


Case histories on the successful use of Fiberglas glass products in combination with asbestos, gypsum, plaster, magnesia and foam rubber.


Published by AsbestosClaims.Law
**asbestosclaims.law/library/24566/1**




**PRODUCT:** Asbestos lagging fabric and tapes for Navy use.

**PROBLEM:** How to stretch a limited supply of long fibered asbestos to meet greatly increased demand . . . without falling below quality standards set up by government specifications.

**SOLUTION:** Use of Fiberglas Chopped Strands in combination with long fibered asbestos. A starch binder is used with the chopped strand to obtain maximum distribution of the individual Fiberglas filaments and provide uniform strength throughout the finished yarn. Fiberglas Chopped Strands ranging from $\frac{1}{2}$" to 2" in length are admixed with the asbestos fiber before carding, then woven into fabric form. Government specifications approved by Bureau of Ships permit use of 20% Fiberglas chopped strand.

**OBSERVATIONS:** Use of Fiberglas Chopped Strands provides the finished product with greater tensile strength and longer life. Braiding efficiency has been improved.

In this field, manufacturers also use Fiberglas Weaving Yarns as a core around which asbestos is applied and then either woven into fabrics or used as a wicking or roving for electrical and filtration products.

**PRODUCT:** Gypsum wallboard.

**PROBLEM:** How to increase fire resistance of the product to meet Underwriters' Laboratories approval. Gypsum, when exposed to fire, is subject to shrinkage cracks and loss of strength caused by the release of its chemically-combined water content. This results in relatively quick deterioration of the board and exposure of the supporting structure itself to passage of flame.

**SOLUTION:** Use of Fiberglas Roving, with chrome complex. The roving is chopped into strands and combined with gypsum and other mineral compounds.

**OBSERVATIONS:** Fibers of glass, because of their unique resistance to heat, retain their strength and hold the gypsum core together even after all of the chemically-combined water has been released. Increased fire resistance up to 300% has been established, with resultant granting of fire resistance ratings by Underwriters' Laboratories.

Leading manufacturers in this field are producing Fiberglas Roving and gypsum admixture products. Further research is underway in connection with wider application of Fiberglas yarn admixtures used in the manufacture of other building materials and products.







**PRODUCT:** Plaster of paris molds used in foundries and the pattern-making industry.

**PROBLEM:** How to increase the strength of the plaster mixture so as to obtain longer life from molds.

**SOLUTION:** Use of Fiberglas Chopped Strands, with chrome complex to maintain strand integrity, in combination with plaster of paris. Approximately 3% to 5% of $\frac{1}{2}$" Fiberglas Chopped Strands are mixed with the plaster powder. This percentage mixture is obtainable ready-mixed; for special formulations, the Fiberglas Chopped Strands and plaster of paris powder can be purchased separately and mixed on the job.

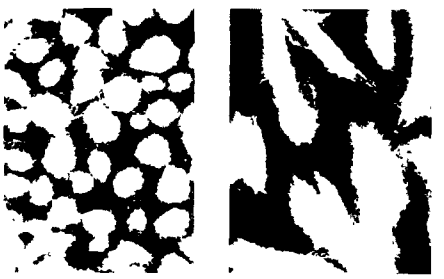
**OBSERVATIONS:** Fiberglas Chopped Strands help to keep plaster from cracking, give longer life to molds. Result: Faster production, reduced costs.

Foundries and suppliers of parts for the automotive industry are among the manufacturers successfully using Fiberglas Chopped Strands and plaster admixtures in their mold-making operations. Significant progress has also been made in the making of molds in the aircraft industry, where control of expansion with the use of aluminum is one of the requisites.


Published by AsbestosClaims.Law
asbestosclaims.law/library/24566/2

# Fiberglas* yarns in admixtures offer challenging possibilities

To manufacturers in an ever-increasing variety of fields—asbestos, gypsum, plaster, magnesia, asphalt, foam rubber, etc.—the use of Fiberglas yarn admixtures offers challenging possibilities for product improvement. Fiberglas yarn itself is a unique basic material, with properties and characteristics which glass alone can provide. Properly combined with other materials in admixtures of various kinds, its possibilities are virtually unlimited.



Milled fibers, magnified 10 times. The fibers on the left are 1/32" long, those on the right 1/8" long

Fibers of glass, from which all Fiberglas products are derived, combine lightness with strength to a degree unmatched by any other fiber available today. They are non-combustible—provide exceptional resistance to temperature extremes, most acids and oils—do not rot or mildew. Dimensionally stable, too—non-absorbent . . . do not shrink or swell. These properties can be adapted for admixture use in several ways, the most common of which are milled fibers, chopped strands and roving.

**MILLED FIBERS**—Continuous filament strands cut extremely short—1/32" to 1/4" in length. Nodular or fluffy in character, depending upon length.

**CHOPPED STRANDS**—Longer strands, chopped to lengths from 1/2" to 2".

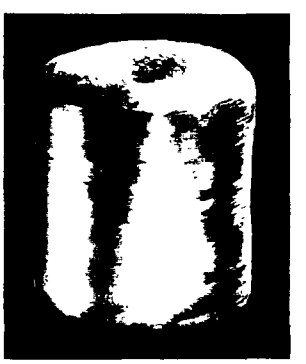
**ROVING**—Sixty ends of continuous filament strands wound without twist and coated with a binder.

Roving and Chopped Strands are available with 2 standard types of binder: the chrome complex binder, for use where strand integrity is desired; and the starch binder, where distribution of the filaments is important.

Significant product improvement histories have already been recorded through admixing Fiberglas yarns with asbestos, gypsum, plaster, magnesia and foam rubber in the manufacture of such products as lagging fabrics, fire-resistant wall boards, plaster molds, and other products. The following brief summaries of several of these developments are intended merely to illustrate the versatility of Fiberglas yarn products and to suggest possible ways and means that other manufacturers might adapt toward the solution of their individual product improvement problems.



Chopped strands are available 1/2" to 2" long



Roving is of continuous length

*Fiberglas is the trademark (Reg. U.S. Pat. Off.) of Owens-Corning Fiberglas Corporation for a variety of products made of or with fibers of glass.


Published by AsbestosClaims.Law
asbestosclaims.law/library/24566/3




**PROBLEM:** Magnesia requires a reinforcing fiber of uniform length. The asbestos fibers commonly used for this purpose are non-uniform in length and in short supply. Needed: a product uniform in length and available in ample supply.

**SOLUTION:** Use of Fiberglas Roving with chrome complex for maintenance of strand integrity. The roving is chopped into 2″ lengths and admixed with magnesia and asbestos, 5% by weight Fiberglas Roving and 12% asbestos.

**OBSERVATIONS:** The uniform-length chopped Fiberglas Roving successfully holds the magnesia together, providing better performance, longer life for the finished product.

With Fiberglas yarn admixture products readily available at all times, an uninterrupted supply of raw material is assured. Further tests, to determine the most efficient usage of Fiberglas yarn admixtures in high temperature block and pipe insulation, are underway.

**PRODUCT:** Foam rubber products.

**PROBLEM:** To reduce mold shrinkage in manufacture of foam rubber products.

**SOLUTION:** Use of Fiberglas Milled Fibers in lengths of 1/16″ and 1/8″ mixed with the foam latex. The Fiberglas Milled Fibers must be thoroughly dispersed to permit use of automatic foamer in transferring to molds. Fiberglas Milled Fibers are being used with both HM-7 cationic and 630 starch binder in percentages of 2% to 3% depending upon end use requirements.

**OBSERVATIONS:** Mold shrinkage is reduced about 12% through the use of this admixture. Less natural or synthetic rubber is required with corresponding savings in manufacturing costs.

Manufacturers of foam rubber mattresses, pillows, and automotive upholstery find this program of particular interest.




## How Can Fiberglas Yarn Admixture Products Fit Into Your Improvement Program?

In all of the fields where Fiberglas yarn admixtures have already proven successful or are in advance stages of development, it has been the privilege of Owens-Corning Fiberglas Research and its corps of sales engineers and trained technicians to work closely with the various manufacturers involved. This same cooperation is available to manufacturers in all fields who may be interested in the possibilities of Fiberglas yarn admixtures in their own product improvement programs.

Why not let us survey *your* particular program and problems to determine whether Fiberglas yarn products can be of help? An inquiry addressed to your nearest Owens-Corning Fiberglas branch office—or direct to the Industrial Textile Division in New York—will make this service available to you without any obligation whatever.

OWENS-CORNING
FIBERGLAS
TM REG. U.S. PAT. OFF

Owens-Corning Fiberglas Corporation
Industrial Textile Division
16 East 56th Street
New York 22, New York

IT-5201


Published by AsbestosClaims.Law
asbestosclaims.law/library/24566/4