

**Electronic Transfer of
Geotechnical
and
Geoenvironmental Data
AGS4
(Edition 4.0)**

Guidance Document

Specimens

ACKNOWLEDGEMENTS

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Comment and feedback from the wider geotechnical industry has also been fundamental to the ongoing evolution of the AGS Format, ensuring that the needs of the geotechnical and geoenvironmental industry and its clients continue to be met.

DOCUMENT HISTORY

Revision	Description	Date
0	First Issue	1 Mar 2011

1 Scope

This guidance document describes how specimens are considered where referred to in the AGS format documentation. It is intended to give guidance on when and how specimens should be used and who is responsible for creating them. It does not cover sampling methods and samples from which specimens are created or the testing performed on specimens once created.

2 Definitions

The definitions used in this document are taken from BS EN 1997-2:

sample - portion of soil or rock recovered from the ground by sampling techniques

disturbed sample - sample where the soil structure, water content and/or constituents have been changed during sampling

remoulded sample - sample of which the soil or rock structure is fully disturbed

undisturbed sample - sample where no change in the soil characteristics of practical significance has occurred

specimen - part of a soil or rock sample used for a laboratory test

natural specimen - specimen made from the available (disturbed, undisturbed, remoulded) sample

remoulded specimen - fully disturbed specimen, at natural water content

re-compacted specimen - specimen forced into a mould with a rammer or under desired static stress state

reconstituted specimen - specimen prepared in the laboratory; for fine soils, it is prepared as a slurry (at or above the liquid limit) and then consolidated (sedimented); for coarse soils, it is either poured or pluviated in dry (dried) or wet conditions and compacted, or consolidated

re-consolidated specimen - specimen compressed in a mould or cell under static pressure while allowing drainage to take place

3 Background

There has often been confusion of what specimens are and the importance of reporting their associated metadata correctly. There is also uncertainty about how they should be transferred in the AGS format and who is responsible for creating the specimens.

4 Guidance

Specimens are defined as 'part of a soil or rock sample used for a laboratory test'. As such, a specimen must be created for a laboratory test to be performed. The type of specimen as defined above is, where necessary, transferred as part of the test method. For example, many tests have a heading like the COND heading in TRIG and TREG groups which define the condition.

4.1 Specimen references

Specimen references (SPEC_REF) should be included for all laboratory tests since, as already noted, a specimen must be created to perform a test. The format is solely at the discretion of the laboratory creating the specimen. It would be most logical to use a simple numeric or alphabetic system, which then permits the specimens to be referenced sequentially as they are created, however other systems are commonly used.

It is important to note that specimen references are used not only to create uniqueness where multiple specimens are taken from a sample but also where multiple tests of the same type are performed at the same location within the whole sample i.e. repeat testing. Test number headings (where included) are for use where a test method requires multiple determinations to produce a result and is not the same as duplicate or repeat testing of a specimen. It is equally important to note that specimen references are not to be used to create uniqueness so that the same test result may be reported twice e.g. reporting the same result with different units. The result should be transferred once only.

Unique specimen references should not be used to cover up where other 'Key heading' data is missing or incorrect.

4.2 Specimen depth

Specimen depth (SPEC_DPTH) is used to define the location of where the specimen was taken from the sample. This only has meaning when specimens are created from undisturbed samples. It is not possible to define a specimen depth for disturbed samples, fluids or gases. Where the whole sample is the specimen, the sample top and the specimen depth will be the same. The specimen depth should always be depth below ground level, as is the sample top, rather than distance from the top of sample. Where the specimen depth is not applicable, null should be used i.e. "".

4.3 Subcontracted specimens

Where a laboratory has to send a specimen to a different laboratory for testing, especially whilst they are testing other specimens from the same sample themselves, specimen references for subcontracted testing will be in the format utilised by the subcontract laboratory. The number of specimens can change as the testing program is completed due to unsuitable specimens, substitutions, dependant options etc. and for this reason, it could easily become unmanageable to

try and keep specimen references sequential across separate laboratories and it is not expected that this will normally be done.

However, if the specimen reference and specimen depth are critical to the test, and the receiving laboratory can adopt third party references, then it is recommended that specimen information is included in LBST_REM when transferring the testing schedule details by AGS Format. The format SPEC_REF-XX|SPEC_DEPTH-XX.XXX (where | is the Record Link data type Delimiter [TRAN_DLIM] and XX are the variables the laboratory are transferring) should be used. If the receiving laboratory can accommodate the format then they will be able to transfer it back with the results. Where the laboratory is unable to accommodate the specimen reference format, they will return it in their normal format. It should be noted that the Environmental Contaminant Testing group (ERES) specifically defines the option to use the Laboratory ID in SPEC_REF. The use of this should make it simple to track the specimen in the laboratory LIMS and in AGS and other submissions. This Laboratory ID may follow a simple format or may be much more complex.

4.4 Specimen description

Specimen descriptions (SPEC_DESC) are included in test groups to enable the reporting requirement of BS1377: 1990: Part 1 Clause 9.1 and other standards to be met. The specimen description will usually be performed by the laboratory technician performing the test and may be the same or very similar to the sample description. For undisturbed samples, variations in the specimen description by depth can be transferred that may be different to the sample description (SAMP_DESC) which is of the whole. The specimens may be from different strata, where the boundary is captured within the undisturbed sample, or local variations in strength may be captured in the specimen. For all specimens, it may be that the technician observed something not seen when describing the whole sample and these should also be entered in the specimen description. The description should be included in full, not abbreviated and should not refer to the SAMP_DESC field i.e. "see SAMP_DESC" is inappropriate.

4.5 Specimen preparation

Specimen preparation (SPEC_PREP) is included in test groups to enable the reporting requirement of BS1377: 1990: Part 1 Clause 9.1 and other standards to be met. This should be a brief but unambiguous summary of key preparation elements. Quoting the clause number followed is not the intention, but a text description, along with the time between preparation and testing e.g. "Specimen from riffled sample and stored 2 days in sealed container between preparation and test" or "Cut from undisturbed sample and tested immediately".