

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

Guidance Document

Specifying AGS Format Deliverables

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 sets out the requirements for specifying AGS Format digital data at the outset of a ground investigation, so as to avoid disputes between the producer and receiver of data at a later stage, and to ensure the data received is the data that is actually required.

A template for a digital data specification is included, together with examples to demonstrate the level of information that might be included.

2 Definitions

AGS	Association of Geotechnical Specialists
AGS4	The 4 th edition of the AGS Data Format
Field	The location in the file in which a particular piece of data resides, the nature of which is defined by its Heading
Group	A set of related data Fields, the nature of which is defined by its Heading
Heading	The standard coding used to identify any particular Group or Field.

3 Background

Although the AGS data format has been in use in UK ground investigation since March 1992, the specification of the data is not well practiced nor formalised. It is common for a ground investigation specification merely to say that 'AGS data is required', without saying what is to be included or excluded, the Specifier's opinion on use of User Defined Fields, how the geology codes are to be allocated, or any of the other many variables that the format gives rise to. As a consequence, the AGS data is frequently treated as an 'add-on' to the main report, delivered later than desirable and frequently incomplete when compared against the paper report.

The lack of provision of tender stage specifications gives rise to problems and inefficiencies later in the investigation when the data is received by another party tasked with taking the project forward, who finds that they have to spend money they hadn't budgeted for on sorting out the data before they can begin their work. This is frustrating for all concerned, yet easily avoided if tackled at source by providing a comprehensive digital data specification at the outset (ideally tender time and/or project commencement).

This document aims to assist in that respect.

4 Guidance

4.1 Digital Data Requirements

The typical contract specification between a producer of data and a receiver will generally specify that AGS Format data is to be provided as a reporting deliverable. It has to be recognised, however, that the AGS Format provides an extensive vocabulary for transfer of data and has within it significant flexibility to allow for the range of data included in most ground engineering projects. It is not sufficient just to specify 'AGS data'; it is necessary to specify the precise requirements for the data to be delivered.

It is best practice to provide a detailed digital data specification to clarify:

- The extent of the data required;
- Any specific requirements for abbreviations or codification of the information;
- Requirements for associated files and cross referencing to the FILE Group;
- Any additional user defined headings or groups to be included in the data file.

It is recommended that this is achieved by an addition to the Specification Schedule in the form of a series of tables. If using the Site Investigation Steering Group Specification for Ground Investigation (2nd Edition) then this will be achieved by additions to Schedule S1.21. Where an alternative Specification is employed then it may be appropriate to provide a separate digital data specification appended to the main specification. In either case the recommendations of this document should be adopted.

It is critical that the digital data specification is aligned to the general specification. Data requirements must match the investigation and testing technical specification.

A template for a Digital Data Specification is attached complete with example information to demonstrate the level of information that might be included. Examples are given in the tables in italics for guidance.

General Notes

User defined fields are NOT recommended unless essential. If user defined fields are used then an allowance MUST be made in the pricing for the provision of the digital data deliverables since they can involve significant extra costs to the data provider.

4.2 EXAMPLE TEMPLATE FOR A DIGITAL DATA SPECIFICATION

4.2.1 Extent of data

All data which is collected during the investigation in accordance with the codes and standards used for the contract are to be transferred in electronic format.

The format of the digital data files shall comply with the Association of Geotechnical and Geoenvironmental Specialists (AGS) publication 'Electronic transfer of geotechnical and geoenvironmental data' Edition 4.0, known as AGS4.

The Contractor is to provide all field and laboratory data in digital form, as well as in paper form. This shall include all data from sub-contractors.

The AGS data and associated files shall be complete and identical to the data provided in the paper copy of the factual report. In order to ensure the AGS4 data provided is identical to the paper copy version, both the paper and digital versions of the data must be generated from the same source software. The preferred approach is to use database software specifically intended for this purpose.

The units of measurement and abbreviations within the data file should match those presented in the AGS publication unless otherwise stated below.

4.2.2 Transfer File

AGS Format data shall be issued as a single file. However, subject to the agreement of the data receiver, separate files may be permitted in the following cases:

- Separate field and laboratory data for preliminary issue (if this serves to expedite the issue of data)
- CPT and other in situ data as separate files for each test where the data files are large .

The associated files that are required to complete the factual data submission shall be provided and referenced in the associated file (FILE_FSET) fields. When these are submitted the Contractor shall provide AGS Format data and associated files within single identifiable submissions.

The digital data provided by the Contractor with the Factual Report is required to be complete and a total replacement of any previous preliminary data submissions.

In addition to the paper copies of the Factual Report, the Contractor shall provide a Report with a digital copy of those field, laboratory data and associated files specified in the Contract to be in digital form. This report shall consist of a disk(s), or other agreed transmission medium, containing the digital data and associated files and paper copies of any data or drawings not included in digital form.

Draft data is that which is represented by the draft factual report. Submission of data shall be by email to the address(es) given in Schedule X. Where data files are too large for practical transmission by email, alternative methods of transmittal may be agreed with the Engineer which may include CD/DVD, FTP transfer or distribution via extranet.

If CD/DVD is used, the media shall be clearly labelled with project information and issue details, including unique sequence number. Where more than one disk is required for a particular issue of digital data, this fact shall be clearly identified on the labels in that issue, and referenced within the transmission issue number (TRAN_ISNO) field of the files concerned (eg. *TRAN-ISNO set to 1-1 and 1-2 respectively*).

Files shall not be compressed (zipped) without the agreement of the data receiver.

All issues of data, including preliminary, shall be accompanied by an issue record that shall include the following information: This information is also included in the TRAN group.

- The heading 'AGS Format Data'
- The title 'Media Index Record' (or similar)
- The project identification (PROJ_ID)
- The unique issue sequence number (TRAN_ISNO)
- The date of issue to the data receiver (TRAN_DATE)
- The name of the data provider issuing the transmission media (TRAN_PROD)
- The name of the data receiver to whom the transmission media was issued (TRAN_RECV)
- A general description of the data transferred and/or a file listing for associated files
- The status of the data (preliminary, draft or final)

For each AGS Format data set, including all associated files, the index will detail:

- The file name including the file extension
- The date and time the file was created
- The file size in bytes/kilobytes/megabytes as appropriate
- A general description of the data contained in each file and/or a file listing for associated files.

All data shall be checked for AGS format errors / integrity prior to issue using AGS checking software. A list of AGS compatible software is available from the AGS website. All files shall be checked for viruses etc. prior to issue.

List any particular checking software or additional checking requirements that are to be used.

4.2.3 Schedule for submission of data

The data will normally be submitted in accordance with the reporting requirements given in the contract. Where these require the electronic data to be submitted separately, or to a different schedule, then the following information shall be given.

The electronic data is to be submitted in accordance with the following schedule:

Data Status	Timing
<i>Field data</i>	<i>Within two days of completion of hole</i>
<i>Preliminary data</i>	<i>Within one week of completion of test</i>
<i>Final prelim</i>	<i>Within two weeks of completion of all testing</i>
<i>Final</i>	<i>Within one week of Engineers approval of final prelim report</i>

4.2.4 Notes on Particular AGS Groups & Fields

Where particular or project-specific requirements are required they are listed below:

Group	Field	Note / example
PROJ	PROJ_ID	Contractors project/investigation reference
	PROJ_NAME	ACME Gas Works Redevelopment Phase 1
	PROJ_CLNT	ACME Developments plc
	PROJ_ENG	ACME International
TRAN	TRAN_STAT	Preliminary, Draft or Final
LOCA	LOCA_ID	See list in Schedule
	LOCA_TYPE	Compound abbreviations to be used where appropriate, e.g. CP+RC
	LOCA_NATE LOCA_NATN LOCA_GL	Used to report hole collar position in UK National Grid coordinates and datum
	LOCA_LOCX LOCA_LOCY LOCA_LOCZ	Used to report hole collar position in site coordinates and datum
	LOCA_CLST	Set to 'Phase 1'
	LOCA_LOCA	Set to 'Primary Treatment Tanks' or 'Secondary Filters' as appropriate
WETH		Group NOT required.

4.2.5 Reported Units of Measurement

The units of measurement for the data presented within the data file shall be those required by the specifications and standards specified in the Contract. Where these are different to the Suggested Units defined in the AGS4 publication they are listed below:

Group	Field	Unit
IRES	IRES_IRES	ohm cm

Note that all units used in the data file are to be fully defined in the UNIT Group. A standard list of units is provided on the AGS website (www.ags.org.uk).

4.2.6 Abbreviations

A standard list of abbreviations is provided on the AGS website (www.ags.org.uk). These shall be used except as listed below.

Other abbreviations shall only be used where no alternative exists in AGS4 or this specification and where the data receiver has given prior approval to their use.

Note that all abbreviations used in the data file are to be fully defined in the ABBR Group.

The following groups and fields require specific abbreviations to be used:

Field	Abbreviation	Description
LOCA_TYPE		As AGS website (www.ags.org.uk)
SAMP_TYPE		As AGS website (www.ags.org.uk) plus additions listed below
	SA	Type A Construction Sample (see Specification)
	SB	Type B Construction Sample (see Specification)
	SC	Type C Construction Sample (see Specification)
GEOL_GEOL		As table below
GEOL_GEO2		As table below

Geology Codes (GEOL_GEOL)	
Drift / superficial deposits	
Code	Name
TOP	Topsoil
MG	Made Ground
ALV	Alluvium
PEAT	Peat
HDD	Head Deposits
CF	Clay with flints
RTD	River Terrace Deposits
GTD	Glacial till deposits
Solid Geology	
BKB	Bracklesham Beds
BAG	Bagshot Formation
CGM	Claygate Member
LC	London Clay
HAR	Harwich Formation
LMG-WL	Woolwich Formation
LMG-RF	Reading Formation
LMG-UP	Upnor Formation
TS	Thanet Sand

Second Geology Codes (GEOL_GEO2)	
General type codes	
Code	Description
CL	Clay
SL	Silt
SD	Sand
GR	Gravel
CO	Cobbles
Conc	Concrete
Trmc	Tarmac / blacktop
Wst	Waste (e.g. landfill)
CK	Chalk
UND	Undifferentiated
EF	Engineered Fill

4.2.7 User defined groups and headings

IF USER DEFINED GROUPS/HEADINGS ARE NOT REQUIRED PRESENT ONLY THE BELOW STATEMENT

- User defined fields are not required

OTHERWISE PRESENT THE FOLLOWING TABLES

The following user defined groups and headings are to be used in accordance with the rules:

Group	Parent Group	Description

Group	Heading	Units	Status	Data Type	Description	Example
SAMP	SAMP_LBID	-	X	X	Laboratory internal sample reference	123-4567A

4.2.8 Associated files

The following associated files are to be included in the AGS data submission. The formats for specific associated files are given below:

Files Format (Clause)	Group	File format
Photographs of cores and trial pits (Cl. 5.8 & 6.12)	FILE	JPG
Drawing(s) (Cl.16.4)	FILE	AutoCAD v13 DXF

Other formats for these data deliverables shall only be used with the prior approval of the Engineer