



CHECK TESTS, RECORES & RETESTS

Key Definitions

Check Test A Check Test is verification of documentation and calculations forming the basis of the Certificate on which a doubt has been raised and, if possible, a set of additional measurements made, in accordance with the same standard IWTO Test Method as was adopted for the original test, on that portion of the sample material remaining after that original test. Where no sample material remains, a Recore Check Test may be carried out as part of the check testing procedures. Check testing is restricted to tests carried out by the Test House, which conducted the original test.

Recore Check Test This is a set of measurements made, in accordance with the relevant IWTO Test Methods and Regulations, on a further sample of raw wool drawn from the delivery as part of the check testing procedures. A Recore check test may only be conducted where a Certificate has not been delivered in relation to a contract. Where staple measurements are involved this definition applies to a fresh grab sample taken from the lot rather than a core sample.

Retest This is a set of measurements made, in accordance with the relevant IWTO Test Methods, on a further sample of raw wool drawn from a delivery for which the original Certificate is in doubt. This differs from a Recore Check Test in that duplicate core (grab) samples are drawn for possible testing by two separate Test Houses to resolve a disputed result. Such sample material must be obtained by recoring (regrabbing) and reweighing all bales, in accordance with the current IWTO Core (Staple) Test Regulations.

Testing Error A Testing Error is deemed to have occurred if the Maximum Retest Range is exceeded.

Maximum Retest Range The Maximum Retest Range (i.e. the difference between the values of a retest and the original Test Certificate or an earlier retest) is a statistically (and scientifically) determined upper and lower limit which, provided the test procedure has been rigorously adhered to, will very rarely be exceeded purely by chance.
The Maximum Retest Range defines the maximum allowable difference between two test results.

BASIC PRINCIPLES

WTAE uses internationally recognised standard test methods established by the International Wool Textile Organisation (IWTO) when issuing IWTO Certificates. Its laboratory is subject to audit by UKAS, and licensed by IWTO to ensure that the procedures defined in these standards are rigorously adhered to.

Nevertheless, you may have looked at an IWTO Certificate or even a Test Report for a particular lot or consignment and thrown up your hands in horror and said: "These results are wrong!" So you grab a telephone and start calling to who ever you think can redress the error. You just want it fixed!

Once you make this call you set off a process that may or may not yield the outcome you want. Under the IWTO Regulations, which define procedures to address queries or challenges from clients about test results, WTAE must follow a very rigid protocol. This protocol is always followed. We think it is fair and impartial, because it is based on science and it is completely objective.

However, before getting too deeply involved, we must define some terms, as these terms are a key part of the jargon surrounding the procedures that are followed when a test result is queried. So take some time to read through the definitions in the adjacent table. They are important.

Understanding exactly what constitutes a testing error is particularly important. The definition in the table is highly technical and even dispassionate. But a client's perception of a testing error is very much influenced by commercial as well as technical factors.

SOME CASE STUDIES

Case 1:

You are a wool trader producing lines from wool purchased from a region where historically the Yield has usually been close to 48%. You reasonably expect that the test result supplied to you by WTAE will be around this number.

However, when you receive the test certificate or report you are astounded to see that the Yield is 40%. You will quite rightly conclude that a testing error has occurred. Despite every effort made by the Test House such errors do occur, albeit extremely infrequently, and are most often due to human factors causing a mix up of samples either at sampling or within the Laboratory. This is an example of a gross error.

Case 2:

Spare a thought for the buyer or processor who has purchased a large number of lots (based on Certificate data) at great expense, which average 28.5 microns, in the expectation that once the wool is scoured the mean fibre diameter will be in the range 28.5-29.0 microns, for a deliverable contract of 29.0 microns maximum. This expectation is usually developed by prior experience, and an understanding that processing often does change the greasy wool parameters slightly – hence the allowance between the greasy and the scoured wool. If the Certificate for the scoured wool says the consignment is 29.1 microns, 0.1 microns greater than the limit in the buyer's contract, then he will certainly deem that this is an error, and reach for the telephone (you can also be certain that in an example such as this if the test result is less than 28.5 microns the Test House will never hear about it). The cost of not meeting the contract specification can be very substantial, given the large amount of wool involved.

Quite clearly, there is a difference between gross errors such as the first example, and a failure to meet commercial expectations, as in the last example. Nevertheless from a client perspective they are both problems.

WHAT HAPPENS NEXT?

Regardless of the reason for the client query the procedures followed by Test Houses are the same. They have to be – to maintain the impartiality and integrity of the Certification system.

If residual sample material is still available then a Check Test will be conducted. If not a new sample will be obtained and a Recore Check Test conducted.

Firstly, the difference between the original result and the Check Test is calculated and compared with the Maximum Retest Range provided in the IWTO Regulations. If this is exceeded then the original result is discarded and a new Certificate issued, using the Check Test results only.

However, if the Maximum Retest Range is not exceeded, then the results from the original test and the Check Test are combined and a new Certificate is issued, using the combined results. Because of the power of averaging this actually improves the precision of the test result.

Gross errors, when they occur, are almost always corrected by the first Check Test, unless the residual sample material has been somehow misidentified or accidentally switched with that from another lot.

This process used to investigate possible testing errors has been developed by IWTO, with strong support from the world wool industry at large, because it is fair, impartial and technically correct. It recognises that there is inherent variation in the testing system, which is difficult to remove without greatly increasing costs. The regulations, while they may appear to be bureaucratic, actually add to the integrity of the system. If followed they leave no room for the Test House to exhibit any bias for or against the client, and ultimately the client's customers.

Of course, where a Check Test is requested for a commercial reason, this system means that the client is to some extent taking a chance. Provided no gross error has occurred the inherent variation in the measurements means that the new Certificate results have an even chance of going up or down. In Case 2 for example, a new Certificate may move the result to 29.2 instead of 29.0 microns!

However, buyers and processors are very good at their job and the rules they use for purchasing and assembling consignments are based on vast experience from past consignments. It costs them real money if they fail to meet the limits of their contracts so their buying decisions take into account this past experience. This knowledge means that when a test result exceeds their limits there is a better than even chance that it is at the high end of the range of variation that randomly occurs. Because of this there is also a better than even chance that the new result after check testing will be either the same as or slightly less than the original, and due to the power of averaging it will definitely be more precise.

MAXIMUM RETEST RANGES

The Maximum Retest Ranges that are applied in making these decisions are derived from very detailed statistical analyses conducted on a very large number of tests by independent laboratories. They therefore take into account variation arising from sampling, laboratories, instruments and people.

The Maximum Retest Ranges for the key parameters Certified for Greasy and Scoured Wool and Wool Tops are detailed in the relevant IWTO regulations. Those applied to the Greasy Wool for Wool Base, Vegetable Matter Base and Mean Fibre Diameter, are replicated in the following tables.

Maximum Retest Range* between Two Test Results for Wool Base (%)	
Wool Base of Most Recent Test (%)	Maximum Retest Range (WB%)
Up to 40.00	3.10
40.01 to 45.00	2.80
45.01 to 50.00	2.50
50.01 to 55.00	2.10
55.01 to 60.00	1.90
60.01 to 65.00	1.80
65.01 and above	1.60

* These values are derived from the true Maximum Probable Difference between two Test Results obtained using the procedures laid down in IWTO-0.

Maximum Retest Range* between Two Test Results for Vegetable Matter Base (%)	
Base of Most Recent Vegetable Matter test (%)	Maximum Retest Range (VMB%)
0.0 to 0.5	0.3
0.6 to 1.0	0.5
1.1 to 1.5	0.6
1.6 to 2.0	0.8
2.1 to 3.0	1.0
3.1 to 5.0**	2.0
above 5.0**	3.2

* These values are derived from the true Maximum Probable Difference between two Test Results obtained using the procedures laid down in IWTO-0.

** As relatively few results are available from VMB% above 3.0%, the between core variation is not included above this level, and the values have not been reduced from previous levels until more data is obtained.

Maximum Retest Range* between Two Test Results for Mean Fibre Diameter (μm) by the Airflow, OFDA, or Sirolan-Laserscan Method			
Mean Fibre Diameter of Most Recent Test	Airflow Method**	Maximum Retest Range (μm)	
		OFDA Method	Sirolan-Laserscan Method
Up to 15.0	0.5	0.4	0.3
15.1 to 20.0	0.6	0.4	0.4
20.1 to 25.0	0.8	0.6	0.5
25.1 to 30.0	1.0	0.7	0.7
30.1 to 35.0	1.1	0.9	0.9
35.1 to 40.0	1.3	1.0	1.1

* These values are derived from the true Maximum Probable Difference between two Test Results obtained using the procedures laid down in IWTO-0.

** These values relate to the use of two Airflow meters.

FURTHER INFORMATION

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