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Asphalitic Concrete Surfacing of Emerald Driver Training & Motorsports Complex ....

Where the Rubber Meets the Road!

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A joint initiative of the Queensland Government and Central Highlands Regional Council
Getting more people active through sport and recreation

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### 18.02 Track Design

The shape of the track, both in plan and vertical profile, is not constrained by these regulations, as it is dictated by certain variable factors, the types of competition for which the course is intended, the character of the terrain, considerations of economics, aesthetics, tradition, etc. However, the construction of the circuit must conform to any safety requirements, which may be specified by the AKA. Those responsible for a circuit design must also ensure that the prescriptions laid down by the Public Authorities are complied with and must obtain their official approval.

### 18.03 Circuit Plan and Approval

Prior to the construction of a new circuit or alteration of any existing circuit, 10 copies of the circuit plans must be submitted to the National Track Safety Committee for approval. All circuits will have a professionally drawn plan at a scale of 1:500 showing the track layout, surface contours, the direction of the racing, buildings, installation, access roads, race areas, the location of the starting grid, ambulance access and parking, the medical centre, pickup vehicles and of the Marshals’ posts, as well as a Paddock plan with the pit spaces and access ways. Non-compliance with this rule will be subject to an investigation and a possible penalty imposed and/or the track licence not being issued by the NKC.

### 18.04 Circuit Grading Criteria

<table>
<thead>
<tr>
<th>GRADE</th>
<th>EVENT STATUS</th>
<th>CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>International</td>
<td>CIK/FIA International Events</td>
<td>Refer CIK/FIA Homologation Regulations</td>
</tr>
<tr>
<td>A</td>
<td>National Sprint Championships</td>
<td>Circuits to be a minimum length of 750 metres and a minimum width of 7 metres. Refer also to National Championships Organisers Manual.</td>
</tr>
<tr>
<td>B</td>
<td>All State Open Championships</td>
<td>Circuits to be a minimum length of 500 metres and a minimum width of 7 metres.</td>
</tr>
<tr>
<td>C</td>
<td>State Closed sprint Titles</td>
<td>Circuits to be a minimum length of 500 metres and a minimum width of 7 metres.</td>
</tr>
<tr>
<td>D</td>
<td>National and state dirt kart championships</td>
<td>Circuits to be a minimum length of 350 metres and a minimum width of 7 metres.</td>
</tr>
<tr>
<td>E</td>
<td>Any Opened and Closed non championship race Meeting</td>
<td>Circuits to be a minimum length of 350 metres and a minimum width of 6 metres.</td>
</tr>
</tbody>
</table>
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18.06 Track Dimensions

1. Length
   The maximum length of any track will be 1.7km (except as approved by NKC). The line around a track used for determining its length will be the centre line.

2. Straight
   The length of a straight will be measured from tangent points of the proceeding and following corners.

3. Start Straight
   (a) All new tracks are to have a minimum distance of 80m from the start line to the start of the first corner and be a minimum length of 130m. An exception may be considered for alterations to existing circuits.
   (b) The first corner must be as "open" as possible and a minimum width of 8m.

4. Track Width
   (a) All straights over 80m in length are to be minimum width of eight (8) metres; elsewhere the minimum width will be 7 metres.
   (b) For all existing tracks, all straights over 80m in length are to be minimum width of 7 metres; elsewhere the minimum width will be 6 metres.
   (c) Track widths will be measured over the sealed bitumen surface, excluding any kerbs or ripple strips.

5. Separation
   (a) The distance between high speed converging sections of track shall be a minimum of twenty (20) metres, between track edges, on all new tracks and major alterations, unless the National Safety Committee approves a suitable alternative.
   (b) All other sections of the track shall have a minimum of fourteen (14) metres separation, apart from the area around the internal radius of any corner.

6. Track Gradient
   The recommended maximum longitudinal gradient will be 5% and recommended maximum transverse gradient will be 10%.

7. Vertical Clearance
   There shall be no permanent or temporary objects within 3 metres vertically above the surface.
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TOTAL TRACK LENGTH 1005.85m
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Minimum separation, T6 to S10 = 20.3m.
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Ch. 292 – 326 (5% long. grade)
Ch. 630 – 665 (5% long. grade)
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Ch. 320 – 350 (transverse grade 6%)
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Ch. 500 – 530 (transverse grade 6%)
Ch. 650 – 680 (+3% to -3% transition)

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Ch. 785 – 800 (-3% to +3% transition)
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Inner kerb provision

Outer kerb edge provision
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Catch trap detail
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T8 – inner kerb edge drainage provision

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Drainage provision at inside of track

T 8:- rad. = 12.0m, change in direction = 169.3° with inner edge drainage
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Ch. 792 – sag curve ponding
29.4. **Pavement Surface Tolerance**

In order to achieve suitable surface tolerance for the asphaltic concrete pavement surfacing, it is extremely important that the prepared surface of the top course (base) achieve a good uniform surface finish, with the recommended tolerance for this being such that the surface should not deviate from the bottom of a 3m long straight edge by more than 6mm parallel to the centreline or 10mm transverse to the centreline for the kart track area; whilst for other areas this tolerance can be broadened to 8mm parallel to the centreline and 12mm transverse to the centreline.

Where the above tolerances are not achieved, such areas shall be reworked to achieve the above tolerance limits or alternatively suitable corrector applied as part of the AC sealing operations.
Surface Tolerance – The asphaltic concrete wearing surface shall be completed true to shape as detailed and specified, and shall not deviate from the bottom of the 3m long straight edge by more than 3mm parallel to the centreline and 5mm transverse to the centreline for the kart track; whilst for other sealed areas the deviation from a 3m straight edge may not exceed 5mm parallel to the centreline and 7mm transverse to the centreline. In all cases, such deviations will only be permitted where they are gradual and progressive, with abrupt deviation totally unacceptable. Any abrupt deviation, even within the above tolerances, is unacceptable and will require rectification at the Contractor’s expense.
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Pavement Surfacing

Unless otherwise specified, all pavement areas shall be surfaced with asphaltic concrete complying with AS2150-2005 using an AC10 mix with a Class 320 bitumen binder and with a 1% to 2% hydrated lime content. The thickness of the wearing surface and primer seal requirements are as specified in the following sub sections.

Given the extreme importance of tight surface finish and low air voids as outlined in section 1 below, it is imperative that laboratory trial mixes be prepared in order to produce an acceptable mix. When acceptable mix has been produced in the laboratory, a scaled up version of the mix formulation must then be produced in the mixing plant to be used for the work. This trial production mix shall then be laid and tested at the site to verify the suitability of the mix design. The mix design shall be further adjusted as necessary to obtain a suitable job mix. Recognising the importance of the correct mix design and to minimise cost and wastage associated with same, it is suggested that the trial mix be laid in the grid area where surface imperfections are not so critical, subject always of course to the finished surface profile of such trial mix areas providing satisfactory level of service in the grid area.
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Initial Trial Mix
Ambulance Access

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AC Surfacing in Progress! 03/06/2012
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T7 – rad.= 17.5m, defl.= 95.3°, change in grade +1.8% to -3.5%
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Thank you