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BUILDING-BLOCK BOOM

by

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Concrete building blocks are enjoying an unprecedented boom as a result of the enormous demand for building materials of all kinds and the current shortage of lumber. In the Portland area there are half a dozen block plants which produce approximately 16,000 blocks a day - a large increase over prewar production. A survey made by the Department reveals that several manufacturers are producing blocks using pumice as an aggregate. These blocks weigh roughly 30 percent less than the regular sand-cement-gravel blocks, have superior heat insulation and sound absorbent properties, and can be used for partitions without the necessity of using so-called nailing blocks or furring strips since nails can be driven directly into the pumice blocks.

Popularity of the lightweight blocks is due to their greater ease of handling, reduced trucking charges from plant to construction site, and their inherent low thermal conductivity. The lightweight blocks are ideally suited for construction of homes, small commercial and industrial buildings, and for partitions in office buildings where accoustic problems are involved.

Pumice is the only lightweight aggregate being used locally at the present time. Shipments of this material are coming from Tumalo in Deschutes County where Walter A. Larsen is operating a quarry, and from just north of Chemult in Klamath County where Chrystallite Aggregates Company is shipping from a pit beside the Great Northern Railroad.

The Portland city building code requires a minimum of 1500 pounds crushing strength per square inch. All of the pumice blocks now being produced at plants visited will test more than this figure. Considerable interest was shown by the various operators in other types of lightweight aggregates such as volcanic cinders and haydite. (Haydite is a clay or shale expanded by rapid heating in a kiln.)

The biggest headache for all block plants is the shortage of cement. Every plant visited was running below full capacity for this reason. Some operators have brought in cement from as far away as Kansas City, with a freight charge larger than the original cost of the cement.

The area in which blocks produced in Portland can be marketed seems to vary with the individual producer. Some operators felt that they could compete anywhere within a radius of 100 miles; others thought 200 miles would not be too far. One manufacturer declared that he even could ship lightweight blocks to points in the Mississippi Valley where block costs have more than doubled since OPA regulations expired.

Concrete blocks are manufactured in much the same way by all block plants. The mix consists of either water, sand, cement and gravel for the standard block, or water, sand, cement and pumice for the lightweight blocks. Some manufacturers also add small amounts of chemicals to the mix to speed setting of the blocks and to facilitate stripping from

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the molds after forming. The mix is fed into a machine which molds and compacts the material into any one of a number of standard shapes. The block is ejected, placed on racks, cured in a steam room for 12 hours and then allowed to yard cure for a week or ten days before shipment. Some block machines compact the block by means of a vibrating action, some use a tamping or pressing action, and some use a combination of these. Machines at two of the larger plants are completely automatic, and require only a man to prepare batches of mix, and an offbearer to remove the finished blocks and place them on racks. Smaller machines range from the semi-automatic models on down to those which are manually powered and operated.

Empire Building Material Company operates one of the largest block plants in Portland at 92nd and N.E. Halsey Street. This recently opened plant is modern in every respect and produces approximately 5000 blocks per eight-hour shift. At the present time only the regular sand, cement, gravel block is being produced, but plans for making lightweight blocks are being considered. Cement is purchased in bulk, while sand and gravel are obtained from local pits.

Smithwick Concrete Products Corporation, N.E. Lombard and Columbia Blvd., is producing between 4000 and 5000 blocks per day. Both regular concrete and pumice blocks are made. Consumption of pumice, which is obtained from Volcanic Materials Company near Bend in Deschutes County, is about two cars a day. Pit run pumice is currently being used which is composed of 3/8-inch lumps and finer sizes. Blocks are steam cured for 12 hours at a temperature of 200° F., after which they are allowed to yard cure for 10 days. Fork trucks are used to carry stacks of cured blocks around the plant. Steel forks fit into the core holes of blocks on the bottom row and no pallet is required. A full line of both types of blocks is manufactured.

The Perma-Insul Company, located on Suttle Road in North Portland, is currently producing about 2500 lightweight blocks per day from 65 yards per week of pumice shipped from a pit near Chemult operated by Chrystallite Aggregates Company. One of the novel features of the Perma-Insul plant is the block machine which is powered by both steam and electricity. A "shotgun" feed actuates a sliding hopper which fills the electrically vibrated mold. A steam piston applies pressure to the top of the mold and also serves to eject the blocks. Steam is also used in the curing room. A 45-h.p. coal-fired upright boiler serves the plant.

Builders Concrete Products Company, 110 N.E. Farragut Street, Portland, is producing both plain and colored concrete bricks. The bricks are cast on an automatic machine at the rate of 33 per minute, and have a recessed bottom face which forms a mortar lock. Approximately two million bricks have been produced since April 15, 1946, when the plant commenced operations. Current consumption of fine-sized aggregate runs about 30 yards per day. Plans for making brick with a lightweight aggregate such as pumice or haydite, are being considered. Oxide pigments are used to color the cement mix before molding; these pigments produce a solid coloring throughout the brick. Forty-five different shades are available for coloring the bricks which are to be used in home, fireplace, barbecue pits, and similar constructions. The plain bricks are in demand principally for cesspools at the present time. Concrete roof tiles in five different styles are to be produced in the near future. A novel process for applying special coatings to freshly cast bricks and to poured walls is in use at the plant. A portable compressed air "gun" equipped with a double hopper first applies a base coat to which the finish coat is added. A concrete pipe plant producing standard sizes of soil and sewer pipe is operated in conjunction with the brick plant.

The Gardner Concrete Block Company, 2700 N.E. 82nd Avenue, commenced operating in February 1946 and is currently turning out 1000 blocks a day with one vibrating machine. Aggregate is obtained from the adjacent Rose City Sand and Gravel Company pit.

A new approach to the construction of buildings with nonmetallics is being developed by the Loye Corporation, Portland. Operations so far have been along experimental lines.

Volcanic tuff from quarries near Baker is sawed accurately into various sized blocks having a dimension tolerance of 1/3000 of an inch. The blocks are cemented firmly together with a thin film of plastic which penetrates into the pores of the blocks. When laid up in a wall, the blocks form a flat, even surface on which paint, plaster, or wallpaper can be applied directly. Minor imperfections, such as chips, caused by handling can be filled with a fast-drying "spackle" composed of powdered tuff and the plastic bond. The tuff blocks possess the qualities of lightness, good thermal insulation, and sound absorption. They have a crushing strength in excess of 3000 pounds per square inch. Nails and screws can be driven and held in the blocks as if they were wood. In addition to the squared blocks, the tuff can be turned on a lathe and shaped easily. The material may also be crushed and used for terrazzo floors.

Heisen, Cole & Company, Inc., Park Building, Portland, are preparing to manufacture and lease a special block machine capable of producing keyed blocks. The machines are to be leased under a franchise to block manufacturers scattered throughout the Northwest. The block machine is designed for both regular and lightweight blocks.

Manford Pate is manufacturing an interlocking tile at a plant located at 82nd and N.E. Brazee Street. No lightweight aggregates are used since the blocks are composed of several small easily handled units.

In addition to the above block producers, several other firms are contemplating production of lightweight blocks when the current cement shortage eases and the cost of pumice decreases. One manufacturer is particularly interested in pumice fines for special concrete building accessories.

Tigard Concrete Products, Inc., Tigard, Oregon, is currently producing about 2500 regular concrete blocks per day, as well as road pipe, well curbings, and septic tanks. Some test work has been done with pumice as a lightweight aggregate, but only standard sand-cement-gravel blocks are being produced.

Umatilla Building Materials, Inc., Umatilla, is currently producing 4 thousand 4 x 8 x 12-inch sand-cement-gravel blocks a day. Some lightweight blocks using pumice from Burns have been produced experimentally, and the company is considering plans for manufacturing this type on a commercial scale. Concrete bricks are scheduled for early production at an estimated rate of 8000 units per day. Eight men are employed in the plant. Mr. J. M. Davies is president, and Mr. J. B. Redwine is plant superintendent.

The B and B Mortarless Block Company at Pendleton is producing interlocking building blocks which require no mortar when they are laid up in a wall. Pumice is obtained from the Volcanic Materials Company at Bend. The plant is owned and operated by Mildred and Stanley Bergeman. A full line of blocks is manufactured.

Lightweight building blocks, using pumice from the Volcanic Materials Company are being produced by the Pendleton Pumice Products Company. Mr. James L. Hinds is owner-operator of the plant which is manufacturing 4 x 8 x 16, 6 x 8 x 16, 8 x 8 x 16, and half-size blocks.

The current boom in concrete building blocks is not a local condition. In the city of Kassel, Germany, which was more than 90 percent destroyed by aerial bombardment during the war, hollow concrete blocks similar to the 3-core blocks produced here are being turned out on huge cumbersome machines. Aggregate, as might be suspected, is obtained from the finely pulverized brick and stone buildings - the rubble of the bombings.

Western Block Co., 101st Avenue and S.E. Foster, is erecting a block plant which will begin production of a full line of pumice building blocks and brick in about 2½ months. The plant is owned and operated by Messrs. C. A. and C. E. Felmley, and will produce 10,000 units per 8-hour day. Pumice will be obtained from Chrystallite Aggregates Company at Chemult.

A list by counties of concrete block manufacturers in the State follows:

Building-Block Manufacturers in Oregon

Baker County

Bilt Rite Block Company
Baker

Baker-Union Concrete Products Co.
North Powder

Deschutes County

Grimes Pumice Block Company
Bend

Oregon Pumice Products Company
Bend

Deschutes Concrete Products Co.
Redmond

Douglas County

Chrystalite Tile Plant
Roseburg

Pre-Mix Concrete
Roseburg

Roseburg Concrete Products Co.
Roseburg

Jackson County

Acme Block Company
Medford

Builders Supply Company
Medford

Conco Block Company
Medford

Crater Pumice Company
Phoenix

Day, Orrin
Medford

Eagle Flue Company
Eagle Point

Hiatt & Korble
Central Point

Ideal Block Company
Medford

John Nosler
Ashland

K. C. Jones
Medford

Medford Concrete Construction Co.
Medford

Jackson County (cont.)

Savage Creek Block & Concrete Co.
Rogue River

Triple A Block Company
Medford

Valley Block Company
Medford

Jefferson County

Pum-Brick Tile Company
Madras

Josephine County

Concrete Products
Grants Pass

V. R. Huffman
Grants Pass

Pumice Block Plant
Grants Pass

Klamath County

Boorman Pumice Products
Klamath Falls

Chrystolite Products Company
Klamath Falls

Hodges Bros.
Merrill

Insulite Pumice Brick & Tile Co.
Klamath Falls

Klamath Pumice Brick & Tile Co.
Klamath Falls

L. P. Montgomery
Klamath Falls

A. J. Tracy
Klamath Falls

Lake County

Concrete Products Company
Lakeview

Mr. A. B. Seymour
Lakeview

Lane County

Creswell Concrete Block Company
Creswell

Malheur County

Armco Drainage and Metal Products Company
Ontario and Nyssa

Eastern Oregon Pipe Company
Ontario

Nyssa Tile & Pipe Company
Nyssa

Marion County

Boock Building Block Company
Salem

Mortarless Block Company
Salem

Oregon Gravel Company
Salem

Pumilite Concrete Block Company
Salem

Salem Concrete Pipe and Products Company
Salem

12th Street Block Company
Salem

Multnomah County
(Portland)

Builders Concrete Products
110 N.E. Farragut Street

Empire Building Materials Company
92 Avenue & N.E. Halsey Street

Gardner Concrete Block Company
2700 N.E. 82 Avenue

Multnomah County (cont.)

Pate, Manford
82 Avenue & N.E. Brazee Street

Perma-Insul Company
North Suttle Road

Smithwick Concrete Products Company
Columbia Blvd. & N.E. Lombard St.

Western Block Company
101 Avenue & S.E. Foster Blvd.

Polk County

Reimer, Ben
Dallas

Umatilla County

B & B Mortarless Block Company
Pendleton

Pendleton Pumice Products Company
Pendleton

Umatilla Building Materials Company
Umatilla

Washington County

McCormack Concrete Pipe Company
Hillsboro

Tigard Concrete Products, Inc.
Tigard

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OREGON SODIUM DEPOSITS DESCRIBED

Sodium salts of Lake County, Oregon, is the title of a report just issued by the State Department of Geology and Mineral Industries. Summer, Abert, and Alkali lake brines and playa deposits are described and analyses of samples are tabulated. Authors of the report are Dr. I. S. Allison, professor of geology at Oregon State College, and Mr. R. S. Mason, mining engineer with the State Department.

Sodium salts are primary raw materials in many industries, and the stepped-up industrial activity all over the country has increased the demand for these salts. Supplies are short at the present time.

The 12-page report, G.M.I. Short Paper No. 17, includes an index map, several tables, and two illustrated plates. It may be obtained at the Portland office of the Department at 702 Woodlark Building, and at the Department field offices at Baker and Grants Pass.

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SOAP FROM PETROLEUM

(Reprinted from The Link, issue of January 1947,
published by the Carter Oil Co., Tulsa, Oklahoma)

A new development in soap - the first soap powder made entirely from petroleum without the use of either animal or vegetable fats - has been perfected and now is in the process of being marketed for both consumer and industrial users.

The finished compound consists of white, free-flowing particles similar to other soap powders, and is used in much the same way.

The new product, technically known as a synthetic detergent, is said to be superior to present cleaners for such household chores as washing dirty dishes, since it won't scum and it has a high sudsing quality, according to the chemical company, which handles the new product. ...

The new "soapless soap", described as an all-purpose cleanser, is said to be equally effective in laundering fine fabrics, dish washing, cleaning the family car and in cleaning industrial equipment, such as bottles and cans. It also is said to be useful as a basic ingredient in textile, tanning and dyeing industries and in the making of insecticides and herbicides.

Of especial interest to housewives, is the fact that the new detergent spells the doom of "bathtub ring." ...

Few persons except experts who developed them understand synthetic detergents, but whereas soap acts as a catalyst, most synthetic detergents are dissolvents.

Soap is a chemical compound made by combining fats with an alkali (potash or soda). Middle-aged persons who grew up on the farm or in small towns will recall the yellow home-made laundry soap which their mothers made by using waste fats and lye water. The lye water oftentimes was obtained by pouring rain water through a hopper of wood ashes numerous times. The result was a strong yellow soap which cleaned thoroughly, but lacked some of the more gentle qualities of our modern soaps.

While the chemical formula varies, generally speaking, synthetic detergents are composed of hydrocarbon chains derived in this case from petroleum, and modified by various chemical groups.

"Soapless soap" from petroleum performs equally well in any kind of water - hard, soft, hot or cold, and even in sea water. It produces more suds per amount used than does soap. A test performed with one brand of synthetic detergent showed that one teaspoon of the synthetic detergent was equal to 4 to 6 teaspoons of a well-known brand of soap. ...

From no production in 1928, the production of synthetic detergents leaped to 125,000,000 pounds during 1945. This still is little more than five percent of the 2,350,000,000 pounds of soap manufactured annually in the United States, where housewives place a premium on cleanliness.

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TEXACO TEST

The Texas Company's Clark and Wilson No. 6-1 test well, located near Mist, Western Columbia County, Oregon, had reached a depth of 4700 feet on February 18. No information on the drilling results is available.

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OREGON KING MINE TO RESUME

The Oregon King Mine, Jefferson County, a past producer of gold, silver, lead and copper, with principal values in silver, is to be reopened in the immediate future under the supervision of Carl V. Ohman, with William J. Murphy as mill superintendent and William J. Shannon as assayer.

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NEW CHIEF METALLURGIST ALBANY LABORATORY

Stephen M. Shelton has been appointed Chief of the Metallurgical Division of the U.S. Bureau of Mines' laboratory at Albany, Oregon, to succeed Bruce A. Rogers who is taking a leave of absence. Mr. Shelton has already taken over the work at Albany.

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CHROMITE

Most of the chromite produced in South Africa since the end of World War II has been exported to the United States as shown by the following statistics reprinted from U. S. Bureau of Mines Mineral Trade Notes, issue of December 20, 1946.

Union of South Africa: Production, local sales, and exports of chromite during 1944 and 1945 are given below in short tons:

	1944	1945	First quarter 1946
Production	98,006	109,229	41,683
Local sales	6,277	7,027	2,117
Exports:			
United States	22,584	184,447	36,522
Argentina	887	1,050	54
United Kingdom	32,318	5,650	2,320
Sweden	931	5,125	7,289
France	-----	-----	22
	56,720	196,272	46,207

The large increase in 1945 exports was due largely to the improvements in railroad and shipping facilities. Exports in 1945 exceeded the peak prewar production reached in 1938 of 194,626 tons averaging 44 percent Cr_2O_3.

For industrial uses, the ore is classified as concentrates, friable ore, and hard lumpy ore. The Union Department of Mines gives the following typical analyses of the ores:

	Concentrates, percent	Friable ore, percent	Hard lumpy ore, percent
Cr_2O_3	53.33	47.05	43.38
FeO	19.24	23.8	25.62
SiO_2	1.04	3.16	1.70
Al_2O_3	14.70	16.18	18.65
MgO	12.18	9.58	10.66
CaO	nil	.91	.10

(Minerals Attaché William O. Vanderburg, Pretoria.)

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PUMICE SHIPPED FROM TUMALO, DESCHUTES COUNTY

Walter A. Larsen is shipping pumice from a pit leased from the city of Tumalo, Deschutes County. Current production is approximately 15 cars per month, with shipments going to lightweight pumice building-block manufacturers located in Pendleton, Walla Walla, Portland, and other points. The deposit is reported to have an overburden of about two feet, with a 15-foot layer of pumice beneath. Rail shipments are made from Deschutes on the Great Northern Railroad. Larsen's operation is called the Volcanic Materials Company and is one of five similar operations now producing pumice in the Bend area. Equipment used at the plant includes a bulldozer, rolls, and screens.

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INTERIOR DEPARTMENT CLINGS TO LEASING POLICY

Interior Secretary J. A. Krug, in the annual report of his Department, states, in part:

"The Department's conviction that metallic minerals on the public domain as well as oil, coal, and potash should be leased rather than be taken over in fee simple has for some years met the opposition of the mining industry. The mineral and land agencies of the Department believe that the public domain is public property and that the national mineral situation is serious enough to demand that some supervision be exercised over the timing of mineral production. They also believe that some royalty should be paid into the public treasury on wealth located on and produced from the public domain. The industry generally believes that the hazards of prospecting and costs of extraction are already sufficiently high, and that the addition of payments on production is one straw too many, and holds back development. Some plan that would allow a basic net income after all costs and taxes and would provide for graduated royalties thereafter, might make the leasing proposal for minerals more acceptable to those small operators who would settle for a reasonable income instead of a killing."

(From News Letter, Mining Association of Montana, February 1947)

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CLEARING HOUSE

CH-92: FOR SALE OR LEASE 160 acres patented dredging ground on Pleasant Creek, Jackson County, Oregon, by Mrs. Sara C. Lowry, 502 East "A" Street, Grants Pass, Oregon.

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PUBLICATIONS

GEOLOGIC MAP SERIES	Price postpaid
1. Geologic map of the Wallowa Lake quad., 1938:W.D.Smith & others (see Bull.12)	$ 0.45
2. Geologic map of the Medford quad., 1939:F.G.Wells & others	0.40
3. Geologic map and geology of the Round Mountain quad., 1940: W.D.Wilkinson & others	0.25
4. Geologic map of the Butte Falls quad., 1941:W.D.Wilkinson & others	0.45
5. Geologic map and geology of the Grants Pass quad., 1940:F.G.Wells & others .	0.30
6. Preliminary geologic map of the Sumpter quad., 1941:J.T.Pardee & others . .	0.40
7. Geologic map of the Portland area, 1942:Ray C. Treasher	0.25
8. Geologic map of the Coos Bay quad., 1944:J.E.Allen & E.M.Baldwin(sold with Bull.27)	----
9. Geologic map of the St. Helens quad., 1945:W.D.Wilkinson, W.D.Lowry, & E.M.Baldwin (sold with Bull. 31)	----
MISCELLANEOUS PUBLICATIONS	
THE ORE.-BIN: issued monthly by the staff as medium for news about the Department, mines, and minerals. Subscription price per year	0.25
Oregon mineral localities map (22 x 34 inches) 1946	0.10
Oregon quicksilver localities map (22 x 34 inches) 1946	0.25
Landforms of Oregon: a physiographic sketch, (17 x 22 inches) 1941	0.10
Index to topog. mapping in Oregon,1946; index to geol. mapping in Oregon,1946	Free

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