DIN 18125-2:2020-11 (E)

Soil, investigation and testing - Determination of density of soil - Part 2: Field tests

Contents

Page

Foreword ... 4
1 Scope ... 5
2 Normative references ... 5
3 Terms and definitions ... 5
4 Designation ... 6
4.1 Structure ... 6
4.2 Designation example ... 6
5 Sample ... 6
6 Principle of method ... 6
7 Determining the sample mass ... 7
7.1 Apparatus and test equipment ... 7
7.2 Procedure ... 7
8 Determining the sample volume ... 8
8.1 Selecting the method ... 8
8.2 Cylindrical cutter method (A) ... 8
8.2.1 Apparatus and test equipment ... 8
8.2.2 Soil types ... 9
8.2.3 Procedure ... 9
8.2.4 Evaluation ... 10
8.3 Sand replacement method (S) ... 10
8.3.1 Apparatus and test equipment for sampling ... 10
8.3.2 Apparatus and test equipment for determining volume ... 10
8.3.3 Soil types ... 11
8.3.4 Determining the bulk density of the test sand ... 11
8.3.5 Procedure ... 13
8.3.6 Evaluation ... 14
8.4 Balloon method (B) ... 14
8.4.1 Apparatus for sampling as in 8.3.1 ... 14
8.4.2 Apparatus and test equipment for determining volume ... 14
8.4.3 Soil types ... 15
8.4.4 Procedure ... 15
8.4.5 Evaluation ... 16
8.5 Liquid replacement method (F) ... 16
8.5.1 Apparatus for sampling as in 8.3.1 ... 16
8.5.2 Apparatus and test equipment for determining volume ... 16
8.5.3 Soil types ... 17
8.5.4 Procedure ... 17
8.5.5 Evaluation ... 18
8.6 Gypsum replacement method (G) ... 18
8.6.1 Apparatus for sampling as in 8.3.1 ... 18
8.6.2 Apparatus and test equipment for determining volume ... 18
8.6.3 Type of soil ... 18

8.6.4 Procedure **18**
8.6.5 Evaluation **19**
8.7 Excavation method (Sch) **19**
8.7.1 Apparatus and test equipment **19**
8.7.2 Soil types **20**
8.7.3 Procedure **20**
8.7.4 Evaluation **20**
9 Expression of results **20**
Annex A (informative) **Application examples** **21**
A.1 Determination of the soil density by means of the cylindrical cutter method as in 8.2 ..... **21**
A.2 Determination of the soil density by means of the sand replacement method as in 8.3 ..... **21**
A.3 Determination of the soil density by means of the balloon method as in 8.4 ..... **22**
A.4 Determination of the soil density by means of the liquid replacement method as in 8.5 (example: bentonite slurry) **23**
A.5 Determination of the soil density by means of the gypsum replacement method as in 8.6 ..... **23**
Annex B (informative) **Uncertainty of measurement** **24**
Bibliography **25**

Figures

Figure 1 — Core cutter **9**
Figure 2 — Double funnel with metal ring plate **12**
Figure 3 — Test container and metal ring plate **13**
Figure 4 — Balloon apparatus and metal ring plate **15**
Figure 5 — Measuring bracket and metal ring plate **17**

Tables

Table 1 — Elements of the standard designation **6**
Table 2 — Suitability of methods as a function of soil type **7**
Table B.1 — Standard deviations **24**