

SUMMARY

This diploma thesis focuses on the weathering of firing bricks used for construction of the walls at the Regional Maternity Hospital U Apolináře in Prague. This wall shows significant marks of weathering, such as black crusts of gypsum on the original bricks surface, blistering, spalling and powdering in the worst cases. The poor quality of the bricks is caused by a low firing temperature (aprox. 800 - 900°C). This leads to a lack of pores bigger than 3 μm , which have positive influence on high performance of bricks against freeze-thaw cycles and effect of water soluble salts. This thesis aims to find the source of raw material for production of bricks, determination of their mineralogical composition and their basic geotechnical survey, as well as determination of weathering forms and their intensity by detailed field study of the wall. The relationship between properties of bricks and weathering forms will be studied by optical microscopy, XR diffraction, which allows to estimate mineralogical composition of bricks and their firing temperature. Ion changing chromatography identifies concentration of water soluble salts in the wall and their relationship to porosity of surface area and cores of bricks which will be detected by mercury intrusion porosimetry. Results will be useful for restoration works at the wall and building of the Regional Maternity Hospital site in the future.