

NATIONAL CIRCUIT CONSTRUCTION AND SAFETY GUIDELINES



Australian Karting Association Ltd T/A Karting Australia

Version 6 Updated November 2017

Document Update Schedule

It is certified that the updates listed below have been approved by Karting Australia and have been incorporated into the document under the relevant rule numbers.

Version Number	Description	Updated By	Date
2.2017	Update Definitions & use of terms to match 2018 Rule Book	NCSC	10.12.17
2.2017	A 1.1 Update wording	NCSC	10.12.17
2.2017	A 1.2 Update for Biennial inspections	NCSC	10.12.17
2.2017	A 1.5 New clause added	NCSC	10.12.17
2.2017	A 3.0 Update description	NCSC	10.12.17
2.2017	A 3.1 Update for Biennial inspections	NCSC	10.12.17
2.2017	A 3.8 New clause added	NCSC	10.12.17
2.2017	A 5.0 Update wording	NCSC	10.12.17
2.2017	B 12.3 Add CIK Starting Grid	NCSC	10.12.17
2.2017	B 12.8.2 Update wording	NCSC	10.12.17
2.2017	B 14.3.1.2 Update wording	NCSC	10.12.17
2.2017	B 18.1.8 New clause added	NCSC	10.12.17
2.2017	CIK Ripple Strip Drawing amended	NCSC	10.12.17
2.2017	Herringbone Out Grid Drawing amended	NCSC	10.12.17
2.2017	CIK Starting Grid Drawing added	NCSC	10.12.17

Preamble:

This document contains the Circuit Guidelines of the Australian Karting Association Ltd (AKA) trading as Karting Australia (KA) for all KA Licensed permanent bitumen and/or dirt surfaced Sprint Kart Circuits in Australia. These Guidelines are split into 2 sections as follows;

Section A: Circuit Inspections.

Section B: Circuit Construction & Safety Guidelines.

These Guidelines & Procedures, drawn up by KA, shall be referred to by KA approved Circuit Inspectors when assessing any Circuit.

KA approved Circuit Inspectors shall also refer to these Guidelines & Procedures when assessing any temporary Circuit.

KA reserves the right to vary these guidelines at any time, with issues of safety being paramount.

Definitions:

1st Line of Protection (1LOP):

A barrier erected as a defence to safety restrain the forward movement of a kart that has left the Track. A Track will have a 1LOP for its full perimeter.

Barrier:

An obstacle (deemed to be impenetrable) used to safely restrain the forward movement of a kart that has left the Track.

Buffer:

An energy-absorbing deformable apparatus designed to partially dissipate the kinetic energy of a kart striking the apparatus.

Catch Traps:

An area of loose material designed to slow a kart, which has left the Track surface.

Circuit:

A closed track, permanent or temporary, beginning and ending at the same point, built or adapted specifically for KA sanctioned Kart activity and including but not limited to the track, in grid and out grid and all the reserved areas designated solely for Officials, Participants, Competitors & Drivers.

Course:

A road or track, and the inherent installations, including but not limited to the Circuit, Spectators Areas and Paddock Area, used for Karting Competitions. A course may be temporary or permanent depending on the character of its installations and its availability for competitions.

Corner:

A significant change in direction of the Track, generally with a radius to the inside and outside edges.

Kerb:

A device located at the Track edge, usually at a corner, designed to prevent Track edge disintegration and to deter karts from driving off the Track.

Paddock:

An area set aside for the use by competitors for kart maintenance, repair and storage during the course of an event. Event Organisers may put in place access exclusions to the paddock for vehicles and the general public.

Parc Ferme: A secure area adjacent the Track and under the control of Officials. The general public is prohibited to enter this area and procedures may be put in place to restrict access by competitors and other persons.

Ripple Strip: A profiled concrete strip on the outside edge of a Track corner, constructed to a specified profile, to deter karts from driving off the Track.

Run-off Area: The area from the edge of the Track to the first line of protection.

Security Fence: A fence constructed to prevent the access of all persons to a secure area.

Separation Barrier:
Is a barrier of buffer designed to stop karts from short cutting the circuit.

Spectator Fence:
A fence constructed to restrict the access of all persons to a specified area.

Stands and Temporary Structures:
All spectator stands, viewing platforms and like structures whether of a temporary or permanent nature, must be approved by the appropriate statutory or regulatory body(ies) charged with the responsibility of approving such structures and thereafter be maintained and repaired so that such structures, at all times, remain in full and strict compliance with the approval conditions as they exist from time to time.

Start Grid or Out Grid:
An area set aside from the paddock and Track for the assembly of karts in race order prior to the start of a race. Access restrictions may apply.

Straight: The section of Track between two corners.

Track: A road specifically built or adapted to be used for Karting competitions. A track is defined by the outer edges of the racing surface and is the only route to be used during a Competition

Track Length: The length of a Track is considered to be that of the centerline of the Track. The centerline of the Track is the median line between the left and right edges of the racing surface of the Track as delineated by the required white or yellow lines and should preferably be measured on site by taking an average of the measurements of the left & right edges.

Weigh-In-Area: An area set aside from the paddock and Track for the assembly of karts at the end of a race prior to being weighed. Access restrictions shall apply.

Works Order: A plan, either provided to a circuit operator by a KA Approved Circuit Inspector or agreed between a circuit operator and a KA Approved Circuit Inspector, scheduling the works necessary at a Circuit or Course to comply with the requirements of the KA Circuit Licence or other directions as appropriate, including required completion date(s).

Section A

1.0 Circuit Inspections:

- 1.1 An inspection of the Circuit and Course undertaken by a Circuit Inspector to establish compliance with the KA 'National Circuit Construction and Safety Guide' using a Targeted Risk Assessment methodology and also establish recommendations and works programs along with verifying or approving those works programs. A Circuit Inspection will also verify the conditions and services required for the conduct of a National and International competitions.
- 1.2 All KA licenced circuits MUST be inspected a minimum of biennially (every 2 years) for compliance with these guidelines.
- 1.3 The KA Approved Circuit Inspector who carries out the inspection MUST endorse the biennial Circuit Licence when all guidelines and any required works have been confirmed by the KA Approved Circuit Inspector. A club Circuit Safety Officer or authorized Circuit representative must be present at the time of circuit inspections by the relevant KA Approved Circuit Inspector.
- 1.4 All structural or layout changes to an existing KA licenced circuit must be approved by a KA Approved Circuit Inspector before being implemented.
- 1.5 A Circuit that is not deemed to be compliant by the Approved Circuit Inspector may not have its Circuit Licence renewed or may be required to comply with Works Orders to maintain its Circuit Licence.

2.0 Club Circuit Safety Officers:

The functions of Club Circuit Safety Officers are to;

- 2.1 Ensure that the circuit is maintained at all times in accordance with these guidelines including any variations as work orders by KA Approved Circuit Inspectors.
- 2.2 Ensure that all work orders / logbook reports have been completed or remedied prior to the completion date agreed with the KA Approved Circuit Inspector.
- 2.3 Liaise with the KA Approved Circuit Inspector.
- 2.4 Complete KA checklist prior to use of the Circuit
- 2.5 Maintain compliance with WHS regulations.

3.0 KA Approved Circuit Inspectors:

A person who has been appointed by an SKC or by KA and accredited and approved by KA and who has the responsibility to undertake a Circuit Inspection on behalf of KA and the SKC (may also be referred to as Track Inspector).

The functions of KA Approved Circuit Inspectors are to;

- 3.1 Make inspections a minimum of biennially prior to the existing KA Circuit License expiring.
- 3.2 Make inspections at the request of a club or Circuit operator, and if required, during a race meeting.
- 3.3 Advise the Club or Circuit operator on required safety improvements and Works Orders in compliance with these guidelines.

- 3.4 Make inspections at the request of KA or the State Office and if required, during a race meeting.
- 3.5 Communicate official information only to the respective club or Circuit operator via the State Office with a copy to the National Circuit Safety Committee.
- 3.6 Prepare and sign inspection reports and forward them to the State Office with a copy to the National Circuit Safety Committee, or as appropriate.
- 3.7 Liaise with the National Circuit Safety Committee and KA.
- 3.8 Be the point of final determination (in conjunction with KA where necessary) on whether or not a Circuit is compliant and if not compliant, what Works are required to achieve compliance.

4.0 National Circuit Safety Committee:

The National Circuit Safety Committee shall be formulated in accordance with Karting Australia Functional Committee Standing Orders.

5.0 Event Classification / Inspection by the relevant KA Approved Circuit Inspector:

The KA Appointed Circuit Safety Inspector will inspect all host Circuits for National Championship, National Series or National Cup Meetings and confirm Works Order(s) for the relevant KA Approved Circuit Inspector to follow through on and confirm compliance.

A final inspection of the host circuits for all National Level meetings must be completed by the relevant KA Approved Circuit Inspector at least 1 month prior to the commencement of the relevant race meeting.

Host circuits for National Level meetings must be inspected by the relevant KA Approved Circuit Inspector as and when requested by KA.

6.0 Critical Incident Procedure:

- 6.1 Critical Incident Procedure is provided in the Official Documentation for events.
- 6.2 Critical Incidents must be reported to KA Insurer and the State Office.

Section B

7.0 Circuit Design:

The shape of the Circuit, both in plan and vertical profile, is not constrained by these guidelines, 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 guidelines, which may be specified by KA. 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.

8.0 Circuit Plan and Approval:

Prior to the construction of a new circuit or alteration of any existing circuit, all circuits must have a professionally drawn plan at a scale of 1:500 showing the Circuit layout, surface contours, the direction of the racing, kerbs, catch traps, barriers, buffers, buildings, installation, access roads, race areas, the location of the starting grid, breakdown lane, circuit entry / exit, 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. This plan is a key step in the KA New Circuit & Extensions Policy.

9.0 Track Density/Maximum Number of Starters:

Track Length (metres)	Track width at narrowest point		
	6m	7m	8m
<500	20	22	24
500 - 625	22	24	26
626 - 750	24	26	28
751 - 875	28	30	32
876 - 1000	32	34	36
> 1000	NA	38	40

Track Density will be approved on the basis that the out grid capacity and in-grid capacity match or exceed the Track density. Lower Track Density may be set based on grid capacity (in/out).

10.0 Circuit Grading Criteria:

GRADE	EVENT STATUS	CRITERIA
International	CIK/FIA International Events	Refer CIK/FIA Homologation Regulations
A	National Championship, National Series, National Cup	Circuits to be a minimum length of 750 metres and a minimum width of 7 metres.
B	State Championship (Bitumen)	Circuits to be a minimum length of 500 metres and a minimum width of 7 metres.
C	State Series, State Cup (Bitumen)	Circuits to be a minimum length of 500 metres and a minimum width of 6 metres.
D	National and State Dirt Circuit Championships	Circuits to be a minimum length of 350 metres and a minimum width of 7 metres.
E	Zonal Competition, Club Competition, Social karting (non-championship)	Circuits to be a minimum length of 300 metres and a minimum width of 6 metres.

11.0 Track Dimensions:

- 11.1 Length:** The maximum length of any Track will be 1.7km (except as approved by KA)
- 11.2 Straight:** The length of a straight will be measured from tangent points of the proceeding and following corners.
- 11.3 Start Straight:** All 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.
- 11.4 First Corner:** The first corner should be as "open" as possible and a minimum width of 8m.
- 11.5 Track Width:**
- 11.5.1 All straights over 80m in length are to be minimum width of eight (8) metres; elsewhere the minimum width is 7 metres.
 - 11.5.2 For existing Circuits, heritage dispensation is possible with a minimum requirement that straights over 80m in length are to be minimum width of 7 metres; elsewhere the minimum width is 6 metres.
 - 11.5.3 Track widths will be measured over the sealed racing surface, excluding any kerbs or ripple strips & delineated by the required white or yellow lines.
- 11.6 Separation:**
- 11.6.1 The distance between high speed converging sections of Track shall be a minimum of twenty (20) metres between track edges, unless the National Circuit Safety Committee approves an alternative.
 - 11.6.2 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.
- 11.7 Track Gradient:** The recommended maximum longitudinal gradient is 5% and recommended maximum transverse gradient is 10%.
- 11.8 Vertical Clearance:** There shall be no permanent or temporary objects within a height of 3 metres vertically above the Track surface.

12.0 Safety Features:

12.1 Surface:

- 12.1.1 The racing surface of sealed Tracks will be sealed with bitumen / concrete. The surface of dirt Tracks may be either dirt or a combination of dirt / concrete / bitumen.
- 12.1.2 The surface must be smooth and continuous and have sufficient fall to prevent formation of puddles in wet conditions (a minimum of 2.5% being recommended).
- 12.1.3 Where practical, the Track surface levels should follow the natural contours. Verges should be graded level with the Track for a distance of 10 metres from the Track edge.
- 12.1.4 Please note that severe positive camber on corners can have a launching ramp effect and should be avoided.
- 12.1.5 Both edges of the Track surface will be defined with a 100mm wide white or yellow line.

12.2 No Mans Land (not to be used with CIK Starting Grid):

- 12.2.1 Circuits that have not yet upgraded to the CIK Starting Grid (12.3) are to have a "no mans land" marked on the Track immediately before the starting line.
- 12.2.2 The marking will be located in the centre of the starting straight, a minimum of 200mm and a maximum of 800mm in width and must be painted white.
- 12.2.3 The length of the markings will be as required by the KA Approved Circuit Inspector but shall be a minimum of 25 metres from the start line or as amended by the KA Approved Circuit Inspector.

12.3 CIK Starting Grid:

- 12.3.1 All tracks upon which a National Championship, National Series or National Cup Meeting will be held, must be marked in accordance with the CIK Circuit Starting Grid marking requirements as detailed in the drawing contained in these Guidelines at least one (1) month prior to the commencement of the Meeting.
- 12.3.2 All other tracks will be required to be marked in accordance with the CIK Circuit Starting Grid markings by no later than 1 January 2019.
- 12.3.3 The CIK Starting Grid markings will commence no earlier than the end of the last corner before the Start Line.

12.4 Baulk Line:

All Circuits are to have a bright green coloured line painted across the out-grid lane a minimum of 5 metres back from the Track edge (or appropriate to suit local conditions with approval of KA Approved Circuit Inspector).

12.5 Start Line:

A white line painted across the Track at 90 degrees to the Track edge, which may also be the finish line.

12.6 Finish Line (also called Control Line):

A white line painted across the track at 90 degrees to the track edge, at the crossing of which by a Kart, timing or other performance criteria are determined.

12.7 Formation Line:

A red line painted across the Track at 90 degrees to the Track edge, on a straight section of track prior to the final corner before the Control Line – position to be determined by the KA Approved Track Inspector.

12.8 Breakdown Lane:

- 12.8.1 Where a mechanical breakdown lane is provided it shall be adjacent to the main Track with entry via a deceleration lane from the Track to the Breakdown Lane.
- 12.8.2 There must be a chicane in the deceleration lane prior to the breakdown lane aimed at substantially reducing the speed of karts entering the breakdown lane.
- 12.8.3 The sealed width of the deceleration lane must be a minimum of 1.5 metres and a maximum of 2.5m.
- 12.8.4 The sealed width of the stopping area of the breakdown lane must be a minimum of 3.0 metres and separate from the racing surface by a barrier or buffer.
- 12.8.5 A Breakdown Lane shall be compulsory at National Championship Events.

12.9 Track edges, verges and run-off areas:

- 12.9.1 The Track must be bordered all along its length on both sides by compact verges having an even surface.
- 12.9.2 These verges must be free of debris or gravel and must normally be grass-covered over a minimum width of 1.0 metres
- 12.9.3 The verges must be continuation of the transverse profile of the Track, with no step between Track edge and verge. Any horizontal transition must be very gradual and progressive.
- 12.9.4 A run-off area is that section of ground between the verge and the first line of protection and unless otherwise specified must have the same basic characteristics as the verge, although it may be less stabilised. The run-off area must be graded to the verge. If there is a negative slope, this must not exceed 5% for a distance of 10 metres from the Track edge; if there is a positive slope, this must not exceed 10% for a distance of 10 metres from the Track edge, with a smooth transition from Track to run-off area.

12.10 Corners: Kerbs must be laid on the inside of corners to prevent karts moving onto the inside verge of corners in normal racing.

12.11 Kerbs on the outside of corners (also referred to as ripple strips):

- 12.11.1 Are to be a minimum 300mm wide and a maximum of 500mm wide.
- 12.11.2 The surface may be rippled.
- 12.11.3 They will be sloped at a negative angle to the plane of the track and a maximum of 5 degrees.
- 12.11.4 The CIK Style ripple strip is to be used. (Refer to CIK Ripple Strip drawing in this document.

12.12 Kerbs on the Inside of corners (also referred to as apex kerbs):

- 12.12.1 Are to be a maximum of 300mm wide.
- 12.12.2 Their surface must be smooth.
- 12.12.3 Their surface must form a positive angle to the plane of the Track being a minimum of 15 degrees and maximum of 20 degrees (equivalent to 80mm to 110mm rise measured at the kerb extremity, for a 300mm wide kerb).
- 12.12.4 As an approved alternative the current CIK/FIA kerb profile may be used.
- 12.12.5 It is recommended that the drainage slots be inserted in apex kerbs.
- 12.12.6 The adjacent verge will be finished level with the top of the kerb.

13.0 Locating Safety Structures:

The primary and optimal form of protection for karts is to ensure suitable run off distances are provided between the edge of the Track and any solid object. In general the minimum distance to a solid object will be ten (10) metres.

- 13.1 Separation barriers and/or catch traps must be installed to prevent karts crossing in any area where two sections of Track are close to each other and/or there is a possibility that karts may cross.
- 13.2 Solid objects should be removed from the Track area where possible. If this is not possible, then suitable run off distance and protection is required. Any structure or solid object of any type must have barriers or buffers and where appropriate catch traps to protect competitors.

14.0 Safety Structures:

14.1 Buffers:

Shall be designed to absorb the energy from impact with a kart and to rapidly decelerate an out of control kart with minimum damage to both kart and driver.

14.1.1 Construction

14.1.1.1 Tyre Buffers

The tyre buffers must be constructed of similar size automotive or racecar tyres (no commercial or 4wd tyres) securely bound / fixed in vertical stacks and longitudinally in a manner that forms a flexible structure. Tyre buffers are constructed to a minimum of 600mm in height unless otherwise directed. The tyre wall shall curve away at the end of the buffer.

It is recommended that tyres are bolted or tek screwed together to form buffer sections of four stacks in length. Washers will be used on bolts or tek screws each side of the tyre wall. When using tek screws a suitable "speed nut" must be fitted to the thread end. Bolt or screw ends shall not protrude from the outside face of the completed buffer. The buffers shall not be attached to the ground so they can move freely when contacted by a kart. Tyres must be in good condition.

14.1.1.2 Plastic Barrels

Plastic barrels may be used as a buffer where appropriate. They cannot be used at flag points. They may be used in suitable locations at the discretion of the KA Approved Circuit Inspector. The barrels must be parallel-sided deformable UV resistant plastic with minimum size of 600mm diameter x 900mm high. The barrels will have holes drilled in their bases to drain water.

The barrels must be bolted together at the top and bottom, in-groups of five barrels. The barrels on the end of each group of five barrels must be filled with a maximum of 100mm of crushed stone as ballast. Each group of five barrels must be tied to the adjoining group with synthetic rope. They shall only be used in an upright position.

14.1.1.3 Alternatives

Buffers may be constructed of alternate material provided the materials and construction methods have been approved by the NCSC.

14.1.1.4 Commercial

Current alternative commercial buffers approved are; -Air fence kart inflatables.

14.1.1.5 Separation

Buffers must be separated by a minimum of 300mm from any solid object or other safety structure.

14.1.1.6 Belting

May be used to supply a continuous belting face to buffers in areas with risk of frequent impact. Minimum height to be that of the buffer being belted, minimum thickness 5mm.

14.1.1.7 Fixings

- Rope is being phased out as a Fixing and is only an option only when approved by the KA Approved Circuit Inspector. The rope shall be durable synthetic of a minimum 8mm diameter. The KA Approved Circuit Inspector can agree on a works program and nominate a replacement timeline for Circuits using rope as a Fixing.
- TEK screws will be a minimum of 4mm diameter with 25mm diameter washers each side of the fixing and a "speed nut" fitted to the end of the thread.
- Bolts will be a minimum of 4mm diameter with 25mm diameter washer each side of the fixing and locating nuts fitted to the end of the thread.
- Facings or Belting to be secured with minimum 6mm dome headed bolt with washers and nuts internally only, to be fixed on every second tyre stack near the top.

14.1.2 Locations

Buffers may be used in the following locations.

- 14.1.2.1 For separation between sections of Track. Separation Buffers are constructed to be a minimum of 600mm in height and by 4 stacks long, unless otherwise directed.
- 14.1.2.2 In high-speed run-off areas, as protection before a barrier.
- 14.1.2.3 For the protection of all Trackside Officials posts including flag points, a double tyre buffer will be constructed with a minimum height of 720mm and a minimum length of 3 stacks with a 300mm separation. All tyres to be bolted together as per 14.1.1.7 Traffic side of tyre barrier to be painted WHITE.
- 14.1.2.4 Where possible, buffers are to be a minimum of four (4) metres from the edge of the Track and have verge and catch trap protection prior.

14.2 Catch Traps:

Catch traps are an area of loose material designed to slow a kart, which has left the Track surface, before it impacts a buffer or barrier.

14.2.1 Construction

- 14.2.1.1 A bed of gravel a minimum of two metres wide & 250mm deep with the top surface being flush with the surrounding ground is the preferred method. A secondary method (subject to approval by the KA approved Circuit Inspector) is to set down 150mm into the existing surface level so as to produce a 100mm high leading edge. The stone to be used shall be either round river stone or clean crushed stone of a single size 5 – 10mm. On a regular basis, the surface of the trap is to be deeply raked up into ridges approximately 100mm deep and 200mm apart. A correct prepared gravel trap should be difficult to walk on.
- 14.2.1.2 As an alternative that is being phased out and to be approved by the KA Approved Circuit Inspector, a bed of woodchips a minimum of 2 metres wide by a minimum of 300mm high at the leading edge, the leading edge to be kept as near to vertical as possible. The height of the woodchip bed must remain constant throughout the width and length of the bed. The woodchip will be raked regularly to maintain a loose consistency.

- 14.2.1.3 If either material is not available, then a locally available suitable non-compactable (engineered/certified) material may be used as approved by NCSC in consultation with the KA Approved Circuit Inspector.
- 14.2.1.4 In high-speed run-off areas the width of the trap will be increased to a minimum of 4 metres.
- 14.2.1.5 The catch trap must be graded to the verge or Track surface. If there is a negative slope, this must not exceed 5% for a distance of 10 metres from the Track edge; if there is a positive slope, this must not exceed 10% for a distance of 10 metres from the Track edge, with a smooth transition from Track to run-off area.

14.2.2 Locations

- 14.2.2.1 In front of buffers in high-speed areas.
- 14.2.2.2 In all areas deemed necessary by the KA Approved Track Inspector.

14.3 Barrier:

An obstacle (deemed to be impenetrable and have minimal crushability) serving to bar the passage of a kart – generally the 1LoP. On new circuits and alterations to existing circuits, it is preferable to provide adequate run-off areas rather than to rely upon barriers alone to control karts.

14.3.1 Construction

- 14.3.1.1 A 50mm square x 2.5mm diameter chain wire fence with steel rails, or a heavy wire or cable along the top, and a heavy wire or cable along the bottom. Fencing shall be installed to manufactures recommendations.
- 14.3.1.2 A minimum height of 1.15 or 1.8 metres as decided by the Approved Track Inspector depending on location of the Barrier.
- 14.3.1.3 There are a number of alternative construction methods for Barriers and the KA Approved Circuit Inspector can advise on the best option for specific Circuits and parts of Circuits.

14.3.2 Location

- 14.3.2.1 A Barrier will normally be located in high-speed run-off areas.
- 14.3.2.2 A Barrier will be located at the maximum distance possible from the outside edge of the track.
- 14.3.2.3 Location of Barriers will be assessed by the KA Approved Circuit Inspector and NCSC for each Circuit to deliver the optimum solution for that specific location.

14.4 First Line of Protection (1LoP):

The 1LoP is used to separate and delineate the controlled racing area and maximise the protection of persons such as spectators.

All Circuits will have a 1LoP for the full perimeter of the Circuit. Gates may be provided but these must be able to be locked. Gates must only swing inwards.

14.4.1 Construction

- 14.4.1.1 As a minimum a 1LoP will be 1.15 metres high above the adjacent ground levels. In some locations, 1.8 metre height may be preferable at the discretion of the KA Approved Circuit Inspector. It will be constructed from heavy galvanised wire with a 2.5mm high tensile tensioned top wire and a lower panel of 6/90/30 hinge joint fencing from 2.5mm wire. Fencing shall be installed to manufactures recommendations
- 14.4.1.2 The maximum spacing of posts will be three (3) metres with corner braces and strainers as recommended by the manufacturer. Minimum post specification will be 75mm diameter CCA treated timber or 50mm NB galvanised steel posts and must be capped.
- 14.4.1.3 The wire mesh must be installed on the Trackside of any supporting posts.

14.4.2 Location

- 14.4.2.1 Location of the 1LoP will be assessed by the KA Approved Circuit Inspector and NCSC for each Circuit to deliver the optimum solution for that specific location but a minimum distance of 10 metres from the outside edge of the Track is the guideline

14.5 Spectator Fence

A Spectator Fence is used to control the access of spectators and unauthorised persons into dangerous or controlled areas and to maintain a separation from 1LoP and barriers at all Circuits. All Circuits will have a Spectator Fence for all public areas of the Circuit. Gates may be provided but these must be able to be locked. Gates must only swing inwards.

14.5.1 Construction

A Spectator Fence must be a minimum of five (5) 2.5mm wire strands evenly spaced over the entire height, support posts at a maximum spacing of three metres. It will have a minimum height of 0.9 metres. A spectator fence is to have warning signs at 10m spacings stating, "KEEP OUT – PROHIBITED AREA".

14.5.2 Location

A spectator fence will be set back a minimum of 0.8 metres from any 1LoP or Barrier.

14.6 Security Fence

A fence erected to define and maintain a secure area such as parc ferme. It may be permanent or temporary. The fence will normally be 1.8 to 2.4 metres high chain wire supported on posts.

15.0 Fire Extinguishers:

15.1 Fire Extinguishers are to be located at the following positions.

- 15.1.1 At the weigh in scales and at least four other accessible points in the paddock area for meetings with up to 200 entrants plus one additional extinguisher for each 100 (or part thereof) entrants.

For National Championships, fire extinguishers are to be located at the scales, start grid and four accessible points in the paddock area.

- 15.1.2 At any fuel dispensing area, if in use.

- 15.1.3 At any fuel testing area, if in use.
- 15.1.4 At all flag points / light points.
- 15.2 Fire extinguishers to be of a type suitable for flammable liquid fire and be non-hazardous to humans. Minimum 2.5kg and must have current certification tag.
- 15.3 Notices for fire extinguishers, 1000mm by 600mm, with lettering a minimum height of 180mm, are to be located with the bottom of the sign, minimum 2.0 metres above the ground at all locations in the parc ferme/paddock area, exceptions being the scale area and the fuel dispensing / testing areas, all areas must have suitable signs displayed.
- 15.4 Entrants may be required to supply an approved filled fire extinguisher with a current certification tag in their paddock space, but the presence of such extinguisher shall not relieve the organisers of the obligation to supply adequate fire fighting equipment for the circuit as a whole.

16.0 Circuit Lighting:

16.1 Start Grid and Weigh Area

Must be such that no shadows are cast, which may be a danger to competitors and pit crews whilst starting or retrieving karts

16.2 Paddock

Must be adequate enough for competitors and pit crew to move around the paddock without endangering themselves by objects hidden in shadows.

16.3 Track

- 16.3.1 No point of the Track surface will measure less than 15 Lux.
- 16.3.2 Track lighting is to be measured at ground level on the centre line of the Track.
- 16.3.3 No section of Track surface will have its intensity of lighting vary by more than 20% over a 5 m distance.
- 16.3.4 No lighting source shall cause glare to drivers or officials.
- 16.3.5 All new Track lighting must be designed by a qualified person.

16.4 Emergency Track Lighting

Tracks will have emergency lighting. The emergency lighting will have an alternate source of power supply to that which powers the main Track lighting. The emergency lighting will be permanently on during racing. The minimum number of lights will be one (1) light for every two hundred metres of Track. Positioning of the lights will be at the discretion of the KA Approved Circuit Inspector. Alternate power supply must comply with relevant government & industry regulatory requirements.

16.5 Control Lights (Flashing Amber Lights / Red and Blue Lights)

The minimum requirement for lights shall be 150mm diameter incandescent or a minimum of 100 square centimetres of LED mounted a maximum 2 meters high. Blue and amber lights shall be independently switched, red shall be full course. All lights shall be controlled from a central point. All cabling must be either underground or around fence lines and must comply with relevant electrical codes. Position, construction and number positions of lights to be decided in consultation with KA Approved Circuit Inspector.

17.0 Paddock Area:

- 17.1 The paddock must be clearly defined and fenced. Under most conditions the public are permitted in the paddock. All karts shall be accommodated within the paddock area. The paddock must be of sufficient area to cater for the maximum number of karts likely to attend a race meeting.
- 17.2 The paddock area surface is to be of a suitable material, graded and drained to maintain access during all weather conditions.
- 17.3 The access ways to paddock spaces are to be a minimum width of 3 metres.
- 17.4 A trade area is to be set aside for exclusive use of Trade Vehicles that have prior arrangements with the Promoters.
- 17.5 The promoting organisation, in conjunction with the KA Approved Circuit Inspector, may designate a safe area for the starting of kart engines. This area will be clearly marked and sign posted.
- 17.6 All Circuits shall have a main notice board. This board is to have a map showing;
 - 17.6.1 emergency vehicle access routes
 - 17.6.2 fire extinguishers
 - 17.6.3 parc ferme boundary
 - 17.6.4 paddock boundary
 - 17.6.5 emergency phone numbers
 - 17.6.6 kart engine starting area

The notice board will be located in the paddock area and will be used to display all official communications to competitors and race information. It is recommended that the notice board be lockable and protected from the weather.

18.0 Start Grid and Weigh In:

The entrance and exit to and from the Track must be clearly defined "OUT" on the start grid and "IN" on the weigh grid.

The direction of racing and practice is to be displayed by an arrow sign. The location of the sign is to be determined by the KA Approved Circuit Inspector.

- 18.1 Start Grid Area
 - 18.1.1 Must be large enough to accommodate the maximum number of starters permitted on the Track.
 - 18.1.2 The kart positions on the grid are to be clearly marked as per grid layout diagrams. (single / double / herringbone grid).
 - 18.1.3 The grid surface is to be smooth bitumen sealed or concrete and well maintained.
 - 18.1.4 The lane to the Track must be fitted with a suitable gate of strength at least equivalent to the adjacent fence.
 - 18.1.5 The sealed width of the lane to the Track must be a minimum of 5m and the width between safety structures must be a minimum of 7.5 metres.
 - 18.1.6 The minimum grid surface width for a single grid is 7 metres.
 - 18.1.7 The minimum grid surface width for a double grid is 12.5 metres.
 - 18.1.8 The minimum grid surface width for a herringbone grid is 8.5 metres.

18.1.9 As a minimum both sides of the start grid must be enclosed with a spectator fence spaced at a minimum of 7 metres to a maximum of 9 metres apart for a single grid or minimum of 12.5 metres to a maximum of 15 metres apart for a double grid or a minimum of 8.5 metres to a maximum of 11 metres for a herringbone grid.

18.1.10 A herringbone grid must be used for all karts when a clutch is fitted.

18.2 Weigh In Area

18.2.1 The weigh in area must be fenced to prevent entry of unauthorised personnel. As a minimum a Spectator Fence will be used.

18.2.2 Scales are to be located at the end of the weigh in area away from the Track.

18.2.3 The surface is to be bitumen sealed or concrete and to be of sufficient area to accommodate the maximum grid capacity. (allow 4.0 m² per kart)

18.2.4 Access to the weigh in area will be by way of a deceleration lane. The sealed width of the deceleration lane must be a minimum of 1.5 m and a maximum of 2.5 m with an overall clear width of 3.0 m.

18.2.5 The deceleration lane will include suitable bends or a tyre chicane to slow the travel of karts. The weigh in area should be protected from an out of control kart by a catch trap or buffer.

18.2.6 An entry lane to the deceleration lane may be painted on the Track.

19.0 Parc Ferme Area:

The parc ferme may include the start grid area, the weigh in area and the weigh scales, an area for impounding karts for technical checking and any tyre or fuel impound area. The parc ferme must be clearly defined and fenced and the public is not permitted in the parc ferme. Appropriate Spectator or Security Fences will define the parc ferme areas. No smoking is permitted in this area and this direction must be clearly signposted.

20.0 Emergency Communication:

A telephone must be provided at all circuits. A mobile phone will suffice where reception can be achieved. Where telephone reception is not available, radio contact with emergency authorities must be in place during competition.

21.0 First Aid Requirements:

These vary from State to State but there must be clear access for an ambulance or paramedic and the first aid facilities at a minimum must be a fully enclosed area with protection from the elements and closed from view of the public. It is recommended that a medical room be established for use by first aid personnel and for the treatment and recovery of injured persons in private. It is also recommended that each event organizer establish communication with their nearest hospital to advise when events are running.

22.0 Stewards Meeting Room:

22.1 All circuits will have an enclosed facility for conducting Stewards hearings. The room should be weatherproof and provided with power. Artificial lighting must be provided.

22.2 A board in the Stewards' room to have a facility map showing;

22.2.1 Fire extinguisher locations

22.2.2 Parc ferme boundary

22.2.3 Paddock boundary

22.2.4 Emergency phone numbers

22.2.5 Kart engine starting area/areas.

22.2.6 Sensor device area

22.2.7 Circuit layout

23.0 Control Tower:

It is recommended that control towers be adequately covered, closed and ventilated with access by way of a permanent stairway. This area is to be considered out of bounds except for essential race day Officials or their delegated messengers.

24.0 Fuel Testing Facilities:

All buildings, including portable structures such as shipping containers, which are used for the purpose of fuel testing, must have adequate Fresh Air Ventilation System (flow through or exhaust system) and fire extinguishers (refer clause 15).

25.0 Technical Inspection Area:

25.1 Enclosed and covered facilities with adequate lighting and suitable benches are to be provided for Engine Measuring and Fuel Testing.

25.2 An adequate secured area for the impounding of karts, tyres, fuel, etc. is required for all State and National Championships and other events as required by KA.

26.0 Sensor Devices:

Pick up / sender / sensor devices are not permitted inside the 1LoP unless in an approved designated area.

27.0 Amenities:

27.1 Toilet and canteen facilities are to comply with Local Council regulations.

27.2 The design and maintenance of all facilities should be such to ensure that the safety of spectators and competitors is paramount.

27.3 Paths and trafficable surfaces should be even and non-slip.

27.4 Electrical and communication wires should be under ground or strung on poles and any hazardous areas isolated.

27.5 All new Courses must have a toilet that is accessible for disabled persons.

28.0 Parking:

- 28.1 All Courses must have a designated parking area for competitors, officials and spectators.
- 28.2 All Courses must have a designated area, outside the fenced-in-Track area, for the storage of Track maintenance equipment and the parking of service vehicles.
- 28.3 All circuits must have a designated area for parking an ambulance or paramedic and pick up vehicle/s. this area must be positioned so as not to cause a hazard for competitors or officials. If necessary, a safety barrier must be constructed.

29.0 Official Signage

(must be positioned at main entry and adjacent to the grid area in the paddock):

Official signs should measure at least 1.8 metres x 1.2 metres in size and be a white background with the words WARNING in LARGE BOLD LETTERS, with the following words in LARGE BLACK TEXT.

29.1 Waivers

WARNING:- Kart racing is dangerous.

Karting Australia and its affiliates ("KA") is in the business of providing recreational services that relate to the sport of go karting, including official and private practice, come and try days, demonstrations, displays and race competition ("Business").

By entering the Venue any Attendee is at risk of death or of suffering personal injury (both physical and psychological) or loss and damage to property ("Harm") arising from KA conducting its Business. Each Attendee releases and indemnifies KA and holds it harmless with respect to all liability for death, personal injury and all other loss and damage, including damage to property howsoever arising, except to the extent prohibited by law.

The Attendee voluntarily entered the Venue at its own risk and knows that go karting is a potentially dangerous activity.

Affiliates of KA include, but are not limited to its Ordinary Members (organisations including Karting (New South Wales) Inc, Karting (WA) Inc, Victorian Karting Association Inc, Australian Karting Association (SA) Inc, Karting Tasmania Inc, Australian Karting Association (NT) Inc, Australian Karting Association Queensland t/as Karting Queensland), associate members, provisional members, life members, honorary members, temporary members, Committee members, Trustees, License Holder, Officials, Instructors/Coaches, Employees and Volunteer workers, the CEO and the Board of KA promoters, sponsors and owners and lessees and licensees of the land, organisers and respective servants, officials and agents

29.2 Practice restrictions

29.3 Direction of practice / racing (Refer to clause 18 of these guidelines)

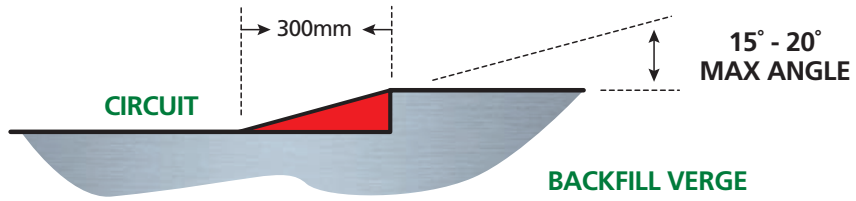
29.4 Fire Extinguishers (Refer to clause 15 of these guidelines)

29.5 Requirement to sign Indemnity Form.

29.6 Recommendation covered footwear be worn at all times (practice/race meeting) whilst in paddock area.

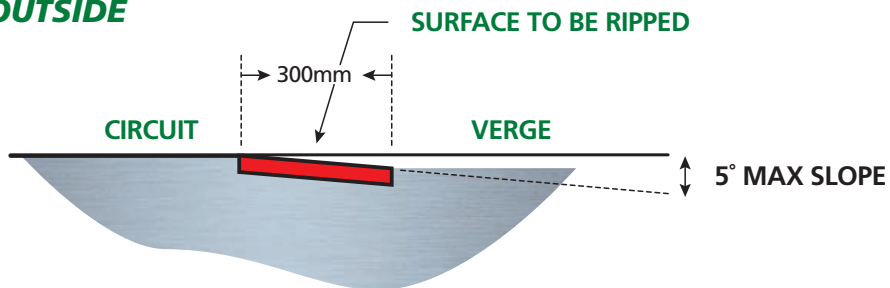
29.7 Enclosed footwear must be worn on the out-grid / in-grid at all times.

KERB - INSIDE

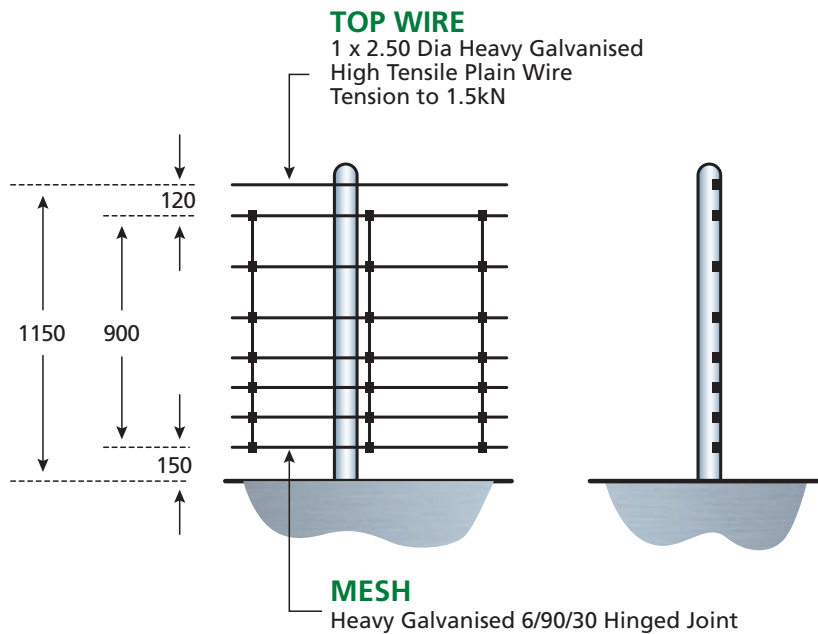


Equivalent to 80mm to 110mm rise measured at the kerb extremity, for a 300mm wide kerb.

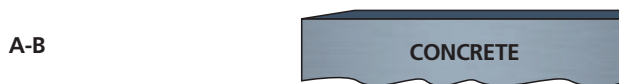
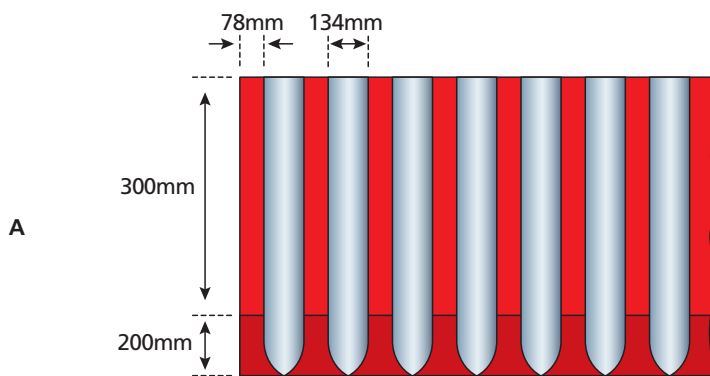
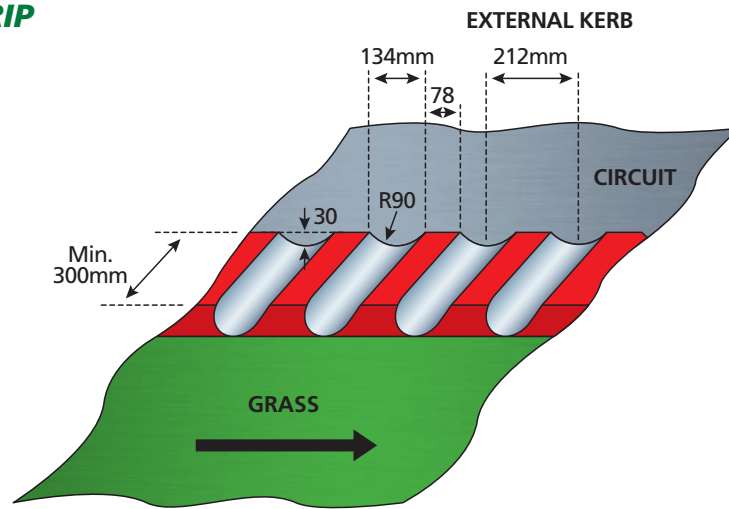
KERB - OUTSIDE



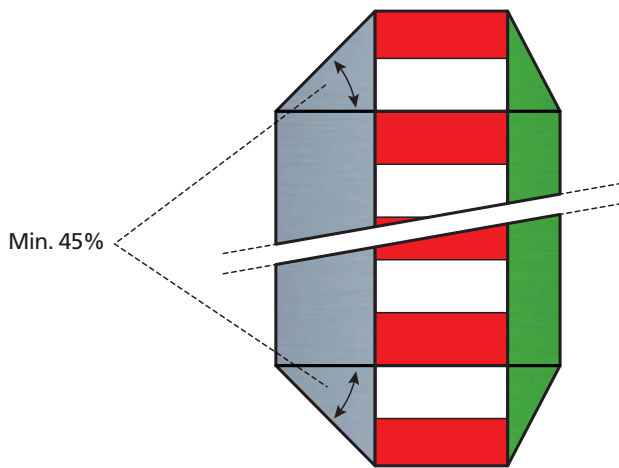
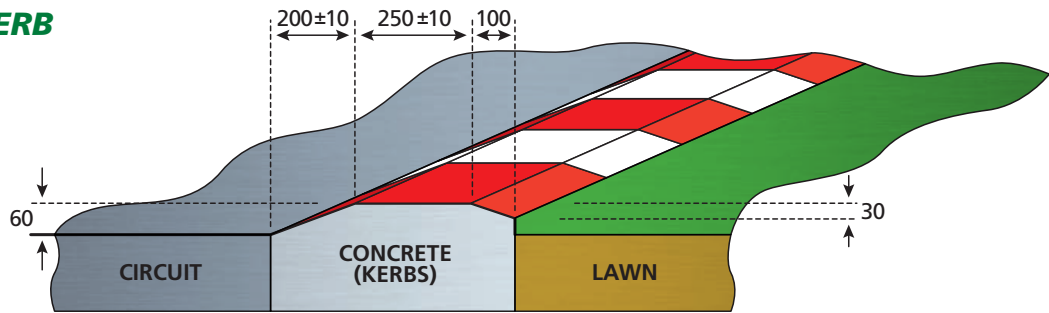
FENCING



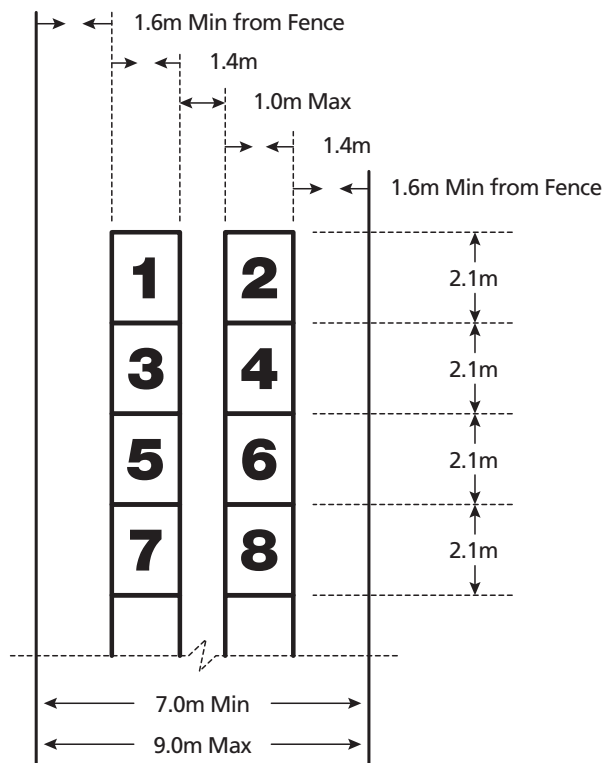
CIK RIPPLE STRIP



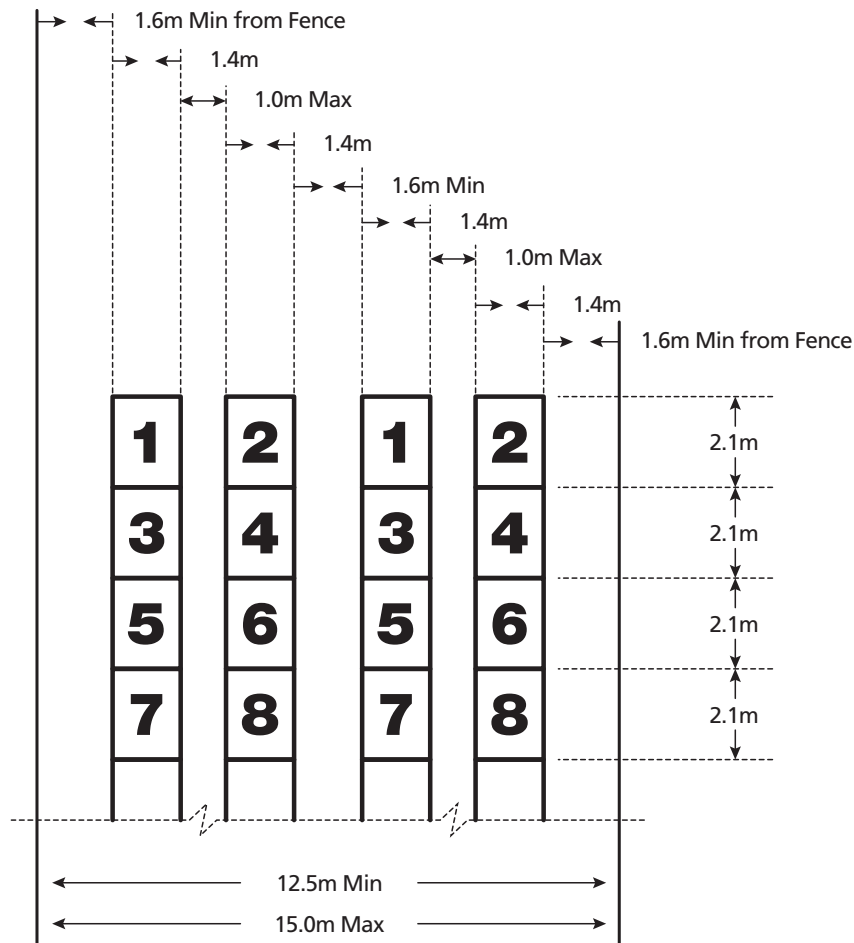
CIK KERB



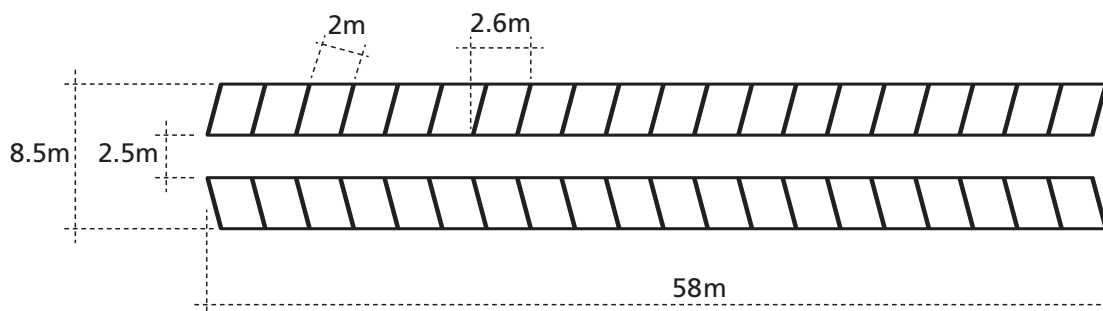
GRID LAYOUT - SINGLE GRID



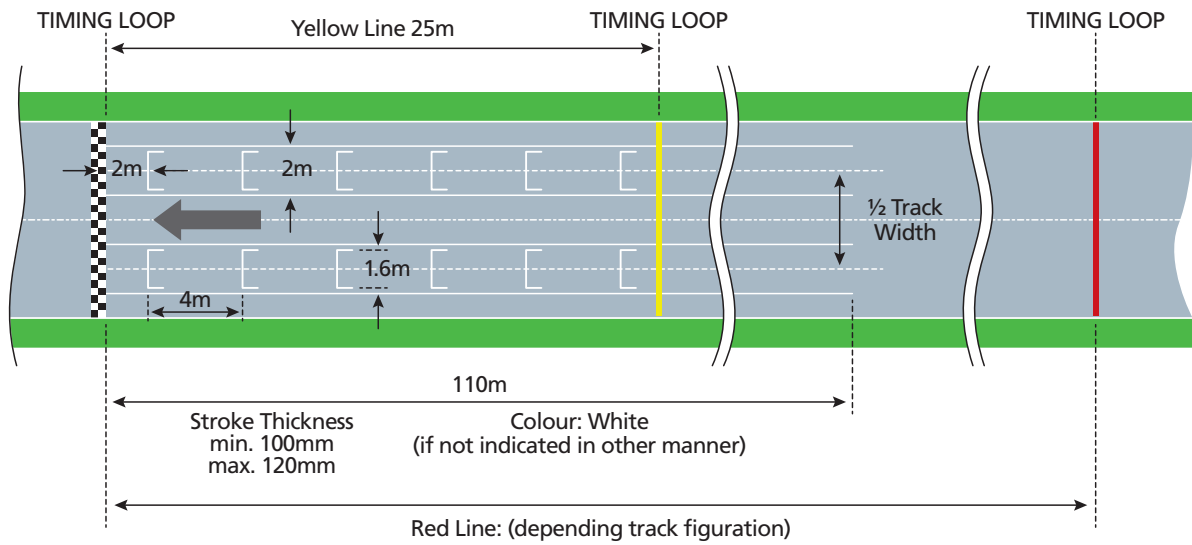
GRID LAYOUT - DOUBLE GRID



HERRINGBONE GRID FORMAT 40 Kart Grid Herringbone Pattern



CIK STARTING GRID



* Dotted lines for measuring purposes only.



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