CAUSE NO. 352-000000-91

	§	IN THE DISTRICT COURT OF
	§	
IN RE: ASBESTOS LITIGATION	§	TARRANT COUNTY, T E X A S
	§	
	§	352ND JUDICIAL DISTRICT

DEFENDANT, OWENS-CORNING FIBERGLAS CORPORATION'S
SUPPLEMENTAL RESPONSES TO
PLAINTIFF'S MASTER SET OF DISCOVERY REQUESTS

TO: ALL PLAINTIFF'S, by and through their counsel of record.

COMES NOW, Owens-Corning Fiberglas Corporation ("OCF"), one of the Defendants in the above styled and numbered cause and files this its Supplemental Responses to Plaintiff's Master Set of Discovery Requests. This supplementation pertains to all discovery propounded on behalf of each and every plaintiff who is consolidated within the September 8, 1993 trial setting.

Objections made previously to the discovery requests propounded by plaintiffs addressed herein are expressly reurged and OCF's supplemental responses are subject thereto.

BEAN & MANNING

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ATTORNEYS FOR DEFENDANT,
OWENS-CORNING FIBERGLAS CORP.

CERTIFICATE OF SERVICE

This is to certify that a true and correct copy of the above and foregoing Defendant's Answers to Interrogatories and Response to Request for Production of Documents has been forwarded to Plaintiff's counsel for record, by facsimile transmission on this the 9th day of August, 1993.

Rick W. Thamm

OWENS-CORNING FIBERGLAS CORPORATION'S
SUPPLEMENTAL RESPONSES TO
PLAINTIFF'S MASTER SET OF DISCOVERY REQUESTS

INTERROGATORY NO. 43.

Identify each and every witness you expect to call at the trial hereof and as to each expert witness provide all information required by the Texas Rules of Civil Procedure and this Court's orders and rules.

RESPONSE TO INTERROGATORY NO. 43:

OCF objects to this interrogatory on the grounds that it exceeds the scope of permissible discovery under Rule 166b. Without waiving this objection, OCF hereby supplements its previous witness designations as follows:

Stephen Pierce
Price Waterhouse
50 Hurt Plaza
Atlanta, GA

Albert Lilienfield
Price Waterhouse
160 Federal St.
Boston, MA

Messrs. Pierce and Lilienfield are accountants and will testify as to OCF's financial condition, Kaylo sales, OCF invoices, previous trial damage awards and related corporate matters.

REQUEST FOR PRODUCTION OF DOCUMENTS AND THINGS NO 16.

Set forth a list of photographs, plats, sketches, or other documents in your possession that will potentially be used as an exhibit at the trial of this case by you.

RESPONSE TO REQUEST FOR PRODUCTION OF DOCUMENTS AND THINGS NO. 16

Without waiving any prior objections, see the reports of Dr. Gerald R. Kerby and Peter Frank attached hereto as Exhibit "5"

submitted as a supplement to prior discovery responses.

Should Mr. Frank not be available to testify at trial, Stephen Pierce and or/ Albert Lilienfield (designated above) will testify as to the matters contained within Mr. Frank's report.

EXHIBIT "5" TO DEFENDANT
OWENS-CORNING FIBREGLAS CORPORATION'S
SUPPLEMENTAL RESPONSES TO
PLAINTIFF'S MASTER SET OF DISCOVERY REQUESTS

HISTORICAL REVIEW OF THE MEDICAL AND SCIENTIFIC LITERATURE CONCERNING ASBESTOS AND DISEASE

At the request of Owens-Corning Fiberglas' counsel, I am providing this report of my review of the historical medical and scientific literature dealing with asbestos health hazards and means adopted by the medical and scientific community for the prevention of same. If called upon as a witness in asbestos-related litigation, this report is intended to be a summary of my opinions based upon a review of the medical and scientific literature relating to asbestos and disease.

Although there were isolated reports, mostly from England, of individuals contracting disease as a result of exposure to asbestos prior to the 1920's, the phrase "asbestosis" was first coined by Dr. Cooke[1] in the late 1920's. Subsequently, there were additional case reports regarding asbestosis up to the landmark report by Dr. Merewether[2] in 1930. Dr. Merewether found asbestosis in individuals exposed to high levels of asbestos dust in asbestos manufacturing factories in England. The report was submitted to the British Government and published in both the British and American medical literature. Subsequent to receipt of the Merewether report, the British Government adopted regulations governing dust exposures in the factory work place, including asbestos. The British regulatory solution to prevention of asbestos hazards was to control or limit the amount of dust exposure to factory workers. These factory regulations were effective in 1933 and only governed dust exposure in factories. The 1933 British Factory Regulations did not control nor govern

asbestos dust generated by persons using asbestos-containing materials outside of the factory environment[3,4,5]. In England, asbestos dust was not controlled in the users' environment such as ship building, building operations, lagging, etc. until the passage of the Asbestos Regulations of 1969.

By the mid- to late-1930's, additional studies continued to appear. Among these were studies published by Lanza[6] on behalf of Metropolitan Life Insurance Company and Fulton, et al.[7] on behalf of the Pennsylvania Department of Labor and Industry. Once again, these reports demonstrated that there were hazards associated with exposure to asbestos. These hazards were occurring within the asbestos manufacturing factories in the eastern United States where workers were exposed to uncontrolled levels of raw asbestos dust throughout their working life.

In 1938 Dr. Dreessen[8], et al. authored Public Health Bulletin No. 241 entitled "A Study of Asbestosis in the Asbestos Textile Industry." Dr. Dreessen reported on workers in asbestos textile factories. In addition to studying the incidence of disease in these workers, Dr. Dreessen did an extensive review of the literature. In the concluding paragraphs of his report, Dr. Dreessen indicated that the solution to asbestos health problems was to control the asbestos dust. Specifically, he indicated that "If dust concentration in asbestos factories could be kept below 5mppcf (the engineering section of this report has shown how this may be accomplished), new cases of asbestosis probably would not appear." Additionally, Dr. Sayers and Dr. Dreessen presented their

paper and findings before the Industrial Hygiene Section of the American Public Health Association at a meeting in October, 1938, the report being published in The American Journal of Public Health[9] in March, 1939. Once again, Drs. Dreessen and Sayers concluded:

> "It appears that if asbestos dust concentrations in the air breathed are kept below 5mppcf new cases of asbestosis will not appear."

The early studies throughout the 1930's concentrated on the disease asbestosis within the asbestos factory environment. The medical and scientific community did not consider that those persons who only used or applied asbestos-containing materials would be at risk to asbestosis. The remedy to this problem was considered to be asbestos dust control.

The onset of World War II resulted in increased use of asbestos insulation materials in the United States. Most military insulation contracts required asbestos-containing materials. In 1946 a study entitled, "A Health Survey of Pipecovering Operations in Constructing Naval Vessels" by Fleischer, et al.[10] was published in the Journal of Industrial Hygiene and Toxicology. The author studied pipecovering operations in four United States naval shipyards. They specifically discussed use of asbestos insulation materials. The authors measured the total dust within the atmosphere and also separately measured the asbestos dust within the work atmosphere. They further noted, "In general we feel that dust counts below 5mppcf by Konimeter indicate good dust control." The authors also made the following conclusions:

(1) The character of asbestos pipecovering industry on board naval vessels is such that conclusions drawn from other asbestos industries such as textiles, cannot be applied.

(4) Since each of the three cases of asbestosis had worked at asbestos pipecovering in shipyards for more than twenty years, it may be concluded that such pipecovering is not a dangerous occupation.

The conclusions of the Fleischer report reflect the medical belief that the conditions in the textile factories and the disease of asbestosis, which had been shown to exist in the textile factories, could not be extrapolated and applied to users such as a pipecoverer in the ship building industry.

In 1946, the American Conference of Governmental Industrial Hygienists (ACGIH) first published threshold limit values (TLV's) concerning exposure to asbestos dust. The 1946 ACGIH membership included representatives of numerous state and federal public agencies. The ACGIH adopted a threshold limit value for asbestos dust of 5mppcf of air. This standard stayed at 5mppcf of air until August, 1970. In August, 1968, the ACGIH proposed a notice of intended change to reduce the TLV to 2mppcf of air or 12 fibers per cubic milliliter greater than 5 microns in length. In August, 1970, the ACGIH adopted the intended change. It was generally recognized by industrial hygienists that the standard of 2mppcf of air of asbestos particles was the equivalent of 12fpcc greater than 5 microns in length. In 1972 the OSHA standard of 5

fibers per milliliter greater than 5 microns in length became the enforceable TLV.

In 1952 the United States Department of Labor published its "Safety and Health Standards" for contractors performing Federal Supply Contracts under the Walsh-Healey Public Contracts Act. Under those requirements, the Department of Labor required that the environmental work place be controlled pursuant to the maximum allowable concentrations as adopted in 1950 by the ACGIH. For asbestos, the level of control was 5mppcf.

Later, in 1960, the Department of Labor required employers engaged in ship repair and related employments within the Federal maritime jurisdiction on the navigable waters of the United States, including dry docks and marine railways, to protect their employees against excessive work place health hazards, in accordance with the Threshold Limit Values, including the T.L.V. for asbestos of 5mppcf.

The Walsh-Healey Act, later reduced the standard for asbestos dust in the workplace to be controlled at a level below 2 million particles per cubit foot of air or 12 fibers per milliliter greater than 5 microns in length in May, 1969.

It is significant that from 1946 until 1972 the ACGIH's solution to problems resulting from exposure to asbestos was to control the dust. In fact, by the early 1950's the ACGIH had a special committee whose main purpose was to make recommendations regarding warning labels on hazardous substances. At no time prior

to OSHA in 1972 did the ACGIH specifically recommend that warnings be placed on asbestos-containing materials.

In 1948 J.M. Dallavalle published a book entitled "The Industrial Environment and its Control."[11] In the chapter entitled "The Atmospheric Environment", the author discussed tolerances for various dusts. He noted that the threshold limit value [including 5mppcf of asbestos dust] is a "concentration which can be tolerated indefinitely with no ill effects." He further stated that this concentration "constituted a tolerance or bench mark to be attained by the control engineer for a safe working environment." They went on to state that exposures below this threshold limit value can be "considered safe."

By the early- to mid-1950's, numerous state public health agencies had adopted the threshold limit value of 5mppcf of air of asbestos dust. Among these states were Pennsylvania (who received the Fulton report in 1935), New Jersey and New York (whose insulation union membership was initially studied in the early 1960's), and Ohio. State public health agencies were well educated and made informed decisions when they adopted the dust control measures for asbestos. For example, in 1952, an article was published entitled "Studies of Occupational Cancer, State Health Departments," by W.C. Hueper and Thomas E. Mancuso[12]. Dr. Hueper was the Chief of the Carcinogenic Study Section for the National Cancer Institute. Dr. Mancuso was the Chief of the Division of Industrial Hygiene for the Ohio Department of Health. In their article, the authors note that "State Health Departments not only

have an important stake in this problem [control of occupational cancer] but are in an especially favorable position of assessing its scope as to etiology, epidemiology, and control." Dr. Mancuso served as Chairman of the Standard Labeling Procedures Committee of the ACGIH from 1952 through 1954. That committee did not make any specific recommendation to label finished asbestos-containing materials as a dangerous substance.

In 1953, an article was published entitled "Asbestosis and Bronchogenic Carcinoma" by Isselbacher, Hardy, et al.[13] in the American Journal of Medicine. The authors discussed an individual who had died but who had exposures to asbestos considerably above the safe level of 5mppcf of air of asbestos dust for an eight hour working day. The authors noted, "Experience has lead to the acceptance of 5 million particles of asbestos per cubic foot of air, of small enough size to be respirable, to be the safe working concentration." One of those authors, Dr. Harriet L. Hardy, later co-authored a book along with Dr. Alice Hamilton entitled "Industrial Toxicology"[14] in 1974. In that book, she again asserted "Such terms as safe dose, threshold limit, or maximum allowable concentration are used to express the concept that there is a level below which no exposed worker will become ill. Maximum allowable concentration (MAC) has been in use the longest time and has been recently supplemented by the term threshold limit value (TLV). Such levels of environmental contamination refer to exposures over a lifetime of a forty hour work week, except in a few instances where exposure level is specified."

In 1958, the American Industrial Hygiene Association published its Hygienic Guide Series[15]. They too stated that the recommended concentration for asbestos was 5mppcf of air. In doing so, they noted, "Prevention of asbestosis depends entirely upon preventing exposure to concentrations of dust sufficiently high to produce the characteristic reactions."

In 1955, Dr. Herbert Stokinger[16] published a paper entitled "Standards for Safeguarding the Health of the Industrial Worker." Dr. Stokinger was the Chief Toxicologist for the Occupational Health Program of the Public Health Service in Cincinnati, Ohio. Among his other credentials, he later became the Chairman of the Committee on Threshold Limit Values of the American Conference of Governmental Industrial Hygienists. In his paper, Dr. Stokinger notes that:

> "Limiting values assigned to each substance in the list represent the maximal atmospheric concentration to which workers may be exposed repeatedly day after day without injury to health.
>
> The purpose of the list is to provide a limiting value of air concentration for injurious substances for use by plant engineers, industrial hygienists, and others concerned with the health and comfort of the workers. The list is intended to be a guide for the control of working atmospheres and to provide management unions, and the worker alike an assurance of healthful conditions on the job."

In this paper as well as in subsequent papers published in the 1950's and throughout the 1960's, Dr. Stokinger provides significant detail regarding the extensive review process undertaken to establish threshold limit values. In a paper

published in 1969[17], he discusses the composition of the Threshold Limit Value Committee. In doing so, he states:

> "Most are individuals of national repute, several have international reputations, but probably more important, many of the committee have a background of long experience in occupational health, and still more important, several are actively engaged daily in evaluating plant situations-and note also, membership is derived from the most highly industrial states. To my mind the accumulated background and experience of this committee provides a perspective in occupational health and animal toxicity data of which it is difficult to find the equal."

In the January-June, 1964 edition of Diseases of the Chest, the Committee on Occupational Diseases of the Chest of the American College of Chest Physicians published an article entitled "Asbestosis[18]." In that article, the Committee reviewed the various maximum allowable concentrations of asbestos utilized by various industrial and governmental agencies. In so commenting, they noted: ". . .that several governmental agencies have recommended 5,000,000 asbestos particles (of any length) per cubic foot of air as the maximal allowable concentration. . ." This Committee report is consistent with the medical belief that the maximum allowable concentration relative to asbestos relates to the asbestos dust content within a work environment. The Committee went on to point out that some hygienists considered a total dust particles of a higher limit as an appropriate measure. To obtain the asbestos dust count, an industrial hygienist would measure the total dust within the work atmosphere and multiply that count by the percentage of asbestos dust within the total dust in order to determine whether or not the maximal allowable concentration is

within 5,000,000 parts per cubic foot of air of asbestos particles.[19]

Throughout the decades of the 1930's, 1940's, 1950's and into the mid-1960's, asbestos-related disease was thought to be confined to the industrial settings of the asbestos textile factories and to the asbestos mining industries. In these work settings, individuals were exposed on a daily basis throughout their work career to high concentrated levels of raw asbestos dust. The disease believed to be related to such exposure was that of asbestosis. The control of the disease was believed to be in maintaining asbestos dust levels below the existing threshold-limit values for asbestos dust. Although there were some scattered case reports during these decades of asbestos-related disease in persons who used asbestos-containing materials, there was no long-term study to confirm a sustained cause and effect of asbestos-related disease in the users of those products.

Between 1964 and the present time, Dr. Irving Selikoff has published numerous studies regarding asbestos health hazards. He commenced his study by evaluating the Asbestos Workers Union members of New Jersey and New York. Those findings were presented at a conference on the biological effects of asbestos in October, 1964, and later published on December 31, 1965[20]. Dr. Selikoff's study was the first epidemiological study to seriously suggest a cause and effect relationship between asbestos exposure of a user of asbestos-containing materials and asbestos-related disease. Dr. Selikoff's initial study was supported by the Health Research

Council of the City of New York and the purpose was to study the question as to whether or not asbestos exposure during insulation work in the United States was associated with the hazard of asbestosis and its complications. He concluded that it was.

In various of his writings, Dr. Selikoff has done a review of the medical and scientific literature regarding asbestos health hazards. He noted that prior to his studies in the 1960's, information generally available regarding asbestos health hazards were confined to textile and plant workers. Following Dr. Selikoff's extensive study of the insulation trade, which included the use of extensive questionnaires completed by insulation workers and interviews, Dr. Selikoff concluded that the asbestos dust within the atmosphere of an insulation union worker utilizing finished asbestos-containing materials was consistently within the 5mppcf of asbestos dust identified as the maximum permissible concentration by the ACGIH.[20,21]

Dr. Selikoff and Dr. Nicholson later published extensive data including prior studies by Balzer and Cooper[22,23] estimating an insulator's prior work asbestos exposure. After considering numerous factors of exposure, both Selikoff and Nicholson estimated an insulator's average time weighted asbestos exposure at 3 fibers per milliliter greater than 5 microns in length.[24,25,26]

In commenting upon why the recognition of asbestos disease in insulation workers was not apparent until the 1960's, Dr. Selikoff, in 1970[27], stated as follows:

"It is too easy to indulge in what might be called the demonological theory of industrial hygiene history. One version would place the responsibility for early identification of risk and its correction upon industry and then indict it for trading human health for profits. Similarly, the other side of this counterfeit coin puts the blame on organized labor for having been more interested in premium pay for hazardous work than in eliminating known hazards. Both conclusions are too convenient and are essentially erroneous. It is much nearer the truth to say that both industry and labor shared in ignorance and neglect of the problem. Science and medicine are also at fault here for inadequate attention to environmental and occupational health.

In retrospect, however, it is possible to see why recognition was so long in coming. We now know that it may take 20 to 30 or more years from onset of exposure before the effects of this particular hazard begin to manifest themselves in the morbidity and mortality of the workers.

In the asbestos mining and manufacturing industry, the risk of heavy exposure to the occupational dusts had been recognized for some years. And this primary industry has understood the need to install ventilation systems and other dust control devices to reduce the hazard. Experience had indicated that reduction of dust levels and exposures could result in greatly improved health experience among asbestos factory workers.

But the extrapolation of that experience to another classification of workers -- specifically those who fabricate and install insulating materials -- was a more sophisticated task for clinical medicine and epidemiology."

Following the conference chaired by Dr. Selikoff in 1964, numerous other conferences were held throughout the world thereafter to further study the effects of asbestos upon users of asbestos-containing products and various diseases which may be associated. It is my opinion that it was not until the mid- to later-1960's that it was generally accepted by the medical and scientific community that direct users of asbestos-containing materials, such as insulators, were believed to be at any

significant risk to the development of an asbestos-related disease. Following the initial conference by Dr. Selikoff, there were additional studies sufficient to confirm Dr. Selikoff's hypothesis.

Those persons studied by Dr. Selikoff during the 1960's and early 1970's were confined to persons actually using and installing asbestos-containing materials. It was not until the mid- to later-1970's that there were sufficient studies to illustrate that job site "bystanders" were also at risk to various asbestos-related diseases. Persons in this category would include workmen in projects wherein insulation is being installed but who did not directly work with the insulation products. Their relative risk of disease, however, has always been believed to be significantly less than those persons directly using the products.[21]

You have also asked that I comment on the evolution of medical and scientific knowledge as it concerns the interrelationships between asbestos, asbestosis, cigarette smoking and lung cancer. As to the relationship between asbestosis and cigarette smoking, it is clear in the medical and scientific literature that cigarette smoking both enhances the susceptibility of an individual to contract asbestosis and also significantly contributes to an accelerated progression of asbestosis. Cigarette smoking interferes with the natural ability of the lungs to clear various particulates, including asbestos, It does this by paralyzing the cilia, which in turn allows the lung to retain greater numbers of fibers in the more peripheral regions of the lung. The statistical data of Dr. Selikoff also shows that

cigarette smokers have approximately two and one half times the risk of severe asbestosis over and above persons with asbestosis who do not smoke.

The early literature concerning lung cancer in persons exposed to asbestos did not consider the impact of cigarette smoking.

The first case report published in the United States which commented on the co-existence of asbestosis and carcinoma of the lung was that by Lynch and Smith in 1935[29]. That case was of an individual who had been a weaver in an asbestos factory, commencing approximately in 1913. On autopsy, the diagnosis was "asbesto-silicosis, with fibrosis, emphysema, bronchiectasis, chronic fibrous and acute pleurisy; epidermoid bronchial carcinoma." The authors of that report did not suggest a relationship of the carcinoma to the asbestos exposure.

Thereafter, several case reports appeared in the medical literature, both in the United States and abroad, reporting on the co-existence of asbestosis and lung cancer. The vast majority of such reports were from workers in the asbestos textile factory industry or other similar type asbestos environments.

A review of this medical literature clearly illustrates that the view of the medical and scientific community during this period of time was that the development of lung cancer in an asbestos exposed textile worker only followed a extensive preexisting asbestosis. Thus, if the disease asbestosis was

prevented by dust control measures, then lung cancer would necessarily be prevented.

In an unsigned editorial published in the Journal of the American Medical Association in 1949[30] entitled "Asbestosis and Cancer of the Lung" the author stated:

> "As the available evidence shows that the occurrence of cancer of the lung is related to pulmonary asbestosis and is not merely a possible sequela of exposure to asbestos dust. . ."

Although today we recognize a distinction between lung cancer and mesothelioma, up through the mid- to late-1960's no clear distinction was made between lung cancer and mesothelioma with respect to dust control preventing asbestosis, and therefore, preventing either of these cancers.

In an article entitled "Survey of Some Current British and European Studies of Occupational Tumor Problems"[31] by Dr. William Smith and presented at a meeting of the Cancer Prevention Committee in New York on October 18, 1950, Dr. Smith did a review of the British and European experience with lung problems related to various substances, including asbestos. In his article, Dr. Smith detailed personal conversations with Drs. Gloyne, Wyers and Merewether. He discusses the incidence of co-existent asbestosis and lung tumors. He further discusses the difference in lung disease rates between those employed in the asbestos industry before and after the British regulations were enacted. In one of his concluding paragraphs he notes:

> ". . . the nature of the disease, asbestosis, as seen in England has changed so that it is less common and less severe in individuals whose employment in the industry has taken place only since 1932. It was the consensus that a lung tumor hazard formerly existed in this industry in Great Britain but that there is no evidence to show that such a hazard continues to exist under the working conditions now prevailing."

Those working conditions, as pointed out by the author, were the dust control measures and regulations enacted in Britain.

In a study by Richard Doll entitled "Mortality From Lung Cancer in Asbestos Workers" (1955)[37] he notes in the first sentence of the article "61 cases of lung cancer had been recorded in persons with asbestosis since Lynch and Smith reported the first case." In his own review of 18 cases of lung cancer in individuals exposed to asbestos, in only three cases did the individual not have co-existent asbestosis. In each of these three cases, the individual's first exposure to asbestos was less than 15 years. The author also notes that the incidence of asbestosis is greatly reduced since implementation of the British Regulations in 1931. When Dr. Doll conducted his own study of all workers who had worked for at least 20 years in "scheduled areas," he noted that each of the lung cancer deaths was associated with underlying asbestosis. He concluded that the incidence of asbestosis associated with lung cancer has become progressively less since dust control measures were implemented.

In his article, Doll specifically related the incidence of both asbestosis and accompanying lung cancer to work conditions prevailing in the English textile factory prior to the

implementation of the British regulations effective in 1933. Later, in a book entitled Industrial Pulmonary Diseases, 1958[33], Richard Doll wrote the chapter on "Occupational Lung Cancer." In that chapter, Doll recited the findings of his previous article. In contrasting the work exposures of pre-1933 and post-1933, Doll wrote:

> "When the men were subdivided according to the length of time they had been employed before 1933 (the year in which the asbestos regulations were made effective with a consequent rate reduction in dust) it was found that the incidence of lung cancer was greatest among those men who had the longest pre-1933 exposure. It seems likely that the risk may now be largely eliminated."

In 1955, Dr. Wilhelm Hueper, Chief of the Environmental Cancer Section for the National Cancer Institute, wrote in an editorial entitled "Silicosis, Asbestosis and Cancer of the Lung,"[34] that "Epidemiologic data available at present indicate that an increased liability to cancer of the lung is limited to the presence of asbestosis of the lung and does not extend to exposure to asbestos without the existence of a pneumoconiosis resulting therefrom." This was a belief held by Dr. Hueper throughout his various writings during the 1950's and 1960's. In other words, if there was not underlying asbestosis, then any resulting lung cancer was not related to asbestos exposure.

In a textbook entitled Industrial Carcinogens, 1959[35], within the chapter on "Occupational Cancers" by R.E. Eckardt, the author stated as follows:

> "The diagnosis of occupational cancer in asbestos workers is considerably simplified in comparison with other occupational cancer because of the requirement of the pre-existence of asbestosis."

The author further noted in the same textbook that the "solution of the problem of lung cancer resulting from asbestos lies in the control of the problem of asbestosis." That control of asbestosis was compliance with the recognized threshold limit values of asbestos dust in the work place.

The author of the earliest paper showing the co-existent diseases of lung cancer and asbestosis, Dr. Kenneth M. Lynch, published an experimental study in 1957 in the AMA Archives of Industrial Hygiene in an article captioned "Pulmonary Tumors in Mice Exposed to Asbestos Dust,"[36] the results of a study intended to show whether or not asbestos could independently produce lung carcinoma in mice. As a result of that experimental study, the authors were unable to produce any proof of the carcinogenicity of asbestos by the development of lung carcinomas in mice. The authors concluded:

> "The equivocal nature of this report does not answer the questions raised by the accumulating clinical evidence that asbestosis is strongly associated with, and therefore a possible cause of, pulmonary carcinoma in man."

The report by Lynch, et al. was further evidence that in the 1950's there was no evidence from either a clinical standpoint nor an experimental standpoint that asbestos was an independent carcinogen. Virtually all of the medical literature reporting on case reports and on experimental data was limited to the

proposition that any incidence of lung cancer in persons heavily exposed to asbestos was solely limited to the pre-existing condition of asbestosis demonstrated clinically and radiographically. Lung cancer was a consequence of the asbestosis and not a direct result of exposure to asbestos. Further, those persons believed to be at risk to this sequence were those in the textile and mining industries. The risk of lung cancer was not believed to be attendant to those persons using asbestos-containing materials. Additionally, the general belief in the medical and scientific community was that if asbestosis were controlled by reduction in dust levels, then any complications leading to lung cancer would not occur.

This opinion is reinforced by the comments of Dr. E. Cuyler Hammond of the American Cancer Society in the comments made at the October, 1964, meeting of the Biological Effects of Asbestos[37] when he stated:

> "I believe that there was hardly anybody a few years ago who would have suspected that there was a lung cancer risk in this group of insulation workers. These men were not asbestos weavers nor asbestos miners, and nobody at that time had suggested an increased risk at all for insulation workers. . . "

In so far as the relation of asbestosis and lung cancer is concerned, Dr. G. W. H. Schepers[38] stated at that same conference:

> "Perhaps carcinogenicity will prove to be a correlate of asbestosis rather than a specific biological function of the mineral asbestos. It may be the crux of the matter. In all the cases of asbestos-associated lung cancer, which I have personally studied (the series now exceeds two dozen), there invariably was well established

> asbestosis. Not only was the asbestosis of marked degree in the area where the cancer arose, but there generally was evidence from serial x-rays that the asbestosis had been present in the lungs for a protracted period. . . ."

In Dr. Irving Selikoff's principal presentation at the New York Academy of Sciences conference on the "Biological Effects of Asbestos,[20]" he further commented on the co-existence of pulmonary asbestosis associated with lung cancer and mesothelioma. After concluding that insulation workers were at risk to asbestosis, he further stated: "This risk includes lung cancer and mesothelioma associated with pulmonary asbestosis."

In that same presentation, Dr. Selikoff also concluded that prior case reports on asbestosis with lung cancer and mesothelioma could not establish an association between the two. Dr. Selikoff footnoted several case reports at footnotes 43 through 53. They included case reports of Holleb and Angrist, Stoll, Bass and Angrist, Cordova, Tesluk and Knutson, Wagner, Sleggs and Marchand, Sleggs, Marchand and Wagner, Weiss, Massachusetts General Hospital, Eisenstadt, Frenkel and DeJager, Keal and Cureton. In doing so, he reported:

> "Scattered case reports have previously been recorded of neoplasms among insulation workers, including lung cancer[43-45] and mesothelioma[46-52] of both the pleura and peritoneum. A lung cancer has also been reported in a workman in a factory making asbestos insulation[53]. However, these reports, while interesting and valuable, could not establish an association between the two conditions."

Regarding the interaction of asbestos, asbestosis and cigarette smoking in the development and/or risk of lung cancer, it

is my opinion (and what I believe to be the prevailing general medical opinion) that the conditions of asbestos exposure and smoking contribute to the development of lung cancer in a manor that is slightly more than additive and not multiplicative. However, in order for asbestos exposure to contribute to lung cancer, the asbestos exposure must have been significant enough to have produced clinically diagnosable asbestosis. In the absence of clinically diagnosable asbestosis, with or without a smoking history, the development of lung cancer cannot be attributed to asbestos exposure. In persons with clinically diagnosable asbestosis and a smoking history the vast majority of the risk and/or development of lung cancer is attributable to smoking. In persons without clinically diagnosable asbestosis with asbestos exposure and a smoking history who develop lung cancer, the cause of such a lung cancer would be entirely attributable to smoking.

The disease mesothelioma was first linked to asbestos exposure in 1960 in a group of case reports published by Dr. J. C. Wagner, et al. In an article entitled "Diffuse Pleural Mesothelioma and Asbestos Exposure in the North Western Cape Providence"[39] Dr. Wagner and his associates reported upon 33 cases of pleural mesothelioma in individuals with suspected exposure to crocidolite asbestos (Cape blue). All of these case reports involved mesothelioma of the pleura. The authors noted that of the 33 cases, lung parenchyma was available in only ten cases. Of those ten cases, only four cases had large sections of lung tissue available for examination. The authors observed that in each of

the four cases where large samples of lung tissue was available, evidence of co-existing asbestosis was found. The authors further noted that the observed mesotheliomas were in individuals with probable exposure to Case blue crocidolite asbestos. However, in the Transvaal District, they had not located any mesothelioma in either the amosite mine or crocidolite mines in the Transvaal areas. Additionally, the authors noted: "The pathological evidence for associating these tumours with asbestos exposure is not conclusive."

It is now generally agreed in the medical literature that the Wagner report in 1960 was the first definitive report linking any type of asbestos exposure to mesothelioma. However, the linkage was to pleural mesothelioma with Cape blue crocidolite being the type of asbestos associated with the tumor. It took many years for the actual association to be accepted in the medical community as being causative. In fact, in the review of asbestos-related diseases by Dr. Margaret R. Becklake in 1976[40], following a complete review of the epidemiology relative to state of the art of asbestos-related diseases, it was her opinion that as late as 1976 that malignant mesothelioma of the pleura or of the peritoneum had been established to exist in association with asbestos exposure but had <u>not</u> been established as caused by asbestos.

During the meeting on the Biological Aspects of Asbestos in October, 1964, Dr. Ian Webster[41] followed up on the incidence of mesothelioma in South Africa. Many additional cases had been reported in the five years following Dr. Wagner's first report.

However, they were also limited to the Cape blue crocidolite asbestos exposure in the Cape Province. In discussing causation for this tumor, Dr. Webster discussed both those points favoring the association of asbestos exposure with the development of a mesothelioma tumor and other factors which would suggest a non-association. One of the factors which he discussed was the existence of asbestosis in a person with mesothelioma. Thus, medical science continued to question the relationship of mesothelioma as having been caused by asbestos in the absence of underlying and existing asbestosis. Further, Dr. Webster made special note of the fact that no mesotheliomas were found in people exposed to amosite nor to the Transvaal blue asbestos.

In Dr. Selikoff's principal paper[20] presented at the New York Academy of Science meeting in 1964, he confined his comments regarding both lung cancer and mesothelioma to individuals with underlying asbestosis. In fact, in the summary of his paper, after noting the increased incidence of lung cancer and ten cases of mesothelioma of the pleura or peritoneum, he referred to these conditions as complications of asbestosis.

In 1965, Dr. Selikoff published in the New England Journal of Medicine an article entitled "Relation Between Exposure to Asbestos and Mesothelioma."[47] Dr. Selikoff noted in that article that the purpose of the investigation was that: "We undertook to study the question whether mesothelioma of the pleura and peritoneum had an important relation with asbestos exposure in the United States. . . The investigation was planned to demonstrate

whether another potential neoplastic hazard of asbestos exposure existed in the United States. . ."

Of particular interest to Dr. Selikoff was whether or not mesothelioma was more common among people dying with asbestosis than those without asbestosis in the United States. In reporting upon the results of an extensive autopsy series, Dr. Selikoff specifically noted, "In this autopsy series we found no case of mesothelioma in the absence of asbestosis." In discussing mesothelioma in persons with underlying asbestosis, he once again refers to mesothelioma as being the complication of asbestosis.

In 1966, Dr. Wilhelm C. Hueper authored a book entitled "Occupational and Environmental Cancers of the Respiratory System."[43] In the section of that book dealing with asbestos, he briefly reviewed the epidemiologic data on mesothelioma of the pleura and peritoneum. In doing so, Dr. Hueper noted that:

> "Recent observations made in Germany, Great Britain, the United States, Canada, Italy, and South Africa strongly suggests that asbestosis is causally related also to the development to mesotheliomas of the pleura and peritoneum."

The leading medical researchers and scientists consistently reviewed the existence of mesothelioma in patients with underlying and pre-existing asbestosis. This was a consistent pattern of medical review at least until the early 1970's. In the same way that lung cancer was thought to be a complication of asbestosis during the 1950's, mesothelioma was thought to be an additional complication of asbestosis during the 1960's. Accordingly, dust control within the threshold limit value of

asbestos dust so as to control and prevent asbestosis was also thought to prevent both lung cancer and mesothelioma as complications of asbestosis.

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Summary of Analysis

Price Waterhouse ("PW") was asked by counsel for Owens-Corning Fiberglas Corporation ("OCF") to review and analyze financial and other related data pertaining to the sales and profitability of OCF's Kaylo product for the period 1954 to 1972. PW also was asked to review and analyze OCF public financial documents regarding OCF's net worth and the costs to OCF of the asbestos personal injury litigation. PW has prepared charts and graphs summarizing results of these efforts. I am a PW partner, in charge of the firm's Dispute Analysis and Corporate Recovery division. In that capacity, I supervised these projects relating to OCF.

PROFITABILITY OF KAYLO

The profits generated by sales of Kaylo for the years 1954 through 1972 are estimated at $1,480,000. The calculation represents the profitability of Kaylo reported as Berlin sales and is summarized in Exhibit One ("Summary of Profitability"). The year-by-year profitability calculations for Berlin and Santa Clara Kaylo are shown in Exhibit Two ("Computation of Kaylo Profitability"). Calculations of annual OCF tax rates are set forth in Exhibit Three ("Owens-Corning Fiberglas Corp. Computation of Income Tax Rate"). PW reached its results through a review and analysis of the financial data contained in OCF's corporate, divisional, and plant financial statements and audited annual reports. Relevant information from those annual reports is summarized in Exhibit Four ("Owens-Corning Fiberglas Corp. Financial History: 1953-1973").

ALLOCATION OF KAYLO SALES DOLLARS

Exhibit Five ("Where Kaylo Sales Dollars Go") shows the allocation of Kaylo sales within the company during the years 1954 through 1972. On average, 41 cents of each Kaylo sales dollar was paid to suppliers of raw materials, 37 cents was paid to OCF employees as salaries and benefits, 8 cents was paid to railroads, truckers and others to deliver the product, 7 cents was spent on selling, administrative, and research costs (net of salaries), 5 cents was spent to provide for replacement of plant and equipment, and 1 cent was paid to governments for Federal and State income taxes leaving 1 cent of each dollar, on average, as the net

contribution to the shareholders of OCF. This breakdown was derived from data contained in OCF's corporate, divisional, and plant financial statements and audited annual reports.

RELATIVE SHARE OF KAYLO SALES TO OCF TOTAL SALES

Exhibit Six ("Percent of Kaylo Sales to OCF Total Sales") depicts the relative percentage of total Kaylo net sales (Berlin and Santa Clara) to OCF's total corporate net sales over the 1954 to 1972 period. The Kaylo and OCF sales data was obtained from OCF divisional and plant financials and audited annual reports.

OCF'S NET WORTH AND THE COSTS TO OCF OF ASBESTOS PERSONAL INJURY LITIGATION

PW has reviewed and analyzed OCF public financial documents regarding the company's net worth and the impact on OCF of the asbestos personal injury litigation. Based on this review, PW concludes that OCF had a negative net worth of $1,008,000,000 ($1.008 billion) as of December 31, 1992 and of $986 million as of March 31, 1993; that the company had received a total of approximately 186,400 asbestos personal injury cases as of December 31, 1992, of which 101,100 had been completely resolved and another 22,800 were settled in principle with payment (at somewhat higher than recent historical averages) in later years; that during the first three months of 1993, an additional 7,900 cases were received by OCF and an additional 6,900 cases resolved; that indemnity payments have thus far totaled as much as $1 billion or more, including $539 million paid over the three-year period from 1990 through 1992 to resolve approximately 54,800 claims; that, as of December 31, 1992, OCF had approximately $675 million in unexhausted products liability insurance coverage (net of deductibles and self-insured retentions and excluding coverage by insolvent carriers), of which $144 million will not be available until after 1996 and $133 million is the subject of pending coverage litigation; that as of December 31, 1992, OCF had a reserve of $950 million, of which $800 million represents a February 1992 charge to 1991 earnings, reflecting in total the company's estimate of the uninsured expense and indemnity cost of both pending asbestos personal injury cases and additional cases to be received through 1999; that the reserve was $943 million as of March 31, 1993; that the current portion of the reserve was $50 million as of

December 31, 1993 and $75 million as of March 31, 1993; that OCF expects additional claims to be filed against it after 1999 but cannot estimate their cost; and that increasing cash expenditures by the company for uninsured costs of asbestos personal injury claims are expected in the 1993-1994 period.

Exhibit Seven ("Owens-Corning Fiberglas Corporation Claims Received") sets forth the numbers of asbestos personal injury claims received annually by OCF, from 1986 through 1992. Similarly, Exhibit Eight ("Owens-Corning Fiberglas Corporation Claims Resolved") sets forth the numbers of claims resolved annually by OCF, from 1986 through 1992. Exhibit Nine ("Owens-Corning Fiberglas Corporation Claims Status at December 1992") shows a breakdown of the status of the 186,400 asbestos personal injury claims received by OCF as of December 31, 1992.

Date: May 27, 1993

Peter B. Frank

Owens – Corning Fiberglas Corporation

PROFITABILITY OF BERLIN KAYLO
1954 – 1972
($ in thousands)

		% of Net Sales
Net Sales	$127,398	100%
Cost of Sales	- 105,401	83%
Operating Expenses & Interest	- 18,984	15%
Income Taxes	- 1,533	1%
Net Income	$1,480	1%

EXHIBIT ONE

Owens Corning Fiberglas Corp.

Computation of Kaylo Profitability

$ in Thousands

BERLIN	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
Net Kaylo Sales	NA	$3,798	$3,283	$4,786	$4,904	$5,714	$5,084	$6,105	$5,593	$5,842	$6,454
Cost of Sales		3,488	2,960	4,358	4,552	4,688	3,982	4,932	4,925	4,871	5,227
Margin		$310	$323	$429	$352	$1,026	$1,102	$1,173	$668	$971	$1,227
Operating Expenses		502	428	638	659	788	687	872	800	829	934
Interest Expense		23	17	23	23	25	19	35	36	31	35
Earnings before taxes		($216)	($122)	($232)	($331)	$213	$396	$267	($168)	$111	$258
Income Taxes (Fed. State, & Franchise)		(111)	(67)	(124)	(176)	112	204	139	(83)	60	139
Net Income		($105)	($55)	($108)	($155)	$100	$193	$127	($84)	$52	$119
Margin as % of Net Sales		*8.2%*	*9.8%*	*9.0%*	*7.2%*	*18.0%*	*21.7%*	*19.2%*	*11.9%*	*16.6%*	*19.0%*
Operating Exp as a % of Net Sales		*13.2%*	*13.0%*	*13.3%*	*13.4%*	*13.8%*	*13.5%*	*14.3%*	*14.3%*	*14.2%*	*14.5%*
Interest Exp as a % of Net Sales		*0.6%*	*0.5%*	*0.5%*	*0.5%*	*0.4%*	*0.4%*	*0.6%*	*0.6%*	*0.5%*	*0.5%*
Net Income as a % of Net Sales		*-2.8%*	*-1.7%*	*-2.3%*	*-3.2%*	*1.8%*	*3.8%*	*2.1%*	*-1.5%*	*0.9%*	*1.8%*
Combined Income Tax Rate		*51.5%*	*55.0%*	*53.4%*	*53.2%*	*52.6%*	*51.4%*	*52.3%*	*49.7%*	*53.5%*	*54.0%*
Kaylo Sales as a % of Overall OCF Sales		*2.6%*	*2.0%*	*2.5%*	*3.0%*	*3.2%*	*2.4%*	*2.6%*	*2.5%*	*2.3%*	*2.4%*

NOTES:

- From 1954 to 1957, the Kaylo sales data are per the General Products Division financial statements. From 1958 to 1972, the Kaylo sales data are per the Berlin plant financial statements.
- Kaylo financial statements for 1963 and 1973 are not available
- Operating, interest, and income tax expenses were not allocated to the product or plant level by OCF. The above allocation is based on the OCF corporate profile. operating and interest as a percentage of net sales, and income taxes as a percentage of taxable income.

EXHIBIT TWO

Owens Corning Fiberglas Corp.
Computation of Kaylo Profitability

$ Thousands

[illegible]	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	Total
Net Kaylo Sales	$6,841	$8,003	$7,740	$9,342	$9,128	$8,753	$8,432	$8,167	$9,430	NA	$127,398
Cost of Sales	5,152	5,864	5,636	7,142	7,139	7,243	7,611	7,346	8,287		105,401
Margin	$1,689	$2,139	$2,104	$2,200	$1,989	$1,510	$821	$821	$1,143		$21,997
Operating Expenses	933	1,091	1,071	1,360	1,304	1,235	1,281	1,191	1,356		17,959
Interest Expense	39	50	68	103	70	99	110	99	120		1,025
Earnings before taxes	$716	$998	$965	$737	$615	$175	($570)	($469)	($333)		$3,012
Income Taxes (Fed, State, & Franchise)	361	492	479	343	317	89	(284)	(214)	(164)		1,533
Net Income	$355	$507	$486	$393	$298	$86	($306)	($254)	($169)		$1,479
Margin as a % of Net Sales	*24.7%*	*26.7%*	*27.2%*	*23.5%*	*21.8%*	*17.3%*	*9.7%*	*10.1%*	*12.1%*		*17.3%*
Operating Exp as a % of Net Sales	*13.6%*	*13.6%*	*13.8%*	*14.6%*	*14.3%*	*14.1%*	*15.2%*	*14.6%*	*14.4%*		*14.1%*
Interest Exp as a % of Net Sales	*0.6%*	*0.6%*	*0.9%*	*1.1%*	*0.8%*	*1.1%*	*1.3%*	*1.2%*	*1.3%*		*0.8%*
Net Income as a % of Net Sales	*5.2%*	*6.3%*	*6.3%*	*4.2%*	*3.3%*	*1.0%*	*-3.6%*	*-3.1%*	*-1.8%*		*1.2%*
Combined Income Tax Rate	*50.4%*	*49.3%*	*49.6%*	*46.6%*	*51.5%*	*51.0%*	*48.3%*	*45.7%*	*49.2%*		*50.9%*
Kaylo Sales as a % of Overall O/F Sales	*2.3%*	*2.4%*	*2.1%*	*2.5%*	*2.1%*	*1.8%*	*1.7%*	*1.5%*	*1.5%*		*1.9%*

Owens Corning Fiberglas Corp.
Computation of Kayle Profitability

$ in thousands

PACIFIC COAST	1955	1956	1957	1958	1959	1960	1961	1962	1963
Net Kayle Sales	NA	NA	$654	NA	NA	$1,082	$1,219	$1,220	$1,410
Cost of Sales			632			1,003	1,130	1,149	1,311
Margin			22			79	89	71	99
Operating Expenses			88			152	174	173	204
Interest Expense			3			6	6	6	6
Earnings before taxes			(69)			(99)	(93)	(109)	(113)
Taxes (Fed, State, & Deferred)			(37)			(52)	(46)	(58)	(61)
Net Income			($32)			($47)	($47)	($50)	($52)
Margin as % of Net Sales			3.4%			5.6%	7.3%	5.8%	7.0%
Operating Expense as % of Net Sales			13.4%			14.3%	14.3%	14.2%	14.5%
Interest Expense as % of Net Sales			0.5%			0.6%	0.5%	0.5%	0.5%
Net Income as % of Net Sales			-4.9%			-4.4%	-3.8%	-4.1%	-3.7%
Additional Income Tax Rate			53.2%			52.3%	49.7%	53.5%	54.0%
Kayle Sales as % of Owens Corning Net Sales			0.4%			0.5%	0.5%	0.5%	0.5%

NOTES:

- Financials for 1955, 1956, 1958, and 1959 are not available
- Operating, interest, and income tax expenses were not allocated to the product or plant level by OCF. The above allocation is based on the OCF corporate profile: operating and interest as a percentage of net sales, and income taxes as a percentage of taxable income.

)wers Corning Fiberglas Corp.
X 'putation of Kayto Profitability

$ in thousands

PACIFIC COAST	1964	1965	1966	1967	1968	1969	1970	1971	Total
lot Kayto Sales	$1,018	$1,135	$1,463	$712	$555	$292	$412	$269	$11,411
Cost of Sales	933	1,030	1,280	662	519	250	351	246	10,496
largin	85	105	173	$50	$36	$42	$61	$23	$915
Operating Expenses	139	155	201	104	79	41	63	39	1,612
Interest Expense	6	7	13	8	4	3	5	3	81
arnings before taxes	(60)	(57)	(41)	(62)	(48)	(3)	(7)	(19)	($777)
axes (Fed State & Foreign)	(30)	(28)	(20)	(29)	(25)	(1)	(3)	(9)	(396)
lot Income	($30)	($29)	($21)	($33)	($23)	($1)	($4)	($11)	($379)
largin as a % of Net Sales	8.3%	9.3%	11.8%	7.0%	6.5%	14.4%	14.8%	8.6%	8.0%
Operating Exp as a % of Net Sales	13.6%	13.6%	13.8%	14.6%	14.3%	14.1%	15.2%	14.6%	14.1%
nterest Exp as a % of Net Sales	0.6%	0.6%	0.9%	1.1%	0.8%	1.1%	1.3%	1.2%	0.7%
lot Income as a % of Net Sales	-2.9%	-2.5%	-1.4%	-4.6%	-4.2%	-0.4%	-0.9%	-3.9%	-3.3%
Combined Income Tax Rate	50.4%	49.3%	49.6%	46.6%	51.5%	51.0%	46.3%	45.7%	51.2%
Kayto Sales as a % of Overall OCF Sales	0.3%	0.3%	0.4%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%

Owens Corning Fiberglas Corp.
Computation of Income Tax Rate

$ In thousands

	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
OCF Earnings Before Taxes	$14,959	$17,340	$24,335	$22,400	$19,228	$23,377	$33,291	$30,660	$28,366	$30,934	$27,110
Income Taxes											
State and Franchise	0	0	0	0	0	0	0	0	0	892	889
Federal	8,503	8,928	13,390	11,852	10,220	12,350	17,120	16,025	14,087	15,670	13,740
	$8,503	$8,928	$13,390	$11,852	$10,220	$12,350	$17,120	$16,025	$14,087	$16,562	$14,629
Combined Income Tax Rate	56.8% (see note)	51.5%	55.0%	52.9%	53.2%	52.8%	51.4%	52.3%	49.7%	53.5%	54.0%

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	Total
OCF Earnings Before Taxes	$34,623	$38,456	$43,553	$27,734	$40,079	$50,422	$38,343	$48,457	$66,294	$77,138	$735,099
Income Taxes											
State and Franchise	1,080	1,335	1,776	1,196	1,495	2,188	1,893	2,110	3,891	4,109	22,859
Federal	16,379	17,606	19,644	11,725	19,163	23,518	15,849	19,143	28,744	33,393	346,449
	$17,459	$18,941	$21,622	$12,921	$20,658	$25,706	$17,742	$21,253	$32,635	$37,502	$371,307
Combined Income Tax Rate	50.4%	49.3%	49.6%	46.6%	51.5%	51.0%	46.3%	43.7%	49.2%	48.6%	50.5%

Note: To calculate the Income Tax Rate for 1953, the $1,100,000 of Federal Excess Profits Tax was excluded from the calculation.

EXHIBIT THREE

Owens Corning Fiberglas Corp.
Financial History: 1953 – 1973

In Thousands

	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
Net Sales	$131,745	$136,470	$161,294	$173,065	$163,327	$176,771	$211,336	$218,178	$226,940	$253,258	$274,221
Cost of Sales	98,109	100,597	116,991	127,226	122,436	128,916	149,689	156,748	165,644	187,338	207,975
Margin	$33,635	$35,872	$45,303	$45,839	$40,892	$47,856	$61,647	$61,431	$61,296	$65,920	$66,253
Operating Expenses	17,805	18,056	21,020	23,091	21,852	24,373	28,553	31,151	32,457	35,924	39,684
Profit from Operations	$15,831	$17,816	$24,283	$22,748	$18,939	$23,482	$33,094	$30,280	$28,840	$29,996	$26,569
Other Income (Expense)											
Income from Royalties	525	692	845	1,135	1,405	1,476	1,991	2,432	2,354	2,817	2,640
Interest on long-term debt	(634)	(831)	(832)	(831)	(780)	(780)	(760)	(1,233)	(1,455)	(1,342)	(1,495)
Minority interest in net income of subs	(210)	(87)	(26)	(169)							
Other (net)	(352)	(250)	64	(484)	(336)	(801)	(1,015)	(819)	(873)	(537)	(605)
	(872)	(476)	52	(348)	289	(105)	197	380	(474)	938	541
Earnings Before Taxes	$14,959	$17,340	$24,335	$22,400	$19,228	$23,377	$33,291	$30,660	$28,366	$30,934	$27,110
Income Taxes											
State Income and Franchise Taxes										892	889
Federal and Canadian Taxes	9,603	6,928	13,390	11,952	10,220	12,350	17,120	16,025	14,087	15,670	13,740
	9,603	6,928	13,390	11,952	10,220	12,350	17,120	16,025	14,087	16,562	14,629
Nonrecurring Income/ Equity in Affiliates	–	–	1,279	–	–	–	–	–	–	–	–
Net Income	$5,356	$9,412	$12,224	$10,448	$9,008	$11,027	$16,171	$14,635	$14,279	$14,372	$12,480
Margin as a % of Net Sales	*25.5%*	*26.3%*	*28.1%*	*26.5%*	*25.0%*	*27.1%*	*29.2%*	*28.2%*	*27.0%*	*26.0%*	*24.2%*
Operating Exp as a % of Net Sales	*13.5%*	*13.2%*	*13.0%*	*13.3%*	*13.4%*	*13.8%*	*13.5%*	*14.3%*	*14.3%*	*14.2%*	*14.5%*
Interest Exp as a % of Net Sales	*0.6%*	*0.6%*	*0.5%*	*0.5%*	*0.5%*	*0.4%*	*0.4%*	*0.6%*	*0.6%*	*0.5%*	*0.5%*
Net Income as a % of Net Sales	*4.1%*	*6.2%*	*7.6%*	*6.0%*	*5.5%*	*6.2%*	*7.7%*	*6.7%*	*6.3%*	*5.7%*	*4.6%*

EXHIBIT FOUR

Owens Corning Fiberglas Corp.
Financial History: 1953 1973

$ In Thousands

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	Tot
Net Sales	$299,812	$335,338	$373,673	$376,484	$429,498	$487,399	$487,013	$536,732	$615,258	$728,965	$6,796,78
Cost of Sales	224,145	250,484	276,390	290,406	325,295	383,702	370,434	405,572	453,664	545,568	5,066,30
Margin	$75,667	$84,854	$97,284	$86,078	$104,203	$123,697	$116,579	$131,160	$161,604	$183,407	$1,730,47
Operating Expenses	40,907	45,698	51,727	54,809	61,352	68,781	73,983	78,276	88,474	98,684	956,75
Profit from Operations	$34,760	$39,156	$45,556	$31,269	$42,851	$54,916	$42,596	$52,884	$73,130	$84,723	$773,72
Other Income (Expenses)											
Income from Royalties	1,925	1,958	2,077	2,014	2,162	2,780	2,677	2,341	3,507	3,835	43,686
Interest Expense - Net of Debt	(1,716)	(2,103)	(3,263)	(4,164)	(3,311)	(5,529)	(8,362)	(8,477)	(7,805)	(8,498)	(60,420
Minority Interest in Net Income of Subs											(492
Other (net)	(345)	(555)	(817)	(1,386)	(1,623)	(1,745)	(566)	(2,291)	(2,538)	(3,022)	(21,396
	(136)	(700)	(2,004)	(3,535)	(2,772)	(4,494)	(4,253)	(8,427)	(6,836)	(7,585)	(38,621
Earnings Before Taxes	$34,623	$38,456	$43,553	$27,734	$40,079	$50,422	$38,343	$46,457	$66,294	$77,138	$735,099
Income Taxes											
State Income and Franchise Taxes	1,080	1,335	1,778	1,196	1,495	2,188	1,893	2,110	3,691	4,109	22,858
Federal and Canadian Taxes	16,379	17,606	19,844	11,725	19,163	23,518	15,849	19,143	28,744	33,393	348,449
	17,459	18,941	21,622	12,921	20,658	25,706	17,742	21,253	32,535	37,502	371,307
Remaining Income of Equity in Affiliates	—	—	—	—	—	—	—	—	2,107	6,467	8,853
Net Income	$17,164	$19,515	$21,931	$15,813	$19,421	$24,716	$20,601	$25,204	$35,766	$46,103	$373,645
Margin as % of Net Sales	*25.2%*	*25.3%*	*26.0%*	*22.9%*	*24.3%*	*25.4%*	*23.9%*	*24.4%*	*26.3%*	*25.2%*	*25.5%*
Operating Exp as a % of Net Sales	*13.6%*	*13.6%*	*13.8%*	*14.6%*	*14.3%*	*14.1%*	*15.2%*	*14.6%*	*14.4%*	*13.5%*	*14.1%*
Interest Exp as a % of Net Sales	*0.6%*	*0.6%*	*0.9%*	*1.1%*	*0.8%*	*1.1%*	*1.3%*	*1.2%*	*1.3%*	*1.2%*	*0.9%*
Net Income as a % of Net Sales	*5.7%*	*5.8%*	*5.9%*	*3.9%*	*4.5%*	*5.1%*	*4.2%*	*4.7%*	*5.8%*	*6.3%*	*5.5%*

Owens-Corning Fiberglas Corporation

WHERE KAYLO SALES DOLLARS GO

1954 - 1972

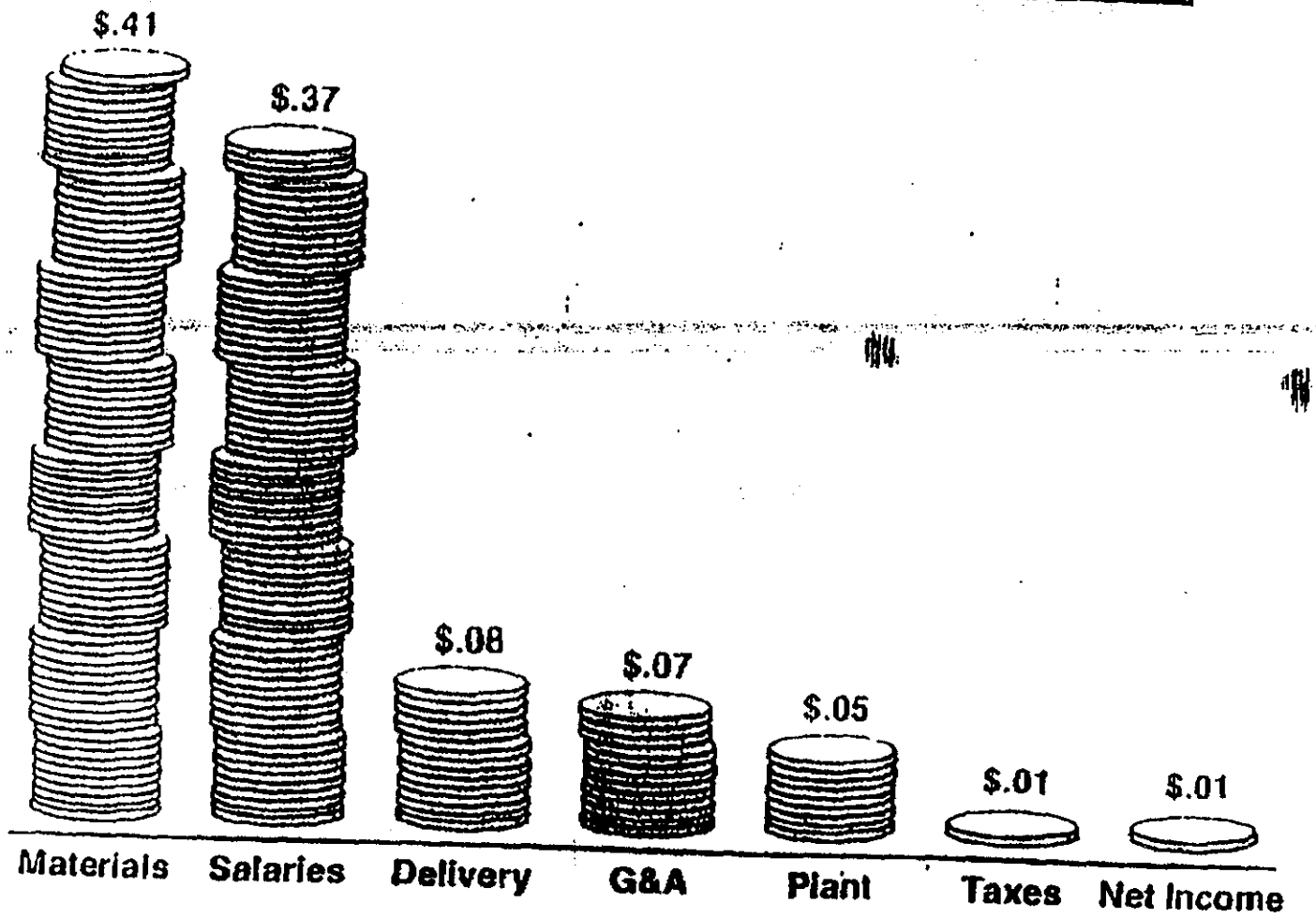


EXHIBIT FIVE

Owens-Corning Fiberglas Corporation

PERCENT OF KAYLO SALES TO OCF TOTAL SALES

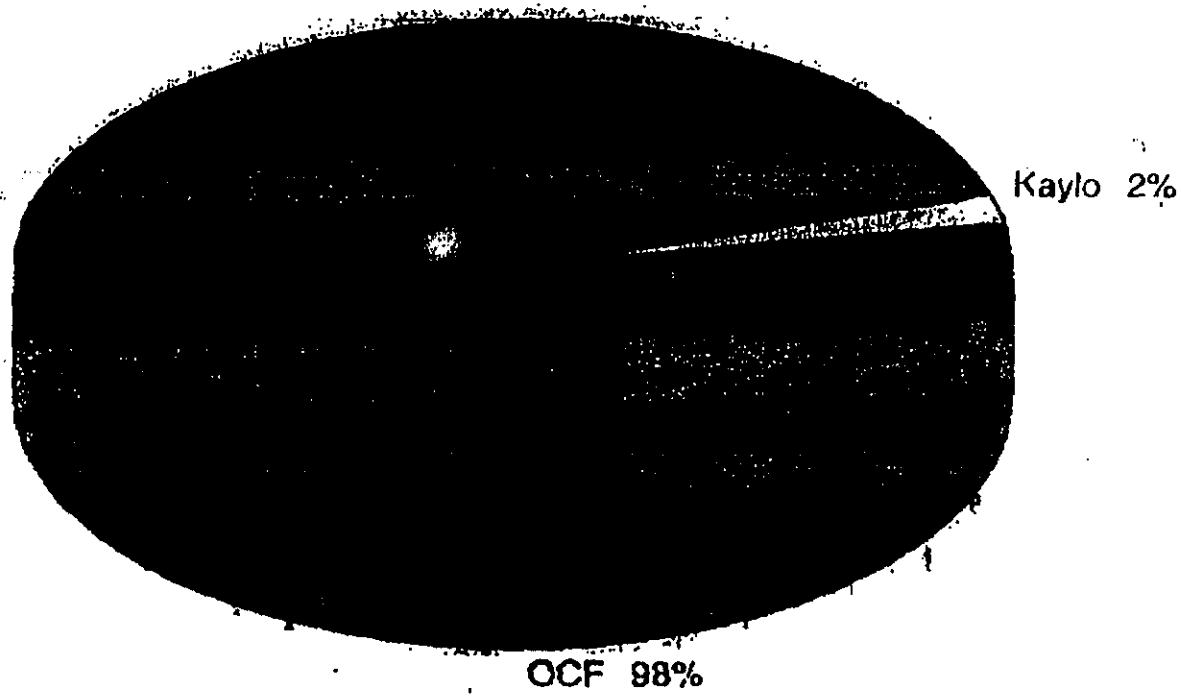
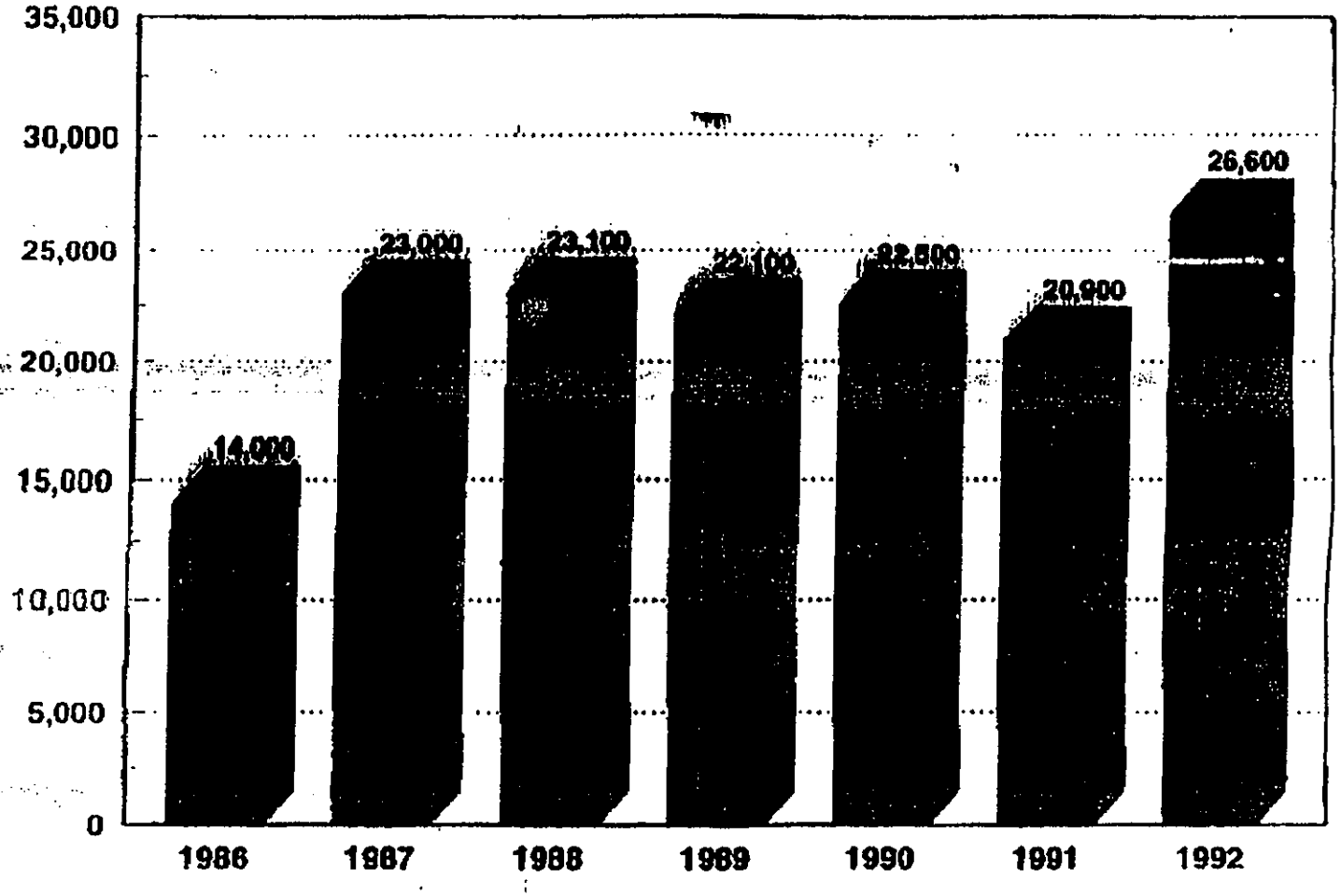


EXHIBIT SIX

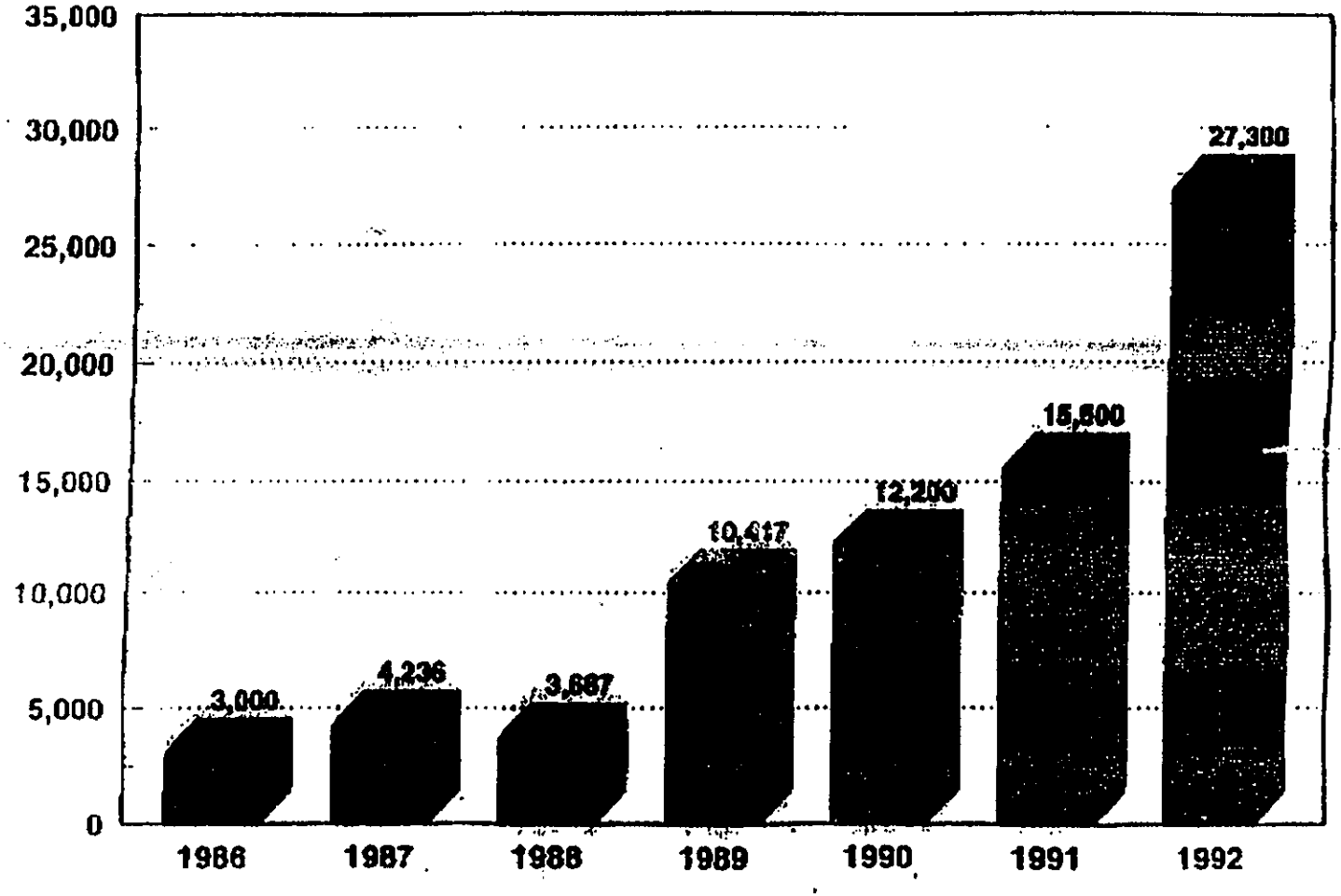
Owens-Corning Fiberglas Corporation
Claims Received



Source 1986 - 1989: OCF Annual Reports
1990 - 1991: OCF December 31, 1992 Form 10-K

Exhibit Seven

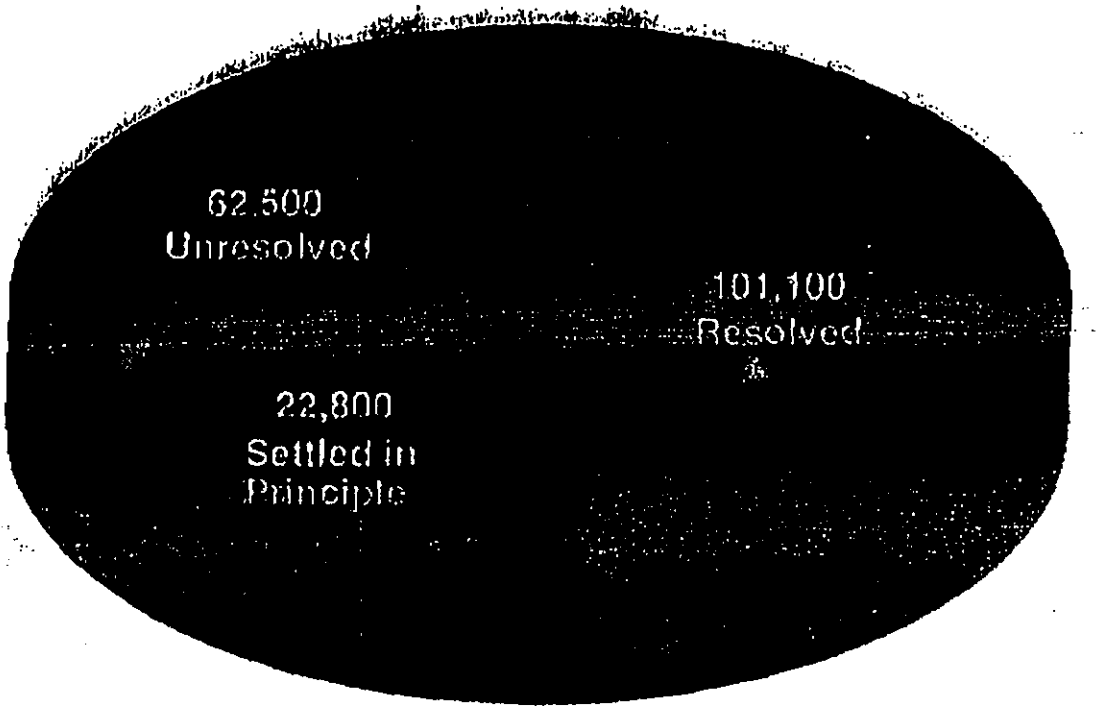
Owens-Corning Fiberglas Corporation
Claims Resolved



Source 1986 - 1991 OCF Annual Reports
1992 OCF December 31, 1992 Form 10-K

Exhibit Eight

Owens-Corning Fiberglas Corporation
Claims Status at December 1992



186,400 Claims

Source: Owens-Corning Fiberglas Corporation December 31, 1992 Form 10-K

Exhibit Nine