

Darvel Football Club Recreation Park Capacity Document



VENUE CAPACITY CALCULATION– 1924, which includes a 60 number small permanent seated stand taken into account within overall calculation - final capacity 1924.

For Normal Category 2 and 3 Matches, this capacity figure will be reduced to 1200 Persons.

Introduction

This document sets out the capacity calculations for Recreation Park, Darvel.

The ground is the home of Darvel Football Club.

The following calculations have been undertaken by James King of Darvel Football Club. These calculations have been carried out based on Section 2 of the Green Guide and the final 1200 capacity has been agreed by East Ayrshire Council.

There are five factors used to calculate the safe capacity of areas of spectator accommodation:

1. Entry Capacity
2. Holding Capacity
3. Exit Capacity
4. Emergency Evacuation Capacity
5. Safe Final Capacity

Recreation Park is a purpose built football stadium providing first class facilities:

- Refurbished home and away changing rooms
- Separate officials changing facilities
- 60 seated spectator accommodation
- Floodlighting to SFA entry level standards
- Turnstiles access - 8 in total - 2@0.55m, 6@1.2metres widths.
- Exits - one 4 metre wide exit, three 3.6 metre wide exits and two emergency exits 4 metres wide.

For Category 2 and 3 matches, only 2 Turnstiles @0.55m and one Exit Gate 4 metres wide (Gate 2) will be in use.

- Steel fence surrounding the pitch 1.2m height by 2.5 metre sections in situ to keep spectators at a safe distance from the pitch.
- New fence surrounding erected at East end of park 1.2m height by 1.2 metre tubular sections to keep spectators from the embankment.
- There are 3 portacabins suited at the west end and south end of the park.
- There is a 2 metre high fencing surrounding the outer limits of the park with green netting attached. This is an essential asset for Darvel Football Club as it helps retain balls in the field of play, unauthorised access, it keep spectators at a safe distance, and can restrict access to ticketed only events.
- There is a high fence constructed at the east end of the park (Cemetery) which is an asset for Darvel Football Club as it prevents spectators gaining unauthorised access.
- On full capacity and televised matches East Ayrshire Greener Communities Department will be contacted to close the Cemetery Gate on Causeway Road.
- Capacity calculated 1200 persons - Average match-day capacity approx. 350 -
Categorisations of matches 1, 2 and 3 :
 - o **Category 3** - A normal run of mill match - league game, early round cup ties – expected attendance, no more than 500.
 - o **Category 2** – A home match v one of larger fan based clubs, latter round cup ties – expected attendance, no more than 1,200.
 - o **Category 1** – A high profile fixture. This could be a televised, all ticket match, depending on the success of the Club, league decider type fixture(s). Darvel Football Club will liaise with EAC Council and the Emergency Services. We will also take part in the Safety Advisory Group (SAG) process in relation to this type of fixture(s). Please note that the Cemetery Gates on Causeway Road will be closed during these types of matches by contacting Greener Communities at Outdoor.Amenities@east-ayrshire.gov.uk

Recreation Park does not have a stand or enclosure that is over 500 in seating or standing capacity, therefore, there is no requirement for it to be licensed by the local authority. There is a disability section north side for disability spectators – these figures are included in the overall calculations.

With this in mind, the Guide to Safety at Sports Grounds has been used to calculate the capacity for the facility.

ENTRY CAPACITY

This figure has been based upon using 2 x turnstiles and 6 x entry points.

Total Capacity 660 people per gate per hour (ref Guide to Safety at Sports Grounds, Sec 7.6)
 $8 \times 660 = 5280$.

Again, For Category 2 and 3 matches, only 2 turnstiles will be in use $2 \times 660 = 1320$ persons.

Gate 2 will be utilised for disabled and less abled spectators to enter along with anyone with prams/pushchairs. Note – for Category 1 matches, Gate 7 will be utilised for this purpose.

For all **Category 1** games 20 number SIA Stewards and 5 Safety Stewards for both the ingress and egress and in case of emergency evacuation will be procured by Darvel Football Club. (High profile matches - fans are subject to a pre-entrance check of their admission ticket and this is highlighted in the risk assessment and Safety Management Plan). In the event there is full capacity crowd our Safety Management Plan will be introduced.

Total Entry Capacity – 60 seated in small stand at the club house south side of the ground – final 1200 capacity).

TOTAL HOLDING CAPACITY (1200)

Holding capacity is split into 2 elements:

1. Seated
2. Standing

The (P) and (S) factors

In order to calculate the holding capacity, each part of the ground's viewing accommodation should be assessed according to its physical condition. This assessment is known as the (P) factor.

Similarly, each part of the ground's viewing accommodation should be assessed according to the quality of the safety management of that area. This assessment is known as the (S) factor.

1. Seated

60 seats available $P = 1$ $S = 1$

Seating Capacity $60 \times 1 = 60$

2. Standing

For the purpose of this document, P and S are both taken to be 0.85

There are barriers in situ surrounding the pitch perimeter however, as these barriers are not tested to meet the horizontal imposed load requirements of a crush barrier, it is recommended (as per Green Guide) that the available viewing area does not exceed a depth of 1.5m behind the front barrier. In practical terms this is the equivalent of approximately four persons deep.

South Terrace:

Length of spectator run from Home Exit Gate to bottom of sloping walkway to Cemetery End (East) Terrace 83 metres

West Terrace:

Length of spectator run from Home Turnstiles to Glen Enclosure 90 metres

North Terrace:

Length of spectator run from Glen Enclosure to Main Stand 38 metres

East Terrace (Cemetery End Terrace)

Length of spectator run from top of sloping walkway 100 metres

This terrace is completely level with no gradient or no stepped area.

A similar depth limitation of 1.5m should apply to areas of level standing, regardless of the loading of any front barrier. This is because the view of spectator standing beyond this depth is likely to be too seriously restricted

From above measurements and restricted depth of 1.5m to all areas:

Available standing area is $(83 + 90 + 38 + 100) \times 1.5 = 466$ square metres

For the purposes of calculating the capacity of standing areas at sports grounds, the maximum number that can be applied is 47 persons per 10 square metres.

For purposes of this calculation, based on P and S Factors of 0.85, Darvel FC has allowed 40 people per 10 sq. metre

Therefore $(466 \div 10) \times 40 = 1864$ people

Standing capacity and Seated capacity = $1864 + 60 = 1924$

Seated is included within the calculation

Total Holding Capacity = 1924

For the purpose of this document, the total capacity for normal Category 3 and 2 matches will not take account of the East Terrace available capacity of $(100 \times 1.5\text{m}) \times 4$ persons per square metre = 600 persons and will be further downsized to **1200 Persons**.

EXIT CAPACITY

There are 3 identifiable main exits, which are Gate 2, Gate 4 and Gate 7 (4 metres wide).

Standing Area at Darvel FC is a mix of stepped and flat ground, hence egress rate taken as that for a stepped surface.

66 spectators per metre per minute egress on a stepped surface (Guide to Safety at Sportsgrounds Section 10.6).

Egress time 8 minutes (Guide to Safety at Sportsgrounds Section 10.7).

$(3 \text{ exits} \times 4 \text{ metres width}) = 12 \times 8 \text{ minutes} \times 66 \text{ (stepped surface) spectators} = 6336$

In 8 minutes all exits could cope with a capacity of 6336

Exit Capacity 6336

For Category 2 and 3 Matches, only Gate 2 would normally be in use.

This would give an egress capacity of $(4 \times 8 \times 66) = 2112$ persons

With a capacity set at **1200** the estimated time to clear the stadium would be 5 minutes (rounded up).

The equation for calculating the exit capacity on a stepped surface is:

Recreation Park capacity evacuation = supporters / (flow rate x time) - e.g. $1200 / 66 \text{ people per minute} \times 4 \text{ metres} (264) = 4.5 \text{ minutes}$.

Place of safety will be the main stadium car park, Irvinebank Road and Causeway Road.

Fire risk is low – no smoking permitted within the stadium

Main risk is from pyrotechnics, spectators' behaviours, clubhouse, and food outlet, first aid room, changing rooms, floodlights and generator.

All gates to have committee members in situ at all times for cat 2 and cat 3 fixtures – note Cat 1 info above.

Entry capacity - from observation and experience it is apparent that 3 entry points (Irvinebank Road) can process the recommended rate of entry, that is, 660 persons per entry point per hour.	5280
Holding capacity - Recreation Park well maintained and in good order with good sightlines. Calculated Total 1924 but reduced for Category 3 and 2 matches.	1200
Exit capacity - zone travel time- set at a maximum of 8 minutes	6336
Emergency capacity - the exit route passes through areas of low risk of fire. The condition of exit route is considered satisfactory. Therefore a maximum emergency egress time of eight minutes.	6336
Final capacity is lowest figure of those calculated	1200

Completed by James King Darvel FC

Appendix Site Plan

