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NATURAL LIGHT-WEIGHT BUILDING-BLOCK MATERIALS
OF NEW MEXICO

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INTRODUCTION

Lifting of the restrictions on building has brought the United States to the verge of a tremendous building boom. New homes, factories, warehouses, stores, and garages that have been planned for months may now become realities, and people are eager to begin construction. Because there is an acute shortage of building materials all over the country, New Mexico builders, calling upon their ingenuity, are manufacturing building blocks from materials provided by nature within the State. These blocks, which are durable, permanent and economical building material, are made for the most part from New Mexico's volcanic rocks. Pumice, pumicite, scoria (volcanic sinter), or a mixture of two of these is combined with sand, cement and water and is molded into building blocks. These blocks are of many sizes and shapes, depending upon the equipment used and the demands of the trade. The manufacturing of building blocks from gravel or coal cinders is not new, but the use of scoria and pumice is comparatively recent.

PROPERTIES OF PUMICES AND SCORIA, AND CHARACTER OF BLOCKS

A building constructed of pumice or scoria concrete blocks is literally a house of glass. Pumice is a natural silicic glass which was produced by vulcanism as a molten froth. This froth, upon cooling rapidly, trapped tiny air bubbles that caused it to remain extremely porous and minutely vesicular

in structure. The pumice is nearly white in color and very light in weight; one cubic yard of the naturally crushed aggregate (pumicite) weighs only about 900 pounds. Scoria, or volcanic sinter, is a natural basic glass. Like pumice, it was deposited by eruption upon the earth's surface. However, the cellular construction is larger and the walls of the cells are thicker. The scoria is slightly heavier and in itself stronger than the pumice. The color varies from red to black.

Because of their glass composition and cellular structure, pumice and scoria have excellent insulating qualities against heat, cold, and sound, and are practically fireproof. These characteristics are to a large extent maintained in concrete blocks properly fabricated from them and properly cured. Moreover, a well-made block is strong, moisture-resistant, and light-weight, being at least 40 to 50 percent lighter than a sand-concrete block. Facility of handling, speed of construction, resistance to weathering, fire, age, and wear, and a moderate initial cost, show pumice and scoria blocks to be one of the most economical of building materials for a permanent comfortable structure. They lend themselves to innumerable types of designs and buildings. They are rough enough to take plaster or stucco with no further preparation, yet smooth enough to be painted if desired. Nails may be driven into the walls and the blocks may be cut or channeled without breakage.

FABRICATION

In Albuquerque and vicinity alone, about a dozen plants employing more than 100 men and having a capacity of 30,000 or more blocks per day have sprung up almost overnight. These plants are mostly using naturally crushed pumice from the Cochiti district, and crushed scoria from the Isleta district. Sand for the

blocks is obtained locally. The proportions of pumice or scoria to sand and cement have, not been definitely established, each manufacturer having his own formula. The finished products are therefore highly variable. However, many of the manufacturers are regularly having their products tested at the University of New Mexico engineering laboratory and are furnishing their trade a uniform product that is well above the strength standards set by the building code.

The Albuquerque plants are shipping their products to other cities and communities in the State and even into bordering states. Other block plants are operating or preparing for operation throughout the State. A few operators are making their own machinery, while most are using machinery manufactured by companies that make a specialty of this type of equipment.

DISTRIBUTION OF DEPOSITS

There are many deposits of pumice, pumicite, and scoria (known locally as "Malpais") in New Mexico. They are found most commonly in regions of geologically recent volcanic activity. There is no reason why the building block industry should not be developed in all sections of the State where markets are accessible. Deposits are known to occur in the vicinity of Aden, Carrizozo, Des Moines, Domingo, Espanola, Grants, Hatch, Santa Fe, and Socorro.

The New Mexico Bureau of Mines and Mineral Resources, Socorro, stands ready to do what it can to help in any way possible anyone interested in developing deposits of the natural building materials of the State. This circular has been released to answer temporarily the numerous requests received by this Bureau for information regarding the building-block industry. Work is now under way on a more detailed and comprehensive report on the building-material resources of the State.