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PRINTED: 10-12-2012

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: CASA GRANDE ROCKWOOL

ALTERNATE NAMES:

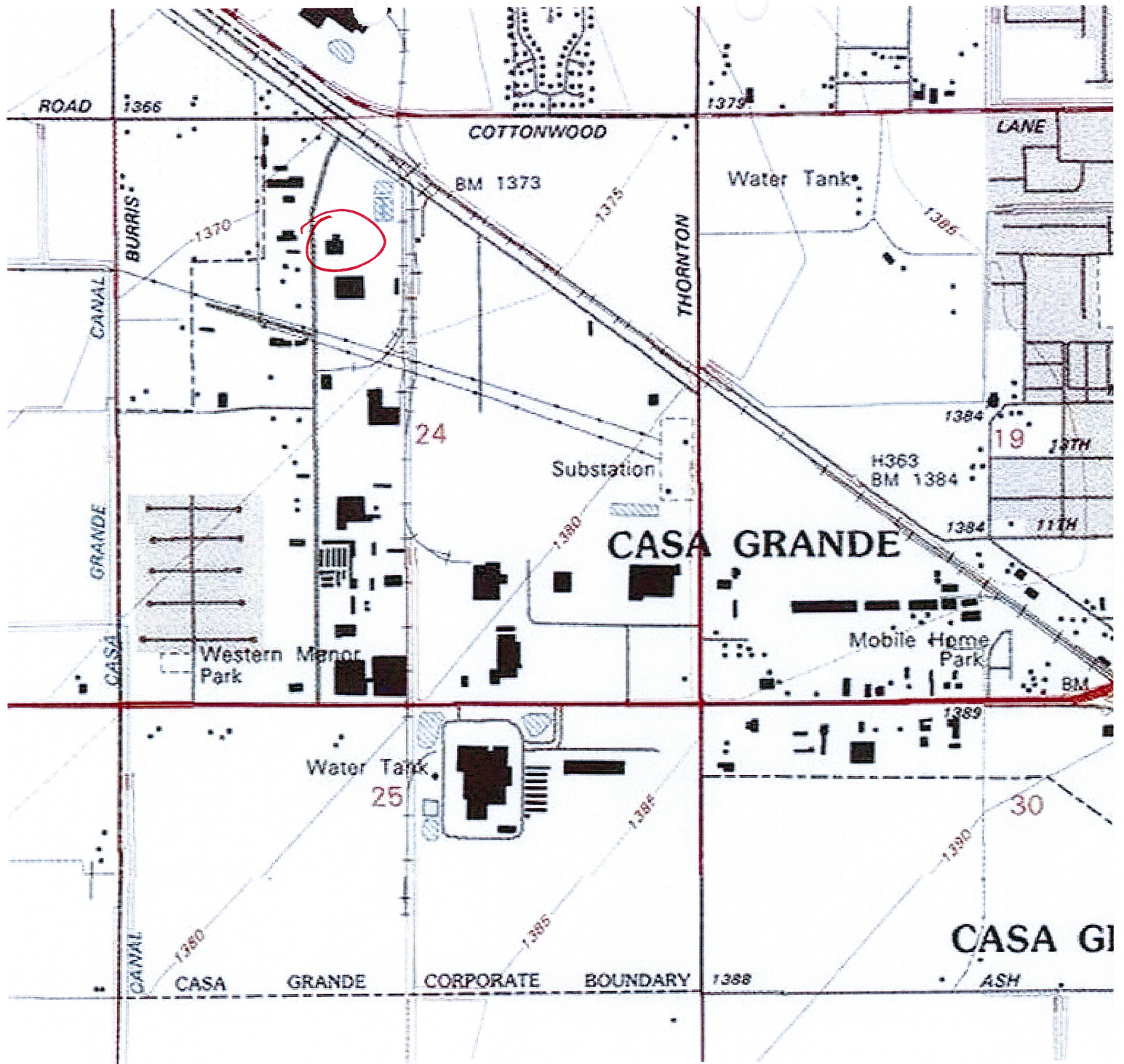
PINAL COUNTY MILS NUMBER: 802

LOCATION: TOWNSHIP 6 S RANGE 5 E SECTION 24 QUARTER N2
LATITUDE: N 32DEG 53MIN 22SEC LONGITUDE: W 111DEG 47MIN 05SEC
TOPO MAP NAME: CASA GRANDE WEST - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
MILL ROCKWOOL

BIBLIOGRAPHY:
ADMMR CASA GRANDE ROCKWOOL FILE
1474 N VIP BLVD, CASA GRANDE, AZ



ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

1. Information from: J.J. Dues, President
Company: Mineral Fibre International Ltd. Inc.
Address: 135 W. Dorothy Lane
Dayton, Ohio 45429
2. Phone: (513) 294-6650 home (513) 299-3397
3. Mine:
4. ADMMR Mine File: CASA GRANDE ROCKWOOL PLANT
5. County: Pinal
6. Summary of information received, comments, etc.:

Mr. Dues explained he plans to reopen and operate the Casa Grande Rockwool Plant to produce mineral wool insulation. He has purchased the equipment and leased or purchased the site and building. He is fully aware of the previous difficulties of the plant but feels operating permits will not be a problem. He is working with community leaders for support for the reopening of the plant.

Date: January 10, 1989

Ken A. Phillips, Chief Engineer

INFORMATION
ON
MINERAL WOOL
INSULATION
MANUFACTURING PLANT
LOCATED IN
CASA GRANDE, ARIZONA



Prepared By:

MINERAL FIBRE INTERNATIONAL, LTD., INC.
135 West Dorothy Lane
Dayton, Ohio 45429
513/294-6650

September 26, 1988

Rockwool Lapinus

ROCKWOOL LAPINUS is part of the ROCKWOOL INTERNATIONAL group which comprises 17 production units and marketing organisations in, among others, Denmark, Norway, Germany, United Kingdom, France, Holland and Belgium.

ROCKWOOL LAPINUS has the largest rockwool production plant in the World and has marketing organisations based in Rotterdam, Brussels, Roermond and Atlanta (USA).

During the last 20 years ROCKWOOL LAPINUS has accumulated substantial knowledge and experience in the fields of energy saving, insulation and other applications for rockwool fibres. Rockwool Lapinus B.V.'s technical staff will be pleased to supply any further information as required.

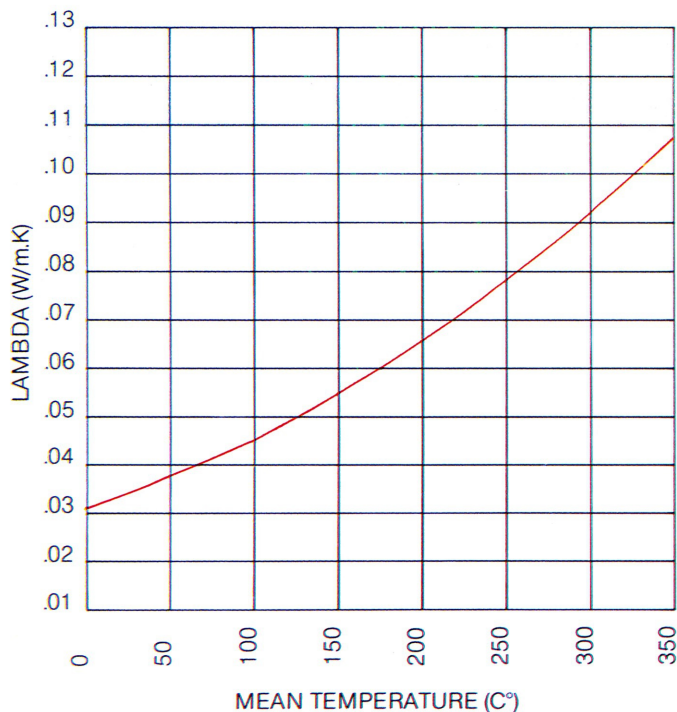
Rockwool Granulate

ROCKWOOL GRANULATE is manufactured from carefully selected volcanic rock which is melted down at a temperature of 1600 °C. The molten rock is then dispersed by the centrifugal force of the spinners to form fibres which can be used in several ways.



THERMAL CONDUCTIVITY

(density: 100 kg/m³)

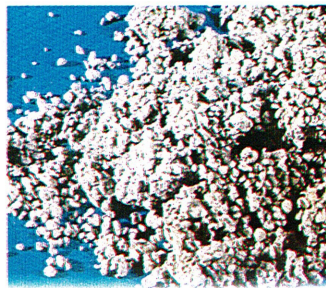


Rockwool Granulate

ROCKWOOL GRANULATE has a low thermal conduction coefficient, is sound-absorbing, non-inflammable, non-toxic in a fire and is admirably suited for all constructions which have to be both fire-proof and chemically neutral.

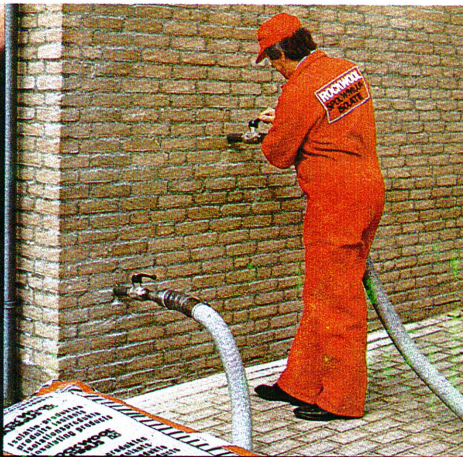
Because of its excellent qualities ROCKWOOL GRANULATE has a prominent position in the fields of:

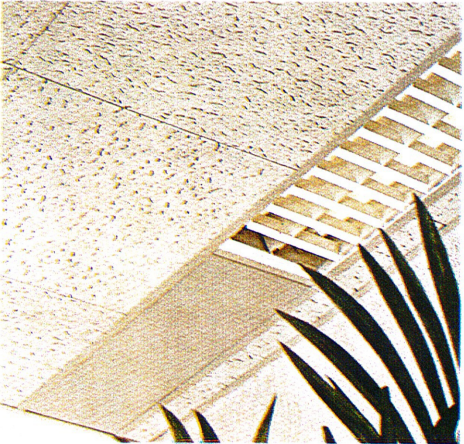

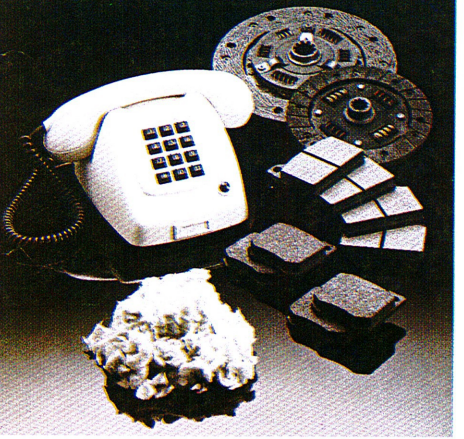

- THERMAL INSULATION
- FIRE-PROOF INSULATION
- SOUND PROOFING
- REINFORCEMENT OF CERTAIN MATERIALS (INSTEAD OF ASBESTOS)
- SUBSTRATE FOR THE HORTICULTURAL INDUSTRY.







ROCKWOOL

Natural fibres for a variety of applications



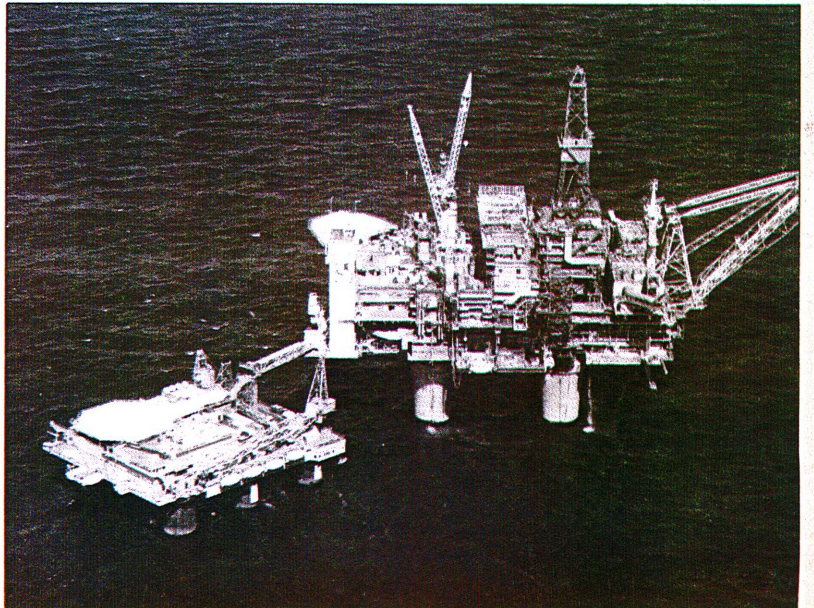
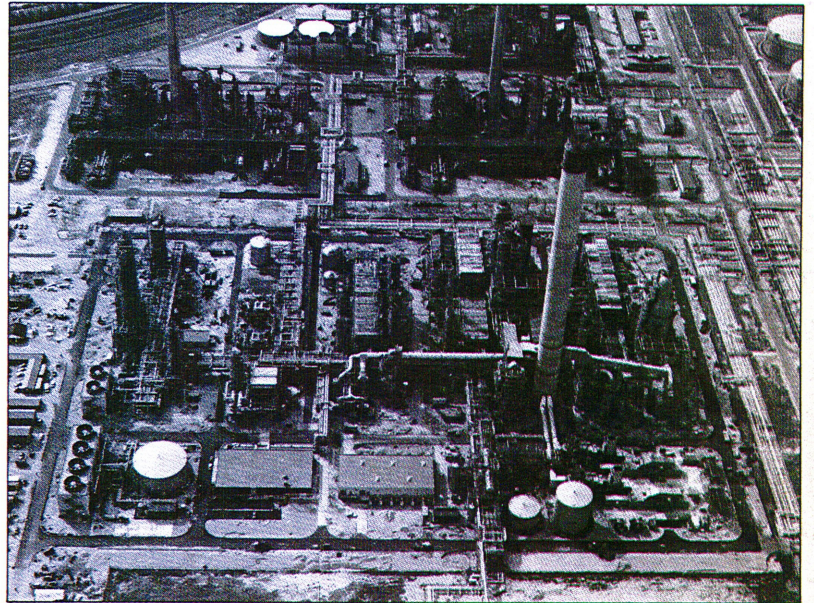
	Product group	Application
	001	<p>ROCKWOOL GRANULATE as an important raw material for the manufacture of mineral wool tiles, fire resistant slabs and concrete slabs.</p>
	010	<p>ROCKWOOL GRANULATE in various granule sizes for</p> <ul style="list-style-type: none"> - cavity fillings in constructions and industry - blow-in material for tanks and double-walled chimneys, etc. - acoustical insulation in silencers and sound-proofing.
	011	<p>ROCKWOOL GRANULATE as reinforcement or filling material for, among others, Brake linings, thermoplastics, thermosets and paints.</p>
	012	<p>ROCKWOOL GRANULATE in various forms as substrate in horticulture and for soil improvement.</p>

	Product group	Application
	013	ROCKWOOL GRANULATE as a basic material in fire-proof, thermal and acoustical sprays.
	014	ROCKWOOL GRANULATE as an insulation material for oxygen tanks at very low temperatures (-180 °C)
 	049 002	ROCKWOOL GRANULATE for improvement insulation as a filling material for cavity walls, lofts and other difficult to reach spaces.



**inverted roof
350**

Rockwool Insulation For All Onshore & Offshore Applications.



LIMITING AND SERVICE TEMPERATURE

The melting temperature of Lapinus fibers is over 1000°C (1800°F). The products are bonded with phenolic resin, which is resistant to temperatures up to 250°C (480°F). Certain types of faced products have a maximum working temperature of 80°C (175°F) on the faced side. The maximum service temperature of Lapinus products ranges between 250°C (480°F) and 750°C (1400°F), depending on the product.

SPECIFIC HEAT

The specific heat factor of Lapinus mineral wool is 0.84 kJ/kg per Centigrade (0.2 BTU/ lb per degree Fahrenheit).

ACOUSTICAL PROPERTIES

Lapinus manufactures products that are highly efficient sound absorbing materials and offer the ideal solution to the sound problems encountered in industrial environments.

Tests have shown that an excellent degree of sound reduction can be achieved with suitably-designed installations.

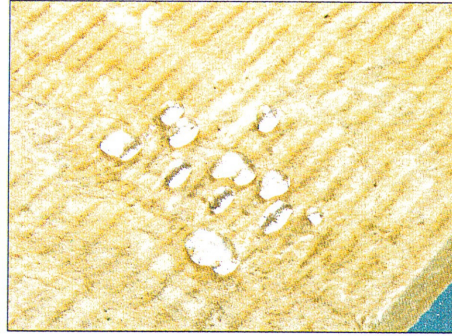
Inquiries on acoustical applications should be addressed to the Export Division.

RESISTANCE TO WATER

Thanks to the presence of water-repellent additives, Lapinus mineral wool is water repellent. It will not absorb water by capillary action

and ambient moisture from the atmosphere.

Should the wool become saturated with water, however, no damage will occur, and the original insulating properties of the material remain unaltered after drying.



CONDENSATION

The vapor resistance of Lapinus rockwool is negligible for vapor diffusion through a structure.

Compared with other building materials, it is usually considered to be zero. This is a considerable advantage as the moisture in a new building or construction can easily pass through the insulation as water vapor and cause the construction to dry out.

CHEMICAL INERTIA

Lapinus fibers are chemically inert. An aqueous extract of the fibers is neutral (pH 7) or slightly alkaline. Because of

their low leachable-chloride content, these products can be used together with austenitic steel.

BIOLOGICAL PROPERTIES

Lapinus mineral wool is biologically inert. It is unaffected by vermin and does not encourage the growth of fungi, molds, or bacteria.

COMPATIBILITY

Lapinus mineral wool is compatible with all other forms of material with which it is likely to come into contact in normal industrial and building applications.

HANDLING AND APPLICATION

Lapinus rockwool is lightweight and easy to handle. It is also easily cut to shape or size with a sharp knife.

More detail information is given in chapter 4 "Product Performances".

Product Properties

Technical properties of the basic material from which all Lapinus products are manufactured are listed below. Additional information is given in the section devoted to Technical Data.

CHEMICAL COMPOSITION

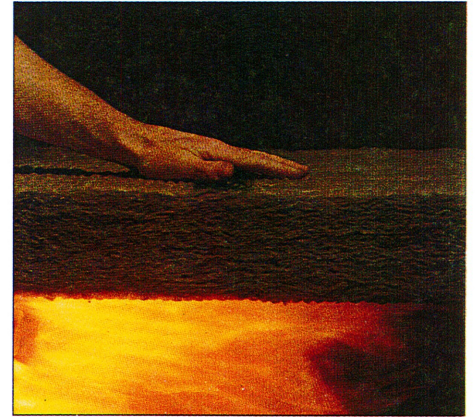
The rock fibers of Lapinus mineral wool are inorganic. Their composition is basaltic, with refractory oxide components deliberately increased to improve and enhance stability at higher temperatures. A complete chemical analysis is provided in the Technical Data section.

THERMAL CONDUCTIVITY

This is the primary product property of thermal insulation material. Lapinus products exhibit extremely low k-values even at lower densities because of its homogeneous structure.

FIRE PERFORMANCE

Mineral wool does not and cannot ignite. Lapinus mineral wool exhibits exceptional fire performance characteristics, and many products are rated non-combustible when tested in accordance with several international standards.



CASA GRANDE ROCKWOOL PLANT

KAP WR 4/22/88 cont: the bad name the previous operators had made for themselves and the plant in the community and that a potential new operator should be aware of the up hill battle they will face in trying to reopen the plant. According to the BLM microfiche the ARW 1-20 claims became void on September 1, 1986 for failure to file an affidavit of labor. Later placer claims located on the same ground by others have subsequently also become void for the same reason. If the plant could again be successfully and acceptably operated it would be a valuable addition to the local economy.

CASA GRANDE ROCKWOOL PLANT

KAP WR 12/5/86: A visit was made to the Casa Grande Rockwool Plant (file) Pinal County. The plant is totally shut down and fenced off. All stockpiled feed material is gone. A number of American Rockwool trucks and trailers are locked in the yard.

KAP WR 7/31/87: Phil Brant, Manager, Commercial Property, Del Webb Development Company, phone 876-3444 was contacted regarding the current status of the Casa Grande Rockwool Plant (file), Pinal County. I was particularly interested in the idle plant if it could be moved to Superior for Magma's use in making rock wool from their smelter slag, limestone and diabase. The plant is up for sale, either as a turn key rock wool plant, or as a well located manufacturing facility and warehouse with the rock wool equipment removed. Considering the negative feeling toward the plant in Casa Grande, it is doubtful that the community would allow the plant to ever operate there again. Mr. Brant said they currently have an option agreement with some people to remove the rock wool equipment and could break that option if Magma could decide they want to buy the equipment within the next 30 days. It is very doubtful that Magma would want to make a decision in such a short time frame. If the equipment is removed from the building, the Casa Grand Rock Wool Plant would cease to exist as mineral industry related facility.

KAP WR 4/8/88: Received a call from Dennis Johnson, Casa Grande, DBA Sun State Insulation, phone 836-3656, inquiring about the status of the Casa Grande Rockwool Plant (file) Pinal County. He purportedly is in touch with someone who is interested in acquiring the plant. The status of the plant was checked with Phil Brant, Manager, Commerical Property, Del Webb Development Company. His secretary reported that the plant is still intact and for sale, but just as it was last summer, the rockwool manufacturing equipment in the plant is under option to a possible buyer (not the same one as last summer.)

KAP WR 4/22/88: Dennis Johnson, Casa Grande (836-8514), who reports himself as being with American Rockwool called for information on the status of the ARW claims on the Southdown Basalt Deposit (file) Pinal County. He wants to acquire the deposit in the possibility that the Casa Grande Rockwool Plant (file) Pinal County may again be operated. He explained tha the industrial property, plant and rockwool manufacturing equipment is under option from Del Webb Corporation to an individual who hopes to operate the plant. Johnson was caustioned about

cont:

CASA GRANDE ROCKWOOL PLANT

PINAL COUNTY

KAP WR 2/10/84: Dennis Johnson reported he is now in charge of raw materials acquisition for American Rock Wool in Casa Grande.

KAP WR 2/24/84: Met with John Robertson, Smelter Superintendent at the New Cornelia Smelter of Phelps Dodge at Ajo. Discussions of PD's interest in precious metal bearing and the possible use of reverbratory slag by American Rockwool were held. Approximately 300 pounds of slag were obtained for testing at American Rockwool's Casa Grande Rockwool Plant, Pinal County.

KAP WR 3/2/84: A 300 pound sample of copper smelter reverbratory slag from the PD smelter at their New Cornelia Branch, Ajo, was delivered to American Rockwool at their Casa Grande Rockwool Plant, Pinal County. Met with Denis Johnson who is in charge of obtaining raw materials for the plant. They are still looking for just the right basalt. Further, they would like to find some nepheline syenite to try as about 10% of a trial melt. Such rock may provide a more fluid melt and reduce the gravity of free iron which drops out during melting and spinning.

NJN WR 3/30/84: Rudolph Gurle of American Rock Wool reported that they were seeking 20 ton samples of nepheline syenite. If satisfactory they could use up to 300 tons/month. Their request, nepheline syenite samples submitted and some suggestions were turned over to Mr. Phillips who is continuing to assist them in their raw material search.

KAP WR 7/19/85: Contacted Dennis Johnson at American Rock Wool (Casa Grande Rockwool Plant -file) Pinal County, about their current sources of materials. They are continuing to mine basalt at the Southdown Basalt Deposit (file) along I-8. They call the quarry their Table Top Quarry. It is mined intermittently by a contractor who delivers a 4-8 weeks supply to the rockwool plant as needed. They still need an Arizona source of high calcium, low silica and iron and low melting temperature rock to replace the steel mill slah they are buying form site of the old Kaiser Steel Mill at Fontana, California.

CASA GRANDE ROCKWOOL PLANT

PINAL COUNTY

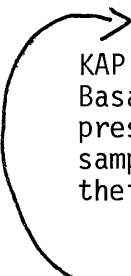
KAP WR 11/14/79: They report they will soon be producing mineral wool for insulation. Charles W. Miller is the manager. They is Sun State Insulation Company, 1474 VIP Blvd., Casa Grande, AZ 85222. Phone 836-3699.

KAP WR 2/1/80: Charles W. Miller, General Manager, Sun State Insulation Company brought in a sample of mineral wool from a pilot coupla. The rock wool is made entirely of Arizona raw materials and include the basalt, limestone, and copper slag. They are still looking for an acceptable source of basalt and are reviewing samples taken by the Department's staff.

RRB WR 11/27/81: Charles W. Miller, General Manager brought in samples of their product of Rock Wool. It is made of 40% Pinal basalt supplied by Pinal Materials from the Papago Reservation and 60% Marathon Steel Slag. Art is going to put them on display.

RRB WR 4/23/82: Charles Miller of Sun State Insulation in Casa Grande was in to try to find a new source of basalt. He reported that Pinal Material lease on the Papago Reservation is expired and he was not sure that it would be renewed. I have him a copy of Ken Phillips basalt study.

KAP WR 8/5/83: Casa Grande Rockwool, Inc., 1474 Valley Industrial Park, (VIP) Blvd., Casa Grande, Arizona 85222, has taken over (purchased from Del Webb Corporation) the Casa Grande Rock Wool plant from Sun State Insulation. Del Stacy is president of the corporation, Oliver Gould is chairman of the Board (and primary owner of the corp.), Robert M. Haase is their raw materials consultant. (All three of these individuals have been active in rockwool manufacturing for many years). Phone numbers: in Casa Grande 836-3699, in Arizona (800) 654-4866, out of Arizona (800) 654-4866, out of Arizona (800) 882-9922. The plant consumes basalt, slag, coke and limestone to produce rock wool insulation. The company is actively looking for nearby (<150 miles from Casa Grande) sources of usable basalt.

 KAP WR 12/9/83: James Bond II reported he has essentially leased the Suffolk Basalt (file) property to Del Tierra Engineering and Mining Corp. Harvey Smith, president, is to pay a royalty of 50 cents per ton to Mr. Bond. A 500 ton bulk, sample has been obtained from the deposit and delivered to American Rock Wool at their plant.

KAP WR 9/16/83 In the company of James E. Bond met with Del Stacy of American Rock Wool and discussed details of a basalt source for the rockwool plant. Mr. Bond is working to locate a source of suitable material and set up mining operation.

SUN STATE INSULATION PLANT

Information Packet

SUN STATE INSULATION PLANT
Property Description

Location:

1474 VIP Boulevard
Casa Grande, Arizona 85222
(See attached map)

General Plant Description:

Two line plant is capable of producing a minimum of 50,000+ tons of insulation annually on a 26 day/month three shift basis.

Equipment is in place to produce batts of from 1½" thickness to 9", and loose blowing wool. Batts can be produced as friction fit or with vapor barriers of kraft paper or foil.

Raw Material:

Raw materials for excellent production of mineral rockwool are available within a relatively short distance from the plant.

Coke needed for melting purposes is presently rail shipped in from Indiana or Tennessee.

Utilities:

Electric service is provided by Electrical District #2 and has proved to be satisfactory. (The plant has its own private line to substation.) Natural gas is supplied by Southwest Gas of Casa Grande, a customer of El Paso Natural Gas Company. Water is supplied by the City of Casa Grande.

Site Acreage:

10 Acres Industrial Land

Facilities Description:

Manufacturing Area:

Steel Building
50,000 square feet
Bays: (2) 100 ft. by 250 ft. clear span
600 amp electrical service
Sprinkled
Overhead door access
Loading dock
Superintendent office
Transportation office
Receiving office
Lunch room
Fully insulated
Restrooms

Office Facilities:

3,375 square feet attached to the main building, under separate roof.

Reception area, (2) secretarial areas, (2) purchasing offices, (4) sales offices, (1) general manager's office, adequate storage areas.

Heated and air conditioned centrally.

Restrooms

Storage Area:

Steel building
7,200 square feet--storage building and maintenance shop
The property is fenced - blacktopped and has a rail siding.

Del E. Webb
Development Co., L.P.

SUN CITY WEST DEVELOPMENT, INC.—LICENSED BROKER

July 31, 1987

Mr. Ken Phillips
Chief Engineer
Arizona Department of Mines
& Mineral Resources
Mineral Building, Fairgrounds
Phoenix, AZ 85007

RE: Sun State Insulation Plant

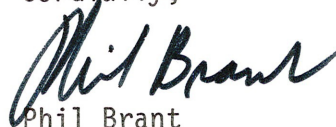
Dear Mr. Phillips:

Enclosed is an information packet on our plant.

We appreciate your willingness to help us dispose of the plant and/or equipment.

Please let us know if we may arrange a tour or other service for Magma, or any other entity.

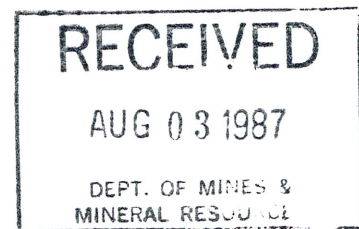
Cordially,



Phil Brant
Manager
Commercial Sales & Leasing

Enclosure

PB:pt



To: John H. Jett, Director
From: Ken A. Phillips, Chief Engineer
Subject: Current status of basalt mining activities for American
Rock Wool
ADMMR File: Casa Grande Rockwool Plant(file), Pinal County and
Southdown Basalt Deposit(file), Pinal County

Contacted Dennis Johnson at American Rock Wool {Casa Grande Rockwool Plant(file) Pinal County} about their current sources of materials. They are continuing to mine basalt at the Southdown Basalt Deposit(file) along I-8. They call the quarry their Table Top Quarry. It is mined intermittently by a contractor who delivers a 4 -8 weeks supply to the rockwool plant as needed. they still need an Arizona source of high calcium, low silica, low iron and low melting temperature rock to replace the steel mill slag they are buying from site of the old Kaiser Steel Mill at Fontana, California.

July 22, 1985

OLIVER GOULD
Chairman of the Board

CASA GRANDE ROCKWOOL, INC.
1474 VIP BOULEVARD - CASA GRANDE, ARIZONA 85222
SPRING HOPE ROCKWOOL, INC.
P.O. BOX 880 • SPRING HOPE, NC 27882

13601 PRESTON ROAD
BLDG. 3-A, SUITE 443
DALLAS, TEXAS 75240
214/661-1156 OFFICE
214/661-9664 HOME

602/836-3699
800/654-4866 AZ
800/882-9922 OTHER

919/478-5111
800/682-2968 NC
800/334-0394 OTHER

STAN JARONCZYK
Sales Manager

 **AMERICAN ROCKWOOL, INC.**

1474 VIP Blvd. - Casa Grande, AZ 85222

AZ 800/654-4866
Other: 800/882-9922

Office: 602/836-3699
Residence: 714/998-5226

Casa Grande Rockwool plant (file)

mm on



Arizona Testing Laboratories

817 West Madison Street □ Phoenix, Arizona 85007 □ 602/254-6181

For: American Rockwool
Attn: Mr. Dennis Johnson
1474 VIP Blvd.
Casa Grande, AZ. 85222

Date: October 19, 1984

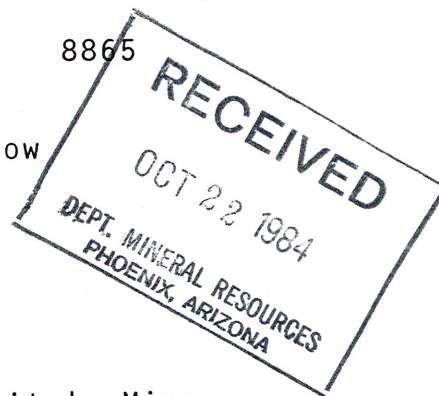
Lab. No.: 8865

Sample: Slag

Marked: See Below

Received: 10-12-84

Submitted by: Same



REPORT OF LABORATORY TESTS

	<u>Stanfield Mine Rock</u>	<u>White's Mine Traprock</u>
SiO ₂	43.3 %	33.7 %
CaO	7.9	10.9
MgO	2.2	14.4
Al ₂ O ₃	24.8	19.7
Fe ₂ O ₃	9.8	12.1
Sulfur	0.06	0.06

The Stanfield Mine Rock is basalt from the Southdown Basalt Deposit (file) developed by American Rockwool. This basalt has been used to manufacture rockwool insulation at their Casa Grande Rockwool Plant.

The "traprock" White's Mine at Knippa, Texas is considered the best material for the manufacture of rockwool insulation.

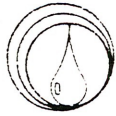
cc: Mr. Ken Phillips
Dept. of Mineral Resources
Mineral Building, Fairgrounds
Phoenix, Arizona 85007

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Claude E. McLean, Jr.
Claude E. McLean, Jr.

Casa Grande Rockwool Plant (file)
K a
WNY



Arizona Testing Laboratories

817 West Madison Street □ Phoenix, Arizona 85007 □ 602/254-6181

For: American Rockwool Inc.
Attn: Mr. Robert Corsentino
Plant Superintendent
1474 VIP Boulevard
Casa Grande, Arizona 85222

Date: August 2, 1984

Lab. No.: 7648

Sample: Limestone

Marked: See Below

Received: 7-31-84

Submitted by: Same

REPORT OF LABORATORY TESTS

	<u>Limestone</u>	<u>Basalt 1</u>	<u>Basalt 2</u>	<u>Fontana</u>	<u>Marathon</u>	<u>Coke</u>	
Silica	2.2	41.3	48.9	33.8	20.3	3.8	%
Alumina	0.05	18.2	24.1	10.9	15.2	2.5	
Iron oxide	0.2	6.4	8.0	1.1	15.9	2.2	
Calcium oxide	54.5	1.0	0.8	3.1	2.3	0.05	
Magnesium oxide	0.2	0.3	0.5	1.7	1.4	0.02	
Manganese	0.01	0.28	0.12	0.39	0.06	0.08	
Sulfur	0.007	0.005	0.01	1.22	0.03	0.07	
		<u>67.5</u>	<u>71.5</u>				

These analyses are of the raw materials used by American Rock Wool at the Casa Grande Rock Wool Plant (file) Pinal Co.

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Claude E. McLean, Jr.

1 MB

TO: John H. Jett, Director
FROM: Ken A. Phillips, Mineral Resource Engineer
SUBJECT: Status of Materials search for American Rockwool Plant in Casa Grande
DATE: April 25, 1984

STATUS OF MATERIALS SEARCH FOR AMERICAN ROCKWOOL PLANT IN CASA GRANDE

Since August 1983, the department has been involved in assisting the American Rockwool Company, 1474 VIP Blvd. Casa Grande, AZ 85222, in their search for deposits and other sources of raw feed for their mineral wool insulation manufacturing plant.

Initially their need was for a low melting point rock such as a special basalt or "trap" rock. Numerous sites were investigated and samples were obtained from 14 occurrences.

One occurrence, the Suffolk, was located as a group of lode claims by James E. Bond II of Welch, Virginia. Approximately 1250 tons of basalt from this property were quarried, crushed, sized and delivered to the rock wool plant for a test run.

A basalt occurrence known as the Southdown was located by American Rockwool after samples were submitted. No bulk testing has taken place on material from this occurrence.

A visit was made to Capitol Castings plant in Tempe to discuss the availability of their slag for use in rock wool production. Their slag is an acid slag, very high in silica and alumina and is not considered acceptable.

A 500 pound sample of slag from Phelps Dodge's Ajo smelter was obtained and delivered to the rockwool plant. No test results are available.

The management of American Rockwool has made a decision to attempt to produce a "white" mineral insulation. To make such a product, they feel a nepheline syenite should be a major constituent of the melt. However, the only parameter of raw materials, or in fact a mix of raw materials is a low melting point and the ability to "spin" fine springy fibers.

The department will continue to provide American Rockwool assistance in finding suitable local sources of raw materials.

The plant is currently using rock from a volcanic flow on the Papago Indian Reservation south of Casa Grande and slag from Fontana, California, El Paso, Texas and Marathon Steel in Tempe, Arizona.

The site of quarry in the volcanic flow is known as the Reservation Quarry. It is leased from the Papago Tribe and is located in the Silver Reef Mountains, Secs 23, 24, 25 and 26, T8S R5E.



STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA 85007
602/255-3791

February 29, 1984

Mr. Del Stacy
American Rock Wool
1474 VIP Blvd.
Casa Grande, AZ. 85222

Dear Mr. Stacy:

Thank you for the opportunity to visit with you and Dennis Johnson yesterday. This letter is to confirm the information I provided you regarding the copper smelter slag samples delivered yesterday.

The slag is a waste product of the copper smelter reverberatory furnace at the Phelps Dodge's New Cornelia Branch mining operation at Ajo, AZ.

The samples and the analysis were obtained through the assistance of Mr. J. M. Robertson, Smelter Superintendent. Mr. Robertson should be contacted for additional information and to discuss the availability of the slag. He can be contacted as follows:

Mr. J. M. Robertson
Smelter Superintendent
Phelps Dodge Corporation
New Cornelia Branch
Ajo, Arizona 85321
Telephone: (602) 387-6122

As we discussed a Mr. James Bush is currently active loading and hauling screened slag for aggregate at the Ajo site.

The average analysis of slag over the period 1979-1981 is as follows:

SiO ₂	38.2
Al ₂ O ₃	7.2
CaO	5.7
Fe	33.1
Fe ₃ O ₄	2.8
Sulfur	0.83
Cu	0.56

MoS ₂	0.35
Gold	0.001
Silver	0.02
Oxygen Ratio	2.13

Further, as we discussed, we will continue our effort to assist your firm in finding suitable raw materials.

Sincerely,



Ken A. Phillips
Mineral Resources Engineer

cc: Mr. J.M. Robertson, Phelps Dodge

KAP/ah



STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES

MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA 85007

602/255-3791

MEMORANDUM:

Engineer: Ken A. Phillips

Subject: Status and Operations at American Rock Wool Corporation's Casa Grande Rock Wool Plant including comments on their consumption and need of raw mineral products.

Date: September 19, 1983

File: Casa Grande Rock Wool Plant

Contact: Del Stacy, President

Address and Phone: American Rock Wool Inc,
1474 VIP Blvd.
Casa Grande, Arizona 85222
Phone: Local 602-836-3699
Az. Watts 800-654-4866
Outside Az. 800-882-9922

American Rock Wool manufactures spun mineral wool (similar to fibre glass insulation) from raw mineral products and metallurgical slag. The plant was previously owned by Del Webb Corporation and operated under the name of Sun State Insulation.

Rock, slag and coke are loaded into a vertical draft furnace and melted. The molten mixture flows by gravity to a high speed spinning wheel. The spun material is blown into a collection chamber where it is matted, a resin binder is added and batts are cut to size and packaged.

Currently the furnace is charged three times each hour. A charge consists of approximately 1,000 pounds of rock (rhyolite dacite), 1,000 pounds Fontana, CA. steel mill slage and 1,000 pounds of Marathon Steel slag. About 500 pounds of coke are added before each charge. Copper smelter slag is also usable.

Basalt or trap is the preferred rock type and if available would make up a larger portion of each charge. Their current rock (they call it basalt) is a flow banded high silica volcanic and is not really acceptable.

They have requested the Department's help in finding a more suitable rock type, preferably a basalt with a very low silica and alumina content and a low melting point.

Ken A. Phillips
Sept. 19, 1983

Important specifications include melting point of 2,200 F or less, silica 50% or less, combined silica and alumina 60%-65%, CaO and MgO 35% or more; iron-less than 15%; size 3" x 4" or 2" x 5" (about). The quantity needed is in the range of 4,000 to 8,000 tons per month.

Once a deposit is located they will need to obtain 50-100 ton bulk sample. They would hope to either have a contractor mine and deliver the material or to simply purchase the material from a supplier.

KAP/ap

cc: Tucson Office