# Chemical analysis methods

The test method for measuring the chemical composition of a mineral wool by the external chemical analysis institutes shall comprise the following steps:

a) glowing of the sample for 30 minutes at a temperature of 550 °C; the obtained lost of ignition shall be reported in the analytical report

b) sample preparation shall be done in an agate or tungsten carbide mill

c1) quantitative chemical analysis at least of the oxides $SiO_2$, $B_2O_3$, $Al_2O_3$, $Fe_2O_3$, $K_2O$, $Na_2O$, $P_2O_5$, CaO, MgO, MnO and $TiO_2$ for glass wool samples

c2) quantitative chemical analysis at least of the oxides $SiO_2$, $Al_2O_3$, FeO (generally given as $Fe_2O_3$), $K_2O$, $Na_2O$, $P_2O_5$, CaO, MgO, MnO and $TiO_2$ for stone wool samples

Further measured elements in a concentration above 0.5% shall be reported. The chemical analysis shall at least account for 98% of the components. More elements may be included if necessary and relevant in relation to original fibre certificate.

ICP-OES with a combined gravimetric analysis for $SiO_2$ and XRF according international or national standards can be used. The precision of the chosen method, as well as the uncertainty shall be given in the report. Other measuring methods may be used if proved to provide similar results and accepted by the scientific expert.

The analysis institutes should aim at sending the analysis results (by e-mail or other mean), within 4 weeks after having received the sample from the inspection institute.

The stated weight percentages are reported by the analysis institute to one or two digits after the decimal point, depending on the measurement uncertainty, and compared with the reference fibre composition. Even if the comparable analysis of a particular oxide is only by 0.01 wt.% outside of the admissible tolerance range of the chemical composition the test will be seen as not passed. The standard deviation of the test method is not taken into account.

The analysis institute shall be accredited for the chosen method. Most preferably some experience on the analysis of glass chemistry is available.

The analysis Institute shall have the following accreditation

- EN ISO/IEC 17025

The chemical analysis methods used for auto-control testing by the mineral wool manufacturers should be either similar to one of the approved test methods above or should correlate with those. Any correlation method for measuring the chemical analysis should be well documented and the correlation data forwarded to the certification body.