This is a re-issued report and supersedes the LACS Group Report issued on Friday 6th November 2020

Reason for Reissue: The total number of 'Questionable' & 'Unsatisfactory' laboratories were incorrect on the previous report.

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

Round 10 Sample Details

BACKGROUND
This report covers Round 10 of the Low Asbestos Content Scheme (LACS). Round 10 was open to laboratories worldwide. Laboratory participation was as follows: 5 UK and 126 Non UK.
131 laboratories subscribed to this round, with 126 submitting results.

SAMPLES
One sample was circulated as follows: Sample LACS010 – This sample was marble with 0.025% UICC Amosite and 0.025% UICC Anthophyllite.

SCREENING & VALIDATOR INFORMATION
The sample was prepared for circulation following our normal internal screening process of samples with representative sub-samples scanned using stereo-zoom and polarised light microscopy and transmission electron microscopy to assess homogeneity and suitability. Approximately 10% of the total number of samples despatched were validated by 8 independent laboratories.

INFORMATION SUBMITTED BY LABORATORIES
Laboratories used the PT online data entry system to submit their results for this round. Results were submitted as asbestos type (s) present and for the Quantitative element, the total % asbestos.

ERRORS
Of the 126 laboratories who submitted results one reported amosite, chrysotile and anthophyllite, one reported crocidolite and anthophyllite, one reported actinolite and 39 reported only amosite for sample LACS010. By including two amphibole fibres - amosite and anthophyllite we recognised there would be particular difficulties for labs with this sample particularly with electron microscopy. This has been highlighted in the results submitted. Although this has given us useful information and we hope equally will provide labs with insight into their own analytical procedures for samples of this type we have decided in this instance to not score those labs that only identified one of the amosite or anthophyllite in this sample.

LACS QUALITATIVE RESULTS
Sample LACS010
Eighty-four laboratories correctly reported amosite & anthophyllite
Thirty-nine laboratories reported amosite only
One laboratory reported amosite, chrysotile and anthophyllite
One laboratory reported crocidolite and anthophyllite
One laboratory reported actinolite

These results are presented graphically in Charts 1 and 2.

LACS QUANTITATIVE RESULTS
The median of quantitative results submitted was 0.05%. For the purposes of the z score we are using 40% of the median - 0.02%. Sixty-nine laboratories submitted quantitative results;
- 48 (70%) laboratories achieved a z-score of < ± 2, this is normally considered to represent "Satisfactory" performance
- 11 (16%) laboratory achieved a z-score of between ± 2 - ± 3, this is normally considered to represent "Questionable" performance
- 10 (14%) laboratories achieved a z-score of > ± 3, this is normally considered to represent "Unsatisfactory" performance.

These results are presented graphically in Charts 3-5.

FTPT F0935R 1 Final Report   UNCONTROLLED IF PRINTED   Page 1 of 4
Issued By: Matthew Jackson/ Melanie Clunas, HSE, Buxton, SK17 9JN

LACS | **Round 10** | **November 2020**
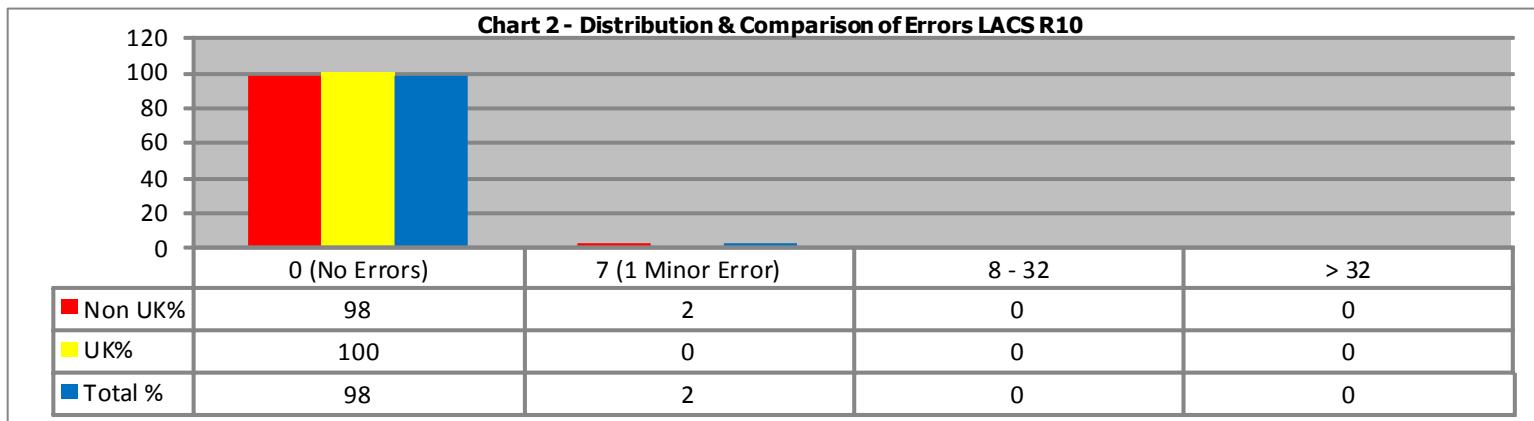
1. Type Of Errors Obtained

Chart 1 illustrates the errors made by participating laboratories. 44 errors were made by laboratories on sample LACS010. Forty laboratories missed anthophyllite, one laboratory identified actinolite, two laboratories missed amosite, one laboratory identified crocidolite and one identified chrysotile.

Chart 1 - LACS Round 10 Errors
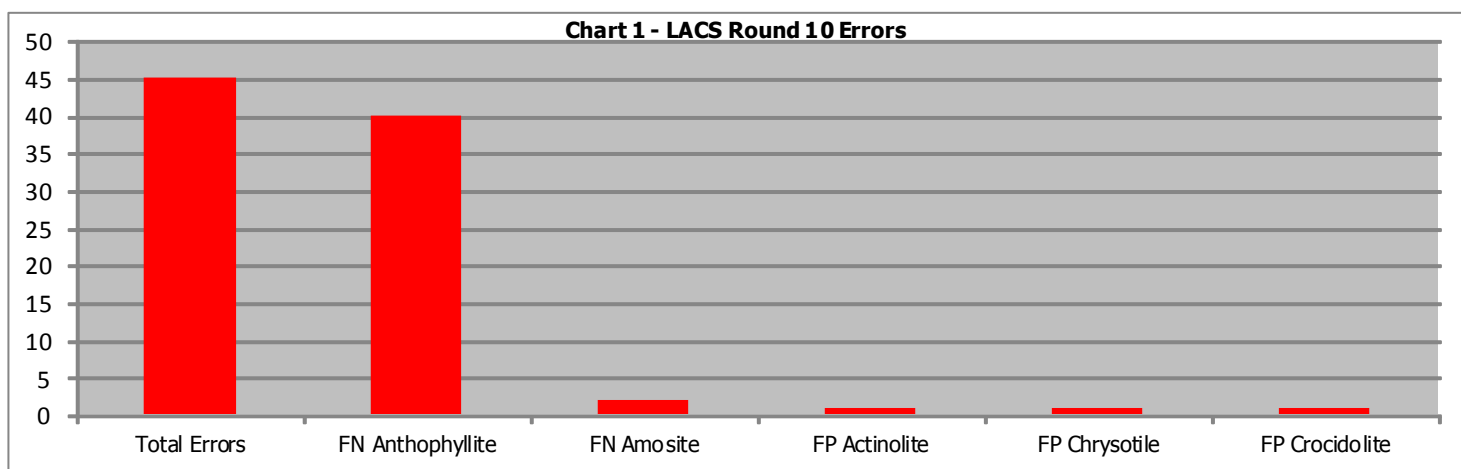
False Negative = Component has been missed. False Positive = Component has been incorrectly identified as present.

2. Errors for UK & Non-UK Laboratories

Chart 2 illustrates the distribution of scores for all participating laboratories. 123 (98%) 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; 5 (100%) UK laboratories and 118 (98%) Non-UK laboratories obtained a score of zero for the round. Please see errors explanation on page 1 for scores regarding the amosite and anthophyllite.

Chart 2 - Distribution & Comparison of Errors LACS R10

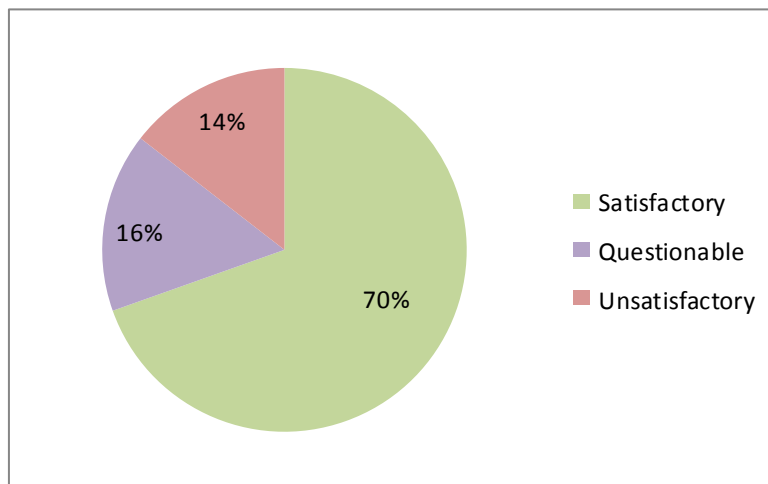|	0 (No Errors)	7 (1 Minor Error)	8 - 32	> 32
Non UK%	98	2	0	0
UK%	100	0	0	0
Total %	98	2	0	0

3. Quantitative Results - z scores

Chart 3

Scatter graph of z scores (10 z scores ranging between 4-147.5 removed as outliers) for the 69 laboratories who submitted a quantification result.
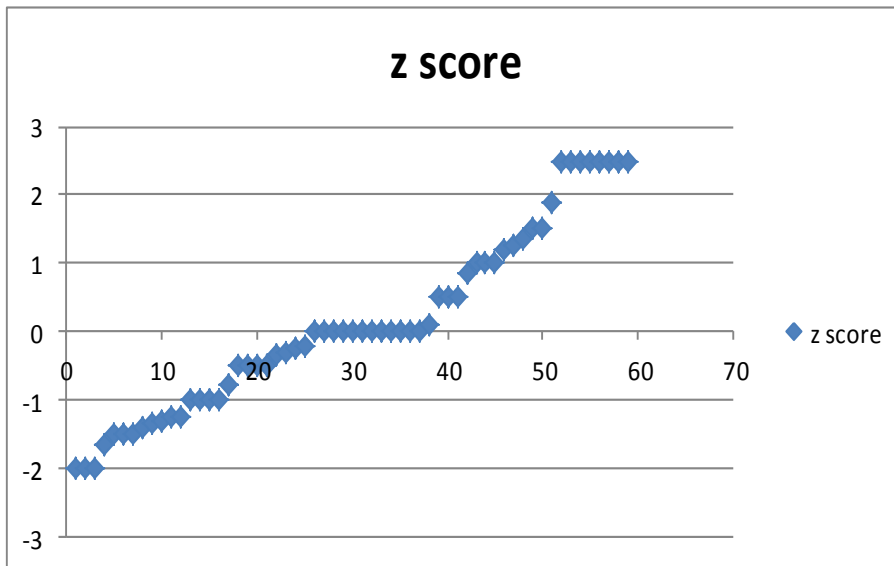
4. Quantitative Results

Chart 4 illustrates of the 69 laboratories who submitted a quantification result, 48 laboratories (70%) achieved a satisfactory result i.e. a z score of < ± 2. 11 laboratories (16%) achieved a questionable result with a z score of between ± 2 and ± 3. 10 laboratories (14%) achieved an unsatisfactory result with a z score of > ± 3.

FTPT F0935R issue 1 Final Report UNCONTROLLED IF PRINTED   Page 3 of 4
Issued By: Matthew Jackson/ Melanie Clunas, HSE, Buxton, SK17 9JN

LACS   Round 10   November 2020

5 Quantitative Results by analytical method

The following charts illustrate the z-score results by method of the 69 laboratories who submitted a quantification result. The number of labs using each method were as follows: 36 labs used SEM/EDX; 29 labs used TEM/EDX/ED and 4 labs used PLM/PCM.

SEM/ EDX

- 8%
- 6%
- 86%
- Satisfactory
- Questionable
- Unsatisfactory

TEM/ EDX/ ED

- 21%
- 27%
- 52%
- Satisfactory
- Questionable
- Unsatisfactory

PLM/ PCM

- 25%
- 25%
- 50%
- Satisfactory
- Questionable
- Unsatisfactory