01	8,3	3,3	200	5,6
2024-10-02	5,9	2,9	160	8,6
2024-10-03	13,3	5,3	25	7,8
2024-10-04	14,4	8,0	20	6,7
2024-10-05	10,9	5,9	30	5,8
2024-10-06	11,8	5,9	25	4,5
2024-10-07	8,6	3,7	5	2,9
2024-10-08	6,4	3,3	15	0,3
2024-10-09	7,6	2,3	0	2,2
2024-10-10	8,3	3,6	0	0,6
2024-10-11	8,1	4,3	355	-0,7
2024-10-12	4,3	2,4	310	-2,9
2024-10-13	6,9	3,8	0	-1,5
2024-10-14	6,7	2,8	345	0
2024-10-15	8,9	4,3	10	5,6
2024-10-16	5,8	2,2	305	6,0

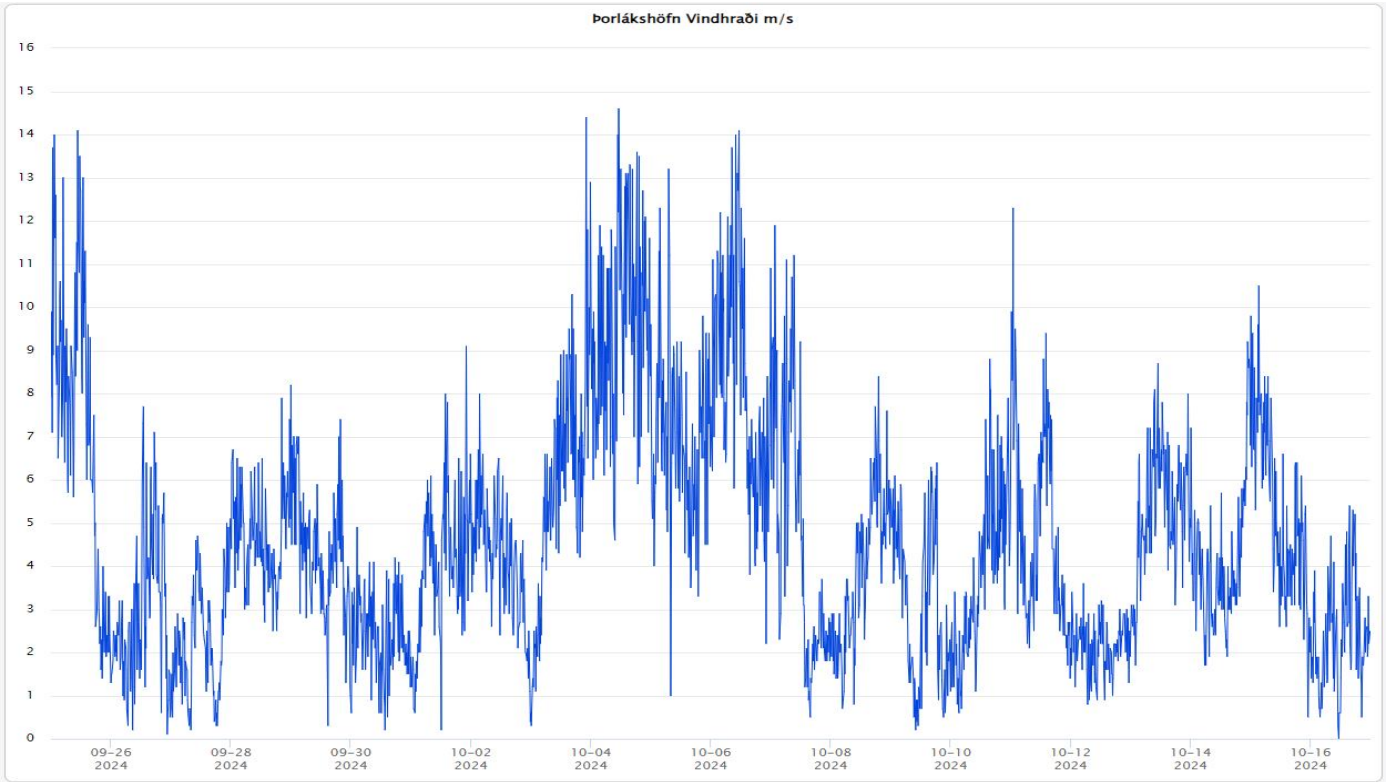
For comparison - weather station data from Þorlákshöfn

Date	Windspeed max [m/s]	Windspeed avg [m/s]	Dominant wind direction [°]	Temperature avg [°C]
2024-09-26	7,7	2,9	335	4.5
2024-09-27	5,1	2,2	65	6.5
2024-09-28	8,2	4,7	60	5.9
2024-09-29	7,4	4,3	45	6.9
2024-09-30	4,9	2,4	10	4.1
2024-10-01	9,1	4	235	5.8
2024-10-02	8	4,1	215	8.6
2024-10-03	14,4	6	35	7.8
2024-10-04	14,6	9,6	45	6.8
2024-10-05	13,2	6,9	45	6.2
2024-10-06	14,1	8,2	50	5.0
2024-10-07	11,9	4,8	35	4.0
2024-10-08	8,4	3,9	50	1.1
2024-10-09	6,4	3,1	30	2.8
2024-10-10	8,8	3,8	25	1.1
2024-10-11	12,3	4,9	25	-0.2
2024-10-12	3,6	2,1	10	-1.7
2024-10-13	8,7	5,3	40	0.4
2024-10-14	9,2	4,1	35	1.8
2024-10-15	10,5	5,2	40	6.0
2024-10-16	5,4	2,4	270	6.9

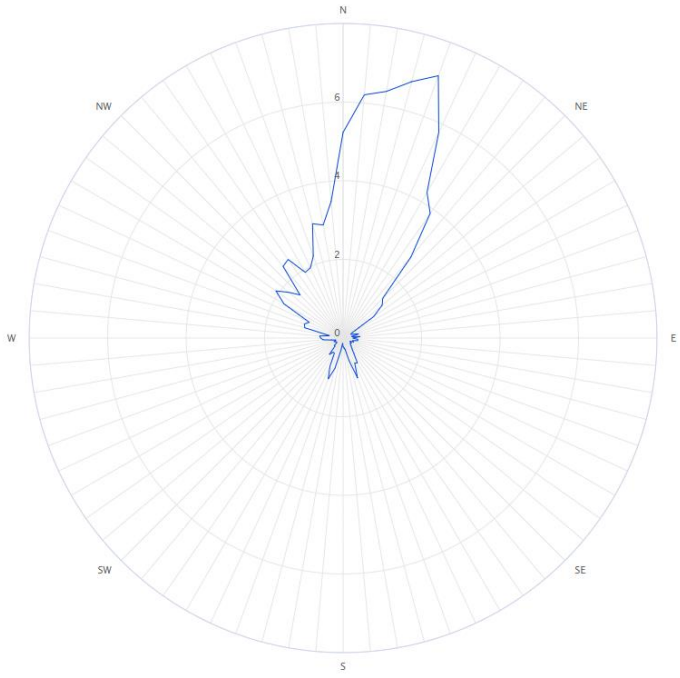
Wind speed over the measurement period



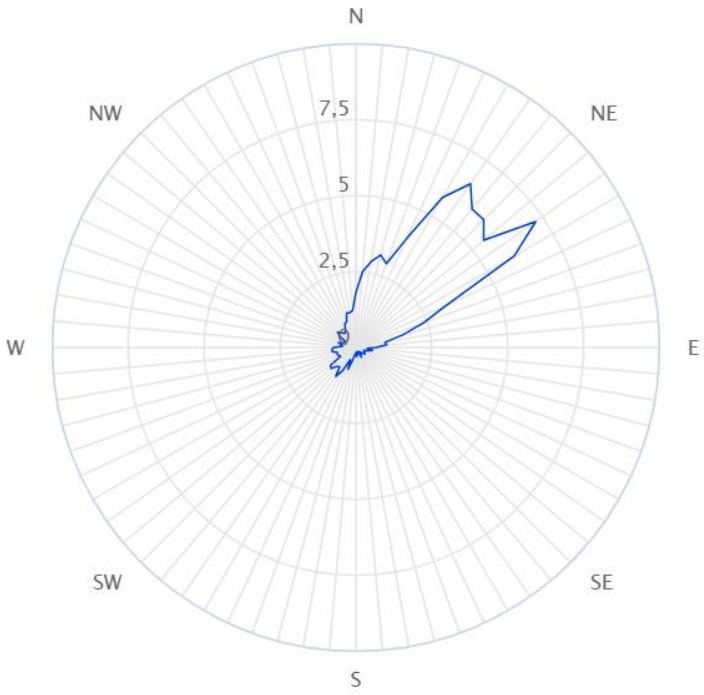
For comparison - wind speed over the measurement period in Þorlákshöfn



Wind rose over the measurement period



For comparison - wind rose from Þorlákshöfn



VISTA

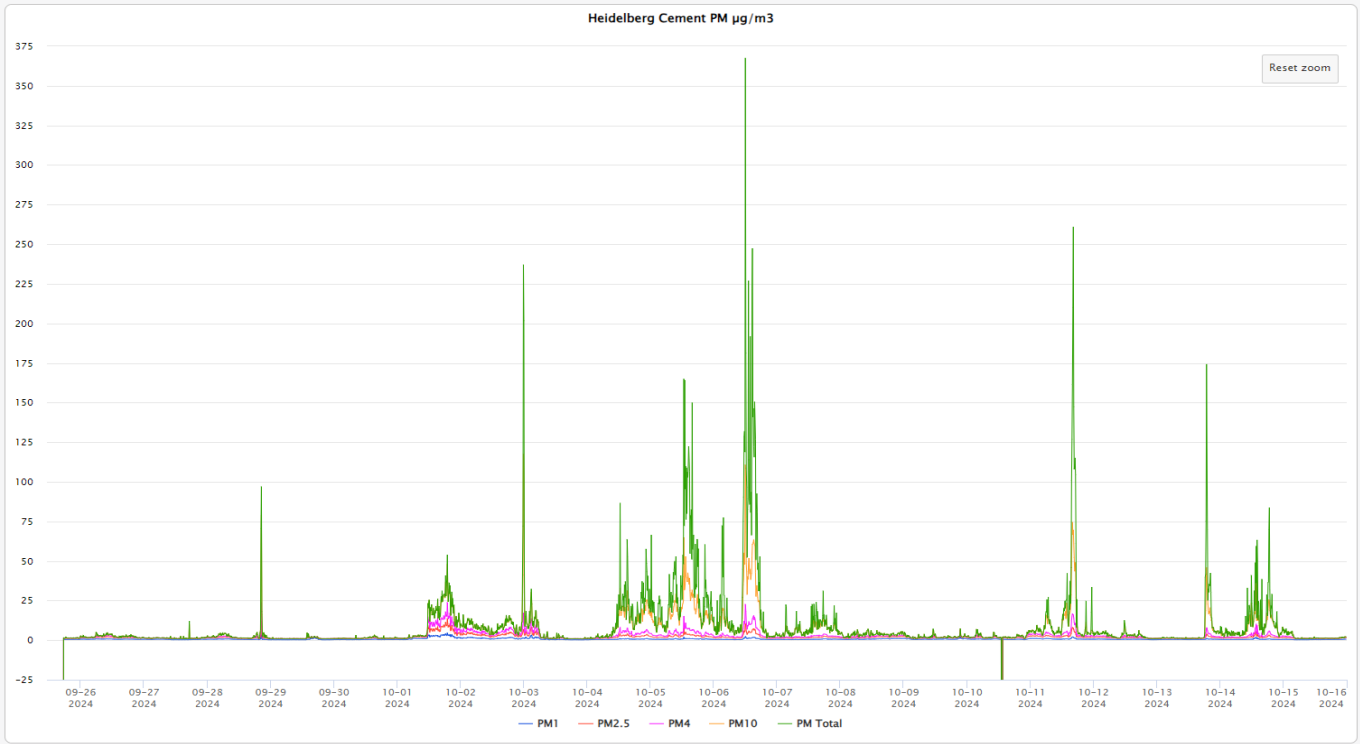
Measurement summary – particulate matter (PM) – 24h averages

Date	PM1 [µg/m3]	PM 2.5 [µg/m3]	PM4 [µg/m3]	PM10 [µg/m3]	PM total [µg/m3]
2024-09-26	0.64	1.59	2.01	2.4	2.4
2024-09-27	0.43	1.12	1.24	1.35	1.37
2024-09-28	0.58	1.54	2.04	3.18	3.48
2024-09-29	0.42	1.06	1.14	1.17	1.17
2024-09-30	0.38	1.1	1.25	1.32	1.32
2024-10-01	1.72	4.42	6.68	11.8	12
2024-10-02	1.23	3.43	5.32	10.3	12.2
2024-10-03	0.66	1.87	2.61	4.33	4.5
2024-10-04	0.59	2	3.29	10.1	13.9
2024-10-05	0.7	2.5	4.46	18.1	35.4
2024-10-06	0.68	2.5	4.51	17.5	38.5
2024-10-07	0.53	1.58	2.31	6.43	7.81
2024-10-08	0.74	1.79	2.38	3.62	3.63
2024-10-09	0.69	1.53	1.81	2.14	2.14
2024-10-10	-5,64	-4.74	-4.34	-3.88	-3.88
2024-10-11	0.85	2.54	4.12	11.4	19.3
2024-10-12	0.53	1.47	1.94	2.93	2.96
2024-10-13	0.46	1.33	1.76	4.18	7.45
2024-10-14	0.56	1.77	2.8	8.49	12.1
2024-10-15	0.38	1.15	1.39	1.83	1.84
2024-10-16	2.85	6.44	9.74	18.1	20.4

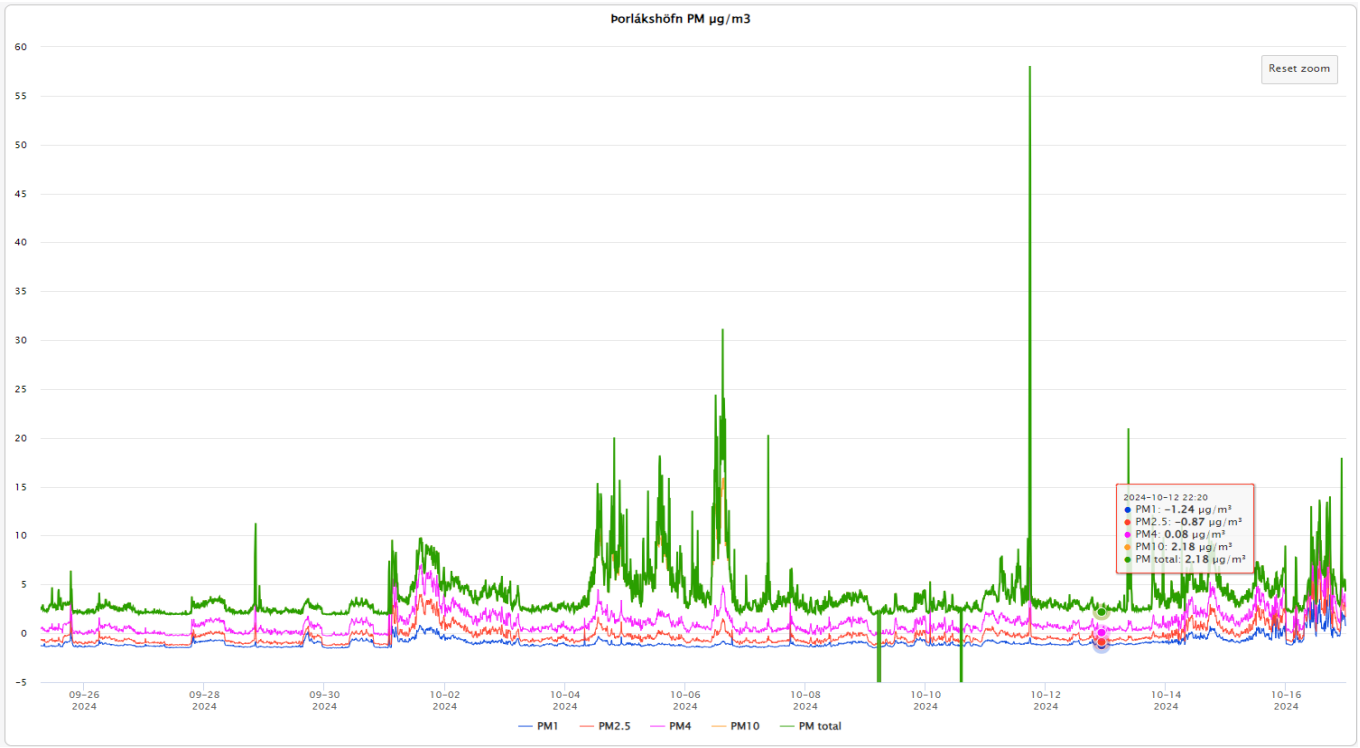
For comparison – particulate matter (PM) in Þorlákshöfn – 24h averages

Date	PM1 [µg/m3]	PM 2.5 [µg/m3]	PM4 [µg/m3]	PM10 [µg/m3]	PM total [µg/m3]
2024-09-26	-1.22	-0.73	0.4	2.52	2.52
2024-09-27	-1.26	-0.88	0.14	2.26	2.26
2024-09-28	-1.13	-0.55	0.63	2.84	2.85
2024-09-29	-1.17	-0.7	0.37	2.43	2.43
2024-09-30	-1.16	-0.69	0.38	2.44	2.44
2024-10-01	-0.26	1.4	3.31	5.77	5.78
2024-10-02	-0.78	0.41	2.04	4.43	4.43
2024-10-03	-1.13	-0.53	0.68	2.82	2.82
2024-10-04	-1.08	-0.2	1.39	5.53	6.13
2024-10-05	-1.18	-0.35	1.25	6.01	6.82
2024-10-06	-1.27	-0.44	1.16	5.69	7.13
2024-10-07	-1.29	-0.75	0.51	3.34	3.44
2024-10-08	-1.12	-0.49	0.79	3.17	3.18
2024-10-09	-7.42	-6.94	-5.84	-3.64	-3.64
2024-10-10	-7.37	-6.8	-5.63	-3.5	-3.5
2024-10-11	-0.99	-0.09	1.41	4.59	5.2
2024-10-12	-1.1	-0.52	0.65	2.82	2.82
2024-10-13	-1.02	-0.51	0.61	3.23	3.57
2024-10-14	-0.42	0.71	2.2	4.93	4.99
2024-10-15	-0.23	0.91	2.37	4.59	4.59
2024-10-16	0.58	2.06	3.5	5.45	5.46

Particle matter (PM) over the measurement period



For comparison - particle matter (PM) over the measurement period in Þorlákshöfn



Conclusion

In conclusion, the measurements conducted during the specified period indicate that particle matter (PM) values at the Heidelberg Cement site are consistent with Icelandic regulations (390/2009), as they do not exceed the established limits. We are confident in the accuracy of the data since it has been cross-referenced with the air quality measurements from Þorlákshöfn, ensuring reliability. While the PM levels are higher at the Heidelberg Cement site, this is likely due to ongoing nearby construction activities.

The weather data, including wind speed, direction, and temperature, further supports the assessment. Strong winds, particularly from certain directions, may have contributed to higher PM values by transporting dust and particles from nearby construction areas.

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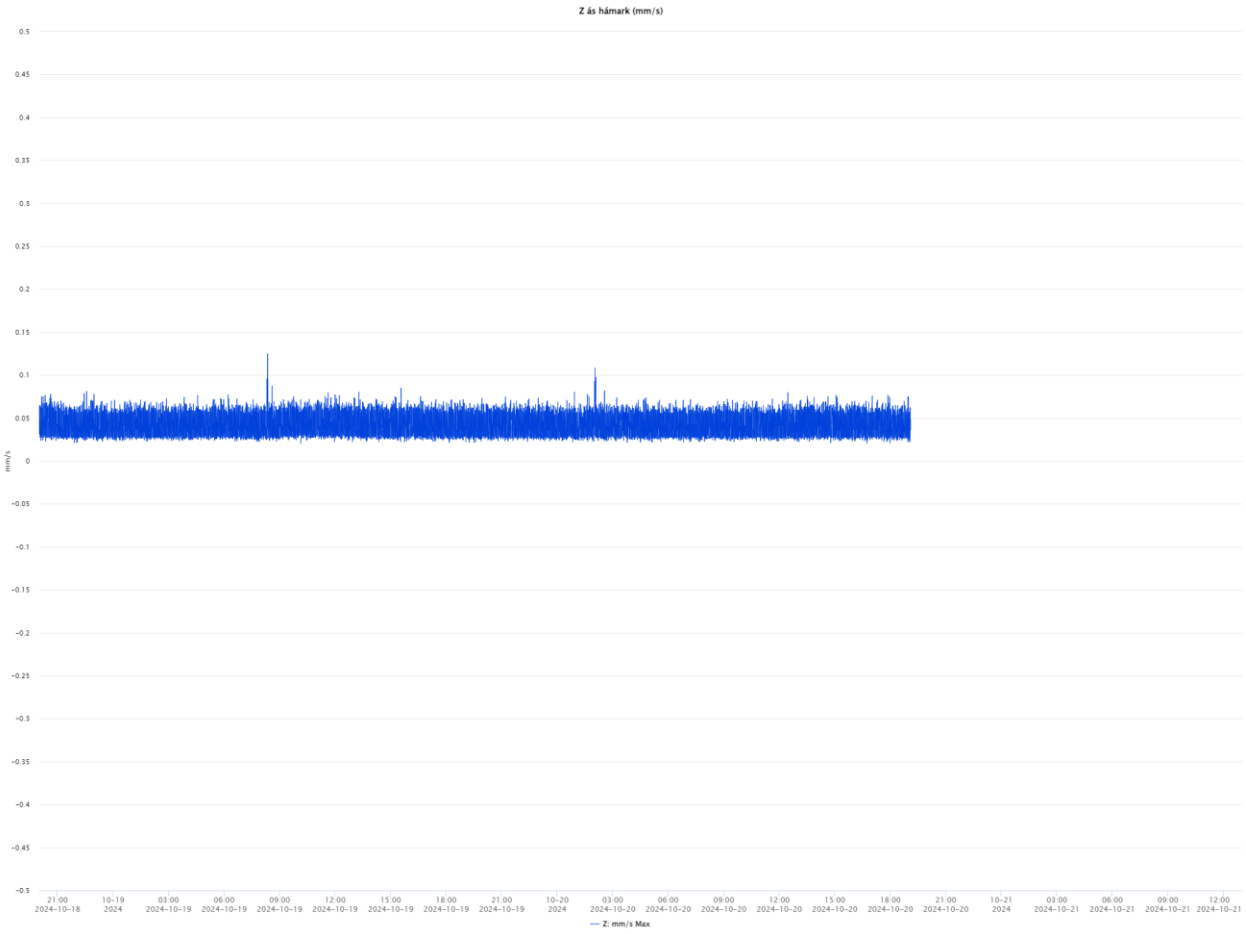
Vibration measurements

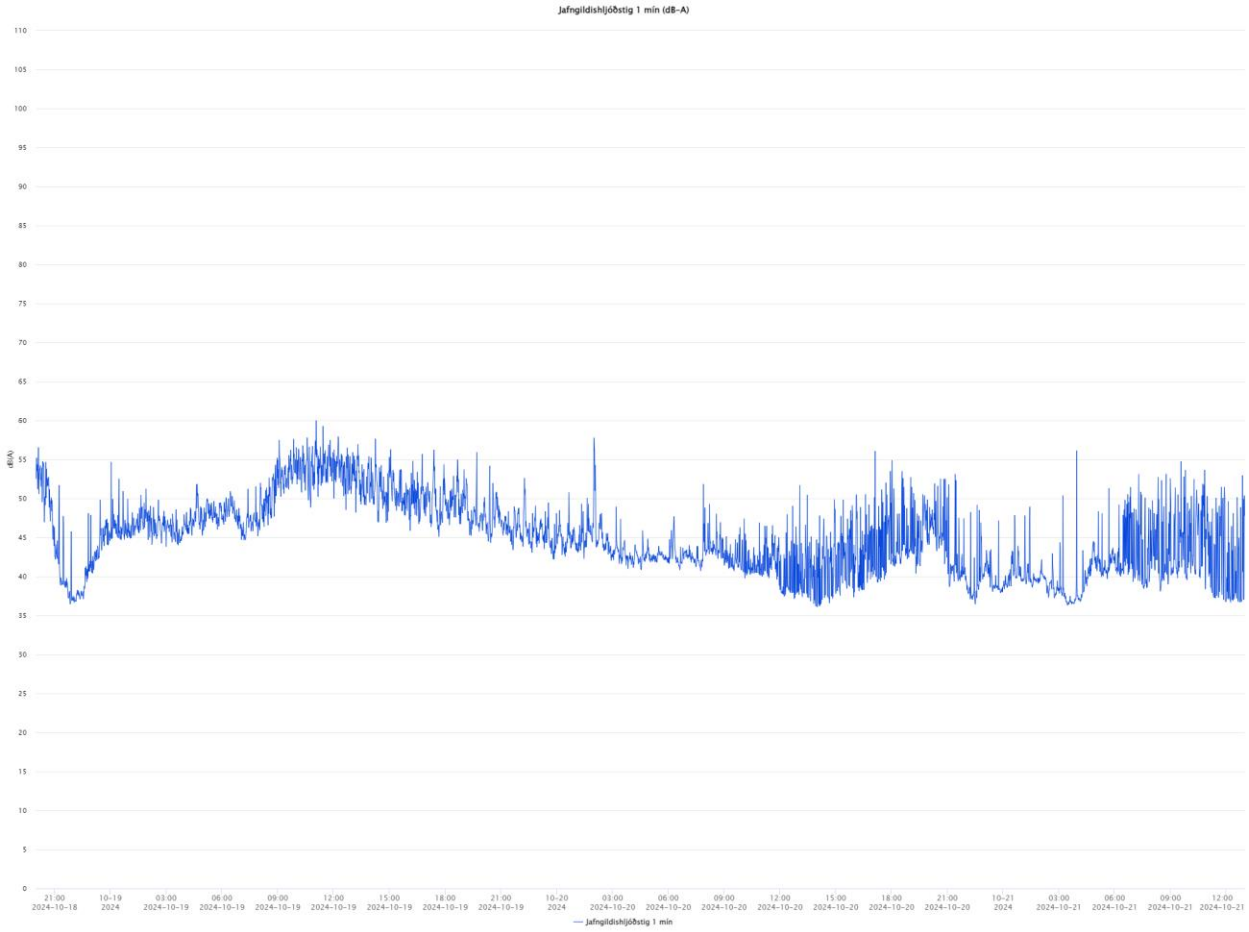
Very little vibration was measured during the time period. As would be expected based on the location. This would give a good indication for a baseline for further measurement in case of planned operation on the location.



Sound measurements

Sound measurments refelct normal abient sound that would be expected at an open location.

15 min avg.


Jafngildishljóðstig 1 mín (dB-A)
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Jafngildishljóðstig 1 mín

1 min avg.