

## Decorative Limestone, Albania

The limestones formations consist predominantly of massive white and grey color, moderately fossiliferous. The limestones are pure, calcium carbonate making up 98-99% of the rock and contain less 1% magnesium carbonate that is, presumably, in solid solution in the calcite.

### Testing and results

More than 50 limestone samples are tested for the petrographic, chemical and physical and mechanical properties.

#### *Petrography*

Many thin sections of limestones samples taken from different depths in open pits, dugs, drillings done in limestone deposit during the prospecting and explorations works, were observed using a polarized microscopic. From these studies, the limestones are divided in:

- Micritic limestones
- Biomicrite limestones

#### *Chemical composition*

The chemical composition was study by classical chemical method. In Table nr. 1 is given the mean chemical composition of the decorative limestones deposits.

Table nr.1

Deposit name	Mean chemical composition (weight %)					
	CaO	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	MgO	SO <sub>3</sub>
Decorative limestone of Albania deposit	53.84	0.30-1.29	0.21	1.98	0.71	0.28

#### *Physical and mechanical properties*

For the physical and mechanical properties are tested 53 samples of the decorative limestones, which are taken from open pits and borings. Uniaxial compressive strength tests and direct shear box test were performed for the determination of mechanical parameters. The results of physical and mechanical properties are given in Table nr.2.

Table nr.2

Properties	Unit	Results
W	%	0.09-0.12
W <sub>op</sub>	%	0.12-0.23
γ	gr/cm <sup>3</sup>	2.68-2.69
γ <sub>s</sub>	gr/cm <sup>3</sup>	2.70-2.71
n	%	0.4-3.1
σ	kg/cm <sup>2</sup>	755-959
τ-	kg/cm <sup>2</sup>	330-370
R <sub>t</sub>	kg/cm <sup>2</sup>	130-150
σ <sub>w</sub>	gr/cm <sup>3</sup>	65.5-705
σ <sub>f</sub>	kg/cm <sup>2</sup>	480-550
Color	-	White, grey and red
Types	-	bedded

W-% - natural water content,  $W_{op}$  - water absorption  $\gamma$ -kg/cm<sup>3</sup>- bulk unit weight,  $\gamma_s$ - gr/cm<sup>3</sup>- specific weight of solid phase, n % - porosity,  $\sigma$ -kg/cm<sup>2</sup> - uniaxial compressive strength,  $\tau$ -kg/cm<sup>2</sup> - shear stress,  $R_t$  -kg/cm<sup>2</sup>- tensile strength,  $\sigma_w$  -kg/cm<sup>2</sup> - uniaxial compressive strength of wet sample,  $\sigma_f$  -kg/cm<sup>2</sup> - uniaxial compressive strength of frost sample.