

CURRENT INDUSTRIAL REPORTS SERIES

2007

MA327C — REFRACTORIES

DEFINITIONS AND SPECIAL INSTRUCTIONS

1. Scope of survey

This survey covers manufacturers of refractories.

2. Figures to be reported

Companies with more than one establishment manufacturing the products covered by this survey are requested to complete a separate report form for each location. If you have not received a separate form for each of your establishments, please call the contact listed on the back of the report form or write to the U.S. Census Bureau for additional forms.

Quantity of shipments — Report products shipped to customers or transferred to other manufacturing plants of your company during the year. Report shipments of products made in the reporting plant only. Do not include shipments of products manufactured in other plants of your company or products made by other manufacturers which were purchased by you for resale in the same condition.

Report all items in metric tons. Report brick and shapes in both metric tons and thousand 9-inch equivalents. (A 9-inch equivalent is a solid volume of 101.25 cubic inches; a metric ton equals 1.102 short tons.)

Value of Shipments — Report the net selling value of the total quantity shipped of each product. The reported figures should represent the net-selling price, f.o.b. plant, after discounts, allowances, and returns. Exclude freight charges and excise taxes. If freight charges are prepaid by you, deduct these charges from the values reported. Report value in thousands of dollars.

3. Definitions

SHIPMENTS OF REFRACTORIES AND REFRACTORY MATERIALS, BY TYPE

CLAY REFRACTORIES

Item code 3210 — High alumina brick and shapes and pouring pit refractories, fireclay and high alumina containing 50% alumina and over, including glass-house pots, tank blocks, feeder parts, and upper structure shapes, made predominantly of calcined bauxite, kyanite, andalusite and similar raw materials. "Calcined" as applied to bauxite implies heat treatment short of fusion for volume stability prior to use in a refractory product. In the process,

volatile materials are driven off and chemical changes take place.

Exclude mullite and extra high alumina refractories and molten cast. Report these products as nonclay refractories in item code 4130.

— Fireclay and bloating fireclay ladle brick. Include alumina ladle brick which contain less than 50% Al_2O_3 .

— Insulating fire brick and shapes. The subdivision of this code should be made in accordance with the ASTM Classification C-1 55, the respective groups being 16, 20, 23, 26, 28, and higher.

Item code 3220 — Refractory bonding mortars, wet and dry types. Include both airsetting and heatsetting bonding mortars which contain Al_2O_3 , dry basis, by analysis.

— Plastic refractories and ramming mixes. Include products referred to as plastic fire brick and the less plastic materials intended for ramming into place after the addition of water (when shipped in dry form). Exclude plastic refractories and ramming mixes of mullite or extra high alumina. Report products made of these materials in code 4140.

— Clay castable refractories (hydraulic setting), made from calcined fireclay, diaspore or bauxite base, and portland or calcium aluminate cements.

— High alumina castable refractories (hydraulic setting) 50% and over Al_2O_3 , made predominantly of bauxite, kyanite, andalusite, and similar raw materials.

— Fireclay gunning mixes, including less than 50% Al_2O_3 . Include aluminosilicate compositions less than 50% Al_2O_3 specifically engineered for gunning applications; may include hydraulic setting or other chemical bonding agents. Insulating gunning mixes (hydraulic setting). Density up to 105 pounds per cubic foot, less than 50% Al_2O_3 .

NONCLAY REFRACTORIES

Note: Molten cast refractories are made by fusing refractory oxides, as in an electric furnace, and pouring the molten material into molds to form finished shapes.

Item code 4110 — Extra-high alumina brick and shapes made predominantly of fused bauxite, fused or dense-sintered alumina. Exclude molten cast extra high alumina brick and shapes. Fused as applied to

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DEFINITIONS AND SPECIAL INSTRUCTIONS — Continued

3. Definitions — Continued

bauxite and alumina, means complete melting, as in an electric furnace. After cooling, the product is crushed and graded for use in the refractory. Dense-centered alumina refers to heat treatment (short of melting) to render it relatively volume-stable for use in a refractory.

— Extra-high alumina pouring pit refractories including sleeves, nozzles, runners, tuyeres, and ladle gate parts, made predominantly of fused and synthetic aluminas.

— Extra-high alumina mortars, made predominantly of fused or synthetic aluminas and mullites.

— Extra-high alumina castables (hydraulic setting), made predominantly of fused or synthetic aluminas and mullite.

— Other nonclay refractory castables (hydraulic setting). Include hydraulic-setting castables made from nonclay refractory materials and portland or calcium cements. Report clay castables in code 3220.

— Basic nonclay gunning mixes. Include chrome, chrome-magnesia, magnesia-chrome, magnesia, and dolomite gunning mixes. Extra high alumina castables which can be gunned should be reported in code 4140.

Item code 4191 — All nonclay refractory material sold in lump or ground form and used directly by consumer as a finished refractory, and exported material. Includes calcined clay, ground brick and siliceous and other gunning mixes.

Item code 4195 — All other domestic shipments of nonclay refractory materials sold in ground or lump form as a refractory raw material and for reprocessing in the manufacture of brick and other refractories. Do not include magnesite or dolomite.

4. Comparability

Data reported in this survey should correspond to data reported in the Economic Census - Manufacturing Sector form. The sum of values for item codes shown in column (a) should correspond to dollar values reported under product codes indicated in column (b) below.

| Current Industrial Reports (Form MA327C) | Economic Census Manufacturing Sector |
|---|---|
| Item codes (a) | Product codes (b) |
| 3210–3290 | 3271240100 |
| 4110–4195 | 3271250100 |

CURRENT INDUSTRIAL REPORTS SERIES

REFERENCE LIST

| FORM MA327C | | |
|---|-------------|--|
| REFRACTORIES | | |
| Product code | Item code | Item description |
| CLAY REFRACTORIES | | |
| Brick and shapes | | |
| 3271240125 | 3210 | Fireclay, high alumina, and insulating brick and shapes |
| Unshaped clay refractories | | |
| 3271240135 | 3220 | Refractory bonding mortars, castable refractories, and gunning mixes |
| Other refractory raw materials and refractory materials sold in lump or ground form, either for direct use by customer as a finished refractory product or as exported material | | |
| 3271240451 | 3280 | Clay and high alumina refractory raw materials |
| 3271240461 | 3290 | Clay and high alumina refractory materials |
| 3271240100 | 3200 | TOTAL VALUE OF CLAY REFRACTORIES (Sum of items 3210–3290) |
| NONCLAY REFRACTORIES | | |
| Brick and shapes | | |
| 3271250125 | 4110 | Magnesite and magnesite-chrome brick and shapes and chrome brick |
| 3271250135 | 4130 | All other brick and shapes |
| Unshaped nonclay refractories | | |
| 3271250145 | 4140 | Mortars, plastic refractories and ramming mixes, gunning mixes, and ceramic refractory fibers |
| Other nonclay refractory materials sold in lump or ground form, including ground silica. | | |
| 3271250256 | 4191 | Domestic shipments for direct use by customers as a finished refractory and all exported material |
| 3271250261 | 4195 | All other domestic shipments of nonclay refractory materials sold in lump or ground form as refractory raw materials (Do not include magnesite.) |
| 3271250100 | 4100 | TOTAL VALUE OF NONCLAY REFRACTORIES (Sum of items 4110 – 4195) |

10/31/07

DUE DATE: 30 Days After Receipt

OMB No. 0607-0392: Approval expires 07-31-09

REPORT FOR CALENDAR YR 2007
 U.S. DEPARTMENT OF COMMERCE
 BUREAU OF THE CENSUS
 FORM **MA327C**
CURRENT INDUSTRIAL REPORTS
 REFRACTORIES
 MANUFACTURER'S ANNUAL REPORT

The 8-digit number that appears above indicates that the Office of Management and Budget has approved this survey. If that number is not displayed, do not complete this form. **YOUR RESPONSE IS REQUIRED BY LAW** (Title 13, United States Code). By section 9 of the same law, **YOUR REPORT IS CONFIDENTIAL**. It may be seen only by persons sworn to uphold the confidentiality of Census Bureau information and may be used only for statistical purposes. The law also provides that copies retained in your files are immune from legal process.

In correspondence pertaining to this establishment's report, please refer to the 11 digit Identification Number (ID) 01234567890



ID 01234567890 541 00 0701 17 MA327C
 2007A1 MA327C

SEQ: 1

ATTN: Controller
 TEST

567 M
 DC AL 22222

If you have questions regarding this report form please contact:
 CASEY BRETZ EXT 3
 1(301)763-4736

EMPLOYER IDENTIFICATION (EI) NUMBER. Identification number used on Employer's Quarterly Federal Tax Return (U.S. Treasury Department Form 941) **(Enter if not shown, correct if wrong.)**

CONTACT PERSON (Enter information if not shown, correct if wrong.)

Name ATTN: Controller

Area code Number

Fax number

(Please correct any error in name and address including ZIP Code)

Enter or correct email address: []

PART I FOR EACH ITEM LISTED BELOW, ENTER FIGURES OR "0" for current period. (The figures shown in the shaded areas were reported for the previous two periods.) PLEASE REFER TO THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT FORM.

| Item (Product code - Description) | Item code | Report period | Shipments | | Value of Shipments FOB Plant \$1,000 | 4 | 5 | 6 |
|---|-----------|---------------|-------------|-----------------|--|---|---|---|
| | | | Quantity | Quantity | | | | |
| | | | Metric tons | 1000 9in equiv. | | | | |
| | | | 1 | 2 | 3 | | | |
| If BOOK FIGURES are not readily available, reasonable estimates are acceptable. | | | | | | | | |
| CLAY REFRACTORIES {see detailed product descriptions in manual} | | | | | | | | |
| 3271240100-TOTAL value of clay refractories {sum of codes 3210-3290} | 3200 | 2007 | | XXXXX | | | | |
| | | 2006 | | XXXXX | | | | |
| | | 2005 | | XXXXX | | | | |
| 3271240125-Fireclay, high alumina, and insulating brick and shapes | 3210 | 2007 | | | | | | |
| | | 2006 | | | | | | |
| | | 2005 | | | | | | |

* Figures not received when form was prepared. PLEASE ENTER, if not previously submitted.

CURRENT INDUSTRIAL REPORTS - Continued

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PART I - Continued

| Item (Product code - Description) | Item code | Report period | Shipments | | Value of Shipments FOB Plant \$1,000 | 4 | 5 | 6 |
|---|-----------|---------------|------------------------------|-----------------------------------|--|---|---|---|
| | | | Quantity Metric tons 1 | Quantity 1000 9 in equiv. 2 | | | | |
| 3271240135-Unshaped clay refractory bonding mortars, castable refractories, and gunning mixes {see manual} | 3220 | 2007 | | XXXXX | | | | |
| | | 2006 | | XXXXX | | | | |
| | | 2005 | | XXXXX | | | | |
| 3271240451-Clay and high alumina refractory raw materials | 3280 | 2007 | | XXXXX | | | | |
| | | 2006 | | XXXXX | | | | |
| | | 2005 | | XXXXX | | | | |
| 3271240461-Clay and high alumina refractory materials | 3290 | 2007 | | XXXXX | | | | |
| | | 2006 | | XXXXX | | | | |
| | | 2005 | | XXXXX | | | | |
| NONCLAY REFRACTORIES {refer to instruction manual for more detail} | | | | | | | | |
| 3271250100-Total value of nonclay refractories {sum of codes 4110-4195} | 4100 | 2007 | | XXXXX | | | | |
| | | 2006 | | XXXXX | | | | |
| | | 2005 | | XXXXX | | | | |
| 3271250125-Magnesite and magnesite-chrome brick and shapes and chrome brick | 4110 | 2007 | | | | | | |
| | | 2006 | | | | | | |
| | | 2005 | | | | | | |
| 3271250135-All other brick and shapes {see instruction manual} | 4130 | 2007 | | | | | | |
| | | 2006 | | | | | | |
| | | 2005 | | | | | | |
| 3271250145-Unshaped nonclay refractories, mortars, plastic refractories & ramming mixes {see instruc. manual} | 4140 | 2007 | | XXXXX | | | | |
| | | 2006 | | XXXXX | | | | |
| | | 2005 | | XXXXX | | | | |
| 3271250256-Other nonclay refract. materials - domestic shipments for direct use by customer - see manual | 4191 | 2007 | | XXXXX | | | | |
| | | 2006 | | XXXXX | | | | |
| | | 2005 | | XXXXX | | | | |
| 3271250261-All other domestic ship. of nonclay refrac. materials sold as raw materials - see manual | 4195 | 2007 | | XXXXX | | | | |
| | | 2006 | | XXXXX | | | | |
| | | 2005 | | XXXXX | | | | |

| ▶ PART I - Continued | | | | | | | | |
|--------------------------------------|-----------|---------------|---|---|---|---|---|---|
| Item (Product code - Description) | Item code | Report period | | | | | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 |
| | | | | | | | | |
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If all your items are not listed, please use additional lines or a blank sheet of paper.

▶ **PART II Has there been any change in the ownership or operation of this establishment during this period?**
 Yes - Indicate type of change below. No - Skip to Part III.

| | | | |
|--|-----------------|--|----------------|
| | Name of company | Address (Number and street, city, State, ZIP Code) | Date of change |
| A. <input type="checkbox"/> Purchased from | | | |
| B. <input type="checkbox"/> Sold to | | | |
| C. <input type="checkbox"/> Plant discontinued all operations | Date | | |
| D. <input type="checkbox"/> Plant operations no longer covered by this survey - Describe in "Remarks" the products currently produced. | | | |
| E. <input type="checkbox"/> Reorganized - Describe in "Remarks;" e.g., partnership change or change in corporate status. | | | |

▶ **PART III Do the figures shown on this report and on your last report cover the identical establishments?**
 Yes No - Indicate reasons for difference in "Remarks."

▶ **PART IV** Remarks

▶ **PART V CERTIFICATION** - This report is substantially accurate and has been prepared in accordance with instructions.

| | | |
|----------------------------------|-------|------|
| Signature of authorized official | Title | Date |
|----------------------------------|-------|------|

| | | |
|---|---|--|
| Complete and return this form in the envelope provided or to: | Bureau of the Census 1201 East Tenth Street Jeffersonville, IN 47132 | NOTE: Please make a photocopy of this for your records. |
|---|---|--|