Round 12 Sample Details

BACKGROUND

This report covers Round 12 of the Asbestos in Soils Scheme (AISS). Round 12 was open to laboratories worldwide. Laboratory participation was as follows: 33 UK, 15 EU and 3 RoW.

SAMPLES

Two samples were circulated as follows:

Sample S023 – This sample contained both amosite and tremolite asbestos (loose fibre) in a pure top soil matrix.

Sample S024 – This sample contained crocidolite asbestos (loose fibre) at 0.06% by weight of the dried sample. Each sample was individually made by mixing known weights of crocidolite asbestos with a soil matrix. The soil matrix consisted of top soil with added quantities of cement, plaster and sand.

SCREENING & VALIDATOR INFORMATION

Both samples were prepared for circulation following our normal internal screening process of samples with representative sub-samples scanned using stereozoom microscopy to assess homogeneity and suitability. Approximately 10% of the total number of samples despatched were validated by 3 independent laboratories.

INFORMATION SUBMITTED BY LABORATORIES

Laboratories used the HSL web-based PT data entry system to submit their results for this round. Results were submitted as asbestos type(s) present and for the Quantitative option, the % asbestos in ACM's, as loose fibres and the total % asbestos.

MAJORITY OF ERRORS

The majority of errors occurred on sample S023 with the failure to identify one or both types of asbestos present. Analysts should be aware that samples may contain more than one type of asbestos and to ensure they carry on and complete a thorough analysis of the sample even after one asbestos type has been identified. Due to the free fibre nature of the asbestos in this sample, analysts may have had difficulty identifying and extracting individual fibre bundles covered with soil particles. The tremolite asbestos fibre bundles in particular being of a shorter fibre length may have become totally covered in soil. However, a thorough analysis with judicious use of the tweezers would uncover these fibre bundles within the sample.

AISS QUALITATIVE RESULTS

Sample 023

Thirty-four laboratories correctly reported amosite and tremolite / anthophyllite.
Ten laboratories reported amosite only.
Five laboratories reported tremolite only.
One laboratory reported chrysotile and tremolite.
One laboratory reported no asbestos.

Sample 024

Fifty laboratories correctly reported crocidolite.
One laboratory reported crocidolite and chrysotile.

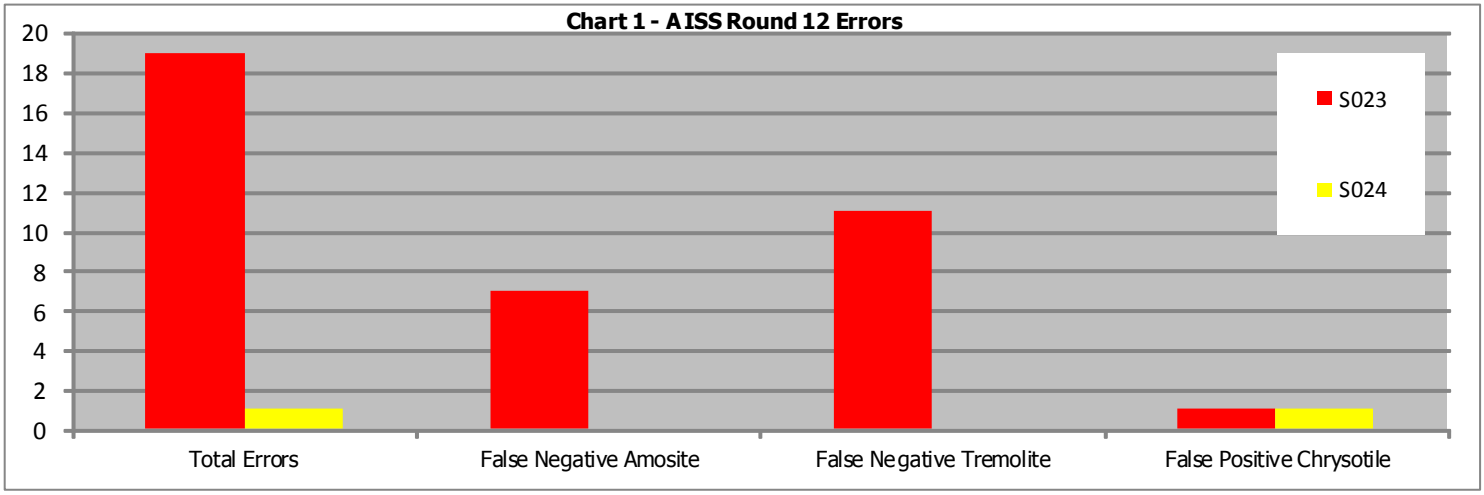
AISS QUANTITATIVE RESULTS

The median of quantitative results submitted was 0.0685. For the purposes of the z score we are using 40% of the median - 0.0274. Forty laboratories submitted quantitative results for S024;

- 35 (87.5%) laboratories achieved a z-score of < ± 2,
- 2 (5%) laboratory achieved a z-score of between ± 2 - ± 3,
- 3 (7.5%) laboratories achieved a z-score of > ± 3

1. Type Of Errors Obtained

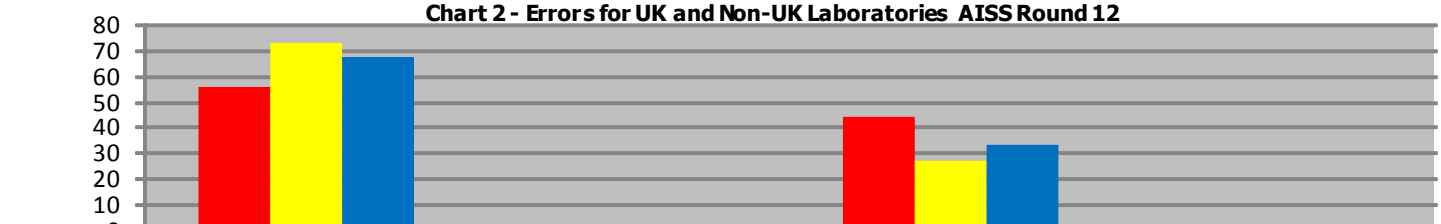
Chart 1 illustrates the errors made by participating laboratories. 19 errors were made by laboratories on sample S023. 18 errors were due to the failure to identify one or both of the two asbestos types present and one lab falsely identified chrysotile. Only one error was made on sample S024 where a lab falsely identified chrysotile.



False Negative = Component has been missed. False Positive = Component has been incorrectly identified as present.

2. Errors for UK & Non-UK Laboratories

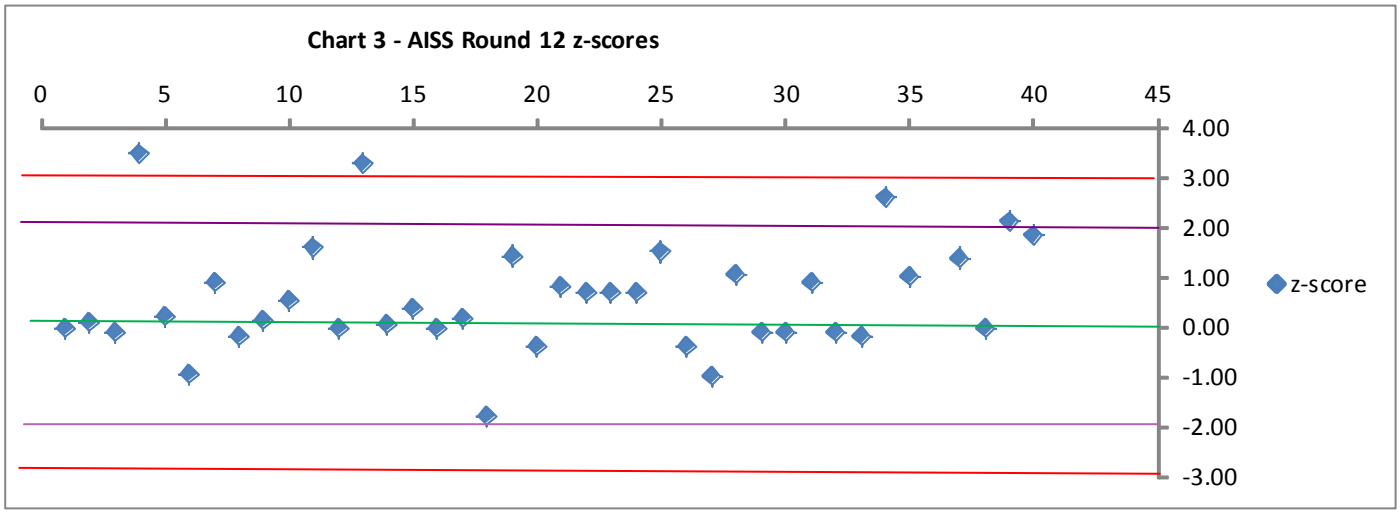
Chart 2 illustrates the distribution of scores for all participating laboratories. 34 (67%) laboratories obtained a score of zero in this round, indicating that these laboratories had not made any errors. The distribution of scores obtained by UK (United Kingdom) and Non-UK laboratories is also compared; 24 (73%) UK laboratories and 10 (56%) Non-UK laboratories obtained a score of zero for the round.



	0 (No Errors)	7 (1 Minor Error)	8 - 32	> 32
Non UK%	56	0	44	0
UK%	73	0	27	0
Total %	67	0	33	0

3. Quantitative Results - z scores

Chart 3 - scatter graph of z scores (one z score of 25.55 removed as outlier) for the 40 labs who submitted a quantification result for sample S024.



4. Quantitative Results

Chart 4 shows that of the 40 labs who submitted a quantification result for sample S024, 35 labs (87.5%) achieved a satisfactory result i.e. a z score of < ± 2. 2 labs (5%) achieved a questionable result with a z score of between ± 2 and ± 3. 3 labs (7.5%) achieved an unsatisfactory result with a z score of > ± 3.