

CERTIFICATE OF SURVEYING

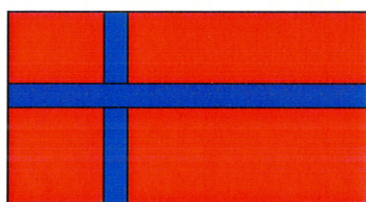
FOR

400M RUNNING TRACK

Sandnes Idrettspark
Sandnes Kommune
NORWAY

according to the Regulation of the

I.A.A.F
(Handbook Edition 2008)



Certificate N° 11-06-2011



Sportstättenbau GmbH
D-86666 Burgheim
Germany
Phone: +49 8432 870
Fax: +49 8432 8787
www.polytan.de

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I. Survey work

Survey Office:

Address:

Date of survey and line marking:

Weather:

Temperature:

Surveyor:

Instruments:

Theodolite:

polytan 

Sportstättenbau GmbH

**Gewerbering 3
D-86666 Burgheim
Germany**

June 2011

Sunny

13 °C

Mr. Pero Kelava

LEICA TCR 110

polytan 

**Sportstättenbau GmbH
D-86666 Burgheim
Germany
Phone: +49 8432 870
Fax: +49 8432 8787**

www.polytan.de

II. The Track

1. Track description

| | |
|--|------------------------------|
| Type of contraction: | Circular arched track |
| Construction radius: | 38,500 m |
| Distance between Centre Points: | 78,106 m |
| Inner edge: | Height |
| Total length: (design size) | 400,000 m |
| Quantity of Running circuits: | 8 lanes |
| Sprint lanes: | 8 lanes |
| Width of lanes: (design size) | 1,220 m |
| Width of track: (design size) | 9,760 m |
| Kind of inner edge: | Aluminium Curbing |
| | Height: 50mm |
| | Width: 50mm |

2. Track surface

Track surface: **Synthetic Polyurethane
Polytan WS 15mm**

Installation:


Sportstättenbau GmbH



2.1.Product Approval


INTERNATIONAL
A M A T E U R
A T H L E T I C
F E D E R A T I O N

CERTIFICATE

THE IAAF IS PLEASED TO CERTIFY HEREBY
THAT THE FOLLOWING PRODUCT

of the Company : POLYTAN

Title of Product : Synthetic surface, Polytan WS, 15mm

Colour : _____

Catalogue Number : _____

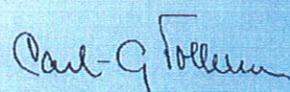
Certification N° : 5-00-0016

HAS BEEN TESTED AND MEETS THE TECHNICAL REQUIREMENTS FOR
USE IN ALL INTERNATIONAL ATHLETIC COMPETITIONS.

THIS CERTIFICATE IS ISSUED IN ACCORDANCE WITH THE TERMS AND
CONDITIONS OF THE IAAF CERTIFICATION SYSTEM OF TRACK AND
FIELD FACILITIES, IMPLEMENTS AND COMPETITION EQUIPMENT.

This certificate is valid from: 1 August 2000
until the last day of August 2004

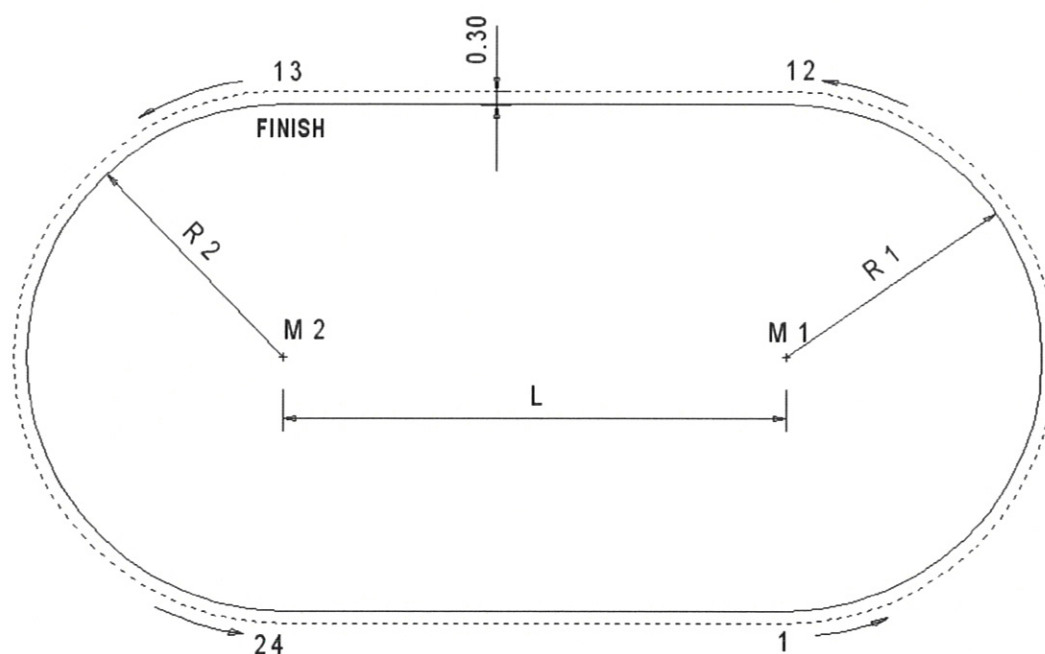

ISTVAN GYULAI
IAAF General Secretary


CARL-GUSTAV TOLLEMAR
IAAF Technical Committee Chairman



3. Track description

3.1. Control measurement of the inside edge (Drawing)



3.2. Control measurement of the inside edge

MEASUREMENTS:

Curve M1

| | |
|----|----------|
| 1 | 38,503 m |
| 2 | 38,505 m |
| 3 | 38,503 m |
| 4 | 38,506 m |
| 5 | 38,503 m |
| 6 | 38,500m |
| 7 | 38,502 m |
| 8 | 38,497 m |
| 9 | 38,498 m |
| 10 | 38,499 m |
| 11 | 38,499 m |
| 12 | 38,498 m |

Curve M2

| | |
|----|----------|
| 13 | 38,499 m |
| 14 | 38,499 m |
| 15 | 38,498 m |
| 16 | 38,500 m |
| 17 | 38,501 m |
| 18 | 38,503 m |
| 19 | 38,499 m |
| 20 | 38,497 m |
| 21 | 38,503 m |
| 22 | 38,504m |
| 23 | 38,502 m |
| 24 | 38,503 m |

Total
1 - 12: 462,013 m

Average: 38,501 m

Total
13-24: 462,008 m

Average: 38,501 m



3.3. Calculation of the running distance

Average: 38.501 m Average: 38,501 m

Track Line: + 0.300 m Track Line: +0.300 m

Radius R1: 38,801 m Radius R2: 38,801 m

$$B1 = \frac{R1 \times A}{\text{Rho}} = \underline{121,897 \text{ m}}$$

$$B2 = \frac{R2 \times A}{\text{Rho}} = \underline{121,897 \text{ m}}$$

A = 200.000 gon

Rho = 63.6620 gon

**Distance between Centre Points M1 and M2:
Finish and opposite track :**

Measured lengths: 78,106 m 78,106 m 78,106 m

Total: 234,318 m Average: 78,106 m

Axis length: 78,106 m

Calculation:

2 x axis length 156,212 m

curve length R1 121,897 m

curve length R2 121,897 m

Total running track 400,006 m



3.4. Certification of the length

1. **The control of the length of the running track gives a length longer than 400,000 metres. (I.A.A.F. rule 161.2)**
2. **The surveying of the different running events and the tracklimiting lines was carried out in accordance with the IAAF Regulations, IAAF - Manual Rule No. 160 ff.
The type and number of measurements points can be seen from the appended table (Page 6).**

The track has a length of 400.006 m.

The deviation in desired value of 20 mm is within the admissible tolerance in accordance with the International Amateur Athletic Federation IAAF .

3. **The calculation of lane one was taken 0,300 metres outward from the inside border.
The length of the other lanes were taken 0,200 metres from the outer edges of the lines. (I.A.A.F. rule 160.2)**
4. **The direction of the running is left-hand inside. The lanes are numbered with the left hand inside lane numbered 1. (I.A.A.F. rule 163.1)**



4. International markings on the track

4.1. International starts

The following International starts are marked on the track:

Races in separate lanes:

| | | | |
|---------|-------------------|----------|------------------------------|
| 100 m | white | Straight | in separate lanes |
| 110 m | white | Straight | in separate lanes |
| 200 m | white | Circle | in separate lanes |
| 300 m | white | Circle | in separate lanes |
| 400 m | white | Circle | in separate lanes |
| 800 m | white-green-white | Circle | first bend in separate lanes |
| 800 m | green (8 lanes) | Circle | first bend in separate lanes |
| 4x400 m | blue | Circle | 3 bends in separate lanes |

Curved starts:

| | | | |
|----------|-------|----------|-------------------|
| 800 m | white | lane 1-6 | 2 full laps |
| 2.000 m | | | 5 full laps |
| 10.000 m | | | 25 full laps |
| 1.000 m | white | lane 1-6 | 2 full laps+200m |
| 3.000 m | | | 7 full laps+200m |
| 5.000 m | | | 12 full laps+200m |
| 1.500 m | white | lane 1-6 | |
| Mile | green | lane 1-6 | |

Steeplechase starts:

| | | | |
|---------|-------|----------|--------------------------|
| 1.500 m | white | lane 1-6 | see I.A.A.F. rule 169 ff |
| 2.000 m | white | lane 1-6 | see I.A.A.F. rule 169 ff |
| 3.000 m | white | lane 1-6 | see I.A.A.F. rule 169 ff |



4.2. National starts

The following International starts are marked on the track:

Races in separate lanes:

| | | | |
|---------------|-------|----------|---------------------------|
| 60 m | white | Straight | in separate lanes |
| 80 m | white | Straight | in separate lanes |
| 4 x 60 m | black | Circle | in separate lanes |
| 4 x 200 m | blue | Circle | 3 bends in separate lanes |
| 1000m Staffet | blue | Circle | 4 bends in separate lanes |

4.3. Additional starts

The following Additional starts are marked on the track:

Races in separate lanes:

| | | | |
|-------|-------|-------------------|-------------------|
| 100 m | white | Opposite Straight | in separate lanes |
| 60 m | white | Opposite Straight | in separate lanes |
| 80 m | white | Opposite Straight | in separate lanes |



The start and finish of the races are denoted by a white line 50 mm in width at right angles to the lane lines. (I.A.A.F. rule 164.1)
The distance of the race is measured from the edge of starting line farther from the finish, to the edge of the finish line nearer to the start. (I.A.A.F. rule 160.3)

The staggered starts for 800 m events are constructed, that the first bend has to be run in separate lanes as far as the break line is marked. The position of the start lines are in accordance with the rule. The break line is an arced green line 50 mm wide is marked across the track. (I.A.A.F. rule 163.5)

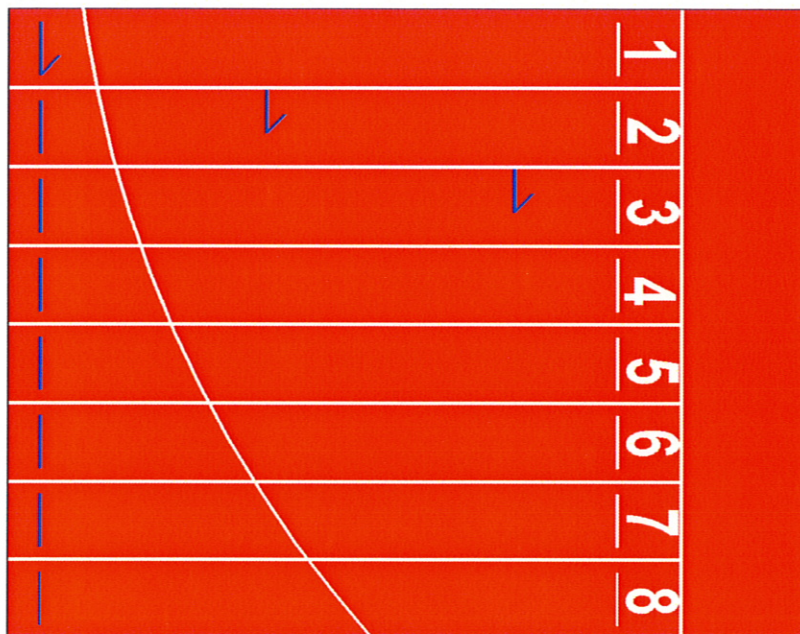
The construction of the curved start lines are, that all runners have the same distance from the finish. (I.A.A.F. rule 162.9)

The 4 x 400 m start lines are in accordance with the rule. (I.A.A.F. rule 170.8)

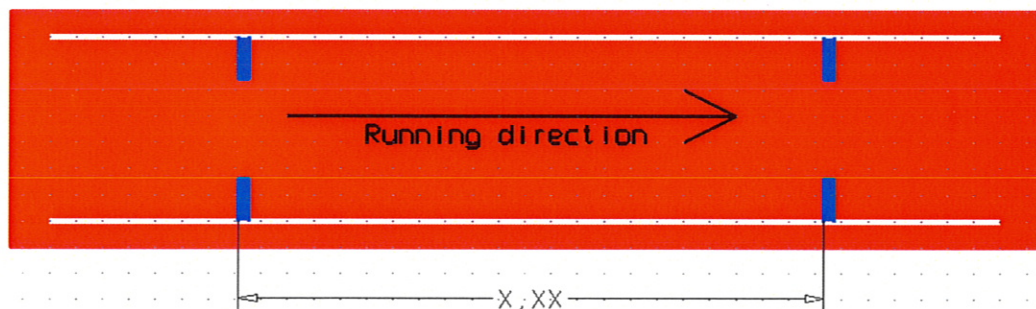
4.4. Finish

The lanes are numbered with the left-hand inside lane numbered 1. (I.A.A.F. rule 163.1)





4.5. International Hurdle Events



The distance between the hurdles are measured from the further end of the marker to the finish line. All markings are falling in running direction.



The hurdle events are marked on the track:

| | | From start to 1. hurdle | Distance between hurdles | from last hurdle to finish line |
|--------------------------|--------------------------|----------------------------|--------------------------------|---------------------------------------|
| 110m hurdles men | blue bar (5x10cm) | 13,72 m | 9,14 m | 14,02 m |
| 100m hurdl. women | yell. Bar(5x10cm) | 13,00 m | 8,50 m | 10,50 m |
| 400 m hurdles | green bar(5x10cm) | 45,00 m | 35,00 m | 40,00 m |

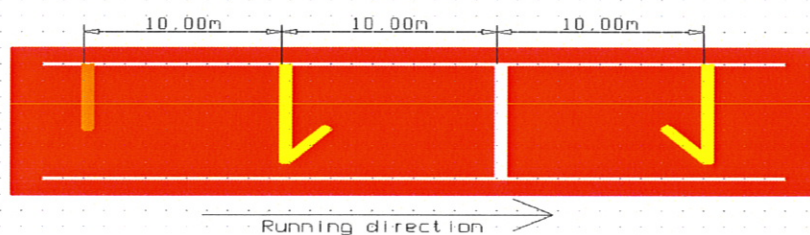
There are ten positions for hurdle marked in each lane. The distance are in accordance with the table in I.A.A.F. rule 168.1

The markings are on the left and right side in each lane. Markings, are in accordance with I.A.A.F. standard.

4.6. International Relay Races

The following International relay races are marked on the track:

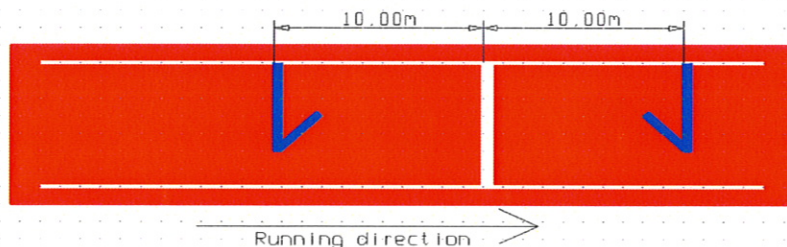
4 x 100 m Relay



The dimensions of the relay zone are in accordance with the rule. Markings, sizes are in accordance with I.A.A.F. standard. (I.A.A.F. rule 170 ff)



4 x 400 m Relay



The first lap (first runner) as well as that part of the second lap up to the exit from the first bend (second runner), is to be run in separate lanes.

The dimensions of the relay zone are in accordance with the rule. Markings, sizes are in accordance with I.A.A.F. standard. (I.A.A.F. rule 170 ff)

4.7. National Hurdle Events

These National hurdle events are marked on the track:

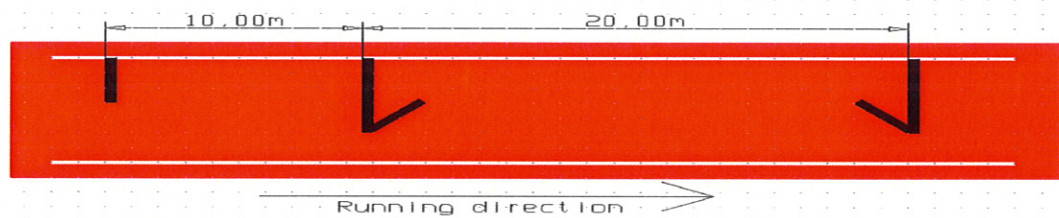
| | | From start to 1. hurdle | Distance between hurdles | from last hurdle to finish line |
|---------------------|----------------|----------------------------|--------------------------------|---------------------------------------|
| 60 m hurdles | white | 11,00 m | 6,00 m | 19,00 m |
| 60 m hurdles boys | blue cross | 11,50 m | 7,50 m | 11,00 m |
| 60 m hurdles girls | red cross | 11,00 m | 7,00 m | 14,00 m |
| 80 m hurdles | blue | 12,00 m | 8,00 m | 12,00 m |
| 200 m hurdles women | red quadrat | 16,00 m | 19,00 m | 13,00 m |
| 200 m hurdles men | yellow quadrat | 18,29 m | 18,29 m | 17,10 m |



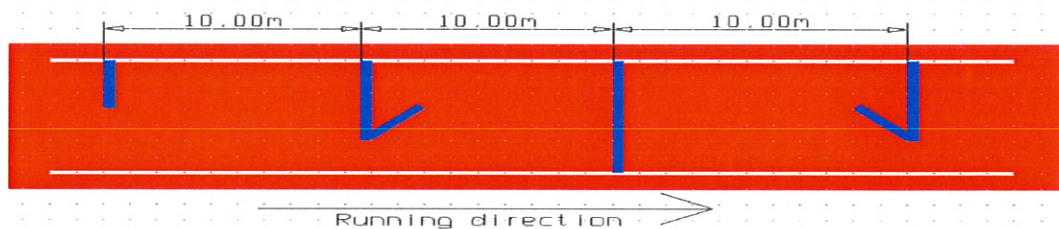
4.8. National Relay Races

The following National Relay Races are marked on the running track:

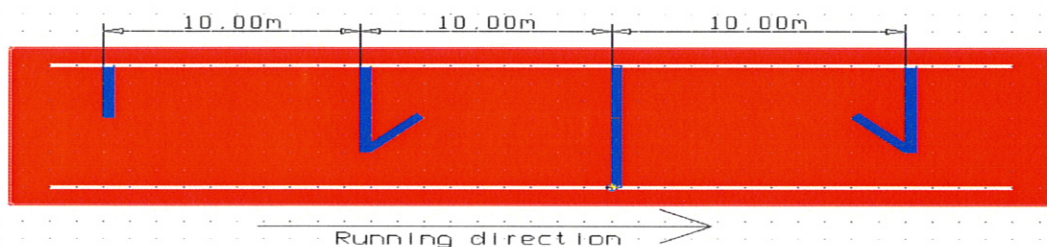
4 x 60 m Relay



4 x 200 m Relay



1000 m Relay



4.9. Steeplechase Events

The length of the Steeplechase was checked

The reduced measurement is 397,72 m

==> 1 VM = 2,28 m

Steeplechase Start Position

Start 1500m 3 VM = 6,84 m before the normal start 1500m

Start 2000m 5 VM = 11,40 m before finish line

Start 3000m 7 VM = 15,96 m before the normal start 3000m



Steeplechase Barrier Position

The distances between each barrier position are 79,544 m



III. Certification

With this certificate we certify that all checked distances, measurements and markings are in accordance with I.A.A.F. Handbook 2008

This sportsground is suitable for National and International meetings that come under the I.A.A.F. rules.

The certificate must be submitted to the "Official Surveyor" before a meeting takes place. (I.A.A.F. rule 122)

The certificate has been written in English in accordance with I.A.A.F. rule 9.

**This is to certify that the established departure of
+ 0.006 m is within the permissible tolerance**

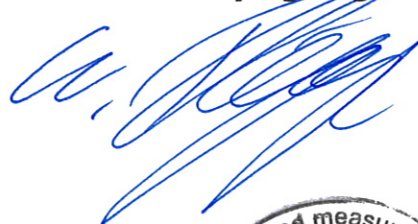
- Instruction of the IAAF -

**Theodor Kath
Civil Engineer
(Assistant)**



Burgheim, 16th June 2011

**Walter Rothgängel
Certified Surveying Engineer**



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**Sportstättenbau GmbH
D-86666 Burgheim
Germany
Phone: +49 8432 870
Fax: +49 8432 8787**

