PLAINTIFF'S
EXHIBIT

ASBESTOS IN BUILDINGS

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Introduction

Concern about the presence of asbestos in buildings, including schools, is widespread. Because prolonged exposure to high levels of asbestos has been linked with such diseases as asbestosis, lung cancer and mesothelioma, there appears to be a general public attitude that any asbestos in schools or other buildings represents an immediate threat to human safety. *Unfortunately, this attitude has often led to hasty, unnecessary and even dangerous asbestos removal activities.*

In fact, the real issue is identifying the few buildings where significantly damaged asbestos-containing materials might pose a risk of high asbestos exposures to occupants. Therefore, the key challenge facing those responsible for dealing with the asbestos issue is understanding the facts and making scientifically-sound decisions.

The Safe Buildings Alliance shares the public's concern for safe, appropriate and timely action regarding asbestos in buildings. To help you understand this important issue, the Alliance has developed this booklet. It describes available scientific knowledge concerning asbestos in buildings and provides answers to the important questions.

The Safe Buildings Alliance is an incorporated association of manufacturers who previously supplied or whose subsidiaries previously supplied asbestos-containing materials for building construction. Alliance members are aware of and sensitive to the public's concern and need for accurate information on this emotional and often misrepresented issue. Along with other concerned citizens, community leaders and government officials, Alliance members are advocating:

1. Practical alternatives to the dangerous process of indiscriminate removal of asbestos-containing products.
2. Adoption of uniform standards governing abatement of asbestos-containing products in buildings, including the determination of acceptable exposure levels.
3. Development of a responsible inspection process to evaluate asbestos in buildings problems.
4. Establishment of a sensible training and certification program for inspectors and contractors involved in corrective actions.

For further information on asbestos in buildings, write the Alliance at: 655 Fifteenth Street, N.W., Suite 1200, Washington, DC 20005; or call: (202) 879-5120.

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Assessing Asbestos in Your Buildings

Q.

What should be done about the asbestos-containing materials that may be in your building?

A.

Most asbestos-containing products in buildings will not release substantial numbers of fibers, and risks to occupants will be insignificant. Hasty corrective actions have often been found to increase exposures and have increased risks. Thus, owners of buildings with asbestos-containing products should not initiate corrective actions before seeking expert advice.

Experts can be helpful in identifying asbestos-containing materials, assessing airborne exposure levels and the potential for release of asbestos fibers, and determining if any action is appropriate. To ensure valid, independent advice, experts chosen to identify problems and to propose corrective measures should not be affiliated with contractors offering to perform removal or similar services.

Q.

How can you identify asbestos-containing materials?

A.

There has been confusion about which materials contain asbestos. Building owners concerned about the presence of asbestos should first take

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core samples of friable products suspected of containing asbestos. These should be analyzed by polarized light microscopy or X-ray diffraction, or both, to determine their content. Competent laboratories capable of making such analyses can be found in major cities.

Q.

When asbestos-containing products have been clearly identified, what is the next step?

A.

Because the mere presence of asbestos-containing materials creates no hazard, building owners should determine whether asbestos-containing products are releasing fibers. The best way of finding what exposures exist is to monitor airborne asbestos levels. Given the extremely low levels of asbestos typically found in buildings, care must be taken to obtain accurate air level readings. *Only experts are qualified to make such determinations.*

Q.

How should airborne asbestos be analyzed to determine if significant exposures exist in buildings?

A.

Numerous experts have concluded the optical microscopy method of determining asbestos exposures is unsuited for reliable, accurate measurement at the low exposure levels typically found in buildings. Accordingly, they recommend employing transmission or scanning electron microscopy (TEM or SEM).[13,20,24] TEM or SEM measurement assures that all fibers counted are in fact asbestos and detects thinner fibers not visible by optical microscopy. Because it is the longer fibers that are most relevant to asbestos health effects, and because outside ambient air typically contains many short fibers, experts have recommended focusing attention in building assessments on the fibers measured by TEM or SEM that are longer than five microns.[20]

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Q.

What are the most important steps that building managers can take to *control asbestos exposure?*

A.

Independent experts believe that in most cases asbestos exposure can be properly controlled by a combination of minor patching or repairs and improved custodial and maintenance procedures.[16,20,30] As EPA has advised, development of an operations and maintenance program "is the best alternative for undamaged materials" for all buildings.[32] EPA's advice reflects the emerging consensus that operations and maintenance programs are the appropriate response in most buildings. Where small areas of asbestos-containing materials have been damaged such that fiber release may be possible, simple patching with readily available commercial compounds will reseal the asbestos fibers. Such procedures can be applied, for example, to cementitious ceiling materials and pipe and boiler insulation.

Q.

What is an operations and maintenance program?

A.

Easily implemented maintenance procedures are effective in controlling exposure to asbestos fibers. Custodial personnel should know the location of asbestos-containing materials. A simple labeling system can be employed to assure that such personnel are alerted to the need for precautions when disrupting such materials. Custodial personnel should also be instructed in the use of wet cleaning and other methods (including proper disposal). In some cases, HEPA vacuum cleaners should be used to properly clean up asbestos fibers.

Building managers also should ensure that maintenance workers, such as electricians or plumbers, do not inadvertently disturb asbestos-containing materials and that they use proper work practices when such materials are involved.

Combined with periodic inspection, these simple precautionary

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measures can simply and inexpensively protect both building occupants and workers from asbestos exposures of concern.

Q.

Are there some circumstances in which custodial control of the asbestos-containing material is not the best option?

A.

In those rare circumstances where airborne fiber concentrations are very high and cannot be lowered by the simple custodial and maintenance procedures discussed above, other control techniques may be appropriate. Encapsulation for some products using commercially available sealants or coatings (particularly those studied and recommended by the Battelle Institute in a study sponsored by the U.S. Environmental Protection Agency [EPA]) can be an effective control measure, as can enclosure of asbestos-containing materials in some circumstances. *Removal—the method recommended by most asbestos abatement* contractors—should be used as a last resort. There is a limited number of qualified contractors who will assure a safe removal and disposal and who are covered by liability insurance. Also, removal is the most costly method in terms of meeting established EPA and U.S. Occupational Safety and Health Administration (OSHA) regulatory standards, and, most importantly, removal often results in increased fiber release, even when careful work practices are followed.[15,21]

Q.

If asbestos-containing materials are removed, how should the asbestos *waste materials* be handled?

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A.

Asbestos wastes need to be handled carefully to avoid release of fibers to the general environment and to protect persons who may come into contact with the wastes. The Federal Environment Protection Agency[8] and state authorities have adopted regulations to govern such disposal. For example, such wastes are typically to be wetted, sealed in leak-tight containers before transportation, and placed in waste disposal sites from which no visible emissions occur or the asbestos-containing material is covered with at least 6 inches of soil once daily or a petroleum-based dust suppressing agent. Building owners need to be sure that all waste disposal regulations are followed.

Q.

Does that mean that removing asbestos-containing materials is often more dangerous than maintaining them in place?

A.

Yes. Many experts believe that removing asbestos-containing materials in buildings often does more harm than good.[9,17,19,28] EPA guidance stresses: "Removing asbestos is not always the safest or most feasible approach." The New Jersey Department of the Public Advocate similarly reported that:

> *Improper asbestos removal places workers, building occupants, teachers and especially children at risk of serious health injury. It is well documented that the improper removal of asbestos can be far more hazardous than if the asbestos is not removed at all.*[16]

A limited number of contractors are qualified to conduct removal work properly, and the demand for their services far outweighs the few available qualified contractors. Many independent experts who have studied the situation have found asbestos fiber levels in buildings to be higher *after* materials were removed than before removal.

The Congressionally-chartered National Institute of Building Sciences reached similar conclusions:

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There is some evidence to indicate that removal of asbestos-containing building products from schools and other facilities may be counterproductive. Whether the removal process involves dry or wet disruption of the in-place asbestos, data show that a substantial quantity becomes resuspended and recirculated throughout the building. Following removal, weeks and sometimes months must pass before ambient air levels of friable [crumbling] asbestos fiber drop below acceptable levels.[26]

Q.

Does the Government regulate asbestos in buildings?

A.

The Federal Government has limited regulations concerning asbestos in buildings.[8] Schools have been required to inspect for and identify friable asbestos-containing materials and certain safety precautions are required when asbestos-containing materials are removed or the building is demolished.

A number of state, and a few local, governments have established more comprehensive asbestos in building regulations. In many states, contractors and workers involved in asbestos removal activities must be trained and certified. Some states have also issued detailed work practice requirements for any asbestos abatement activities. California has in addition adopted indoor nonoccupational airborne asbestos exposure limits to serve as a guide for determining whether asbestos abatement activity is appropriate.

Q.

What are the most important points to remember about asbestos-containing products in buildings?

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A.

The mere presence of asbestos-containing materials in a building is no cause for alarm. Everyone is exposed to asbestos every day from a variety of sources. While high levels of asbestos exposure, such as those experienced by workers years ago, can sometimes lead to serious disease, the low levels found in the ambient atmosphere and in some buildings should not be a cause for concern.

Once an expert laboratory has confirmed the presence of asbestos-containing materials, building owners need to obtain qualified independent advice specific to their building. In most cases, a simple and inexpensive program of patching and improved custodial and maintenance procedures will keep asbestos levels under control. Removal of asbestos-containing materials should be a last resort, primarily because of the high likelihood that asbestos fiber levels will be increased after materials are removed.

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Important Information About Asbestos

The information on the following pages is essential to understanding why experts agree that very low-level asbestos exposures do not pose significant health risks.

1. The widespread natural occurrence of asbestos
2. Uses of asbestos
3. Asbestos and health

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The Widespread Natural Occurrence of Asbestos

Q.

What is asbestos?

A.

The term "asbestos" refers to a unique group of minerals that are widely useful because of their special properties. Asbestos minerals are fibrous silicates with a crystalline structure and are found in rock formations throughout the United States and the world.[29] However, concentrations high enough to make commercial mining practical exist only in certain locations. As a result of both natural occurrence and commercial use, asbestos is commonly found throughout the United States in water supplies and in outside and indoor air.

Q.

How are people usually exposed to asbestos?

A.

Human exposure to asbestos may be caused by air, wind and water erosion from naturally-occurring deposits as well as by the mining, manufacture and use of some asbestos-containing products. Asbestos concentrations exceeding those permitted by the government in workplaces have been recorded in natural dustfall along roads in some areas.[4]

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Drinking water from areas of asbestos-containing rock has been found to contain hundreds of millions of naturally-occurring asbestos fibers per liter.

Q.

Is asbestos exposure an everyday occurrence?

A.

People are regularly exposed to asbestos. The U.S. Environmental Protection Agency, in broad samples of local water supplies, detected naturally-occurring asbestos in nearly three-fourths of all U.S. water systems. More than 15 percent had greater than one million fibers per liter (or more than 250,000 fibers per eight-ounce glass).[11] The U.S. Department of Health, Education and Welfare reported that in 20 U.S. cities, airborne asbestos concentrations ranged up to 0.007 fibers per cubic centimeter (fibers/cc) and averaged 0.0006 fibers/cc.[6] The National Academy of Sciences concluded that the average person is daily exposed throughout the United States to 0.0004 fibers/cc.[13] What these rather complex figures mean simply is that people are exposed daily to asbestos without developing asbestos-related diseases.

Q.

Can people avoid exposure to asbestos?

A.

Asbestos exposure is unavoidable, given its widespread natural occurrence in air and water. Asbestos fibers have been found in lungs and other tissue of the general population. Analyses of normal healthy adult lung tissues from persons who have not been exposed in the workplace have found that average lungs contain millions of asbestos fibers.[3] These findings indicate how pervasive asbestos is in our environment. Eliminating all exposure to asbestos is impossible.

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Q.

Do these routine exposures endanger the public?

A.

Because the concentration of asbestos fibers occurring in the environment generally is at low levels, numerous governmental and scientific groups, including the *National Academy of Sciences, Commission of European Communities*, the *International Agency for Research on Cancer* and the *British Health and Safety Executive*, have concluded that low level exposures do not pose significant public health risks. In contrast to their approach to these low, everyday asbestos exposures, these groups have advocated stringent workplace controls on asbestos mining, manufacture and product installation, where much higher exposures can occur.[2,7,10,12,14,20,30]

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Uses of Asbestos

Q.

Why was asbestos used?

A.

For many years, asbestos was called the "magic mineral" because of its unique nature and widespread usefulness. The word itself comes from the Greek word for incombustible. The mineral's fire retardant qualities are among its most valuable characteristics. This led to its wide use in ships, buildings and theater curtains, where protection against fire was essential. In addition to its fire retardant properties it has other qualities which make it useful, including: a fibrous nature, heat stability, thermal and electrical resistance, flexibility, high tensile strength and stability in acids or alkalis.[29] Untold thousands of lives have been saved by the use of asbestos.

Q.

How widely was asbestos used in the United States?

A.

Asbestos has been used extensively. Asbestos consumption jumped dramatically in the United States during World War II, because of the Navy's determination that it was an essential component of shipboard fire protection.[31] Up until 1976, it was required by model building codes in specific areas of buildings where protection against fire was essential. In 1973 and again in 1978, however, the EPA prohibited certain spraying of asbestos-containing materials as part of its air pollution regulations.[8]

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Q.

Is asbestos still used in the United States?

A.

Because of its unique properties, asbestos is currently used in many products including vehicle brakes, roof shingles, building panels, water and sewer pipes, roof coatings, floor tiles, electrical insulating materials, specialized thermal insulation, elevator brakes, and protective aprons and gloves. EPA has been reviewing these uses.

Q.

Does the mere presence of asbestos-containing products pose a significant risk to building occupants?

A.

No. The presence of an asbestos-containing material will not, of itself, pose any hazard to building occupants. No risk occurs unless a significant number of respirable asbestos fibers are released from the material, enter the building air supply, and reach the breathing zone of building occupants. The Environmental Protection Agency has found that most asbestos products "have effectively immobilized the asbestos fibers by mixing them into a strong binding material."[22]

Q.

What are some examples of asbestos-containing products found in buildings?

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A.

The following table indicates the purpose and general location of such product types.

Product Type	*Purpose*	*Generally Found*
Acoustical	Sound Control	Ceilings in Classrooms, Halls, Multi-purpose Rooms
Thermal Insulation	Safety-Energy Conservation	Pipes and Boilers
Steel Fireproofing	Fire Protection	Covering Structural Steel
Asbestos Cement Board	Fire Protection	Near Furnaces and Boilers
Tile and Sheet Flooring	Cleanability-Decor	Floors, Classrooms and Halls
Textiles	Fire Protection	Auditorium Curtains, Laboratory Aprons and Gloves

Q.

What type of asbestos-containing materials have caused the greatest concerns?

A.

Most concern about asbestos in buildings relates to certain materials that release fibers in large quantities. Over the years asbestos-containing products have been classified as both cementitious and dry-applied materials. Cementitious products are less likely to release fibers because they are bonded into non-asbestos materials. Dry-applied materials are not as well-bonded into other materials. As a result, they can have a higher potential for fiber release when disturbed.[20] Even such potentially friable materials will not normally release fibers in significant numbers if they are undamaged, well-maintained or wrapped in protective coverings.

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Q.

What levels of airborne asbestos fibers have actually been found in buildings?

A.

Numerous studies, including those conducted by the EPA and the Ontario Royal Commission, have monitored asbestos levels in buildings constructed with these materials. In many cases, airborne levels have been so low as to be indistinguishable from outside air. In some, measurements show levels that exceed outside air levels by small amounts, and in only a few, measurements have significantly exceeded outside levels. But even at the highest levels, exposure is substantially lower than current Occupational Safety and Health Administration standards.[1,18,19,24] The Ontario Royal Commission concluded the "majority of exposures of building occupants in buildings with substantial amounts of friable asbestos would be to fibre levels less than 0.001 f/cc (fibre/cc), with a few single readings as high as 0.01 f/cc representing the highest likely exposure."[20]

Q.

How do airborne asbestos fiber levels in buildings and outside air compare to the levels associated with the workplace, and to existing government standards?

A.

Exposure levels in a typical building with asbestos-containing materials are, as EPA has emphasized, "10,000 to 100,000 times lower than levels in industry workplaces where asbestos-related diseases have been well-documented,"[33] as illustrated in the following table.

It is highly unlikely that building exposure levels will rise as high as present OSHA standards for the workplace and most certainly not as high as levels associated with historical asbestos worker exposures.

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	Representative Average Asbestos Exposures
Unregulated Workplaces (Historical)	20 or more f/cc
Workplaces Today	Up to 2.0 f/cc
Typical Building with Asbestos-Containing Materials	Up to 0.0009 f/cc
High Outside Air Readings	0.0007 f/cc
Outside Air	0.0004 f/cc

Q.

Will prolonged exposure to even low levels of asbestos fibers in a building (such as a school) cause a substantial health risk?

A.

No, because cumulative exposures are also very low. As the following table illustrates, a representative lifetime exposure from outside air would be 20 times higher than exposure over 10 years in a school building. The school building exposure would be but $^{1}/_{100,000}$th, or 0.001%, the exposure that a typical worker has been found to have in an historical asbestos workplace.

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Representative Lifetime Asbestos Exposures

	Level in Fibers/cc	*Years of Exposure*	*Days/ Week*	*Hours/ Day*	*Weeks/ Year*	*Total Lifetime Fiber Hours**
Unregulated Workplaces (Historical)	20	30	5	8	50	**1,200,000**
OSHA Standard	2	45	5	8	50	**180,000**
Proposed OSHA Standard	0.2	45	5	8	50	**18,000**
Outside Air	0.0004	70	7	24	52	**245**
Typical School With Asbestos-Containing Materials	Less than 0.0009	10	5	6	36	**Less than 11**

* Scientists often express cumulative asbestos exposures in fiber-years; one fiber-year of exposure can be caused by one year exposure at 1 fiber/cc or 10 years exposure at 0.1 fibers/cc.[20] The table expresses the same concept, but in terms of hours of exposure for ease of undertanding the comparisons.

Even in that rare school where exposures *might* average 0.01 asbestos fibers/cc, a student attending for 10 years would experience a total of 108 lifetime fiber hours—less than one-half the exposure typically received over a lifetime breathing outside air.

Q.

Even if average exposures are low, are not "peak" exposures a cause for concern?

A.

Usually not. Many persons have expressed concern that peak exposures, *as might occur for example* when a ball hits an asbestos-containing ceiling, pose significant risk. In fact, such events normally elevate airborne concentrations only slightly and only for a short period. Accordingly, long term average exposures to asbestos, which are the relevant measurements for determining the potential for health effect, are *minimally* affected by such "peak" incidents. Renovation, repair or

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removal activities which disrupt friable asbestos-containing materials can increase asbestos concentrations in the air. An operations and maintenance program using proper work practices will effectively minimize such exposures to workers and building occupants alike.

Q.

During which periods of school construction were asbestos-containing products used?

A.

Asbestos-containing products were most widely used in school construction from the period immediately following World War II to the early 1970s. These products were used in many buildings to ensure safety and efficacy and often were mandated by building codes and municipal regulations.

Q.

If an asbestos-containing product is found in a building, wouldn't it be best just to remove it?

A.

No. Some activities that disturb asbestos, *especially removal,* can cause high fiber release and consequent human exposure. Numerous studies have found airborne asbestos levels in buildings to be higher *after* removal activities than *before.*[1,17,19] The Congressionally-chartered National Institute of Building Sciences reported on cases where removal increased the risks:

> *[S]ome poorly performed asbestos removal and abatement work actually led to increased airborne asbestos levels in the building. There were also reports of cases where stable asbestos was disturbed during abatement resulting in airborne asbestos where it had not been previously. . . . [I]t is clear that poor abatement prac-*

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tices may exacerbate existing conditions rather than solve the problem.[15]

Robert N. Sawyer, M.D., one of the country's recognized experts on asbestos risks and corrective actions, recently warned the EPA:

> *In contrast to the nonexistent or negligible exposure of typical building occupants, removal operations are certain to disturb asbestos-bearing materials and release significant numbers of fibers. . . . Unqualified contractors and untrained workers are more likely to aggravate the risk than to correct it.*[28]

Q.

Does that mean, then, that some removal taking place today may create a serious risk?

A.

Yes. Many current contracts for asbestos removal call for achieving post-removal exposure levels below 0.01 fibers/cc. Because almost all buildings have even lower levels before removal, the potential for causing contamination is high.

A report issued by the State of New Jersey Department of The Public Advocate concluded: "It is well documented that the improper removal of asbestos can be far more hazardous than if the asbestos is not removed at all."

Further, the report stated that any proposal for removal, containment or management of asbestos, "must also ensure that the short-term solution of immediate removal of asbestos does not create even greater dangers for the children in our schools."[16]

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Asbestos and Health

Q.

What diseases are associated with asbestos exposure?

A.

Numerous studies of workplace exposures in occupational environments have linked asbestos with three diseases: asbestosis, a fibrotic lung condition; lung cancer; and mesothelioma, a rare cancer of the surface linings of lung or abdomen tissues. As reported by the U.S. Surgeon General and other experts, the studies have also found that the lung cancer risk from asbestos exposure is closely related to individual smoking habits, with very few lung cancer cases found among non-smokers.[20,25,34]

Q.

Even though workers in the historical workplace were exposed to very high levels of asbestos, doesn't any exposure to asbestos pose a serious health risk?

A.

No. Studies of heavily exposed workers reviewed by the *National Academy of Sciences*, the *Commission of European Communities*, the *U.S. Consumer Product Safety Commission's Chronic Hazard Advisory Panel on Asbestos* and others have uniformly found that as exposure decreases, disease decreases.[2,3,13,20] It is because of such dose-response relationships that the U.S. Surgeon General concluded "it is generally accepted that [exposures to asbestos in ambient air] do not substantially

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alter the occurrence of lung cancer or chronic lung disease in the general population" and even "*current industrial exposure standards for asbestos* [referring to OSHA's 2 fibers/cc standard] if adhered to . . . will not substantially elevate the rate of lung cancer in these workers."[34] Such dose-response relationships are typical of our environment. The general population is exposed daily to many agents linked with cancer—radiation from sunlight, radon from naturally-occurring sources, the fungus aflatoxin in milk and peanut butter, saccharin in food and beverages—at such low levels that little or no disease is expected.

Q.

How, then, can the health risks of low levels of exposure be determined?

A.

They can't. At best, only estimates called "risk assessments" can be made. Government agencies often estimate low level risks by extrapolating from risks found for much higher exposures.

In order to ensure that risks are not underestimated, risk assessors *assume* that risk will occur at any exposure and *further assume* that low exposures are proportionately as hazardous as high exposures. For example, one-tenth the exposure is assumed to pose one-tenth the risk. Based on such assessments, government agencies have developed upper limit estimates of the risks of low-level exposures to many substances, including asbestos.

Q.

How do the government's risk assessments for typical buildings with asbestos-containing products compare with other risks of everyday life?

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A.

In order to understand the risks predicted for low level asbestos exposures, those risks can usefully be compared to the risks of a number of other everyday activities.

Dr. Hans Weill, who testified for OSHA at its asbestos hearings, and Dr. Janet Hughes, a member of the CPSC's Advisory Panel on Asbestos, recently published a scientific article listing such comparisons that found asbestos in building risks are much smaller than many commonly accepted risks.[35]

Activity	*Average Annual Risk Per Million Persons*
High Asbestos Exposures in a School (0.003 f/cc mixed fibers)	0.25
Typical Asbestos Exposure in a School (0.001 f/cc chrysotile)	0.005
Long-Term Smoking	1200
Inhalation of a Foreign Object	15
Living with a Cigarette Smoker	6
Bicycling (10 to 14 year-old)	15
Playing High School Football	10

Q.

Does this mean that the public should not be concerned about any asbestos exposure in buildings?

A.

Not at all. It suggests that the sense of urgency felt by many is unwarranted. It is important to remember that the degree of risk in a representative school built with asbestos-containing materials is compar-

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able to, or less than, the risks inherent in a wide variety of everyday activities. And, it is well below the predicted risk from asbestos exposure from the general environment. Even in the rare school with average exposures of 0.01 asbestos fibers/cc, many everyday activities pose a much greater risk.

Q.

Is this the opinion of a selected few or has it been corroborated by other scientific experts and governmental bodies?

A.

A number of expert governmental and scientific bodies around the world have concluded the risk of disease from exposure to asbestos in buildings is not significant. For example, the 1979 report of the United Kingdom (U.K.) Advisory Committee on asbestos, concluded:

> *[U]nless contaminated buildings are very much commoner than seems likely, no appreciable mortality from lung cancer can be associated with any degree of contamination by chrysotile [asbestos] likely to be encountered in the U.K. in the ambient air or in buildings not under active construction or repair.*[29]

The 1984 report of the Ontario Royal Commission on asbestos similarly said:

> *[W]e deem the risk which asbestos poses to building occupants to be insignificant and therefore find that asbestos in building air will almost never pose a health hazard to building occupants.*[20]

The State of New Jersey's Asbestos Policy Committee concurred explicitly with the Ontario Commission's conclusion, noting further[9]:

> *As of this date, there are no documented cases of lung cancer associated with low-level asbestos exposure over a lifetime. Risk assessment models used to estimate the incidence of cancers from low exposures to hazardous substances predict very low levels. For example, the lifetime risk of cancer associated with nonoccupational exposures to asbestos was found to be from 1,000 to 10,000 times less than the risk due to tobacco smoking alone.*

In releasing a comprehensive study of asbestos risks by Oxford University scientist Sir Richard Doll and University of London professor

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Julian Peto, the British Health and Safety Executive found that the report:

> *indicates that the environmental health risk from asbestos in buildings is of an extremely low order.*[30]

A new article on asbestos in the 1986 Encyclopedia Britannica *Medical and Health Annual* by Dr. Ronald G. Crystal of the National Institutes of Health similarly concludes:

> *Currently there is no evidence that the levels of the airborne asbestos in public buildings, such as schools, present a hazard. While it is rational to evaluate all public buildings to ensure that the levels are in the range that would yield "low cumulative" exposures, there are no data to suggest that removal of asbestos from such buildings is necessary.*[5]

Q.

Some claim that children are at greater risk from asbestos exposure than adults. Is this true?

A.

There are no studies documenting any greater risk to children, as compared to adults. Upon reviewing the available information, the Ontario Royal Commission concluded:

> *[E]ven allowing for the hypothesis that the very young might be more susceptible to asbestos disease, the health risk to children remains insignificant because the level of exposure in asbestos-containing schools has in general been so low.*[20]

The information contained in this booklet is designed to serve as a basis for understanding the complex issue of asbestos in buildings. If you have further questions regarding this issue, please write or call:

Safe Buildings Alliance
655 Fifteenth Street, N.W.
Suite 1200
Washington, DC 20005
(202) 879-5120

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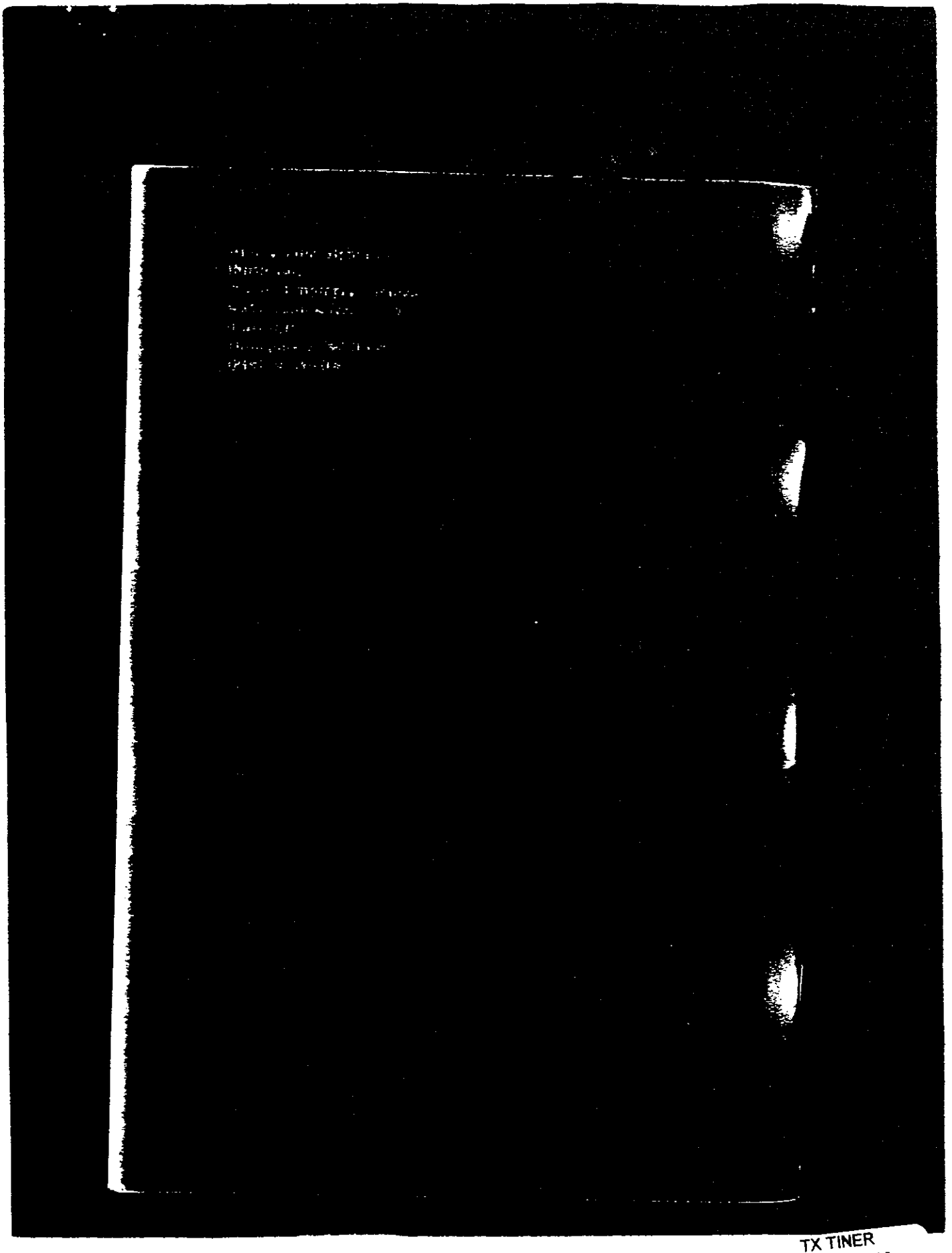

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