

Norwegian Athletic Federation

Ullevaal stadion
Sognsveien 75 J, 0840 Oslo, NORWAY
E-mail: friidrett@friidrett.no
Phone: +47 94 83 33 26

Industriløpet
Stord, Norway
16.March 2024

COURSE MEASUREMENT REPORT

- REPORT FOR INTERNATIONAL CERTIFIED COURSE –

INFORMATION ABOUT EVENT AND COURSE
Event: Industriløpet 10 km
Technical Organiser: Stord IL - friidrett
City/Place: Stord, Norway
Date of Arrangement: 16.March 2024
Date and time for measurement: 11.March 2024 - 1 pm
Measured distance(s): 5 km + 10 km – This report is for 10 km
Length of calibration course: 300 m
Terrain: Flat ☒ Slightly hilly ☐ Hilly ☐ Terrain ☐
Type of course route: Closed loop ☒ Back and forth ☐ A to B ☐ Other ☐
Race surface: Asphalt
Elevation Start - Finish: 0
Description of start: Outside main entrance to Aker Solutions
Description of finish: Same as start
Distance, in a straight line, between start & finish: 0 m
Start and Finish marked: Yes ☒ No ☐
Km-markings: Yes ☐ No ☒
Measurement direction: Running direction ☒ Opposite running direction ☐
National record can be approved: Yes ☒ No ☐

CONTACT INFORMATION		
	Measured by:	Organizer:
Contact person:	Erling Hiorth	Nils Hetleflåt
Phone:	+47 91337338	+47 91385442
Email:	Erling.hiorth@gmail.com	Nils.hetleflat@sklbb.no

It is hereby confirmed that the course has been measured by an A- or B certified international certified course measurer from Norwegian Athletics. The course is measured in accordance with AIMS and Norwegian athletics regulations, and the distance(s) has the minimum reported length(s). The survey is valid for 5 years, except if the route is changed.

12.March 2024 *Erling Hiorth*

Date	Signature by Course measurer	Date	Signature by AIMS
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CALIBRATION COURSE AND PROCEDURE – 11.Mar.2024 – 11 am	
Length of measuring tape (steel measuring tape only)	50 m
Length of calibration course 1st measurement	300,00 m
Length of calibration course 2nd measurement	300,01 m
Possible 3rd measure (max. 1 cm diff per 100m 1 st and 2 nd)	No
Average of measurements before adjustments	300,005 m
Temperature (road or measuring tape)	6 degree
Adjustment cf. $D-(D*(1+(temp-20)*0,0000115))$	- 0,048 m temp.
Measured calibration distance after adjustment	300,00 m (+4,3 cm on ground)
Distance from start/finish to calibration distance	150 m

CALIBRATION INFORMATION - (max 8 counts difference of 1000 m between 4 measurements, ie 2 counts of 300m and 3 count of 400m)						
	Pre-measurement:			Post measurement:		
	Date and Time: 11.Mar – 1 pm			Date and Time: 11.Mar – 3:30 pm		
	Start	End	Diff.	Start	End	Diff.
1st measure	83900	87356	3456	18600	22057	3457
2nd measure	87356	90812	3456	22057	25514	3457
3rd measure	90812	94269	3457	25514	28970	3456
4th measure	94269	97725	3456	28970	32426	3456

	Pre measurement	Post measurement	
Average (1+2+3+4) / 4	3456,25	3456,5	Today's constant. Either highest or average of before and after measurement
Constant 1 km	11520,845	11521,678	
Addn. +1‰	11,521	11,522	
Measurement constant (rounded)	11532,366	11533,200	11533

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MEASUREMENT PROCEDURE		
Measurement constant	11533	
Measured Distance	Counter	Description of place
		Trial round:
	500	Pre-set start / finish line
1.712,7 m	20252	Intermediate point
3.248,1 m	58128	Pre-set start / finish line
4.996,8 m		Closed loop
		Final / official round:
	58200	Pre-set start / finish line
1.711,0 m	77933	Intermediate point
3.279,8 m	115759	Pre-set start / finish line
4.990,8 m		Total measured without adjustments
+ 12,6 m	Steel tape	New radius around turning point after 900 m
		4,0 m radius * Pi 3,14
- 1,9 m	Steel tape	Original radius at turning point after 900 m
		0,6 m radius * Pi 3,14
5.001,5 m		2 nd round is equal to 1 st round
+ 5.012,2 m		Total measured adjustments
10.003,0 m		Total measured course

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CONCLUSION OF MEASUREMENT

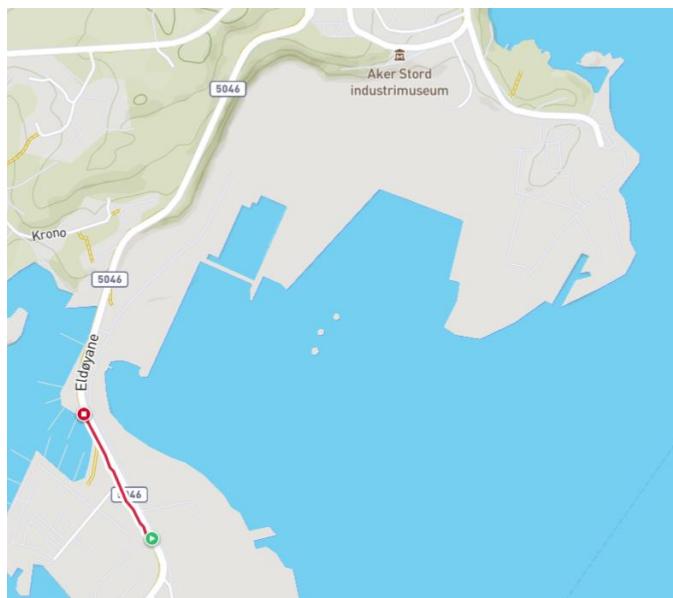
1. General information about race course and start/finish
 - Start / finish line is 50 m outside main entrance to Aker Solutions ship yard
 - The course consist of 1 continous loop run twice. One part of the loop is outside the ship yard, and one part inside.
 - 1st we drove through the course to review. 2nd round included pre-measure with bicycle and marking of all required corners. 3rd and final round was the official measurement of the course length.
 - The race organizer is part of the management at the yard, and the course has been used over the last 2 years.
2. Measurement of calibration course
 - 150 m from start/finish, straight/flat cycle path on asphalt
 - Measured in accordance with procedure, 2 persons
 - Marked at both ends, adjusted for temperature and adjusted +4,3 cm on ground
3. Calibration of bicycle
 - Calibrated in accordance with procedure, 4 measures, devation 1 count ok
4. Measurement of the course
 - From pre-set start to finish continuous, one round
5. Post calibration of bicycle
 - Same procedure, 4 measures, devation 1 count ok
6. Course adjustments
 - Turning point after 900 m adjusted by increasing the radius from 0,6 m to 4,0 m
7. Overall length of the course
 - The course is not shorter than 10.000 m
8. Additional info
 - The organizer will set up cones on all course separations and corners as shown on attached pictures.
 - Pictures are taken on all locations were these cones are required, and all locations are also marked with spray on ground.
 - For safety reasons and smooth running, the cones / turning points are placed well outside buildings and other obstacles.

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CALIBRATION COURSE MAP



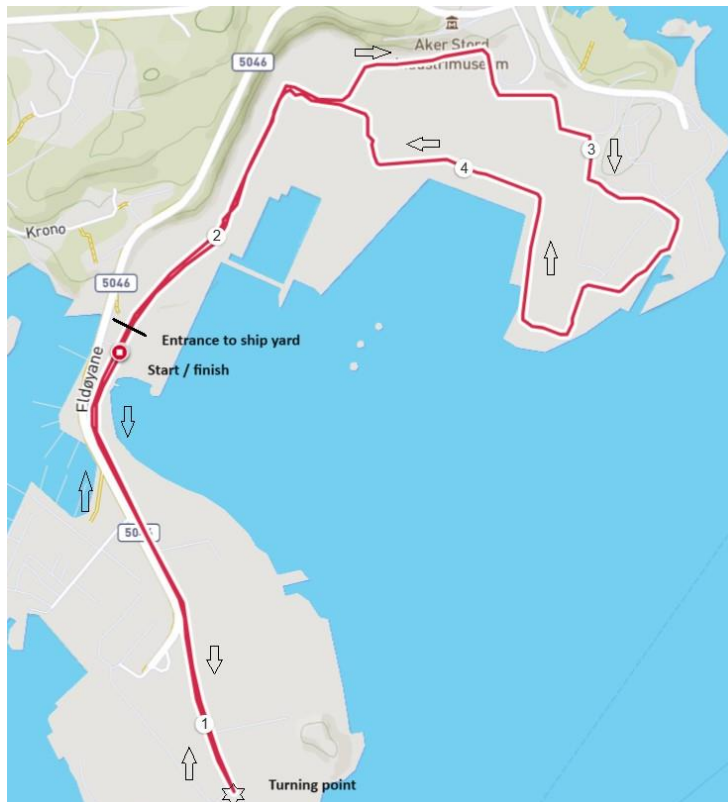
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COURSE MAP & DESCRIPTION

Start towards south and using left side of road. Turning point after 900m, then north on other side back to and passing start/finish line. Continue running north into ship yard using left entrance gate. Around ship yard clock wise and return through opposite entrance gate, and last 50 m to finish line. Same round is run twice.



Start / finish below



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Detail running course map with all corners shown
Pictures attached on following pages



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DOCUMENTATION / PICTURES – Turning points

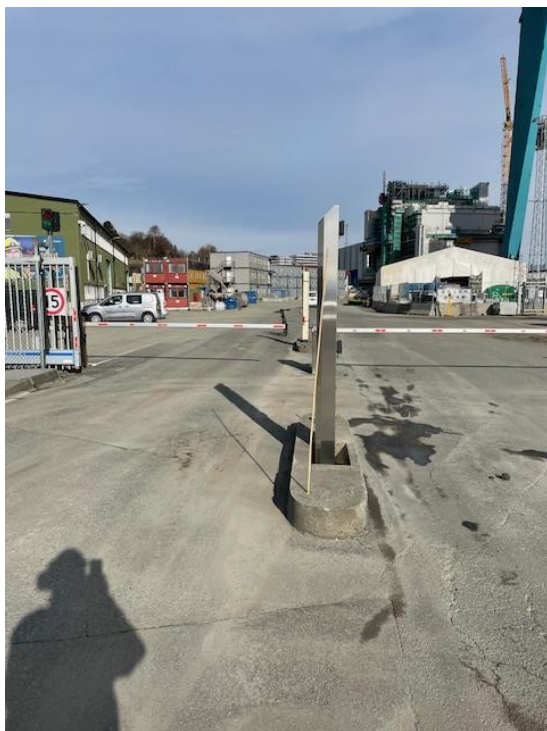
All pictures are shown in order of appearance while running through the course

Course separation, 4,0 m

Turning point after 900 m, arc drawn on ground



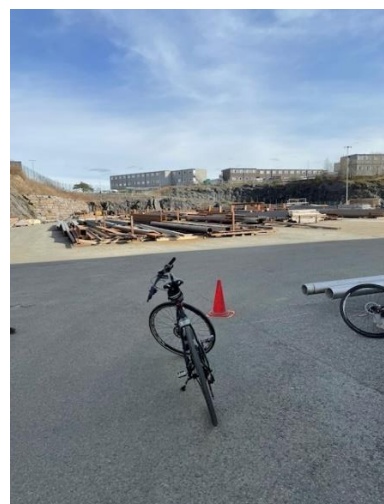
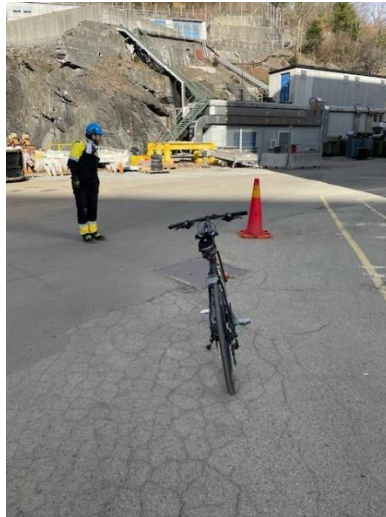
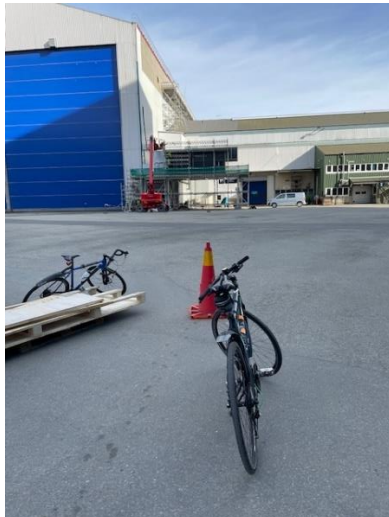
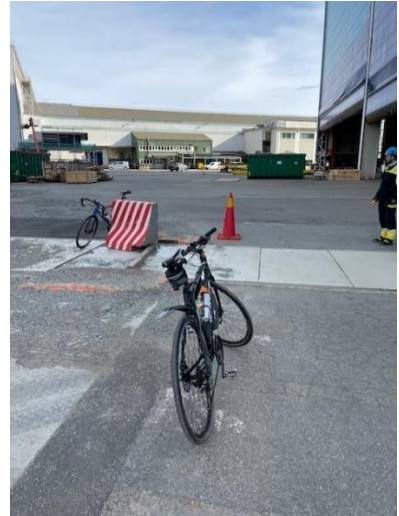
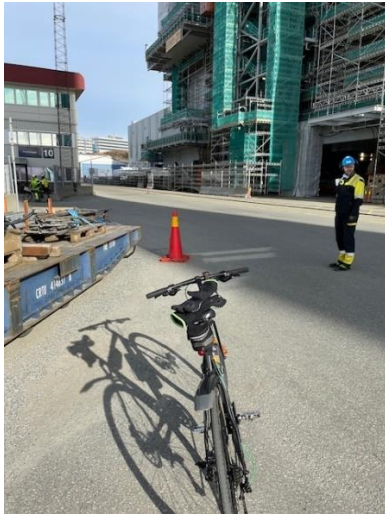
Left gate into ship yard



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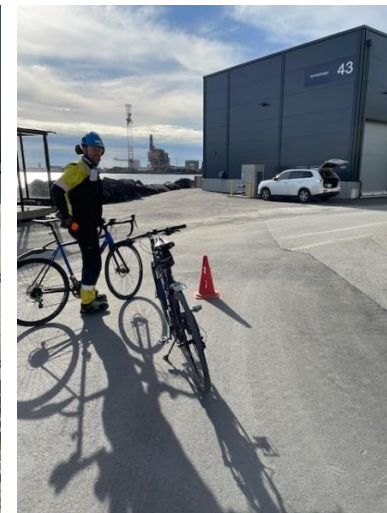
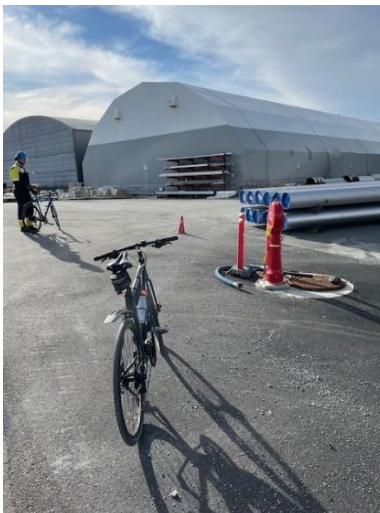
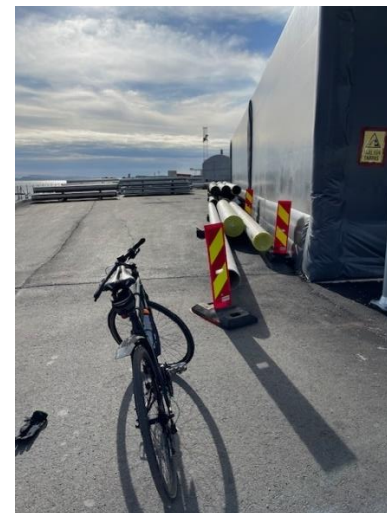
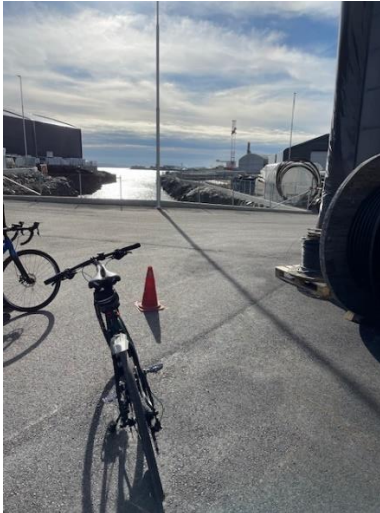
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