

*Attachment III Corp. Correspondence  
Materials Institute  
and Respirators*  
Johns-Manville  
Research & Engineering Center  
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*Art Chalkley*

*FR 13*

*Copies for  
1. Dr. J. J. ...  
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3. Dr. J. J. ...  
4. Dr. J. J. ...  
R. K. ...  
Dr. J. J. ...*

*Pgh*

*acknowledgment*

May 16, 1972  
(dictated 5/12)

Mr. R. W. Knapp  
Quality Assurance & Environmental Control Manager  
Aluminum Company of America  
POB 150, Massena, New York 13662

Dear Mr. Knapp:

Thank you for your letter of May 1 concerning the material I submitted for the OSHA hearings on asbestos.

Enclosed is a copy of the list of locked-in and non-locked-in asbestos-containing products, along with my letter of transmittal to A. Goldberg, the hearing examiner.

If you have any questions after you review this material, please do not hesitate to contact me.

Very truly yours,

*F. L. Pundsack*

F. L. Pundsack  
Vice President, Research & Development

ae  
Enc

PLAINTIFF'S  
EXHIBIT  
AL-1671

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Category Code

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March 21, 1972

Mr. Arthur Goldberg  
Hearing Examiner  
U.S. Department of Labor  
OSHA Hearings  
Room 305-306  
Railway Labor Building  
400 First Street, NW  
Washington, DC 20001

Dear Mr. Goldberg:

Enclosed is a list of "locked-in" and "non-locked-in" asbestos-containing products for incorporation into the record of the OSHA hearings on occupational standards for asbestos dust which were held March 14-17, 1972 in Washington, DC.

As you recall, in my testimony with regard to some of the proposed labeling requirements for asbestos-containing products I argued that no labels should be required for products in which the asbestos is "locked-in-place" by a binder such as portland cement, resins and plastics. On the other hand, I did support the use of proper cautionary labels on products in which the asbestos is not firmly locked-in-place, and in which the worker who handles and applies the material may generate significant quantities of asbestos-containing dust. During the questioning which followed my testimony, I agreed to submit a list of "locked-in" and "non-locked-in" products which could be incorporated into the hearings. These are the lists which are attached.

We have used the following general definition for "locked-in" products:

"Locked-in" asbestos-containing products are those products in which the asbestos is firmly fixed in place with some type of binder, saturant, coating or bonding agent such that normal handling and application does not generate significant quantities of asbestos-containing dust.

Examples of binders, saturants and coatings used in "locked-in" products are portland cement, phenolic, polyester, epoxy and other thermosetting resins, thermoplastic resins, asphalt, bituminous concretes, and latex and similar polymeric coatings or bonding agents.

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Mr. Arthur Goldberg  
March 24, 1972  
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Although we have tried to make the enclosed lists of products as complete as we can, it is possible we have overlooked some uses. Thus, if OSHA accepts and uses the distinction between locked-in and non-locked-in products, a provision should be made for adding products to the lists in the future.

It should be understood that the range of asbestos contents listed for the products is an approximate range. We believe these ranges to encompass most formulations, but it is possible that a given manufacturer may be operating either slightly higher or lower in asbestos content than these ranges.

Thank you for the opportunity to submit this material for the record.

Very truly yours,

F. L. Pundsack  
Vice President, Research & Development

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Mr. A. Goldberg  
March 24, 1972  
Attachment 1

## "LOCKED-IN" ASBESTOS PRODUCTS

| PRODUCT                                    | APPROXIMATE RANGE OF<br>ASBESTOS CONTENTS IN<br>PRODUCTS AS USED |
|--------------------------------------------|------------------------------------------------------------------|
| <u>ADHESIVES</u>                           |                                                                  |
| Various resin systems                      | 1 - 3%                                                           |
| <u>ASBESTOS-CEMENT PRODUCTS</u>            |                                                                  |
| Architectural panels & facings             | 15 - 20%                                                         |
| Canal bulkheads                            | 15 - 20%                                                         |
| Cooling tower fill                         | 15 - 20%                                                         |
| Extruded shapes                            | 5 - 20%                                                          |
| Pipes & ducts                              | 10 - 20%                                                         |
| Pipe fittings & couplings                  | 15 - 25%                                                         |
| Sheets -Corrugated                         | 20 - 30%                                                         |
| Sheets -Flat - Flexible                    | 20 - 35%                                                         |
| Sheets -Flat - Rigid                       | 15 - 20%                                                         |
| Shingles -Roofing                          | 15 - 20%                                                         |
| Shingles -Siding                           | 15 - 20%                                                         |
| <u>ASPHALT PRODUCTS</u>                    |                                                                  |
| Asphalt roads & curbing                    | 1 - 3%                                                           |
| Fibrated emulsions                         | 12 - 18%                                                         |
| Flashing cements                           | 10 - 25%                                                         |
| Mastics                                    | 12 - 18%                                                         |
| Roofing cements                            | 12 - 18%                                                         |
| Roof coatings                              | 4 - 6%                                                           |
| <u>CALCIUM-SILICATE SHEETS</u>             |                                                                  |
| High density sheets (50#/ft <sup>3</sup> ) | 55 - 60%                                                         |
| <u>COATINGS</u>                            |                                                                  |
| Premixed underbody coating                 | 12 - 30%                                                         |

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Mr. A. Goldberg  
March 24, 1972  
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"LOCKED-IN" ASBESTOS PRODUCTS

| PRODUCT                                                | APPROXIMATE RANGE OF<br>ASBESTOS CONTENTS IN<br>PRODUCTS AS USED |
|--------------------------------------------------------|------------------------------------------------------------------|
| <u>FRICTION MATERIALS</u>                              |                                                                  |
| Brake linings                                          | 35 - 70%                                                         |
| Clutch facings                                         | 35 - 60%                                                         |
| Heavy duty brake linings                               | 70 - 75%                                                         |
| <u>PACKINGS &amp; GASKETS</u>                          |                                                                  |
| Braided textiles (resin saturated)                     | 50 - 60%                                                         |
| Millboard (polymeric bonded or encapsulated)           | 85 - 95%                                                         |
| Packings - sheeter type                                | 80 - 85%                                                         |
| Packings - beater additive type                        | 55 - 80%                                                         |
| <u>PAPERS &amp; FELTS</u>                              |                                                                  |
| Backing for sheet flooring (polymeric bonded)          | 85 - 88%*                                                        |
| Cooling tower papers (inorganic bonded & coated)       | 80 - 90%                                                         |
| Electrical papers & tapes (resin saturated)            | 65 - 75%                                                         |
| Laminating papers (resin bonded)                       | 50 - 65%                                                         |
| Pipe line felts (bitumen saturated)                    | 65 - 70%                                                         |
| Protective metal sheets (metal bonded & enamel coated) | 85 - 90%                                                         |
| Roofing felts (bitumen saturated)                      | 60 - 65%                                                         |
| Underlayment felt (polymeric bonded)                   | 85 - 88%                                                         |
| <u>PLASTICS</u>                                        |                                                                  |
| Thermoplastics                                         | 20 - 40%                                                         |
| Thermosetting                                          | 20 - 25%                                                         |
| <u>SEALING COMPOUNDS</u>                               |                                                                  |
| Caulking putties & sealants                            | 15 - 45%                                                         |
| Radiator sealants & coolants                           | 0 - 1%                                                           |
| <u>TILE</u>                                            |                                                                  |
| Asphalt tile                                           | 15 - 25%                                                         |
| Vinyl tile                                             | 10 - 20%                                                         |
| Tile adhesives                                         | 3 - 10%                                                          |

\*Excludes varying thicknesses of vinyl surface applied to the backing. The filler content of the finished flooring product is much lower than these ranges.

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Mr. Arthur Goldberg  
March 24, 1972  
Attachment 2

"NON-LOCKED-IN" ASBESTOS PRODUCTS

| PRODUCT                                             | APPROXIMATE RANGE OF<br>ASBESTOS CONTENTS IN<br>PRODUCT AS USED |
|-----------------------------------------------------|-----------------------------------------------------------------|
| <u>ACOUSTICAL PRODUCTS</u>                          |                                                                 |
| Dry spray type                                      | 10 - 15%                                                        |
| Foamed asbestos                                     | 85 - 90%                                                        |
| <u>CALCIUM-SILICATE SHEETS</u>                      |                                                                 |
| Low density sheets (less than 50#/ft <sup>3</sup> ) | 25 - 35%                                                        |
| <u>CEMENTS</u>                                      |                                                                 |
| Gypsum joint cements                                | 2 - 4%                                                          |
| Insulating cements                                  | 20 - 100%                                                       |
| <u>INSULATIONS</u>                                  |                                                                 |
| Low density calcium silicate binders                | 7 - 12%                                                         |
| Corrugated paper                                    | 85 - 95%                                                        |
| Low density magnesia binders                        | 8 - 12%                                                         |
| High temperature blocks & bricks                    | 8 - 12%                                                         |
| <u>PAPERS &amp; FELTS</u>                           |                                                                 |
| Commercial grades (unsaturated)                     | 85 - 90%                                                        |
| Roofing felts (unsaturated)                         | 85 - 90%                                                        |
| Gaskets (unsaturated or not encapsulated)           | 85 - 90%                                                        |
| Millboards (unsaturated or uncoated)                | 85 - 90%                                                        |
| <u>STUCCO &amp; PLASTER</u>                         |                                                                 |
| Dry mix cement stucco                               | 0 - 1%                                                          |
| Dry mix decorative plaster                          | 0 - 2%                                                          |
| <u>TEXTILES (unsaturated or uncoated)</u>           |                                                                 |
| Braided products                                    | 75 - 100%                                                       |
| Cloth                                               | 75 - 100%                                                       |
| Listing                                             | 75 - 100%                                                       |
| Wicks                                               | 75 - 100%                                                       |
| Yarn                                                | 75 - 100%                                                       |

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