

FROM F. E. MUELLER
INGOT AND POWDER DIVISION
PITTSBURGH OFFICE - 23

TO MEMORANDUM

② RPC

~~4-7-73~~

August 15, 1973

RE: ASBESTOS FREE TROUGH LINING MATERIALS
Ref: Memorandum, F. E. Mueller to D. R. Barch, Dated 4/4/73,
Re Same Caption

The reference presented recommendations for the captioned which generally amounted to replacement of asbestos shorts mixtures and sawed Marinite trough linings with Johns-Manville JM375-L. Summarizing the progress made since April, of our thirteen casting plants:

- 5 have converted to JM375-L
- 4 are evaluating JM375-L
- 3 are evaluating other non-asbestos materials
- 1 has converted to another non-asbestos material

The table attached to the present memo shows those casting plant locations between the furnace and the mold where asbestos containing materials have been used and the specific progress and program to replace these materials.

F. E. MUELLER

PLAINTIFF'S
EXHIBIT
AL-813

FEM/mj

distribution reverse side



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PLANT	REFRACTORY POSITION	PREVIOUS ASBESTOS TYPE MATERIAL	PROGRESS	PROGRAM
BADIN	B/T Filter and Basin HDC Basin FDC Pots	Marinite (contains asbestos) "	JM375-L evaluated satisfactorily at HDC drop-ins. JM375-L now a stores item.	Will evaluate JM375L in casting troughs and then FDC pots
CRESSONA	B/T Furnaces B/T Furnace and filter B/T Filter and Distribution basin Distribution basin and pots	Brick and Asbestos-lumnite SJP or asbestos-lumnite Asbestos-lumnite Asbestos-lumnite and Marinite	JM375-L now a stores item replacing asbestos shorts (JM-352) JM375-L being used routinely with no problems.	Will use JM375-L as trough linings need replacement. FDC pots still Marinite.
DAVENPORT	B/T Furnaces B/T Filter and basin Basin	Brick and asbestos-lumnite Glasrock and Marinite Glasrock and Marinite	Evaluating B/T furnace and filter.	Expect to go to B/T furnaces and B/T furnace and filter. Will go to Glasrock in basin and B/T filter and basin.
LAFAYETTE	B/T Furnaces B/T Furnace and filter B/T filter and basin Basins and FDC pots	Asbestos-lumnite " " and Marinite	JM375-L now a stores item replac- ing asbestos shorts.	Will substitute JM375-L for asbestos-lumnite as trough linings need replacement.
MASSENA	B/T furnaces B/T furnace and filter B/T filter and basin Basin and FDC pots	Asbestos-lumnite " " "	JM375 evaluated satisfactorily. JM375-L FDC pot lining being evaluated.	Will use JM375-L as trough linings need replacements. Expect evaluation to approve JM375-L for FDC pot lining.
POINT COMFORT	B/T furnace and filter B/T filter and basin Basin	Marinite " "	JM375-L on order for evaluation	Evaluate JM375-L.
ROCKDALE	B/T furnace and filter Filter B/T filter and basins Basins	Asbestos-lumnite " " Marinite	Filters are all brick now. JM375-L evaluated, approved for all lining applications including HDC basins. About half converted.	Will convert remaining 50% of trough linings to JM375-L.
ROCKDALE PDR.	B/T furnace and nozzles	Marinite	-	Will convert to JM375-L.
TENNESSEE NP	None	No asbestos type linings used.	Evaluating Thermotec Castable (non-asbestos)	
TENNESSEE SP	B/T furnaces and filter B/T filter and basin Basins	Marinite " "	Evaluating Thermotec Castable in DC trough.	Complete Thermotec Castable evaluation.
VANCOUVER	B/T furnaces B/T furnaces and filter Filters B/T filters and basin Basin and pots	Asbestos-lumnite " " "	-	Obtain and evaluate JM375-L. Obtain and evaluate R-340 and R-616 for short term FDC operation.
VERNON	B/T furnaces B/T furnace and filter B/T filters and basin Basin and pots	Asbestos-lumnite " " Glasrock and asbestos-lumnite	-	Obtain and evaluate JM375-L
WARRICK	B/T furnaces B/T furnace and filters B/T filters and basins Basins	Marinite " " "	R-340 and R-616 drop-in trough sections installed B/T holder and filter undergoing long term HDC evaluation	Complete R-340 and R-616 evaluation
WEWATCHEE	B/T furnaces and filters A-263 Filter B/T filter and basin Basin	Asbestos-lumnite " " Marinite	Tried JM375-L and had some cracks but felt this due to water content.	Will convert to JM375-L as trough linings are replaced.

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→ R.G. LABAR
ATC

FROM PITTSBURGH PURCHASING
INDUSTRIAL MATERIALS
AND CHEMICALS - 19

TO MEMPHIS

May 16, 1973

MY 18 4 3

RE: JOHNS-MANVILLE 375L Cement
IN003416PA JOHNS MANVILLE

By means of Change Order No. 1, we have added John-Manville's 375L Cement to the referenced Agreement. This asbestos-free material is a recommended substitute for asbestos-talcum in molten metal operations.

The Johns-Manville 375L can be combined with Superox Block shipments out of Waukegan, Illinois; and the material is available in the following packages:

50 lb. paper bags @ \$2.75/bag FOB Waukegan, Illinois

25 lb. plastic bags @ \$2.35/bag FOB Waukegan, Illinois

Johns-Manville will carry an inventory of 15 tons per month for Alcoa releases. This inventory will consist solely of the material packaged in 50 lb. paper bags. If your location prefers plastic bags, we suggest that you immediately notify Johns-Manville's Pittsburgh Office (Miss Pat Keegan) of your estimated monthly usage.

M. J. CAPRIO

MJC/lmp

mjc

Distribution:

R. D. Griswold - Alcoa, Tennessee
H. A. Barton - Badin
J. K. Chambers - Bauxite
W. E. King - Cleveland
T. B. Weber - Corona
A. E. Gantt - Cressona
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G. H. Duckworth - Massena
O. E. Proctor - Alcoa Technical Center
J. V. Driscoll - Mobile
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C. G. Shiring - Rockdale
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C. J. Shank - Wenatchee
F. E. Mueller - Pittsburgh 23
D. R. Borch - Oliver Plaza 8

7315218

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R. G. LA BAR - ALCOA TECHNICAL CENTER

FROM PITTSBURGH PURCHASING
INDUSTRIAL MATERIALS
AND CHEMICALS - 19

TO MEMORANDUM

APR 16 1973

April 12, 1973

RE: ASBESTOS-FREE TROUGH LINING
J-M 375-L

Johns-Manville's J-M 375-L (Fiberglass-Lumnite) is an asbestos-free material recommended for the following trough lining applications:

- (a) holding furnace to molten metal treatment process.
- (b) downstream of molten metal treatment process in both troughs and distribution pans.

Today J-M 375-L is available only on special manufacture orders and is not a warehouse item. However, because of our intent to purchase J-M 375-L, Johns-Manville will maintain a stock of this material at their manufacturing site in Waukegan, Illinois, for exclusive use by Alcoa. This site is the shipping point for Superex, and a freight savings may be realized in combining shipments of Superex and J-M 375-L.

To arrive at a satisfactory inventory level for J-M 375-L at the vendor's site, we request each plant to forward to my attention their estimated monthly usage of this material. All ingot plant personnel have been alerted on the use of this material by Mr. F. E. Mueller's letter of April 4, 1973.

In order to expedite the availability of J-M 375-L, your estimated usage is requested by May 1, 1973.

M. J. CAPRIO

MJC/lmp *mjc*

DISTRIBUTION:

See Page 2

751-4494

ALCOA0000009718

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April 12, 1973
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DISTRIBUTION:

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D. J. Fisher - Vancouver
C. A. Halliday - Vernon
J. D. Eagan - Warrick
C. J. Shank - Wenatchee
H. A. Wolff - Suriname Aluminum Company

D. R. Barch - Pittsburgh, Oliver Plaza 8
C. J. Cox/R. E. Albrecht - Pittsburgh, Oliver Plaza 8
F. E. Mueller - Pittsburgh, 23
J. Z. Nelson - Pittsburgh, Oliver Plaza 7
A. J. Sartschev - Pittsburgh, Oliver Plaza 7
R. G. LaBar - Alcoa Technical Center

731-4301

ALCOA0000009719

MESSRS. ~~T. B. BOWNEY~~/R. P. CARTER - PITTSBURGH 7

FROM D. R. BARCH
PITTSBURGH OFFICE

TO MEMORANDUM

R. G. LaBAR
ALCOA TECHNICAL CENTER

April 27, 1973

RE: RECOMMENDATIONS FOR TROUGH LINING INSTALLATION
Ref: Memorandum, F. E. Mueller & D. R. Barch, "Asbestos Free
Trough Lining Materials," April 4, 1973

This memo provides recommendations for preparation, installation, in-service care, and precautions for asbestos free trough lining materials outlined by Mueller and Barch.

Recommendations for Preparation and Installation

A. Melter to Holder

Castables (2 in. minimum thickness): Alcoa C-1, Wahlcast SJP, Kastolite 30, Alfrax 28A, alternatively fused-silica castables (Glasrock 840, Silfrax ARC, Thermosil 120, H-W Visil).

1. Use manufacturer's recommended water addition for pouring. Mix thoroughly, preferably in a cement mixer.
2. Use plywood forms coated with oil, grease, polyethylene sheet stapled to forms.
3. For best results tack weld expanded metal mesh liner (2.5 diamond mesh lathing) to inside of trough. Liner should be 1/2 to 1 in. from inside of trough surface.
4. Post-casting procedure:
 - a. Cover casting with plastic sheet for 24 hours.
 - b. Dry casting in air for 24 hours.
 - c. Castables should be heated slowly to 600F prior to use, preferably overnight.

Caution: Avoid flame impingement and rapid heatup.

5. Coatings are recommended, especially for high Mg alloys. Recommended coatings are: Plistix 900 (add sufficient water for wash coating).

Brick: Coral P or Chas. Taylor 12054

- a. Use 85% alumina phosphate bonded mortar.
- b. Standard practice for refractory brick installation.



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B. Holder to Molten Metal Treatment Process

Moldables (2 in. minimum thickness): JM-375L, JM-375L + JM-460 (50-50 mixture), alternatively fused-silica castables (refer to A above).

1. Avoid excessive water. Use approximately 75-100% by weight to form a soft ball in hand consistency.
2. May be hand tamped and trowel finished or tamped around a form.
3. For best results use expanded metal mesh liner as in item A-3 above.
4. Post forming procedure: Follow same schedule as outlined in item A-4 above.
5. Coatings recommended:

J-M Cerakote
Plistix 900 (wash coat)

C. Downstream of Filters (both trough and distributor)

Moldables (1-2 in. thickness): JM-375L, JM-375L + JM460 (50-50 mixture).

1. Follow same procedure as outlined in B above.

Drop-In Liners: Glasrock foam (50 pcf)

1. Follow manufacturer's recommended installation and coating procedures. Alternatively a wash coat of Plistix 900 could be used instead of manufacturer's recommended coating.

In Service Care

1. Avoid excessive preheating. If preheating is necessary, apply uniform heat, avoiding hot spots and direct flame impingement.
2. Avoid mechanical abuse.
 - a. Install protective caps over linings near tap spouts.
 - b. Lift skulls by hand, minimize scraping and/or gouging.
3. Extra care is required when installing dams in drop-in liners to avoid breakage. Recommend use of ceramic fiber paper (Fiberfrax, Cerapaper, etc.) gasketing around dams and joints.

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4. A program of scheduled inspection and maintenance should be implemented.

It is recognized that individual plant differences exist in trough usage and design, but it has been concluded that these differences can be taken care of if made known and discussed.

The ingot plant metallurgists are requested to inform F. E. Mueller of contacts with various vendors and receipt of sample materials. In addition, brief feedback on plant experiences, either pro or con, with the recommended materials are requested.

New materials and/or revised procedures for installation and use will be added to the list as they develop.


D. R. BARCH
R. G. LaBAR

RGL:sh

cc: TID
M. J. Caprio - Pittsburgh 19
F. E. Mueller - Pittsburgh
J. Z. Nelson/A. J. Sartschev - Pittsburgh Oliver Plaza
R. E. Albrecht - Pittsburgh Oliver Plaza
C. J. Cox - Pittsburgh Oliver Plaza
R. W. Wrenn/J. A. Dunbar - Pittsburgh 23
T. B. Bonney/R. P. Carter - Pittsburgh 7
V. W. Rieke - Pittsburgh 24
J. H. Mudge - Badin
R. C. Hinkle - Badin
R. L. Givens - Badin
J. H. Baugh - Badin
C. T. Barger - Badin
W. E. Goza - Badin
R. C. Ashurst - Cressona
B. J. Axelsson - Cressona
R. B. Hanson - Cressona
N. O. Kraft - Cressona
E. J. Schafer - Cressona
D. D. August - Davenport
L. D. Dunlap - Davenport
R. P. Dieffenbach - Davenport
R. J. Reitz - Davenport
J. W. McIntee - Davenport
J. D. Yerger - Davenport

ALCOA0000009722

Memorandum
April 27, 1973
Page Four

cc (Cont.)

W. G. Allen - Lafayette
W. K. Dalton - Lafayette
J. B. Dolan - Lafayette
P. M. Tomalin/J. E. Jacoby - Lafayette
F. R. Knox - Lafayette
J. J. Hicks - Logans Ferry
W. D. Helmick - Logans Ferry
G. B. Campbell - Massena
R. W. Knapp - Massena
G. H. Lantz - Massena
B. A. Schafer - Massena
J. N. Rumble - Pt. Comfort
C. L. Green - Pt. Comfort
D. N. Harvey - Pt. Comfort
R. A. Molsberger - Pt. Comfort
R. M. Rose - Pt. Comfort
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G. L. Paolino - Rockdale
R. E. Aungst - Tennessee
L. L. Held - Tennessee
J. C. Vergho - Tennessee
J. N. Lehigh - Tennessee
R. L. Dearstone - Tennessee
D. E. Luckett - Tennessee
C. R. Windbigler - Tennessee
B. R. Hood/E. L. Rooy - Tennessee
H. F. Godges - Vancouver
P. F. Woodward - Vancouver
L. J. Sullivan - Vancouver
A. M. Shanks - Vancouver
M. Scherbak - Vancouver
W. C. Harvey - Vernon
J. R. Jones - Vernon
L. F. Hughes - Vernon
R. J. Stokwicz - Vernon
M. L. West - Warrick
R. L. Parsons - Warrick
J. A. McCune - Warrick
B. Anderson - Warrick
M. L. Redhair - Warrick
N. L. Lawson - Warrick
C. R. Seltzer - Wenatchee
J. A. Thompson - Wenatchee
K. A. Isaksen - Wenatchee
J. L. McKinstry - Wenatchee
J. E. Gunn - Wenatchee
R. C. Studley - Wenatchee

W. P. Helsley - Suriname
O. R. Gonsalves - Suriname
N. L. Sundaram - Suriname
J. R. Herrick - ATC
R. J. Ormesher - ATC
C. R. Howle - ATC
L. Resch - ATC
R. Bachowski/G. Ponzani - AT
R. E. Spear/G. K. Turnbull &
Div. File
12B10319

cc: A. F. Malort, Corona & R. H. Allen, Corona (5/29/73)

ALCOA0000009723

FILE COPY

TO MEMORANDUM

FROM: F. E. MUELLER
INGOT AND POWDER DIVISION
PITTSBURGH OFFICE - 23

April 6, 1973

RE: ASBESTOS-FREE TROUGH LINING MATERIALS
Ref: F. E. Mueller and D. R. Barch to Memorandum, 4/4/73,
Re Same Caption

The referenced memorandum presented recommendations for asbestos free materials in trough lining applications. These recommendations were agreed upon at a March 21, meeting of ATC and Pittsburgh personnel wherein plant and ATC development programs were also discussed. Table I reveals the present materials being used at each of our production plants, and it is readily evident that we are presently deeply involved in asbestos usage. Also shown in Table I are the asbestos free materials either already under investigation or being proposed for investigation at the plants. It is encouraging to note that the recommended JM-375L is already being considered by half of the plants. Unfortunately, Table I also reveals that some plants have:

- 1) spent "X amount" of time, effort, or money on evaluation of previously known unsuitable materials
- 2) unsuitably evaluated suitable materials
- 3) are investigating materials totally unknown to both ATC and Pittsburgh

To minimize the possibility of misdirected effort, the review at the above meeting covered those materials either previously or presently being evaluated at ATC. These materials are shown in Table II. These materials fall into the four natural categories as shown. Comparative data are shown, where available, and continuing work at ATC will provide the lacking and additional data from the following areas of investigation:

- 1) R-340 and R-616 - Basic data shown in Table II. These materials show great promise but are presently in the development stage at one plant (Warrick) working with ATC. A small plant will be contacted to simultaneously evaluate these materials under a development program as smaller plants do not have the same service requirements as Warrick.
- 2) Consolidated Ceramic Products - Moldable Mix #3924
ATC will evaluate this material in cooperation with Vernon Works, but this material is still to be considered in the research stage.
- 3) General further refinement of:
 - a) Vacuum formed drop-in trough liners from Foseco and Babcock & Wilcox.
 - b) Various materials such as Kast-O-lite 30, Mandoseal, JM-375L, coatings, mortars, and installation procedures.
 - c) Refractory resistance to salt penetration.



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Memorandum
April 6, 1973
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The ingot plant metallurgists are requested to inform this office of contacts with various vendors and receipt of sample materials. In addition, brief feedback on plant experiences, either pro or con, with the recommended materials are requested.

F. E. MUELLER

FEM/mj

cc: M. J. Caprio - Pittsburgh Office (19)
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C. J. Cox/R. E. Albrecht - Pittsburgh, Oliver Plaza
D. R. Barch - Pittsburgh, Oliver Plaza
R. E. Spear/G. K. Turnbull - ATC
C. R. Howle/R. G. LaBar - ATC
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D. E. Lockett - Tennessee Operations
C. R. Windbigler - Tennessee Operations
M. Scherbak - Vancouver Operations
R. J. Stokwicz - Vernon Operations
M. L. Redhair - Warrick Operations
J. E. Gunn - Wenatchee Operations
O. R. Gonsalves - Suriname Operations
C. T. Barger, Jr. - Badin Operations
R. P. Dieffenbach - Davenport Operations
F. R. Knox - Lafayette Operations
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R. A. Molsberger - Pt. Comfort Operations
R. L. Givens - Badin Operations
B. J. Axelsson - Cressona Operations
L. D. Dunlap - Davenport Operations
W. G. Allen - Lafayette Operations
J. R. Herrick - ATC
B. A. Schafer - Massena Operations
D. N. Harvey - Pt. Comfort Operations
W. R. Smith - Rockdale Operations
J. N. Lehigh - Tennessee Operations
A. M. Shanks - Vancouver Operations
L. F. Hughes - Vernon Operations
B. Anderson - Warrick Operations
K. A. Isaksen - Wenatchee Operations

ALCOA0000009725

PLANT TROUGH LINING MATERIALS

TABLE I

PLANT	PRESENTLY USED MATERIALS	PRESENTLY EVALUATING MATERIALS
BADIN	Castable before filters Glasrock after filters Some marinite and some asbestos-lumnite	Johns-Manville 375 ¹
CRESSONA	High-alumina brick, castable and asbestos-lumnite before filters. Asbestos-lumnite or marinite after filters	JM-375 and JM-460 on order
DAVENPORT	Brick or castable before filters Glasrock and marinite after filters.	
LAFAYETTE	Asbestos-lumnite	JM-375 and JM-460
MASSENA	Asbestos-lumnite before filters. Marinite after filters.	JM-375 and JM-460
POINT COMFORT	Marinite	Fused silica found unsatisfactory.
ROCKDALE	Asbestos-lumnite converting to JM-375 across the board.	Evaluated JM-375, JM-460 and Harchrome. Found all equal.
TENNESSEE NORTH PLANT	Glasrock Thermotec	R-340
TENNESSEE SOUTH PLANT	Marinite	Thermotec material in DC trough. Glasrock failed at tap-hole.
VANCOUVER	Asbestos-lumnite	Glasrock, JM-375 Fibrebrax or Kaowool to replace asbestos filters.
VERNON	Asbestos-lumnite	Consolidated Ceramic products #3924-Moldable mix.
WARRICK	Marinite	R-340 and R-616
WENATCHEE	Asbestos-lumnite Marinite	JM-460

¹All plants have been notified to request JM-375L

TABLE II
ASBESTOS-FREE TROUGH LINERS

TYPE	MATERIAL	ARL TEST RESULTS		DENSITY pcf	SERVICE TEST RESULTS	PRESENT COST UNIT LENGTH OR PER LB	COMMERCIAL SOURCE	REMARKS
		72 HR CUP 7075	B IMPRESSION					
Pre-Cast Drop In	R-340 (REG.)	Exc	Exc	95	Molten metal contact exc, strength-fair	No. 4 trough \$22.48/ft.	Thermo-Materials* Atlanta Georgia	In dev. tests at Warrick
"	R-340 (Foam)	(not tested)		60	In use at ATC, Arnold Molten metal contact exc, strength-fair	No. 4 trough \$14.20/ft.**	"	In res. tests at ATC
"	R-616 (Fused Silica-CA25)	Exc	Exc	88	Molten metal contact exc, strength-good	No. 4 trough \$15.00/ft.	Sil Bess Co.* Munhall, Pa.	In dev. tests at Warrick
"	Glasrock Foam				(must be coated) in use at Tennessee strength-good	No. 4 trough \$22.50/ft.	Glasrock Products	In use at Tennessee
Castable Mix	East-o-lite 30	Good		80	Limited experience to data. Molten metal contact - good strength-exc.	\$.1875/lb.	A. F. Green	In res. tests at ATC
"	Glasrock 840 (Coarse Fused Silica CA25)	Good	Good	111	Molten metal contact-good strength-exc.	\$.157/lb.	Glasrock Products Atlanta, Georgia	Coarse aggregate should not be used downstream of filters.
"	Glasrock 820 (Fine Fused Silica-CA25)	Good	Good	110	Molten metal contact-good strength-exc.	\$.244/lb.	Glasrock Products Atlanta, Georgia	Requires a Plystix 900 or Cera-coat coating.
"	Lo-X (Tool Grade)	Good	Good		Molten metal contact-good strength-exc.	\$.57/lb.	Fryor-Giggy Co.	Expensive
"	Sil Frax ARC****	Exc.		115	Molten metal contact-good strength-exc.	\$.328/lb.	Carborundum	Equivalent to Glasrock 820 Expensive
Moldables	JM-460 (Mineral wool sodium-silicate binder)			(34) dry	High shrinkage on curing	\$.125/lb.	Johns-Manville	Curing shrinkage is unacceptably large.
"	JM-375 (Hi-temp glass fibers Portland cement Bentonite)		Exc.	(40) dry		\$.125/lb.	Johns-Manville	Portland cement less effective than lumnite.
"	JM-375L (Hi-temp glass fibers - lumnite cement)		Exc.		Satisfactory	\$.125/lb.	Johns-Manville	Best all around non-asbestos trough lining material at this time.
"	LDS (Fiberfrax colloidal silica)	Poor			Poor wear resistance strength-poor	\$1.50-2.00/lb. (Originally for non- aluminum applications.	Carborundum	Price is for a non-aluminum application
Vacuum Formed Drop In Trough Sections	Fiberfrax - colloidal silica	Poor			Molten metal contact-OK if coated strength-poor		Thermotec Fosaco B&W	Under res. tests at ATC.

*Available as pre-cast trough liners in 18 or 24 in. lengths cast to Alcoa standard specifications.

**Internally calculated on basis of density - not manufacturer's quote.

***Approximately equal to \$15.00/ft. for No. 4 trough.

****Equivalent to Glasrock 820 or 840.

FROM F. E. MUELLER
D. R. BARCH
PITTSBURGH OFFICE

TO MEMORANDUM

RPC

April 4, 1973

RE: ASBESTOS FREE TROUGH LINING MATERIALS

A meeting concerning the captioned was held on March 21, attended by representatives from: Melting and Ingot Casting Division, ATC; Pittsburgh Mechanical Engineering; Pittsburgh Ingot and Powder Division; and Pittsburgh Purchasing Department. The objectives of the meeting were to:

- 1) Discuss which asbestos-free materials have worked satisfactorily in the plants.
- 2) Review which asbestos-free materials have been or are being investigated at ATC.
- 3) Arrive at a recommendation of materials for the plants to replace asbestos-containing material in troughing applications right now.

Recognizing that asbestos-containing materials are used in many other Alcoa and Ingot Division applications such as pot linings, furnace linings, and headers, by definition the only concern of the above meeting was related to:

- a) Troughing between melters and holders.
- b) Troughing between furnaces and molten metal treatment processes.
- c) Troughing between molten metal treatment processes and molds--this includes the distributors and FDC pot linings.

Elimination of asbestos containing materials for other applications will be covered by related but separate programs.

Information on objectives 1) and 2) above will be distributed by separate memorandum, however, summarizing this information, those present at this meeting agreed on the following recommendations for objective 3):

A. Melter to holder

Recommended: Coated¹ castable (C1 or SJP)
Brick (coral P or Chas. Taylor 12054)

Preferred alternate: Coated fused silica castable²

B. Holder to Molten Metal Treatment Process

Recommended: Coated¹ JM-375L

Preferred alternate: Coated¹ fused silica castables²



ALCOA

67-4562 (REV 11-66)

ALCOA0000009728

cc: J. H. Mudge - Badin Operations
R. C. Ashurst - Cressona Operations
D. D. August - Davenport Operations
W. K. Dalton - Lafayette Operations
G. H. Lantz - Massena Operations
J. N. Rumble - Pt. Comfort Operations
T. J. Randall - Rockdale Operations
R. E. Aungst - Tennessee Operations
L. L. Held - Tennessee Operations
H. F. Godges - Vancouver Operations
W. C. Harvey - Vernon Operations
M. L. West - Warrick Operations
C. R. Seltzer - Wenatchee Operations
W. P. Hellsley - Suriname Operations
R. C. Hinkle - Badin Operations
N. O. Kraft - Cressona Operations
R. J. Reitz - Davenport Operations
J. B. Dolan - Lafayette Operations
J. J. Hicks - Logans Ferry Operations
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C. L. Green - Pt. Comfort Operations
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J. R. Jones - Vernon Operations
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J. A. Thompson - Wenatchee Operations
R. L. Givens - Badin Operations
J. H. Baugh - Badin Operations
B. J. Axelsson - Cressona Operations
R. B. Hanson - Cressona Operations
L. D. Dunlap - Davenport Operations
J. W. McIntee - Davenport Operations
W. G. Allen - Lafayette Operations
J. R. Herrick - ATC
R. J. Ormesher - ATC
B. A. Schafer - Massena Operations
D. N. Harvey - Pt. Comfort Operations
W. R. Smith - Rockdale Operations
J. N. Lehigh - Tennessee Operations
R. L. Dearstone - Tennessee Operations
L. J. Sullivan - Vancouver Operations
A. M. Shanks - Vancouver Operations
L. F. Hughes - Vernon Operations
J. A. McCune - Warrick Operations
B. Anderson - Warrick Operations
K. A. Isaksen - Wenatchee Operations
J. L. McKinstry - Wenatchee Operations
C. T. Barger - Badin Operations
P. P. Dieffenbach - Davenport Operations
F. R. Knox - Lafayette Operations
G. B. Campbell - Massena Operations

Memorandum
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cc: R. A. Molsberger - Pt. Comfort Operations
G. L. Paolino - Rockdale Operations
D. E. Lockett - Tennessee Operations
C. R. Windbigler - Tennessee Operations
M. Scherbak - Vancouver Operations
R. J. Stokwicz - Vernon Operations
M. L. Redhair - Warrick Operations
J. E. Gunn - Wenatchee Operations
O. R. Gonsalves - Suriname Operations
B. R. Hood/E. L. Rooy - Tennessee Operations
N. L. Lawson - Warrick Operations
R. C. Studley - Wenatchee Operations
N. L. Sundaram - Suriname Operations
W. E. Goza - Badin Operations
E. J. Schafer - Cressona Operations
J. D. Yerger - Davenport Operations
P. M. Tomalin/J. E. Jacoby - Lafayette Operations
W. D. Helmick - Logans Ferry Operations
R. M. Rose - Pt. Comfort Operations
M. J. Caprio - Pittsburgh Office (19)
J. Z. Nelson/A. J. Sartschev - Oliver Plaza, Pittsburgh
R. E. Albrecht - Pittsburgh, Oliver Plaza
C. J. Cox - Pittsburgh, Oliver Plaza
R. W. Wrenn/J. A. Dunbar - Pittsburgh Office (23)
T. B. Bonney/R. P. Carter - Pittsburgh Office (7)
V. W. Rieke - Pittsburgh Office (24)
R. E. Spear/G. K. Turnbull - ATC
C. R. Howle/R. G. LaBar - ATC

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C. Downstream of Filters (Both trough and distributor)

Recommended: Coated¹ JM-375L

Preferred alternate: Coated¹ Glasrock foam

These recommendations pertain to materials which have been found to be suitable, practical, available, and asbestos free. Shortly following issuance of this memorandum, Pittsburgh Engineering and ATC will issue a joint memo with recommendations for preparation, installation, in-service care, and precautions for each of the above recommended materials. The ingot plants are to begin programs for orderly replacement of all asbestos containing trough materials with the above recommended materials bearing in mind that on July 1, 1976, the present OSHA asbestos dust exposure limit becomes even tighter. If any plant finds restrictions to their use of these recommended materials for these applications, they are specifically requested to contact any one of the following in this order:

D. R. Barch - Pittsburgh Mechanical Engineering
F. E. Mueller - Pittsburgh Ingot and Powder Division
R. G. LaBar - ATC

It is recognized that individual plant differences exist in trough usage and design, but it has been concluded that these differences can be taken care of if made known and discussed.

F. E. MUELLER
D. R. BARCH

FEM/DRB/mj

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¹Refractory coating and/or mortar should be Plystix 900.

²Glasrock 820 and 840, Thermosil 120 and TG, or Silfrax ARC.