

CMWP 10 December 2011 - Item 6b - Certification of 'gravel' courses

Scope of Report

This report suggests a method for dealing with courses with sections on paved surfaces and smooth gravel surfaces. Classification of the Shakespeare Marathon as an off-road course has been a major bone of contention in the past few years, and **runbritain** have asked us to look at the problem. The Shakespeare Marathon course includes almost 11km of good gravel cycle path (just over 25%) and will serve as an example.

Mike Sandford & Phil Holland carried out a limited investigation this year on a section of the cycle path. Mike's report on their work shows that calibration on the gravel varies slightly from road calibration, and that measurement accuracy on the gravel may be slightly worse than on the road. However, based on this limited work, reasonably accurate measurement on such surfaces looks possible, although we do not have sufficient data to be specific about the degree of accuracy.

Course Classification - Certificate Categories

At present we issue a 'Certificate of Course Accuracy' for road courses and a 'Statement of Course Measurement' for off-road courses. The former certifies that the course has been accurately measured, and the latter states that 'The distance recorded is measured only as accurately as the definition of the course and the course surface permits'.

We would need a third form of certificate to accommodate the type of course covered in this report, including revised wording below our logo on the certificate. We currently use the terms 'Certified Accurate' and 'Multi Terrain' with the logo and 'Road' and 'Off-road' in the text. I have not yet found a suitable alternative wording (see final section).

I suggest that these courses can be issued with a Certificate, which would identify a guaranteed measurement to a lower accuracy standard than a road course, rather than the unknown accuracy of the off-road Statement.

Definition of 'Gravel'

This is the first problem - the term 'gravel' is interpreted differently in different areas of the country, by technical and non-technical people. I propose to stick to a technical definition and refer to 'compacted well-graded gravel with a firm, smooth surface'.

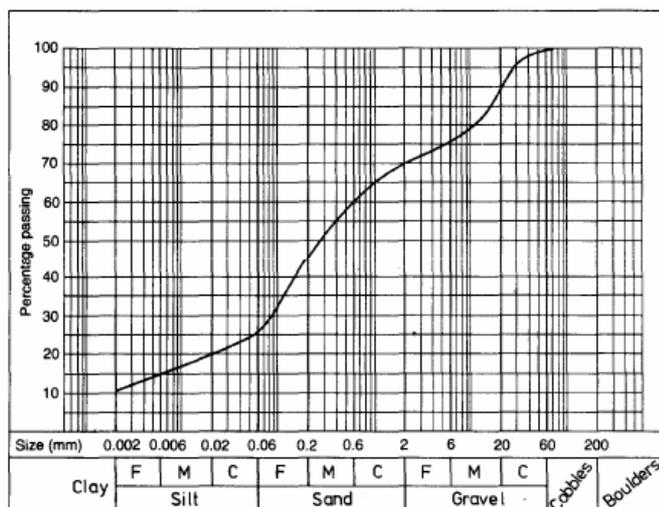


Fig. 8.1 Typical particle size distribution.

The principal technical definition of gravel is a material with a specific range of particle size. The standard classification of particle sizes in soils is shown in the diagram, with gravel falling between 2mm and 60mm. For a satisfactory course surface, we should probably exclude the larger particles and quote 2mm to 40mm.

The 'well-graded' part of the definition means that the full range of sizes is present, including a small percentage of sand, for good compaction properties. The clean gravels used in landscaping are generally washed and of a limited size range. They will not compact.

There is a secondary consideration - the source of the gravel. The two main categories are natural gravels and crushed rock gravels. The former are generally rounded and the latter angular. Some natural gravels are also fairly soft (the Cotswold oolitic limestone gravels as used at Stratford are one example) and tend to give a smoother surface than harder flint gravels or crushed stone gravels.

Characteristics of Surfaces

The 'Smoother' and 'Typical' photographs in Mike's report show good surfaces of natural gravel, while the 'Roughest' photograph shows mainly crushed rock gravel. The good surfaces have a dusting of loose material mainly of coarse sand/fine gravel size, often described as 'grit'. This may be displaced by cycle tyres, showing a track, but the underlying surface is firm and the tyre rolls smoothly. The rough surface has much larger loose material which will probably disturb the smooth progress of the tyre.

Motor vehicle tyres may have a much greater effect on gravel surfaces, sweeping all the loose material from the wheeltracks into central and side 'windrows'. They also tend to erode the surface, adding to the quantity of material displaced. The windrows disturb the rolling of the tyre and make it much more difficult to follow the SPR, and for these reasons I would exclude any gravel surface which is regularly used by motor vehicles.

Suggested Criteria

The type of surface which is covered by the new category is defined as '**compacted, well-graded gravel with a firm, smooth surface**'. *Gravel* is defined as hard material having particles between 2mm and 40mm in size, naturally occurring gravels or crushed rock. *Well-graded* means having the full range of particle sizes (possibly with a small percentage of sand) to permit satisfactory compaction. The *surface* may have a dusting of loose material of the smaller sizes, but there should be little larger loose material. A good test is to sweep the loose material away with the fingers - this should be easy and leave a smooth surface.

The surface defined is most commonly found on cycle tracks and urban park paths with little or no motor vehicle traffic. Tracks constructed with larger sized crushed rock and intended for motor vehicle use (eg forestry and country park roads) usually have a rougher surface and more larger loose material, and would not meet this definition.

Suggested Certificates and Logo

1 *Road courses.*

- Sealed road or pavement - less than 5-10% other surfaces.
- Issued with a *Certificate of Course Accuracy* showing compliance with IAAF requirements for road races.
- Logo wording is CERTIFIED ACCURATE.

2 *Gravel courses.*

- Sealed road and/or good compacted gravel - less than 5-10% other surfaces.
- Issued with a *Certificate of Distance* confirming a full-length course, but not claiming to be comply with IAAF limits of accuracy for road races.
- Logo wording suggested - DISTANCE CONFIRMED

3 *Off-road courses.*

- Over 5-10% on surfaces other than sealed road or good compacted gravel.
- Issued with a *Statement of Course Measurement* confirming the measurement method used but stating that 'the distance recorded is measured only as accurately as the definition of the course and the course surface permits'.
- Logo wording is MULTI TERRAIN.

The wording of some of the above elements needs improving. The words *track* and *trail* would be useful, but have other definitions for running. *Road* and *off-road* are fine for 2 categories, but confusing when a 3rd category is introduced. The distinction between *Certificate of Course Accuracy* and *Certificate of Distance* may not be clear. The format of the new certificate also needs consideration - the current Certificate and Statement have very different appearance. Possibly a third distinctive format is necessary.

Phil Holland - 29 Nov 2011 (minor modifications 12 Dec 2011)