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ABSTRACT

ARTIFICIAL ROUGHNESS STANDARD FOR
OPEN CHANNELS

By

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ENGINEERING RESEARCH
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FOOTHILLS READING ROOM

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of Science, Boulder, Colorado, May 2, 1952.

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ABSTRACT

ARTIFICIAL ROUGHNESS STANDARD FOR
OPEN CHANNELS

(Presented before the Engineering Section, Colorado-Wyoming Academy
of Science, Boulder, Colorado, May 2, 1952).

There are two principle equations which are used in computing
discharges in open channels. These are:

(1) $Q = CA RS$ (Chezy)

(2) $Q = \frac{1.486}{n} AR^{2/3} S^{1/2}$ (Manning)

The resistance coefficients C and n are assumed to be
constant for a particular location. Previous investigations have
shown that these coefficients may vary as much as 100 percent for
the same section. A similar situation existed for pipes until a
new method was devised for finding the resistance coefficient by
using an artificial roughness standard and considering the magnitude
of the Reynolds number.

An artificial standard for the roughness which exists in an
open channel is proposed. A design for the roughness is presented
and this roughness tested in a range of conditions where the
resistance to flow is due solely to the roughness.

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