

## PROPERTIES OF HYDRAULIC BINDER PREPARED FROM METAKAOLIN, ANHYDRITE AND LIME

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The work deals with the verification of the properties of the newly designed hydraulic binder based on metakaolin, anhydrite and lime. Two types of mixtures were prepared. The influence of the preparation method of these mixtures on the resulting mechanical properties of the hardened binder in the horizon of up to 90 days was monitored. The change in composition over time was further studied on all hardened samples using X-ray diffraction analysis. In addition, the porosity of the hardened bodies was determined for 90-day samples, and scanning electron microscope images were taken. It was found that after 90 days the hardened binder mixtures reach the strengths comparable to hardened Portland cement and are in the range of 40 – 61 MPa. No decrease in strength over time was noted.

The main crystalline phase of the hardened binder is ettringite, which is formed at the beginning of the hydration process and with increasing time its amount remains constant or decreases slightly.