A S B E S T O S B U L L E T I N

Vol.2. No.3.

- May, June, 1961

Editor C.Z. Carroll-Porczynski.

C O N T E N T S

		Page
PART 1	MINING	74
PART 2	ASBESTOS-CEMENT.	78
PART 3	ASBESTOS TEXTILES.	88
PART 4	ASBESTOS FRICTION MATERIALS.	89
PART 5	REINFORCED PLASTICS.	90
PART 6	ASBESTOS JOINTINGS, SEALING AND COATING COMPOSITIONS.	92
PART 7	PLASTIC MATERIALS AND PIPES.	92
PART 8	ASBESTOS PAPER AND INSULATING MATERIALS. . . .	93
PART 9	REFRACTORY FIBRES.	94
PART 10	MISCELLANEOUS.	95
PART 11	REVIEW OF JOURNALS	96

PART 1. MINING

CANADA

305 ASBESTOS. W.J. Bichan. The Mining Journal May 1961, Annual Review.

"Murry Mining Corp. reserves of asbestos ore in Northern Ungava now estimated to be more than 20,000,000 tons."
"The entry of Lake Asbestos in Canada and the impending supply from Advocate Mines Ltd., has placed a premium upon quality of fibre shipped."
"It is reported that Newfoundland deposits are free-milling, separate readily from the rock and show a minimum of adherent dust and magnetite."
The article is concluded with a statement that "the traditional supply of asbestos from the Eastern Townships of the Province Quebec will lose in importance as certain markets are rapidly taken over by Newfoundland and other northern suppliers."

306 ASBESTOS PRODUCTION MAKES RECORD IN CANADA AS RUSSIA SEEKS LEAD IN OUTPUT. Karl V. Lindell. Mining World, 1961, 23, No. 5, p. 69.

A short annual review article.

BRITISH COLUMBIA

307 ASBESTOS DISCOVERIES. Can. Mining J. 1961, 82, No. 4, p.156.

Four of seven peridotite bodies located by Geological Survey of Canada in 1960 field work carried chrysotile asbestos. The locations of discoveries are as follows:
1. On Sinkut Mountain a small amount of slip fibre was noted.
2. On Bobtail Mountain between elevation 3,700 - 4,200 ft. cross-fibre asbestos with fibre length $\frac{1}{4}$ to $\frac{1}{2}$ inch occurs in veins up to 3 ft. long; these veins are widely spaced for the most part, but in one place four such veins occurred in a distance of 2 ft.
3. On the west side of Telegraph Range cross-fibre with a length up to $\frac{1}{4}$" occurs in veins 2 to 3 ft. long widely distributed for $\frac{1}{2}$ mile across the width of peridotite body.
4. At a point of 6 miles, from Baldy Hughes Mountain about 25 miles south-west of Prince George, fibres 1/16 long were observed.

308 ASBESTOS. Can. Min. & Met. Bulletin, 1961, 54, No.586, p. 215.

Income from production of Cassiar Asbestis Corp., Ltd., during fiscal year ended September 1960 was the highest on record. Net profit after all charges was $ 2,353,586. The outlook for future sales is satisfactory. No work was done during the year on the high-grade asbestos deposit on Clinton Creek, Yukon, but the prospector's interest was purchased for cash and the property is now wholly owned by Cassiar. Reserves of 5 million tons of ore have been established. Another prospect, the Letain asbestos property is held by the Kutcho Creek Asbestos Co., Ltd., which Company has issued 750,005 shares of its capital stock of which Cassiar owns 730,005.

MANITOBA

309 MINERAL PROSPECTS AROUND GODS ISLAND, AND OXFORD LAKES MANITOBA. G.S. Barry. Can. Mining J., 1961, 82, No.4, p.63.

Mention is made of poor quality asbestos found in serpentinized peridotite bodies north of Knee Lake, in the Carrot River area west of Oxford Lake, and at Island Lake.

NEWFOUNDLAND

310 NEWFOUNDLAND'S MINERAL INDUSTRY 1960. D. Johnston. Can. Mining J., 1961, 82, No. 4, p. 80.

Near Baie Verte on the advocate mines concession production of asbestos is planned by mid-1963 of 3000 tons per day. Prior to last September official reserves had been stated at 21 million tons of ore averaging 3.68% 4D fibre, plus 2.5% shorts to a depth of 450 feet. Recent statements reveal that more than 35 million tons have now been outlined. The location of the deposit practically at tidewater is well-suited for the proposed shipment of fibre to Europe and to points on American continent.

311. ASBESTOS LABORATORY AT UNIVERSITY OF SHERBROOKE. Can. Mining J. 1961, 82, No. 5, p. 98.

The announcement of the establishment by Quebec Asbestos Mining Association laboratory, which will provide technical and research facilities for Eastern Townships asbestos mines.

312 AIR SEPARATORS IN ASBESTOS INDUSTRY. Can. Mining J. 1961, 82, No. 5, p. 74.

A brief note on Sturtevant Air Separators installed by Canadian Johns-Manville Co.

U.S.A.

313 JEFFERSON LAKE PLANS CALIFORNIA ASBESTOS MINE. Mining World, 1961, 23, No. 6, p. 17.

News item about the mine and mill to be built in Calaveras County to handle 2500 tons per day.

314 U.S. PATENT 2,968,400. FIBRE COLLECTOR. F.H. Clute.

This patent describes an apparatus by which progressively lighter fractions from comminuted asbestos ore are discharged from the airborn stream.

U.S.S.R.

315 1960 production in the U.S.S.R. increased with relative rapidity as several new centres were opened up. The estimated total exceeds 1,000,000 tons. (extract from The Mining Journal Yearbook May 1961).

316 U.S.S.R. PATENT 136,523. TREATING BRITTLE CHRYSOTILE ASBESTOS WITH HCŬ. I.N. Kusimin, I.G. Kamenshchikov & M.P. Ovchinnikova.

ARGENTINA

317 Asbestos deposits of over 100,000,000 tons have been located in La Rioja according to Rheinstahl-Planung. Foreign technical and financial aid is being considered. (extract from Mining J. May 1961 Annual Review).

BOLIVIA

318 1960 export of asbestos amounted to 60,028 kg. (extract from Mining J. 1961, 256, No. 6564, p. 662).

CYPRUS

319 Cyprus Asbestos Mines exported a total of 15,328 long tons of asbestos in 1960 (14.4 in 1959). Known reserves are sufficient for more than 100 years of operation at the present rate of production. (extract from Mining J. May, 1961: Annual Review).

SOUTHERN RHODESIA

320 SOUTHERN RHODESIA'S MINERALS. The Mining J. 1961, 256, No. 6563, p. 624.

An outstanding feature of the asbestos industry has been the activities of a company operating a factory which blends fibres purchased from a number of mines. Its products have secured a good market in a variety of countries, particularly behind the Iron Curtain. These operations have materially assisted the struggling mines and the responsible company has established markets in Poland, Czekbslovakia and India. (complete extract).

321 TAKE OVER. The Mining J. 1961,n256, No. 6563, p. 624.

Management and technical control of 2 operating asbestos mines in the Gwanda area of Southern Rhodesia have been taken by Rand Mines of the Union of South Africa. Rand Mines are also understood to have an option on the Alpha, another asbestos working to Thornwood and Beta.

322 OPERATIONS AT THE ETHEL ASBESTOS MINE, SOUTHERN RHODESIA. N.M. Airey. Inst. Mining Met. Trans. 1961, 70, No.7, p.407-413.

Description with flowsheets of the new crushing and milling plants which have been operating since 1959; supplements a comprehensive article on this mine published in 1956.

AUSTRALIA

323 In Western Australia the capacity of the mill at Witenoon has been increased to 25,000 short tons.
The 1960 output is expected to reach 16,440 short tons.
Production of chrysotile, mainly in New South Wales will be about 1,430 short tons. Prospecting has shown attractive deposits of good fibre, but there has been no activity in their development. (complete abstract from Mining J. May 1961).

324 WESTERN AUSTRALIA AND ITS MINERALS. G. Spencer Compton. The Mining Magazine, 1961, 104, No. 3, p. 151.

The asbestos of Western Australia is mainly crocidolite. Production has passed beyond the £A 7,000,000 mark, with annual figures now in excess of £A 1,000,000. Information to hand indicates that steps are being taken to build up a bigger annual turnover, to improve transport and communications and to make the area and conditions more hospitable for staff and workpeople.

NORTH VIETNAM

325 Asbestos mining is reported at Quang-Yen. (extract from Mining J. May, 1961, Annual Review).

NORTH BORNEO

326 Asbestos and chromite deposits have recently been discovered in North Borneo and investigations are now in progress. The Mining J. May 1961, p. 91.

PART 2. ASBESTOS-CEMENT.

327 ASBESTOS-CEMENT PIPE PLANT. A. Hegarty. Mining Mag. 1961, 104, pp. 152-155.

Description with pictures of the Johns-Manville automated continuous process asbestos-cement pipe plant at Denison, Texas.

328 TECHNICAL-ECONOMIC PROBLEMS IN THE DEVELOPMENT OF THE CEMENT AND ASBESTOS-CEMENT INDUSTRY. V.E. Shneider. Zhur. Vsesoyuz. Khim. Obshchestwa im. D.I. Mendeleeva. 1960, 5, 2, pp. 221-23.

Data on the size of the industry in the U.S.S.R. and other countries and the course of growth of the industry are presented. The gap between supply and demand in different parts of the Soviet Union is given as well as the output of different types of plant.

329 TECHNOLOGY OF ASBESTOS-CEMENT PRODUCTS. Third Edition. N.P. Sokolov. Moscow, Gosudarst. Izdatel. Stroitel. Lit., 1960: 395 pages.

330 PRODUCTION OF ASBESTOS-CEMENT PIPES IN SPAIN. Zement-Kalk-Gips, 1961, 14/59, No. 1, p. 39.

A factory producing asbestos-cement pipes will be erected in Madrid; 2100 t. of asbestos will be imported yearly.

331 HOW WE ARE FIGHTING CORROSION. H.D. Holloway & T.W. McSpadden. Oil Gas J. 1961, 59, No. 22, pp. 146-148, 150.

The authors report on materials for handling oil well brines at Pan American Petroleum Corp. Asbestos-cement pipe is mentioned, but its tendency to clog with scale is also noted.

332 REVOLUTIONARY HEATING SYSTEM - ELECTRICAL POTENTIAL APPLIED TO REINFORCING FABRIC. Wire & Wire Prods. 1961, 36, pp. 614-615, 658-661.

The steel wire reinforcing fabric of a building in Minot, North Dakota, is to be used as an electric heating element. Asbestos-cement board to insulate the overlapping ends of the mesh from each other.

333 BUILDING ASBESTOS-CEMENT PANEL HOUSES. R. Abramova. Stroi. i. arkhit. Mosk. 1961, 10, No. 2, pp. 33-35.

334 NEW EQUIPMENT FOR PREPARING OF ASBESTOS-CEMENT SLURRY.

G.K. Snegireva.

One of the first stages in the manufacture of asbestos-cement products is the opening of asbestos fibre bundles, or fiberization of the material.

As a rule, a wet method is employed for this purpose in order to minimize damage of the fibres. The most common machines in the fibre preparation department are edge runners and hollanders. These machines, however, are only periodically employed, consume a great amount of power, occupy a large space, and have a relatively low production capacity.

In order to improve this process, it was decided to design a new equipment which could treat the material automatically and in a continuous manner. This development work was assigned to Leningrad Scientific Research Machine Building Institute (VNIIS) and PKB Asbestos-Cement Research Institute (PKBNIT).

This newly developed asbestos-cement preparation process is shown in Fig. 1.

As may be observed, several grades of asbestos fibres are being discharged on to the conveyor, which delivers the material in a continuous manner to a blade type mixer where various types of fibres are thoroughly blended.

From the mixer, the asbestos is transferred to the main hopper feeder, which weighs the material, and also controls the speed of the conveyor belt.

In the next step, the blended material, moistened by a water spraying equipment, passes to the crushing rollers (Fig.2). Here the fibre bundles are subjected to a progressive softening treatment by two sets of vertical rollers, which rotate in opposite directions. The average output of this machine is about 2.5 tons

per hour. The diameter of the rollers is 400 mm., their length 500 mm., the surface speed 5 metres per second, and the roller's pressure from 30-50 kg./cm.

From the crusher, softened material is passed to the pulp preparing machine where it is mixed with water to 2.5% concentration.

At this stage a final fiberizing of previously softened fibre bundles takes place.

The pulp preparing machine (Fig.3) consists of a revolving rotor fitter with 12 blades. The machine cover has an eliptical shape which ensures that all thrown off stuff is gently returned for further treatment.

The capacity of this machine is about 1500 klg/hour, the diameter of the rotor is 800 mm., its length 2000 mm., and number of revs. per minute between 200 - 320. The gap between the rotor and the staticnary bottom blades can be adjusted within 0-10 mm.

The suspension thus prepared (2-3% asbestos and cement) is then delivered to a vertical cylinder-stirer having three rows of blades fitted to its walls (Fig.4). The shaft of the cylinder is also fitted with blades. Here the asbestos-cement suspension is subjected to vigorous stirring and vertical flow movement, effected by blades.

The output of this machine is $60m^3$ per hour with the slurry concentration between 13-17%. The diameter of the mixing chamber is 350 mm.

From the mixer the asbestos-cement slurry is continuously supplied to the scoop agitator.

The overall capacity of this new automatic preparing section is 1.5 tons of asbestos and 10 tons of cement per hour. A complete installation of this type passed evaluation stages at the Kramatorsk Asbestos-Cement Works.

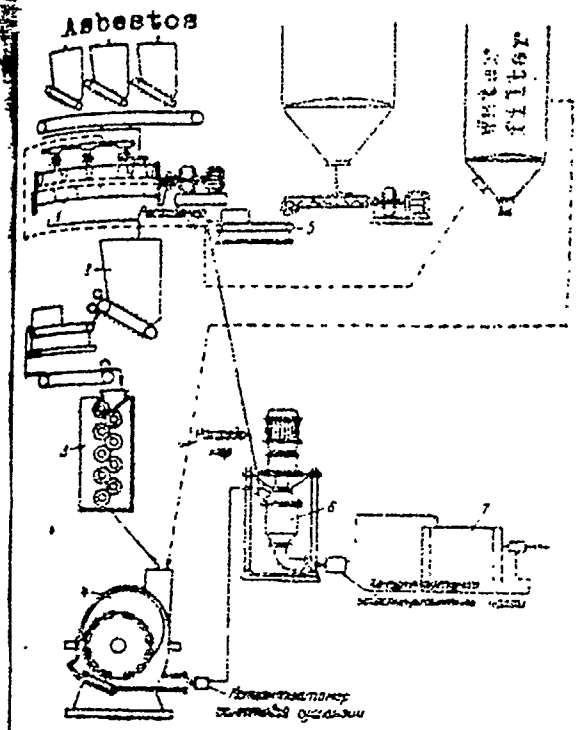


Fig.1 CONTINUOUS PREPARATION OF ASBESTOS-CEMENT SLURRY
1.Mixing & wetting device; 2.asbestos feeding. 3.milling rollers; 4.asbestos pulp; 5.cement feeder; 6.mixer of slurry; 7.scoop mixer.

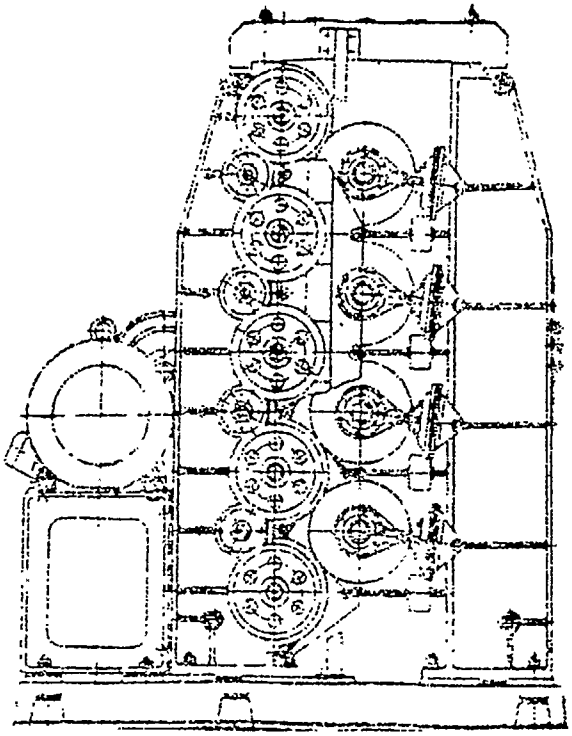


Fig.2 ROLLER MILL FOR MILLING OF ASBESTOS

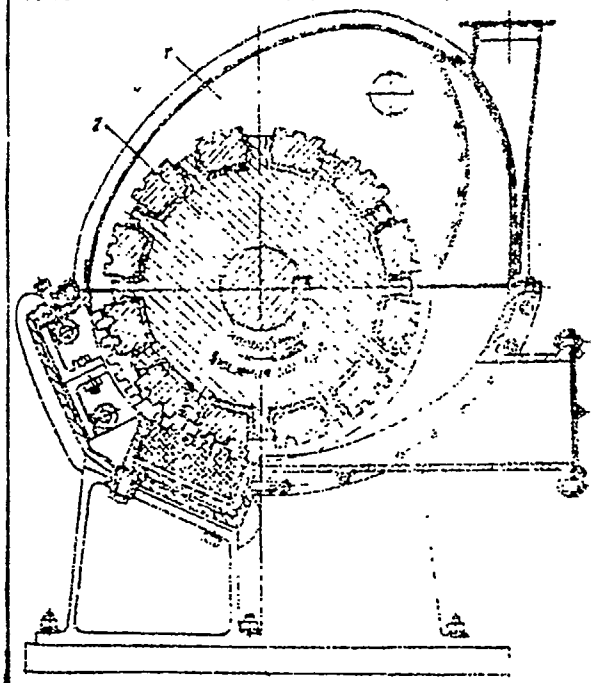


Fig.3 ASBESTOS PULP PREPARING M/C.

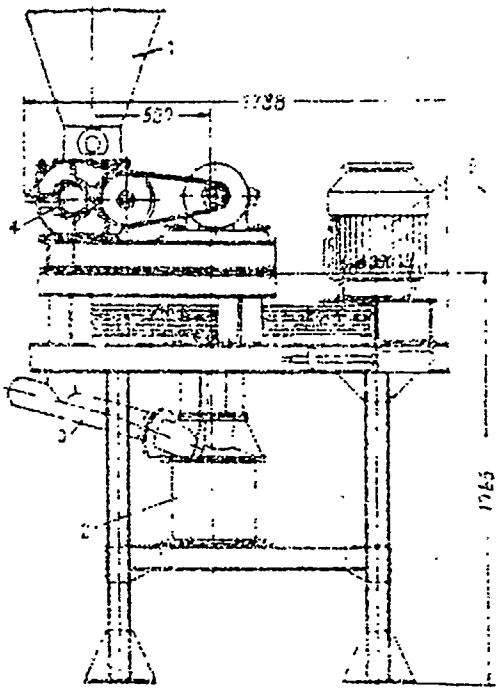


Fig.4 MIXER OF ASBESTOS-CEMENT SLURRY
1.Cement silo; 2.mixing chamber; 3.Pipe for delivering suspension;

335 B.P. 860,088. IMPROVED ASBESTOS-CEMENT PIPE MAKING MACHINE. Mannesmann Aktiengesellschaft.

It is claimed that this machine differs from known machines by virtue of the construction of its various units, their arrangement and their manner of operation. At the same time the machine has the advantage that because of its simpler construction it can be manufactured more economically than the known machines, without introducing losses in output or quality.

In this machine the material to be applied to conveyor 3, issues from a container (1) and feeding mechanism (2) the front wall of which is formed by a vertically and horizontally and adjustable baffle roller (4). The vertical position of the latter controls the thickness of the layer of material to be applied to the belt. Under feeding mechanism (2), the supporting plate (14) is provided in order to support the belt in the region where it is subjected to the greatest load and also to prevent a too rapid penetration of water from the mixture through the felt belt (3). The gap (18) between feeding point and commencement of suction by suction box (15) is provided in order to prevent the fibres from being deposited in the undesirable direction. The suction boxes (16) and (17) are operating at a gradually increasing vacuum so that the vacuum reaches a maximum value only when it is no longer possible to cause the fibre to settle out.

At the end of the conveyor run, there is provided a pipe core (19) associated with a belt roller (36) below it, running on rollers (21), (28) and (31). The pipe core together with pressure rollers (21) shapes the material to form pipe on the core.

The rollers (21) are carried by a carriage connected to a pressure cylinder (22) via a piston (23). The pressure rollers (21) can thus be applied substantially independently of the tensioning and guiding means for the belt (36), the manners of application being chosen to suit the consistency and/or the nature of material.

The belt (3) returns by way of a belt cleaning mechanism which consists of an inner row (37) of spray nozzles, a belt beater (38) and a further outer row (37) of spray nozzles.

336 PRODUCTION AND APPLICATION OF CONCRETE, REINFORCED CONCRETE AND ASBESTOS-CEMENT PIPES. M.V. Von Ritter. Beton-Herstellung u. Verwedung 1960, 10, No. 6, pp. 245-255.

337 B.P. 866,863. APPARATUS FOR MANUFACTURING SHEETS OF ASBESTOS-CEMENT. A. Magnani.

Apparatus for manufacturing asbestos-cement sheet collects from a vat and dewaters an aqueous slurry by means of a hollow forming cylinder over which travels an endless felt, the cylinder being provided on its surface with axially extending ribs and a suction source.

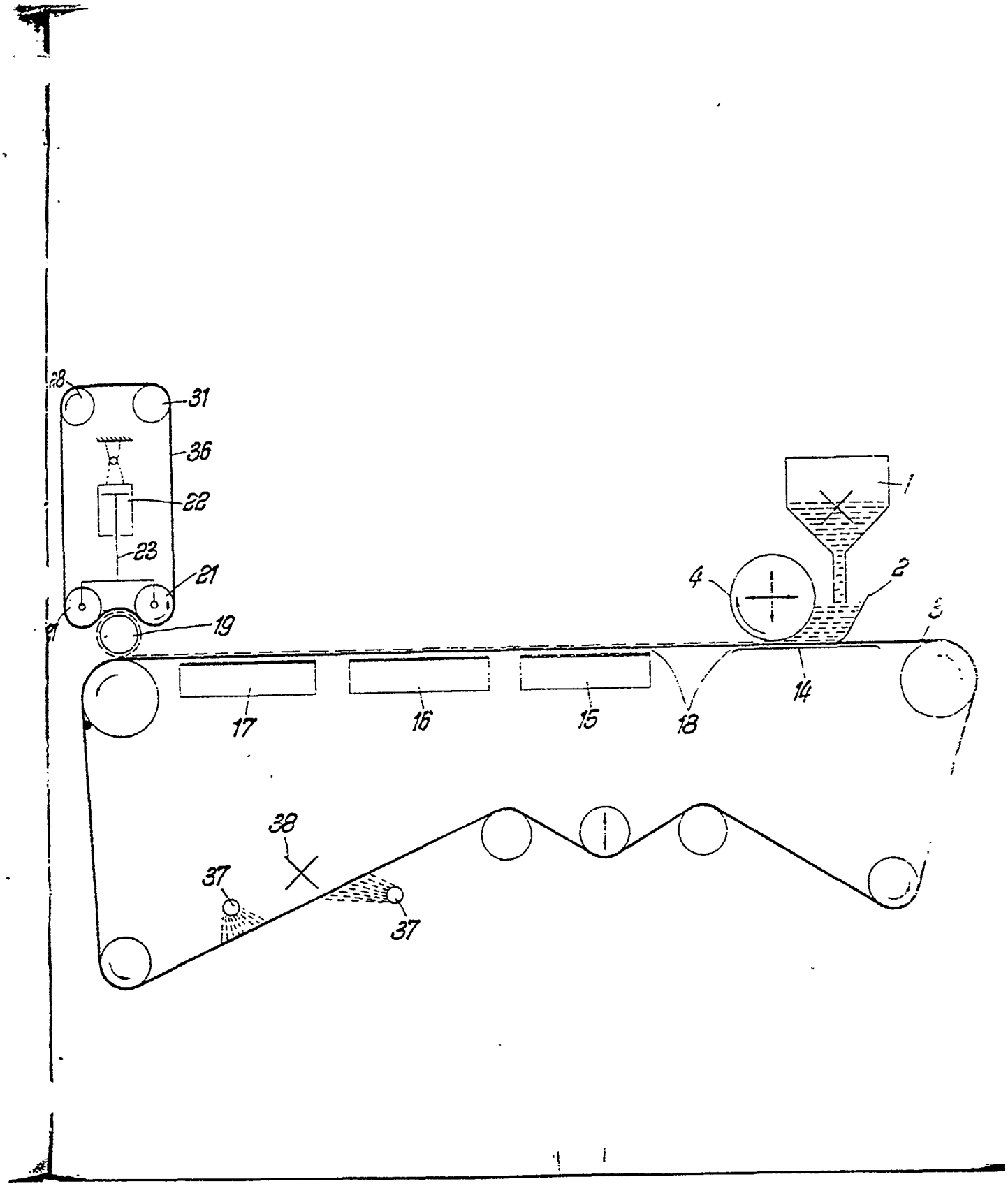
338 U.S. PATENT 2,946,158. COMPOSITE BUILDING STRUCTURE. Keasby and Mattison Co.

The sheet formed from portland cement, diatomite and asbestos fibre is cured and coated with a slurry of lime and diatomite and autoclaved to react the lime and diatomite.

339 WHERE IS ABS HEADED? Mod. Plastics 1961, 38, No. 8, pp. 82-86, 156, 158, 160-161.

Acrylonitrile-butadiene-styrene uses and future are discussed. One section of the article compares its cost with that of asbestos-cement for municipal water pipe.

340 DUTCH PATENT 89,385. (Nov. 15, 1958). REMOVING TALC FROM ASBESTOS FIBRES. N.V. Eternit voorheen eerste Nederlandse Fabriek van Asbest-cementplaten "Martinit".


28
31
36
22
23
21
19
1
4
2
3
14
17
16
15
18
38
37
37

PART 3. ASBESTOS TEXTILES.

341 TITAN GETS ABLATIVE SKIRT ON 2nd STAGE. F.G. McGuire. Missiles & Rockets 1961, 8, No. 19, p. 22-23.

Aerojet-General Corp., developer of all Titan engines, disclosed the construction of a "new skirt" enabling the engine to ignite without the presence of fuel in the regeneration-cooling tubes of the chamber wall and the possibility of leakage causing an explosion. One of the photographs shows wrapping of asbestos tape, pre-impregnated with phenolic resin, on the aluminium mandrel.

342 CAN. PATENT 607,089. PAPERMAKER'S DRYER FELTS. Scapa Dryers Ltd.

The construction embodies asbestos-nylon reinforced yarn.

343 ADHESIVE BACKED ASBESTOS TAPE. J.M. Packing & Text. Div. Product Eng. April 24th 1961, p. 86. See also April 10th p. 51.

Adhesive backed asbestos tape is available for services up to 500°F. in commercial grades and up to 900°F. in other grades. Use in unsupported structure, however, is limited to 275°F. point at which adhesive begins to lose strength. Supplied in thickness of 0.002, 1/32, 1/16 and $\frac{1}{8}$ ins. and in widths $\frac{1}{2}$ - 6". Tapes under 1/16" are furnished in 50 ft. rolls, others in 25 ft. rolls.

344 CAN. PATENT 605,799. PAPERMAKERS DRYING FELTS. Asten-Hill Ltd.

The warp of surface ply comprises essentially yarn spun from a homogeneous blend of polyester (20-25%) and asbestos fibre (75-80%).

345 SPINGARD SPINNING FRAME.

Messrs. Gardella of Genoa, Italy announced that their new high speed (up to 7000 r.p.m.) asbestos spinning frame is now available for inspection to interested parties during normal working in one of the spinning plants.

PART 4. ASBESTOS FRICTION MATERIALS.

346 NEW BRAKE LINING MATERIAL. Iron Age, 1961, 187, No. 21, p. 15.

Powdered-metal brake linings for passenger cars will soon make their debut. The prime feature of these linings is that they are made entirely of powdered metal. It's bonded directly on the brake shoes without using any asbestos or asbestos-metal combinations. Advantages include: Less pedal pressure, faster stops, longer lining life, better heat dissipation, no squeaking and a reduction in the number of adjustments needed. (complete abstract).

347 MOULDING MATERIAL FOR BRAKE LINING. Mod. Plastics, 1961, 38, No. 9, p. 410.

An asbestos fibre-reinforced phenolic moulding material with high heat resistance has been developed by Rogers Corp., Rogers, Conn., for use in brake applications. Called RL 415, the material, produced by the beater-addition method for homogeneous blending of fibre and resin, is easily moulded into flat or three-dimensional shapes. It is claimed to have successfully replaced fabricated laminate for textile brake pads with spindles rotating at 20,000 rpm at a torque of 20 in. per ounce. (complete abstract).

348 CHARACTERISTIC GOVERNING THE FRICTION AND WEAR BEHAVIOUR OF REFRACTORY MATERIALS FOR HIGH-TEMPERATURE SEALS AND BEARINGS. L.B. Sibley and others. Battelle Memorial Inst., Columbus, Ohio. Report 57 pages.

Various ceramic and cermet materials have been evaluated for unlubricated wear resistance at high sliding speeds and low unit load (up to 50 psi) in 1,000 to 1,800°F. air. Promising materials for high-temperature high-speed sliding bearings and seals include Al_2O_3-Cr-Mo Cermets, SiC ceramis and TiC-Ni-Mo cermets. Extract from U.S. Government Research Reports 1960, 34, No. 6, p. 737.

349 SOVIETS USE METAL-CERAMIC ASBESTOS DISCS. An. Product Eng. June 13, 1960, p.8.

350 U.S. PATENT 2,946,091. CURING THERMOSETTING COMPOSITIONS. American Brake Shoe Co.

This patent is covering a new type of press for curing brake lining materials based on phenol formaldehyde type of resins.

351 U.S. PATENT 2,954,853. FRICTION MATERIAL. General Motors Corp.

The composition consisting of asbestos, silica and mica powder and cork dust incorporates a phenol formaldehyde-butadiene acrylonitrile type of binder.

352 U.S.P. 2,966,737. FRICTION ELEMENTS. R.E. Spokes & F.W. Smith. American Brake Shoe Co.

A friction couple comprises a rigid metallic support and a friction element for high energy applications, the element consisting of a thermally stable heat-conductive metallic matrix having dispersed therein bodies of aluminium silicate mineral consisting only of highly angular naturally occuring pure sillimanite. (Heat stable up to about 1550°C.)

PART 5. ASBESTOS FIBRE-REINFORCED PLASTICS.

353 ASBESTOS REINFORCED PLASTICS. Ind. Eng. Chem. 1961, 53, No. 4, p. 23A.

Recent high-strength, high-temperature applications of plastics reinforced with asbestos fibres in nose cones and exhaust nozzles of rockets point the way to other potential markets, perhaps in the processing industries. Asbestos fibres have great strength, light weight, and large surface area, making them an ideal reinforcement for plastic materials. Other advantages are flexibility and resistance to heat, moisture and weathering. (complete abstract).

354 TEFLON-ASBESTOS CUPS SOLVE HIGH HEAT SEALING PROBLEMS. Rubber Age. Feb. 1961, 88, 822.

355 COMPOSITE FIBRE-REINFORCED PHENOLIC INSULATION. Materials in Design Eng., 1961, 53, No.5, p.119.

A 5-ft. diam. reinforced phenolic disc is said to be the largest compression moulded part yet made. The 400-lb. concave disc is the closure insulation protecting the steel engine casing of the Minuteman missile. Made of phenolic resins reinforced with silica, asbestos and graphite fibres, the piece will withstand more than 5000 F at high pressures while holding the casing temperature to a maximum of 200 F.
Source: Dumont Mfg. Corp., 607 Irwin St., San Rafael, Calif. (complete abstract).

356 PLASTICS IN BRITISH MISSILES. H.H. Starte. Plastics, 1961, 26, No. 283, pp. 133-135.

Asbestos phenolic felts and their use in nose cones are described and illustrated. (two line drawings).

357 ARMSTRONG COUNTER CORLON IS NEW SURFACE MATERIAL. Furniture Record & International Furnisher. 1961, 158, No. 3209 (5th May), p. 725.

Vinyl resin laminated to asbestos fibre backing called Hydrocord has been developed by Armstrong Cork Co., for surfacing furniture.

358 U.S. PATENT. 2,958,443. MOULDED CARRIERS. The Richardson Co.

Asbestos may be used as a filler (25-40% by weight) in the manufacture of carriers moulded from polyolefins.

359 B.P. 864,057. MANUFACTURE OF LIGHTWEIGHT BUILDING ELEMENTS. J. Fisher.

An apparatus for manufacturing lightweight building elements of fibrous material and a mineral binder, comprises a plurality of moulds arranged on a rotary head rotating about horizontal axis, wherein fibrous material is loosely strewn or loosely stuffed in the moulds between slack resilient inflatable cones with internal stiffeners.

360 B.P. 866,925. REINFORCED PLASTIC LINING FOR TUBES. H.J. Goodwin.

The sleeve lining may consist of asbestos and thermoplastic or thermosetting resin.

PART 6. JOINTING, SEALING AND COATING COMPOSITIONS.

361 U.S.P. 2,977,248. GASKET AND METHOD OF MAKING SAME. General Motors Corp.

A heat, chemical and solvent resistant gasket is made of short asbestos fibres (60% by weight) and 40 parts of plastic mixture of the following composition:

100 parts butadiene-acrylonitrile copolymer (75% butadiene - 25% acrylonitrite)
5 parts zinc oxide
1 part stearic acid
15 parts mineral oil
25 parts carbon black
1.5 parts sulphur
1.5 parts Altax (benzothiazyl disulphide)

PART 7. PLASTIC BUILDING MATERIALS AND PIPES.

362 REINFORCED EPOXY PIPING: EXTENSIVE TESTS IN VARIED ENVIRONMENTS. Rubber & Plastics Weekly, 1961, 140, No.18, pp. 682, 684-685.

Test results on Bristol Aeroplane Plastics Ltd., glass and acrylic-fibre reinforced pipes subjected to variety of fluids and low temperatures.

363 SPECIALISED MATERIALS HANDLE CORROSIVE CHEMICALS. An. Ind. Eng. Chem. 1961, 53, No. 5, pp. 52A-54A.

Johns-Manville's "Chemtite" pipe is mentioned as being the most economical material for carrying hot corrosive liquids up to 300°F. It is made of asbestos-reinforced epoxy or phenolic resin.

364 P.V.C. FOR HOT WATER PIPES. Rubber & Plastics Age, 1961, 42, No. 5, p. 531.

365 PLASTIC PIPES AND PIPELINES. C.H. Tetherton. Chemical & Process Eng. 1961, 42, 5, pp. 208-211.

366 PLASTIC PIPE SURVEY SHOWS INCREASING USE BY MUNICIPALITIES. Can. Plastics, 1961, 1, 36, p. 36.

367 Can. P. 544,585. PIPE COVERING. Miracle Adhesive Corp.

Coverings for steam, oil and water pipes which have previously been encased in asbestos, consist of sheets of plastic material with closure tapes with interlocking jaws fastened along the longitudinal edges.

368 CLASSIFICATION OF P.V.C. FLOOR COVERINGS. 1960, 50, 4, pp. 221-223.

This article covers most known types of P.V.C. flooring material. (In German).

369 BRITISH PATENT 864,103. STABILIZED ASBESTOS-FILLED VINYL CHLORIDE RESIN COMP. Ferro Corp.

An asbestos-filled polyvinyl chloride resin composition containing boric acid in intimate admixture and zinc oxide which imparts stabilizing effects against deleterious effects of heat and light.

PART 8. ASBESTOS PAPER AND INSULATING MATERIALS.

370 CAN. PATENT 606,428. APPARATUS AND METHODS OF PREHEATING CEMENTITIOUS INSULATING MATERIAL.

This invention applies to magnesia insulation or fibre reinforced calcareous silicious materials.

371 U.S. PATENT 2,957,223. APPARATUS FOR SEVERING CAST MATERIAL. Owens - Illinois Glass Co.

Apparatus for cutting calcium silicate or the like insulating slubs into plurality of smaller slubs.

372 HOW TO CHOOSE THE RIGHT ELECTRICAL INSULATION. A.J. Sherbourne. Prod. Eng. 1961, 32, No. 15, pp.41-45.

A summary ofthe various factors to be considered when selecting insulation, accompanied by tables summarizing the thermal, electrical, mechanical, and chemical properties of a wide variety of materials, including asbestos papers, tapes, and plastics.

373 SILICONES FOR BONDING ASBESTOS PRODUCTS. Gummi Asbest. Kunststoffe. 1961, 14, No. 3, pp. 206-210.

Article about Wacker Chemie's silicone binder ASE and its use in emulsion form in making asbestos paper.

PART 9. REFRACTORY FIBRES.

374 DEVELOPMENT OF TEXTILE TYPE VITREOUS SILICA YARNS by W. Wendall Drummond and Burns A. Cash. U.S.Gov.Res.Reports 1960, 34, No.4., p.450.

Experiments were performed leading to development of methods for producing fused quartz rods by means of electrical heating devices. Both induction and resistance furnace devices were used, best performance being obtained from a resistance unit shielded against radiation losses and operating in a protective atmosphere. Power capabilities of available equipment were insufficient to permit production of a large number of continuous filaments simultaneously but operation with 5 filaments was achieved. A limited amount of data on physical properties of filaments and strand was obtained. (Complete abstract).

375 FLEXURAL RELATIONSHIPS OF A METAL FIBRE REINFORCED CERAMIC. Bruce R. Goss, Allis-Chalmers Mfg., Co., Milwauke, Wis.

Paper delivered at American Ceramic Society's 63rd Annual Meeting.

376 CERAMIC FIBRES FOR FILTERING DUST FROM HOT GASES. L.J. Kane, G.E. Chichester and C.C. Shale. U.S. Buy. Mines Rept. Invest. 1960, No. 5672, 18 pp.

Results are given of tests made with an aluminium silicate filter to develop methods for removing dust from hot gases at 1800°C. 17 figures.

377 U.S.P. 2,957,756. FILAMENTARY GRAPHITE AND METHOD OF PRODUCING. Union Carbide Corp.

The method comprises confining in a closed pressure vessel having means for introducing inert gas therein a graphite rod surmounting a carbon block, striking a d.-c. arc between the rod and block while maintaining the pressure at 1150 to 1400 p.s.i. of effect vaporization from the rod onto the block in the form of a boule, cooling the boule, fracturing it, and removing graphite filaments embedded therein.

378 U.S.P. 2,963,739. METHOD OF APPLYING METAL TO GLASS FILAMENTS. Owens Corning Fiberglass Corp.

The method includes forming of continuous longitudinal globule of molten metal in projecting relation from a longitudinal slot orifice connected to a supply of the metal and orienting the globule across the paths of filaments being attenuated from streams of glass

379 U.S.P. 2,961,758. METHOD OF MAKING A METAL ELEMENT. Owens-Corning Fiberglass Corp.

The process comprises coating the individual surface of glass fibres, with metal, assembling the coated fibres to form a bundle, converting the bundle into unitary structure by joining the metal coatings on the fibre to each other and heating the structure to flow the softened glass from the coatings.

380 DEVELOPMENT AND MANUFACTURE OF TEXTILES FROM CERAMIC FIBRES. Donald B. Aiken, Refractories Division, The Carborundum Co., Niagara Falls, N.Y.

Paper delivered at 63rd Annual Meeting of American Ceramic Society.

381 U.S.P. 2,980,510. PREPARATION OF FIBROUS TITANIUM DIOXIDE. E.I. du Pont de Nemours & Co.

Process for preparing fibrous titanium dioxide which comprises reacting a halide of tetravalent titanium with a melt selected from the class consisting of boric oxide, alkali metal borates and mixture of boric oxide with at least one alkali metal borate.

PART 10. MISCELLANEOUS.

382 GRAPHITE AND CERAMICS ORNL-3017 p. 97-100. M.C.Wittels & F.A. Sherrill. Nuclear Sci. Abst. 1961, 15, p. 703.

The effect of reactor irradiation on the temperature at which asbestos is dehydrated is reported.

383 ASBESTOSIS OF LUNGS. (In German). H. Bohling, G. Jacob & H. Muller Stuttgart. Georg Thieme Verlag, 1960, p.166.

384 RADIOLOGICAL DIAGNOSIS IN ASBESTOSIS. R. Williams & P. Hugh-Jones. Thorax (London) June 1960, 15, p. 103.

385 ASBESTOSIS AND ABDOMINAL NEOPLASMS. E.E. Keal. Lancet 1960, 2, p. 1211.

PART 11. REVIEW OF JOURNALS.

AC-22 INTERNATIONAL ASBESTOS-CEMENT REVIEW.

Editions Girsberger, Zurich, Switzerland.

386 The Mineralogy of Asbestos: illustrated 5 page discussion.
387 A short Literary History of Asbestos.
388 Asbestos-cement on Historic Monuments in Austria.
389 New Asbestos-cement Constructions and Products in the U.S.S.R. The Soviet Seven Year Plan envisages the erection of 37 new asbestos-cement factories.

390 Competition for the Filling Station and Garage.
391 Contest for an Expandable House.
392 Competition "The European Home 1960".
393 A New Water Conduit in the French Pyrenees
M.M. Azais & Salomon.
394 Asbestos-cement for Solar Screens in the Philippines.
Federice S. Ilustre.
395 Competition for Asbestos-cement Plant Receptacles and Stools.
396 Economic Roofing for Central American Dwellings.

ASBESTOS April 1961, 42. No. 10.
807, Western Saving Fund Bldg., Philadelphia 7, Pa., U.S.A.

397 Theory-cum-Practice in Asbestos Production. W.E.Sinclair.
398 Canadian Asbestos - 1960. H.M. Woodrooffe. Annual Review.
(reprint from Can. Mining J. February 1960).
399 J-M Improved Super Insulation.
Flexible type of Mink-K Insulation is described.
400 Cape Asbestos will manufacture in Mexico.
Aislantes Industriales, S.A. de C.V. of Mexico will begin manufacture of "Capesite", amosite pipe sections for high temperature insulation.
401 Turnal-Asbestos Ships Board. Page 40.
News item on Turner & Newall Ships Board meeting the requirements of the International Convention for the Safety of Life at Sea.
402 Market Conditions. Page 32.
403 Production Statistics. Page 42.

ASBESTOS May 1961, 42, No. 11.

404 Dust Control in Asbestos Operations. W.E.Sinclair. Page 2.
405 Aphibole Asbestos in South Africa.
Extract from the paper presented to the 7th Commonwealth Mining & Metallurgical Congress at Johannesburg by F.E. Keep.
406 Besto-Tak. Page 14.
New item on Johns-Manville new asbestos adhesive tape.
407 Asbestos Fibre Standards Laboratory. See item 311.
408 Market Conditions. Page 32.
409 Production Statistics. Page 38.