

Recycling and Reuse Technology Transfer Center

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<http://www.rrttc.uni.edu>

Use of Recycled Wood and Paper in Building Applications **Forest Products Society**

Publication: 1996 - 087

Ahmed Elsayy, Industrial Technology, University of Northern Iowa

Sept. 9-11, 1996

96-034
Catherine.Zeman@uni, 09:47 AM 9/3/1998, Abstract fwd.

Return-path: <Catherine.Zeman@uni.edu>
Date: Thu, 03 Sep 1998 09:47:33 -0500 (CDT)
From: Catherine.Zeman@uni.edu
Subject: Abstract fwd.
To: donita.gray-krueger@uni.edu
X-VMS-To: IN%"donita.gray-krueger@uni.edu"

From: IN%"Ahmed.Elsawy@uni.edu" 1-SEP-1998 10:13:56.80
To: IN%"catherine.zeman@uni.edu"
CC: IN%"Ahmed.Elsawy@uni.edu"
Subj: abstract of a publication

Return-path: <Ahmed.Elsawy@uni.edu>
Received: from ahmed.elsawy.itc ([134.161.242.245])
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Tue, 1 Sep 1998 10:13:41 CDT
Date: Mon, 31 Aug 1998 21:49:29 -0500
From: Ahmed ElSawy <Ahmed.Elsawy@uni.edu>
Subject: abstract of a publication
To: catherine.zeman@uni.edu
Cc: Ahmed.Elsawy@uni.edu
Reply-to: Ahmed.Elsawy@uni.edu
Message-id: <35EB60B9.7982@uni.edu>
Organization: University of Northern Iowa
MIME-version: 1.0
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Donita:

Below find Dr. ElSawy's abstract forwarded to you for inclusion in our files.
Thanks a bunch!

CZ

Cathy

as per your memo dated 8/21/98, I enclosed a copy of the abstract for
the paper entitled: "USE OF RECYCLED WOOD AND PAPER IN BUILDING
APPLICATIONS". It is easier to extract electronically and for your use
in this format. If you need it in a formal memo format, I will be happy
to do so. Thanks Cathy.
Ahmed

ABSTRACT

The need for affordable housing becomes a paramount issue in
construction. This need is further complicated by the rising cost of
basic building materials due to the depletion of natural resources
throughout the world. The purpose of this study is to determine the
performance characteristics of using solid waste materials (i.e.
fiberglass dust, fly ash, and spent foundry sand) as substitute
materials in the matrix and reinforcement of wood/cement blocks. To
determine the optimum proportion of materials, 44 test mixtures
including control samples are produced. The samples were cured 28 days,
and tested as prescribed by the American Society for Testing and
Materials (ASTM) standards for performing compression, split tensile,
and 3-point flexural loading tests. 1-4 Statistical analysis of the
results reveals that as many as 66% of the experimental group mixtures
demonstrate significantly greater mechanical properties over that of the
control, often doubling strength. Overall, one experimental group
mixture combining fiberglass and fly ash substitution maintains optimal
performance across all mechanical properties tested. Furthermore, one
experimental group combining fiberglass and spent foundry sand exhibited
superior compression strength over all other experimental groups and

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