

UDC 624 (083.75)

SABS 1200 DM-1981

SOUTH AFRICAN BUREAU OF STANDARDS

STANDARDIZED SPECIFICATION

for

CIVIL ENGINEERING CONSTRUCTION

DM : EARTHWORKS (ROADS, SUBGRADE)

Approved by the  
COUNCIL OF THE  
SOUTH AFRICAN  
BUREAU OF STANDARDS  
on 20 May 1981

Obtainable from the  
S A BUREAU OF STANDARDS  
Private Bag X191  
Pretoria  
0001 Republic of South Africa

Telegrams : Comparator, Pretoria  
Published and printed in the Republic of South Africa by the  
South African Bureau of Standards

ISBN 0-626-05958-5

**Gr 7**



CONTENTS

<u>Clause</u>		<u>Page Number</u>
1.	SCOPE .....	5
2.	INTERPRETATIONS .....	5
2.1	Supporting Specifications .....	5
2.2	Application .....	5
2.3	Definitions and Abbreviations .....	5
3.	MATERIALS .....	5
3.1	Classification for Excavation Purposes .....	5
3.2	Classification for Placing Purposes .....	5
3.2.1	General .....	5
3.2.2	Fill .....	5
3.2.3	Selected layer .....	5
3.2.4	Gravel surfacing .....	5
3.3	Selection .....	6
3.3.1	General .....	6
3.3.2	Cuts .....	6
3.3.3	Fills .....	6
4.	PLANT .....	6
5.	CONSTRUCTION .....	6
5.1	Precautions .....	6
5.1.1	Safety, existing services, stormwater, etc. and nuisance .....	6
5.1.2	Accommodation of traffic .....	6
5.2	Methods and Procedures .....	6
5.2.1	Stripping of site .....	6
5.2.2	Cut and borrow .....	6
5.2.3	Treatment of the road-bed .....	7
5.2.4	Fill .....	8
5.2.5	Selected layer .....	9
5.2.6	Gravel surfacing .....	9
5.2.7	Stabilization .....	9
5.2.8	Transport .....	9
6.	TOLERANCES .....	9
6.1	Frequency of Checks .....	9
6.2	Dimensions, Levels, etc. ....	10
6.2.1	General .....	10
6.2.2	Cut .....	10
6.2.3	Fill .....	10
6.3	Selected Layer .....	10
6.4	Gravel Surface Layer (if Any) .....	10
7.	TESTING .....	10
7.1	General .....	10
7.2	Process Control .....	10
7.3	Routine Inspection and Testing .....	11
8.	MEASUREMENT AND PAYMENT .....	11
8.1	Basic Principles .....	11
8.2	Computation of Quantities .....	11
8.3	Scheduled Items .....	12

DRAWINGS

Drawing DM-1 - Benching .....	14
Drawing DM-2 - Control of Stormwater Run-Off .....	15
APPENDIX A. APPLICABLE STANDARDS .....	16



SOUTH AFRICAN BUREAU OF STANDARDS  
STANDARDIZED SPECIFICATION  
for  
CIVIL ENGINEERING CONSTRUCTION  
DM : EARTHWORKS (ROADS, SUBGRADE)

1. SCOPE

1.1 This specification covers

- a) the construction, up to and including the selected layer, of the subgrade in new roads,
- b) the reconstruction of existing roads, and
- c) except where SABS 1200 ME forms part of the contract document, the construction of gravel road surfaces

In urban and industrial areas.

It covers construction of cuts within the road prism and intersections, removal to spoil of unsuitable or excess material, compaction of the road-bed, construction and compaction of fills and the selected layer using material selected from cuts in the road prism or from approved borrow pits, and finishing of cuts and fills, up to the stage where the subgrade is ready for the placing of the subbase or base (or both) and the shoulders.

NOTE

- a) Subbase and base are dealt with in SABS 1200 ME and SABS 1200 MF respectively.
- b) The publications referred to in the specification are listed in Appendix A.

2. INTERPRETATIONS

2.1 SUPPORTING SPECIFICATIONS. Where this specification is required for a project, the following specifications shall, inter alia, form part of the contract document:

- a) Project specification;
- b) SABS 1200 A or SABS 1200 AA, as applicable;
- c) SABS 1200 D or SABS 1200 DA, as applicable;
- d) SABS 1200 C;
- e) SABS 1200 M.

In addition, one or more of the following specifications may be required:

- SABS 1200 DB;  
SABS 1200 G or SABS 1200 GA, as applicable;  
SABS 1200 LE;  
SABS 1200 ME.

2.2 APPLICATION. This specification contains clauses that are generally applicable to civil engineering construction. Interpretations of and variations to this specification are set out in Portion 2 of the project specification which precedes this specification in a contract document.

2.3 DEFINITIONS AND ABBREVIATIONS. For the purposes of this specification the definitions and abbreviations given in the applicable of the specifications listed in 2.1(b) - (e) shall apply.

3. MATERIALS

3.1 CLASSIFICATION FOR EXCAVATION PURPOSES. All cut to fill, cut to spoil, borrow to fill, and excavations for drains will be classified as set out in Subclause 3.1.1 of SABS 1200 D, or Subclause 3.1.1 of SABS 1200 DA, as applicable.

3.2 CLASSIFICATION FOR PLACING PURPOSES

3.2.1 General. Notwithstanding the provisions of Subclause 3.2.1 of SABS 1200 D or Subclause 3.2 of SABS 1200 DA (as applicable), classification for placing purposes shall be in accordance with 3.2.2 - 3.2.4 inclusive.

3.2.2 Fill. Fill material shall

- a) have a minimum CBR at 90 % of modified AASHTO maximum density for material other than sand and at 100 % of modified AASHTO maximum density for sand, as follows:

<u>Depth below bottom of selected layer</u>	<u>Minimum CBR</u>
---	--------------------

0 m to 9 m 3 %

Below 9 m and down to 12 m 5 %

- b) unless otherwise acceptable, contain no single rock particle with a maximum dimension of more than 600 mm.

3.2.3 Selected Layer. Selected layer material shall have

- a) a maximum particle size not exceeding 60 % of the thickness of the completed layer;
- b) a minimum grading modulus of 0,5;
- c) a minimum CBR at 93 % of modified AASHTO maximum density for material other than sand and at 100 % of modified AASHTO maximum density for sand of
  - 1) in the upper 150 mm of the layer, 15 for natural material and 30 for stabilized material;
  - 2) in the lower part of the layer, 7 for natural material and 30 for stabilized material; and
- d) a maximum plasticity index (for natural material) of 12.

3.2.4 Gravel Surfacing

NOTE: The requirements of SABS 1200 ME for gravel surfacing shall take precedence over the requirements of this subclause where SABS 1200 ME forms part of the contract document.

Where a gravel surface is scheduled, the material used for gravel surfacing shall have

- a) a maximum particle size of 40 mm;
- b) a Pl of not less than 6 and not more than 18; and
- c) a minimum CBR at 95 % of modified AASHTO maximum density of 45.