1918  
TALLINN UNIVERSITY OF TECHNOLOGY

**DEPARTMENT OF CHEMISTRY**

REPORT

This is a results report for the analysis of the properties of the limestone in the Ungru deposit conducted at the Materials Engineering Research Centre of Tallinn University of Technology. The analysis involved the determination of the properties that most significantly affect the stability of cladding stones made from this limestone in natural and artificial environments, i.e. corrosion resistance. The results are presented in the table below.

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Property** | **Result** | **Notes** |
| 1. | Density, g·cm–3 | 2.43–2.62 |  |
| 2. | Water absorption, % | 2.0–3.5 | DIN 5210 |
| 3. | \*Portion of material undissolved by acid, % | 2.9–7.8 |  |
| 4. | Salt resistance of non-impregnated stones, %, | –0.70 ± 0.29 | EN 12370 |
| 5. | Salt resistance, treated with hydrophobiser 1, % | –0.07 ± 0.03 | EN 12370 |
| 6. | Salt resistance, treated with hydrophobiser 2, % | –0.12 ± 0.08 | EN 12370 |
| 7. | Frost resistance, non-impregnated, cycle | 100, practically no damage | DIN 52104 |
| 8. | Frost resistance, non-impregnated, cycle | 100, practically no damage | DIN 52104 |
| 9. | Calcite, % : dolomite, % | ~ 1 : 1 |  |

\* The main components of the portion undissolved by the acid (non-reactive portion) were quartz, clay minerals and pyrite. Calcite (CaCO3 ) and dolomite (CaCO3 MgO3) reacted fully with the acid.

The test was conducted on a random set of commercial products. In all cases, at least 10 samples were used.

The results are valid for the entire set of tested products.

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