



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكرو فيلم

بسم الله الرحمن الرحيم



HANAA ALY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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جامعة عين شمس

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قسم

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Ain Shams University
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Geology Department

SUITABILITY OF ATAQA DOLOMITIC ROCKS AS CONCRETE AGGREGATES

A Thesis Submitted in Partial Fulfillment for the
Requirements of the Degree of Master in Science (Geology)

By

Wagih Eshak Saad Ghaly

Technical Manager in Ready Mix Concrete Alalamia “RMB”

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Prof. Dr. Hossam Eldin Hassan

Professor of Properties and Testing of Materials, Faculty of Engineering
(Shoubra), Banha University.

To

Geology Department, Faculty of Science,
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ABSTRACT

As a result of the huge investments in construction sector in Egypt, the demand of rocks to be used as concrete aggregate is increased. Dolomite is one of the mostly used concrete aggregate in Egypt. Ataqa area is considered as one of the biggest sources of suitable aggregate for concrete industry in Egypt

The study aims to evaluate the quality of Ataqa dolomite for concrete works as concrete aggregate. In addition, determination of the relation between geological examinations, petrography, geochemistry and engineering properties, taking into consideration the requirements of the national and international standards for selecting the inert rocks/minerals to be used as concrete aggregate will be investigated.

Representative samples have been collected from quarries and crushers located in northern and eastern sides of G. Ataqa. Various laboratory techniques were used to achieve the aim of this work and interpreting the results from applied tests were performed to insure the suitability of Ataqa dolomitic rocks as concrete aggregates.

The experimental results of studied dolomitic aggregate samples gave the shed light on the quality of aggregates produced from crushers.

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List of Symbols

Symbol	Definition
Kg/cm ²	<i>Compressive strength of concrete sample by kilogram per square centimetre</i>
Kg/m ³	<i>Unit weight by kg per cubic metre</i>
KN	<i>Load of applied compression on sample by kilo-newton</i>
LOI	Loss on Ignition (%)
ND	<i>Non-Detected</i>
ODD	Oven-dry specific gravity
PPL	<i>Mineral properties in plane-polarised light</i>
SEM	Scanning Electron Microscopy
SEM-EDS	Scanning Electron Microscopy coupled with energy dispersive spectroscopy
SSD	Saturated-surface dry specific gravity
XPL	<i>Mineral properties in cross-polarised light</i>
XRD	X-Ray Diffraction
XRF	X-Ray fluorescence

