بسم الله الرحمن الرحيم


# شبكة المعلومـــــات الجامعية

# التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

# جامعة عين شمس

## التوثيق الالكتروني والميكروفيلم

## ﴿ قـــسـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

## يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

**To be kept away from dust in dry cool place of**
**15 – 25c and relative humidity 20-40 %**

# بعض الوثائق الأصلية تالفة


# بالرسالة صفحات

# لم ترد بالأصـــل

# PROPERTIES OF CONCRETE USING RICE STRAW ASH AS A PART OF CEMENT

By

**Mohamed Hassan Mohamed El- dardiry**

B.Sc. in Civil Engineering at Ain Shams University, 1996

A Thesis Submitted to the
Faculty of Engineering at Cairo University
In Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
In
Civil Engineering (Structures)

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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# Abstract

One of the main problems in last few years which face the environment in Egypt is the big amount of rice straw ash and how the society gets rid of it.

One of the recent suggestions in this field is the use of rice straw ash as a part of cement in concrete mixes.

This research studies the effect of the physical and chemical properties of rice straw ash on the mechanical properties of concrete and the behavior of reinforcement concrete under high temperature taking into consideration the different percentages of rice straw ash.

Many specimens are tested in this research using different percentages of rice straw ash in the concrete mixes.

The test results indicate that the rice straw ash is highly pozzolanic and can be used as a part of cement in concrete, with excellent workability and high resistance to sulfate salts.

In general the rice straw ash concrete had higher compressive strength compared with that of the control concrete.

Also, the thesis contains study for the behavior of reinforcement concrete columns which contain different percentage of rice straw ash and subjected to high temperature. The study shows that the temperature resistances of columns were improved using rice straw ash in the mixes.

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