Asbestos In Materials (AIMS) Scheme

Report Round 67 **March 2019** — HEALTH & SAFETY LABORATORY — Asbestos In Material Scheme

This report is available to view on our website: https://www.hsl.gov.uk/proficiency-testing-schemes/group-reports

Round 67 Sample Details

404 labs were assigned to Round 67 with 392 labs submitting complete results. All samples were prepared for circulation following our normal internal screening process and were scanned using stereo-zoom microscopy to assess homogeneity and suitability. Approximately 10% of all samples prepared were validated by 17 independent laboratories using either PLM or SEM analytical techniques. All validation labs identified all asbestos components present in the samples and no additional asbestos components were identified.

The round consisted of four manufactured samples of materials that may contain asbestos and would typically be submitted for analysis at an asbestos testing laboratory. Sample 1 was a mortar containing amosite asbestos; Sample 2 was a non-asbestos sample consisting of a painted board containing sawdust and polypropylene fibres within the paint layer; Sample 3 was a marble powder sample containing anthophyllite asbestos and Sample 4 was a plaster sample containing crocidolite asbestos.

The majority of errors in this round involved samples 1 and 3 and mainly involved the failure to identify asbestos or mis-identifying the asbestos type present in each sample. Sample 1 was a manufactured mortar sample with 0.1% by weight amosite asbestos. Analysts should be thorough during analysis of samples, analysing the whole sample, extracting fibres and if using optical microscopy ensuring all optical properties are observed before deciding on an identification. Sample 3 was a manufactured marble powder sample containing 0.3% by weight anthophyllite asbestos. Although anthophyllite is one of the rarer asbestos types analysts must be capable of identifying all six regulated asbestos types. Anthophyllite was used in certain commercial products e.g. magnesite (magnesium oxychloride) flooring screed (can also contain tremolite and chrysotile), crucibles and has been found in lagging so analysts may therefore experience it occasionally during typical analysis.

Sample	Validation Number	Product Type	Target Component	Asbestos Present (%)
1	287	Mortar (Manufactured)	Amosite	0.1%
2	288	Painted Board (Manufactured)	No Asbestos	N/A
3	289	Powder (Manufactured)	Anthophyllite	0.3%
4	290	Plaster (Manufactured)	Crocidolite	0.1%

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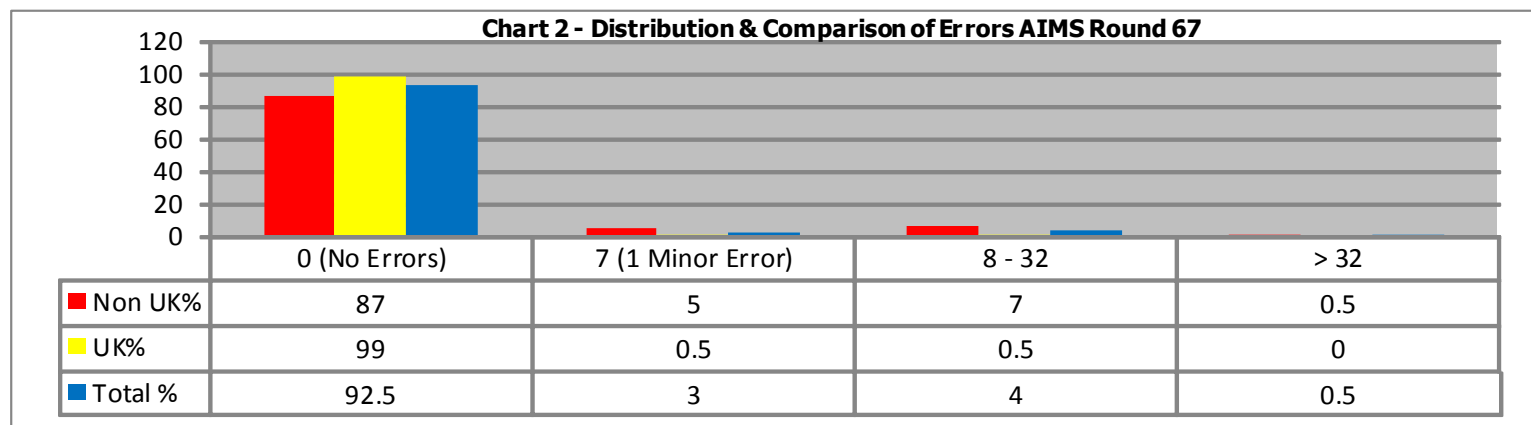
1. Type Of Errors Obtained

Chart 1 - AIMS Round 67 Errors
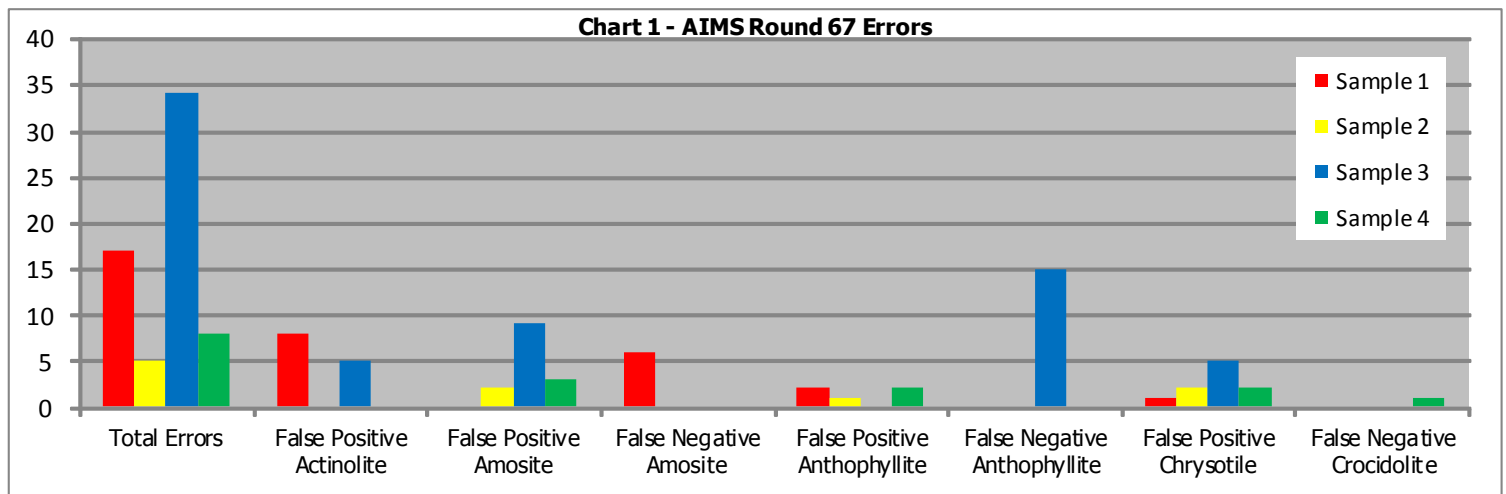
False Negative = Component has been missed. False Positive = Component has been incorrectly identified as present.

2. Round Scores

Chart 2 illustrates the distribution of scores for all participating laboratories. 363 (92.5%) 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; 178 (99%) UK laboratories and 185 (87%) Non-UK laboratories obtained a score of zero for the round.

Chart 2 - Distribution & Comparison of Errors AIMS Round 67

	0 (No Errors)	7 (1 Minor Error)	8 - 32	> 32
Non UK%	87	5	7	0.5
UK%	99	0.5	0.5	0
Total %	92.5	3	4	0.5

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Chart 3 shows the percentage distribution of cumulative three round scores for all UK and Non-UK laboratories. 33 laboratories (8%) in total had not yet completed 3 rounds and therefore did not accumulate a score. Following this round, 290 laboratories (72%) obtained a good cumulative score (0 – 7 penalty points cumulatively). 67 laboratories (17%) obtained an acceptable cumulative score (8 – 32 penalty points cumulatively) and 14 laboratories (4%) obtained an unsatisfactory cumulative score (33 or more penalty points cumulatively).

Chart 3 - Distribution & Comparison of Cumulative Scores Following AIMS Round 67

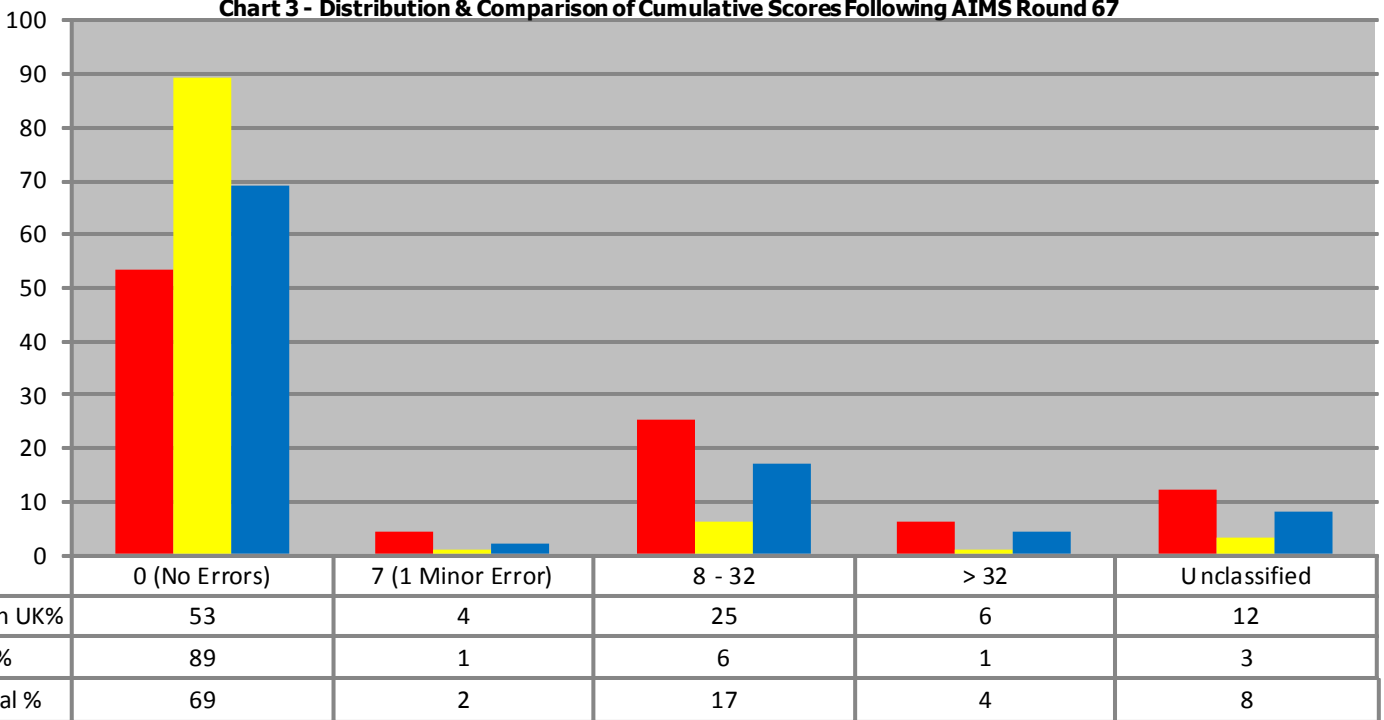|	0 (No Errors)	7 (1 Minor Error)	8 - 32	> 32	Unclassified
Non UK%	53	4	25	6	12
UK%	89	1	6	1	3
Total %	69	2	17	4	8

Chart 4 shows the number of errors made on each sample for all UK and Non-UK laboratories.

PLM - polarised light microscopy. DSO - dispersion staining objective. SEM - scanning electron microscopy. EDX - energy dispersive X-ray. TEM - transmission electron microscopy. FTIR - Fourier transform infra-red.

Chart 4 - AIMS Round 67 Errors by Method
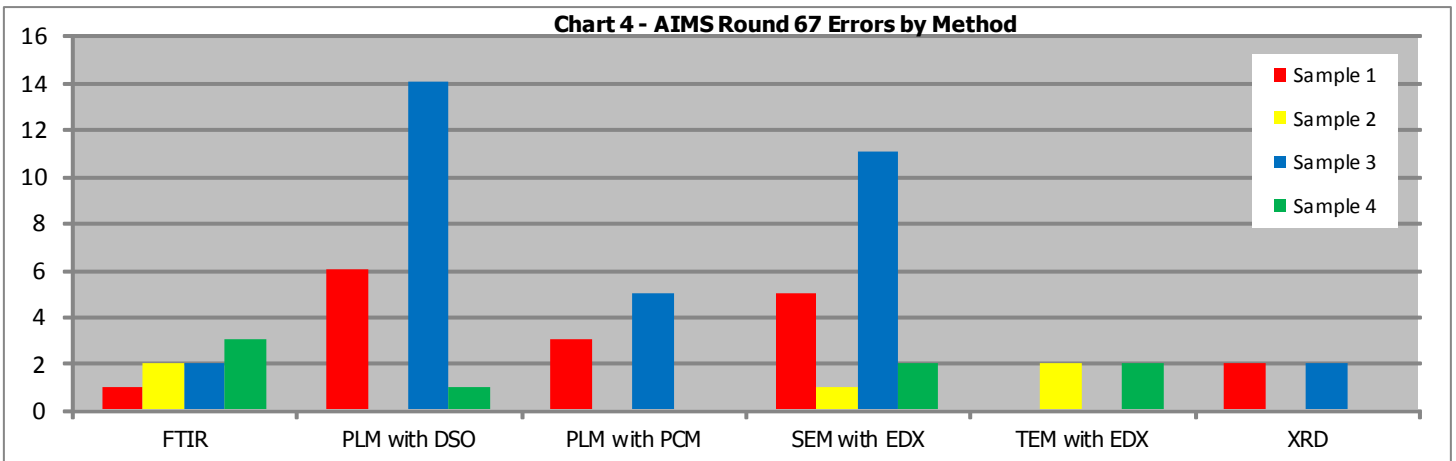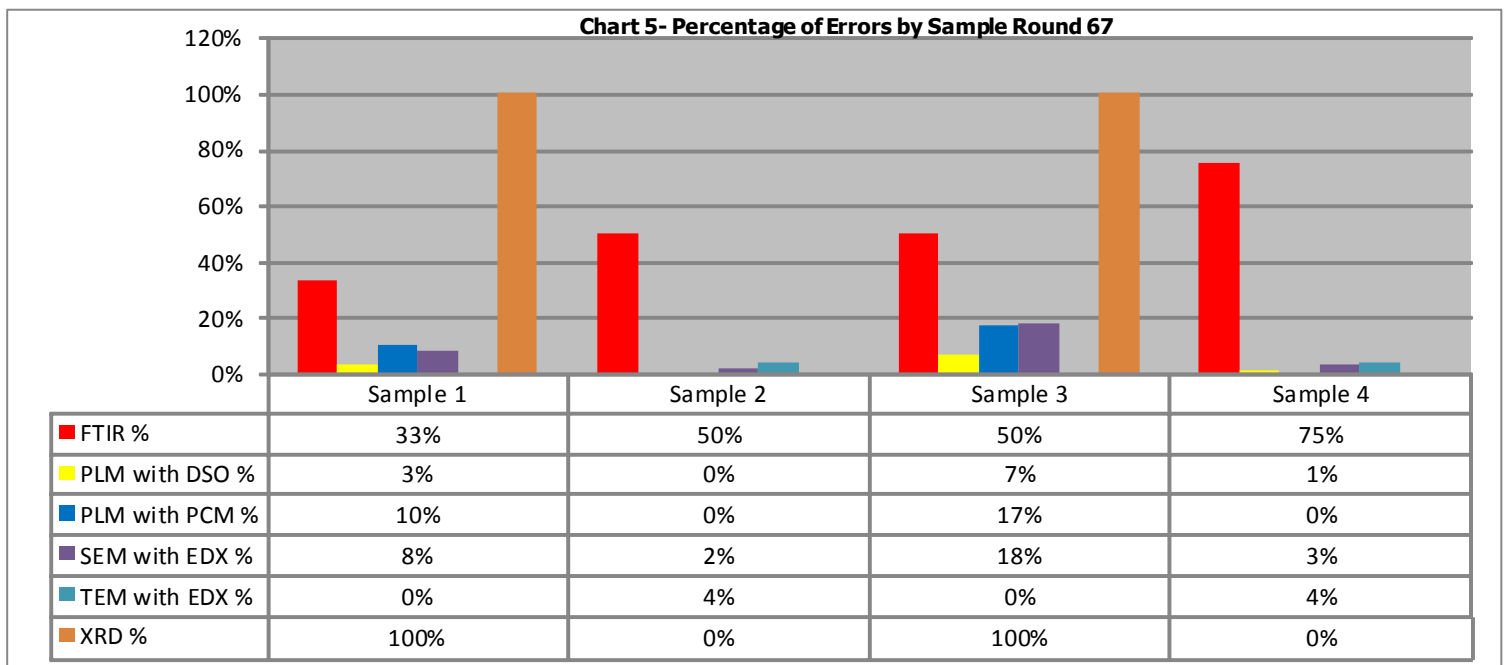
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Chart 5 shows the percentage of sample errors by method.

Of the 392 participating labs in R67 the method used in terms of the number of labs was as follows : FTIR, 4 labs; PLM with DSO, 216 labs; PLM with PCM, 30 labs; SEM with EDX, 61 labs; TEM with EDX, 48 labs; PLM with DSO & TEM with EDX, 19 labs; PLM with PCM & FTIR, 1 lab; PLM with PCM & SEM with EDX, 10 labs; Other, 2 labs and XRD, 1 lab. (Note: 100% has been entered for samples 1 and 3 with XRD as only one lab use this method but made two errors on both those samples).

Chart 5- Percentage of Errors by Sample Round 67

	Sample 1	Sample 2	Sample 3	Sample 4
■ FTIR %	33%	50%	50%	75%
■ PLM with DSO %	3%	0%	7%	1%
■ PLM with PCM %	10%	0%	17%	0%
■ SEM with EDX %	8%	2%	18%	3%
■ TEM with EDX %	0%	4%	0%	4%
■ XRD %	100%	0%	100%	0%

3. For Your Information - AIMS NEWS !!

Following R66 there were two sample investigations. Actinolite was identified in sample 1 and the report reissued. Only trace amounts of chrysotile identified in sample 2 and therefore the report was reissued.

Our annual feedback gathering exercise was carried out in December 2018. There were some useful, constructive suggestions made and generally participants are happy with our schemes. Full details can be found on our website: https://www.hsl.gov.uk/proficiency-testing-schemes/participant-feedback

We are currently offering discounted rates on a few of our AIMS QC samples, including past AIMS samples, UICC asbestos, wollastonite and brucite. Please contact the PT Team if you require an order form.

Scheme subscriptions for 2019/20 are now available online. Please ensure payments are made promptly to prevent samples/ reports being withheld. The first round (R68) will be despatched week commencing 29th April 2019. Our Scheme Schedule and Information Book for Participants are available in the Useful Links on our website page: https://www.hsl.gov.uk/proficiency-testing-schemes/aims

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