1.4.2 VERIFICATION

Under the current legislation, initial verification by an approved person from a Notified Body, or by a "self-verifier" are equally valid and the procedures are generally the same no matter who carries out the initial verification. In cases where the manufacturer can demonstrate to the satisfaction of his assessment body that he has controlled procedures and operations in his production process that negate the need for specific tests to be carried out on the completed instrument, then he need not carry out all the tests that an approved person from a notified would. The actual verification process will depend on the type of equipment being verified.

Non-automatic weighing instruments (NAWIs)
NAWIs come under the Non-automatic Weighing instruments Regulations 2016(2016 No.1152)

The test loads that should be applied must meet the requirements of 3.7.1 of EN45501 (2015) Further information can be found in part 4.4 of the Non-automatic Weighing Instruments Guidance notes mentioned in section 7.3 above. Weights used for initial verification and re-qualification should be within the tolerances outlined in OIML R111[1], for class III instruments the weights should be at the standard of M1 or higher for class II instruments they should be F2 or higher.

It is advised that M1 or F2 weighs should be calibrated annually by either a local weights and measures authority or a UKAS approved laboratory. It is important to stress that the periodicity of the calibration is not stipulated in law, the obligation is to ensure that they stay within calibration.

When testing instruments at the place of use, instead of 100% of standard weights any other constant load may be used, provided that standard weights of at least ½ max are used. This can be reduced further to 1/3 max if the repeatability error is not greater than 0.3 e and 1/5 max if the repeatability error is 0.2e. The repeatability error should be determined with a load approximately of the value where any weight substitution may be made

The International Organisation of Legal Metrology OIML drafted a standard in 2006 (OIML recommendation R76) to cover specifications and testing of NAWIs, this became European Norm EN45501 that was later adopted in this country as British Standard BS EN 45501(2015) The regulations in force today are derived from the above and linked directly to them..

Section 8.3 of EN 45501 / OIML R76 details the assessment required for initial verification (i.e. when the unit is put in to service). This refers to several of the sub-sections of the standard for the specific tests to be performed. The tests can be summarised as follows:
- Checking of a declaration of conformity.
- Visual inspection of basic metrological characteristics (e.g. Min, Max, e, d, etc), markings and suitability of use.
- Errors on loading and unloading; gross, net and tare weighing (sections 3.5.1, 3.5.3, 4.6.2, 4.7.3; appendices A4.4 – A.4.6)
- Accuracy of zero setting and tare setting (A.4.2.3 & A.4.6.2)
- Repeatability tests (section 3.6.1 and appendix A.4.10)
- Eccentric loading tests (section 3.6.2 and appendix A.4.7)
- Discrimination tests (section 3.8 and appendix A.4.8)

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[1] OIML R111-1 (2004). Weight of Classes E1, E2, F1, F2, M1, M1-2, M2-3 and M3: Metrological and technical requirements

Other tests may be performed in special cases and if the instrument is to be used in a different location then any difference in gravity shall be considered, if appropriate.

Automatic weighing instruments

The regulations in force depend on the type of instrument to be verified and the verification procedures will be outlined in the associated OIML recommendation.

In general the verifier will have to:

- Ensure that the unit under test complies with the type approval certificate
- Check the markings on the instrument
- Test the unit with the product or equipment to be processed and from the test results determine the accuracy class
- Ensure that the errors are within the appropriate maximum permissible limits

In addition to test weights verification may require a separate control instrument for comparative static reference tests.