The raw material composition of wooden ceilings, walls and altarpieces paintings of Churches and polychrome sculptures of different locations of state Minas Gerais in Brazil were studied in the last two years. The work was carried to decide the appropriate intervention methods and materials to be used in the conservation of the paintings. The Churches were built in the Baroque and Rococo style in the period of 1750 to 1870.

Extensive examinations such as stratigraphic studies of cross sections, material analysis using polarized light microscopy, portable x-ray fluorescence and Raman light scattering were applied. The work revealed a number of layers of painting covering the originals (fig. 1) in most fragments, some of the wooden ceiling with the original paint, three different techniques of gilt, water gilding and oil-gilding and gold-mercury amalgam described in the Portuguese manuals of the eighteenth century (STOOTER, J. 1786 – Arte de Brilhantes Vernizes, e das Tinturas, Fazellas, e como sed eve obrar com ellas), grounds of mineral dolomites, calcium carbonate and calcium sulfate and a limited number of pigments in the original layers commonly used as: vermillion, Prussian blue, ultramarine, chrome yellow, white lead and iron oxides (ochres). Some pigments were observed with significant variations in particle size and form suggesting the use of mineral pigments in the first layers and the synthetic ones in the later. Prototypes have been made to study the effect of multiple layers of paint on the result of the analysis and standards were used for comparison of sizes of particles encountered.

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Fig. 1: Figure 1 – Cross section photography showing the layer sequence of a side pulpit fragment from the Church of São Gonçalo do Amarante – São Gonçalo do Rio Abaixo - Minas Gerais. (48x)