

**SUPREME COURT OF PENNSYLVANIA  
EASTERN DISTRICT**

---

**NOS. 48 EAP 2012, 49 EAP 2012, and 50 EAP 2012 (Related Cases)**

---

**MARGARET HOWARD and ROBERT HOWARD,  
Co-Executors of the Estate of John C. Ravert, Deceased,**

**Appellees**

**v.**

**A.W. CHESTERTON COMPANY, ACE HARDWARE CORP.,  
MONSEY PRODUCTS CO., PECORA CORPORATION,  
and UNION CARBIDE CORPORATION,**

**Appellants**

**APPEAL OF: MONSEY PRODUCTS COMPANY**

---

**BRIEF OF *AMICI CURIAE* RICHARD WILSON, JOHN HENDERSON DUFFUS,  
KENNETH R. FOSTER, JOHN F. GAMBLE, RONALD E. GOTS, DUDLEY  
HERSCHBACH, STEVEN LAMM, ALAN MOGHISSI, ROBERT NOLAN,  
GORDON L. NORD, JR., MALCOLM ROSS, EMANUEL RUBIN  
AND JAMES D. WATSON IN SUPPORT OF APPELLANTS**

---

Appeal from the Order Entered October 28, 2011,  
in the Superior Court of Pennsylvania at No. 2978 EDA 2010, Reversing and  
Remanding the Order Entered May 14, 2008 in the Court of Common Pleas of  
Philadelphia County, in the Case Docketed at June Term, 2007, No. 202 (Asbestos)

---

Patrick J. Hughes (Pa. I.D. #41403)  
Connell Foley LLP  
1500 Market Street  
12th floor, East Tower  
Philadelphia, PA 19101  
(215) 246-3403

Martin S. Kaufman  
Atlantic Legal Foundation  
2309 Palmer Avenue (Suite 104)  
Larchmont, NY 10538  
(914) 834-3322

*Attorneys for Amici Curiae*

**TABLE OF CONTENTS**

TABLE OF CONTENTS..... i

TABLE OF CITATIONS. .... ii

INTEREST OF *AMICI CURIAE*..... 1

SCOPE AND STANDARD OF REVIEW. .... 15

QUESTIONS PRESENTED FOR REVIEW. .... 16

STATEMENT OF THE CASE. .... 17

SUMMARY OF ARGUMENT..... 21

ARGUMENT..... 22

I. PLAINIFFS’ EXPERT AFFIDAVITS ARE INCOMPETENT TO  
DEFEAT MONSEY’S MOTION FOR SUMMARY JUDGMENT  
AND THE TRIAL CORRECTLY GRANTED SUMMARY JUDGMENT..... 22

    A. General and Specific Causation. .... 22

    B. Proximate Causation in Asbestos Cases Generally.. .... 24

    C. The Burden Of Proof In Asbestos Cases In Pennsylvania. .... 25

    D. The Inadequacies of Plaintiffs’ Expert Evidence. .... 27

CONCLUSION. .... 41

CERTIFICATE OF SERVICE. .... 42

## TABLE OF CITATIONS

### Cases

<i>Asbestos Info. Ass'n/North America v. Reich</i> , 117 F.3d 891 (5 <sup>th</sup> Cir. 1997). . . . .	18-19, 34
<i>Basile v. H &amp; R Block, Inc.</i> , 563 Pa. 359, 761 A.2d 1115 (2000). . . . .	15
<i>Betz v. Pneumo Abex, LLC</i> , 44 A.3d 27 (Pa. 2012). . . . .	<i>passim</i>
<i>Chanceford Aviation Prop., L.L.P. v. Chanceford Twp. Bd. of Supervisors</i> , 592 Pa. 100, 923 A.2d 1099 (2007). . . . .	15
<i>Collins v. Hand</i> , 431 Pa. 378, 246 A.2d 398 (1968). . . . .	35-36, 39
<i>Commonwealth v. Delbridge</i> , 859 A.2d 1254, 1257 (2004). . . . .	15
<i>Downey v. Crozer-Chester Med. Ctr.</i> , 817 A.2d 517 (Pa. Super. 2003). . . . .	39
<i>Eckenrod v. GAF Corp.</i> , 544 A.2d 50 (Pa. Super. 1988). . . . .	<i>passim</i>
<i>Fort Cherry Sch. Dist. v. Gedman</i> , 894 A.2d 135, 139 (Pa. Super. 2006). . . . .	15
<i>General Electric Co. v. Joiner</i> , 522 U.S. 136 (1997). . . . .	39
<i>Grady v. Frito-Lay, Inc.</i> , 576 Pa. 546, 839 A.2d 1038 (2003). . . . .	15
<i>Gregg v. V-J Auto Parts</i> , 596 Pa. 274, 943 A.2d 216 (2007). . . . .	<i>passim</i>
<i>Grieff v. Reisinger</i> , 548 Pa. 13, 693 A.2d 195 (1997). . . . .	15
<i>Kenner v. Kappa Alpha Psi Fraternity, Inc.</i> , 808 A.2d 178 (Pa. Super. 2002). . . . .	36
<i>Lohrmann v. Pittsburgh Corning Corp.</i> , 782 F.2d 1156, 1162-63 (4th Cir. 1986). . . . .	25
<i>Murphy v. Duquesne Univ. of the Holy Ghost</i> , 565 Pa. 571, 777 A.2d 418 (2001). . . . .	15
<i>Summers v. Certainteed Corp.</i> , 886 A.2d 240 (Pa. Super. 2005). . . . .	38, 40

Statutes, Regulations and Rules

Pa.R.App.P. 531(a). . . . . 14

U. S. Department of Labor, Occupational Safety and Health Administration,  
29 C.F.R. Parts 1915 and 1926. . . . . 34

U. S. Department of Labor, Occupational Safety and Health Administration,  
29 C.F.R. § 1915.1001(a)(8) (2000). . . . . 18, 34

U. S. Department of Labor, Occupational Safety and Health Administration,  
29 C.F.R. §1915.1001, App. H (2000)). . . . . 18, 34

U. S. Department of Labor, Occupational Safety and Health Administration,  
Occupational Exposure to Asbestos, 63 Fed. Reg. 35137, *et seq.*. . . . . 34

Other Authorities

Agency for Toxic Substances Disease Research (ATSDR),  
*Report on the Expert Panel on Health Effects of Asbestos and Synthetic  
Vitreous Fibers: The Influence of Fiber Length*, vi (Mar. 17, 2003),  
available at <http://www.atsdr.cdc.gov/HAC/asbestospanel/asbestostoc.html>. . . . . 37

D.W. Berman and K.S. Crump, A Meta-Analysis of Asbestos-Related Cancer  
Risk That Addresses Fiber Size and Mineral Type,  
38 *Crit. Rev. Tox.* (supp. 1) 49 (2008). . . . . 36

D.W. Berman, K.S. Crump, Update of Potency Factors for Asbestos-Related  
Lung Cancer and Mesothelioma, 38 *Crit. Rev. Tox.* (supp. 1) 1 (2008). . . . . 36

David E. Bernstein, Keeping Junk Science Out of the Asbestos Litigation,  
31 *Pepp. L. Rev.* 11 (2003). . . . . 40

David L. Eaton, Scientific Judgment and Toxic Torts-A Primer in Toxicology  
for Judges and Lawyers, 12 *J.L. & Pol'y* 5 (2003). . . . . 28

David L. Faigman, The Limits of Science in the Courtroom, in (E. Borgida &  
S.T. Fiske, eds., BEYOND COMMON SENSE 303 (2008)). . . . . 28-29

Bernard D. Goldstein & Mary Sue Henifin, *Reference Guide on Toxicology*,  
in REFERENCE MANUAL ON SCIENTIFIC EVIDENCE (3d ed. 2010). . . . . 28

Michael D. Green, D. Michal Freedman & Leon Gordis, <i>Reference Guide on Epidemiology</i> , in REFERENCE MANUAL ON SCIENTIFIC EVIDENCE (3d ed. 2010). . . . .	22-23
J.T. Hodgson and A. Darnton, <u>The Quantitative Risks of Mesothelioma and Lung Cancer in Relation to Asbestos Exposure</u> , 44 <i>Ann. Occup. Hyg.</i> 565 (2000). . . . .	36
J.T. Hodgson, D.M. McElvenny, A.J. Darnton, M.J. Price and J. Peto, <u>The Expected Burden of Mesothelioma Mortality in Great Britain from 2002 to 2050</u> , 92 <i>Brit. J. Cancer</i> 587 (2005). . . . .	36
International Organization for Standardization, ISO 10312, International Standard Ambient Air – Determination of Asbestos Fibers – Direct Transfer: Transmission Electron Microscopy Method (1995). . . . .	32
A. M. Langer & R. P. Nolan, <u>Asbestos in the Lungs of Persons Exposed in the USA</u> , in 53:2 <i>Monaldi Archive for Chest Disease</i> (1998). . . . .	29
F. Mowat, R. Weidling & P. Sheehan, <u>Simulation Tests to Assess Occupational Exposure to Airborne Asbestos from Asphalt-Based Roofing Products</u> , 51 <i>Ann. Occup. Hyg.</i> 451 (2007). . . . .	29-30, 31, 37
<i>Restatement (Second) of Torts</i> §§ 431, 433 (1965). . . . .	24
I. J. Selikoff, <i>et al.</i> , <u>The Occurrence of Asbestosis Among Insulation Workers in the United States</u> , 132 <i>Ann. N.Y. Acad. Sci.</i> 139 (1965). . . . .	28
U.S. EPA, <i>Report on the Peer Consultation Workshop to Discuss a Proposed Protocol to Assess Asbestos-Related Risk</i> , viii (May 30, 2003), available at <a href="http://www.epa.gov/oswer/riskassessment/asbestos/pdfs/asbestos_report.pdf">http://www.epa.gov/oswer/riskassessment/asbestos/pdfs/asbestos_report.pdf</a> . . . . .	36-37
World Health Organization, International Programme on Chemical Safety, <i>Asbestos and Other Natural Minerals</i> , Environmental Health (1986). . . . .	29

## **INTEREST OF *AMICI CURIAE***

*Amici* are scientists, including physicians, epidemiologists, toxicologists, chemists, geologists and physicists, who have studied the role that scientific issues play in public affairs and in particular the way in which they can illuminate disputes between different persons or elements of society in the courts of law. *Amici* are also aware of the significance of asbestos litigation nationally and in Pennsylvania, and they are concerned that the mere utterance of “asbestos,” no matter the asbestos fiber-type, or the level of exposure, together with “mesothelioma” or “cancer” can have undue impact on juries. *Amici* are also perturbed by the “shotgun” accusation of any product that a plaintiff may have used, regardless of the extent of such use or the characteristics of the product or the type, form or amount of asbestos in that product and the use of the “each and every exposure” theory (or analogue thereof) to justify that “shotgun” tactic.

Some of the *amici* also filed a brief in the *Betz v. Pneumo Abex, LLC*, 44 A.3d 27 (Pa. 2012), case. *Amici* believe that this case presents an even more egregious example than *Betz* of “litigation science,” that is, science that is produced for the express purpose of influencing the outcome of a case, and not for the purpose of presenting evidence-based and scientifically sound evidence to the court.

**RICHARD WILSON, D.Phil.** is Mallinckrodt Research Professor of Physics at Harvard University and was the first Director of the North East Regional Center for Global Environmental Change at Harvard University. He is an affiliate of the Belfer Center for Science and International Affairs at Harvard University Kennedy School of Government, and

an affiliate of the Center for Middle Eastern Studies at Harvard University. Professor Wilson is an associate of the Center for Risk analysis at the School of Public Health at Harvard University. Professor Wilson served as Chairman of the Department of Physics at Harvard University and was chairman of the Harvard Cyclotron Operating Committee as it changed its physics program to patient treatment. He is a past chairman and still a member of the visiting committee of the Radiation Medicine Department at Massachusetts General Hospital. He is a co-founder of the Society for Risk Analysis. Professor Wilson is and has been a consultant to the United States government and the governments of numerous foreign countries on matters of toxicology, epidemiology, public health and safety, nuclear safety, and risk assessment. Professor Wilson's areas of expertise include elementary particle physics, radiation physics, chemical carcinogens, air pollution, ground water pollution by arsenic, and human rights. He is the author of many articles on high energy physics, environmental pollution and risk analysis, including *Particles in Our Air, Exposures and Health Effects* (with John Daniel Spengler) (Harvard University Center for Risk Analysis, 1986) and *Risk-Benefit Analysis* (2<sup>nd</sup> ed., 2001) (with Edmund A. C. Crouch) (Harvard University Center for Risk Analysis). Professor Wilson is the author or co-author of more than 930 published papers on subjects including atomic particles, radioactive particle decay, acute toxicity and carcinogenic risk, carcinogenicity bioassays, statistical distributions of health risks, public health, cancer risk management, shielding of particle accelerators and nuclear reactors, nuclear energy production, health risks of nuclear power plant accidents, health effects of electromagnetic fields, risks and health impacts of radiation, risks of nuclear

proliferation, risk-benefit analysis, global energy use and global warming and has received many awards in these various fields.

**JOHN HENDERSON DUFFUS, B.Sc., Ph.D., D.Sc., C.Sci., C.Chem., F.R.S.C., C.Biol., M.S.B.** is the Director of the Edinburgh Centre for Toxicology and the author of more than 200 publications including books, book chapters, and research papers in peer-reviewed journals. He has also helped to organize postgraduate courses on toxicology in the U.K. and many other countries, sponsored by international organizations such as the International Programme on Chemical Safety (World Health Organization, United Nations Environmental Programme, and International Labor Organization) and prepared distance learning material and defined terminology in toxicology for the International Union of Pure and Applied Chemistry (IUPAC), and for the U.S. Society of Toxicology, and for TOXNET, the toxicology internet portal of the U.S. National Library of Medicine. Dr. Duffus has acted as a consultant on toxicology to the World Health Organization and to the European Commission, as well as to the U.K. government and to private individuals and international companies. He has never been connected with the asbestos industry in any way although his main area of expertise relates to the carcinogenicity and toxicity of inorganic substances including the various forms of asbestos. Dr. Duffus has been deeply involved with current developments relating to the chemical speciation of metallic elements in relation to toxicity, and has contributed in various publications to the development of the underlying scientific concepts. He is currently the Chair of the IUPAC Chemistry and Human Health Division Subcommittee on Toxicology and Risk Assessment.



**KENNETH R. FOSTER, Ph.D.** received his doctorate in physics in 1971. Since 1976 he has been on the faculty of the Department of Bioengineering, and is now a full professor at the University of Pennsylvania. Professor Foster's research interests relate to biomedical applications of non-ionizing radiation from audio through microwave frequency ranges, and health and safety aspects of electromagnetic fields. One of his major scholarly interests is technological risk, and the impact of technology on humans. Professor Foster examines technology, putting into perspective its relative risks and benefits to society. He is the author or co-author of numerous scientific articles that have been published in peer-reviewed journals. He is on the editorial boards of the scholarly journals *Critical Reviews in Biomedical Engineering* and *Ethics in Biology, Engineering and Medicine*. Professor Foster is co-author or co-editor of two books on risk assessment and the law dealing with expert scientific testimony in the courtroom, *Phantom Risk* (with Peter Huber and David Bernstein) (M.I.T. Press 1993) and *Judging Science* (with Peter Huber) (M.I.T. Press 1999).

**JOHN F. GAMBLE, Ph.D.** received an M.A. in Biology at Oberlin College and M.S.P.H. and Ph.D. in Environmental Science and Industrial Hygiene at the University of North Carolina School of Public Health in Chapel Hill, NC. He developed a job classification system used in epidemiology studies for stratifying different jobs with similar exposures. in the rubber industry His dissertation research was a lung function/industrial hygiene study of rubber workers. Subsequently he was Epidemiology Section Chief in National Institute of Occupational Safety and Health (NIOSH) studying morbidity and mortality among miners and workers exposed to diesel exhaust, sulphuric acid, coal mine

dust and industrial talc. Dr. Gamble worked at ExxonMobil Biomedical Sciences Inc. studying mortality of petroleum workers, respiratory morbidity of asphalt-exposed workers and air pollution. He was a member of Scientific Advisory Board of an International Agency for Research on Cancer (IARC) multi-national cohort and case-control study of bitumen workers. He was an observer for IARC Monograph 68 on silica, some silicates, coal dust and para-aramid fibrils. Subsequent to his retirement in 2005, Dr. Gamble has been working as a consultant and conducting critical literature reviews on issues including epidemiology of lung cancer and mesothelioma related to asbestos and non-asbestiform amphibole exposures; epidemiology of asbestos and gastrointestinal cancers; epidemiology of diesel exhaust and lung cancer; epidemiology of silica and lung cancer; and epidemiology of coal mine dust and coal workers pneumoconiosis. He served as industry observer at IARC Monograph 100C which updated previous reviews of silica and asbestos. He has authored chapters on Occupational Epidemiology in *Patty's Industrial Hygiene and Toxicology*, a standard reference work. He has published approximately 100 research articles in peer reviewed journals and book chapters on subjects including lung cancer, the epidemiologic evidence relating to asbestosis and lung cancer, and asbestos and colon cancer.

**RONALD E. GOTS, M.D., Ph.D., DABT**, is chief executive officer of the International Center for Toxicology and Medicine. He is a physician and board certified toxicologist, specializing in toxicology and environmental medicine. He is a member of the Society of Toxicology and the American College of Occupational and Environmental Medicine. Dr. Gots is Adjunct Professor of Pharmacology at Georgetown University School

of Medicine. He has been Coordinator of the Pharmaceutical Class Labeling Project of the U.S. Food and Drug Administration, Medical Director and Examining Physician of the Occupational Health Units, Bureau of Economic Analysis, Census Bureau and Immigration and Naturalization Service, and Senior Investigator/Chief in the Department of Gastroenterology, Walter Reed Army Institute of Research. Dr. Gots has focused on the scientific methods for assessing causation of diseases associated with chemical and biological agents, the causal analysis of chemically-induced illnesses, and to workplace exposures, worker protection and environmental risk communication. He has provided medical oversight for chemically-exposed individuals. Dr. Gots has chaired two international symposia on “Multiple Chemical Sensitivities: The State of The Science.” He was a member of a United Nations committee convened by the International Programme on Chemical Safety (UNEP-ILO-WHO) to evaluate the “chemical sensitivity” issue. Dr. Gots is the author of six books, and has written chapters in six additional books and has published more than 70 articles on biochemistry and toxicology. He has authored book chapters on *Toxic Risks: Science, Regulation, and Perception* and *Risk Analysis and Communication in Occupational, Industrial, and Environmental Toxicology*, and *Applying Principles of Science to Daubert Motions in Toxic Tort Claims* in *2000 Wiley Expert Witness Update*. He has written the books *Chemical Sensitivity: The Truth About Environmental Illness* and *Keeping Buildings Healthy*.

**DUDLEY HERSCHBACH** is a Nobel Laureate in Chemistry (1986). He is Baird Professor of Science *emeritus* at Harvard University, where he was previously Professor of Chemistry, Chairman of the Chemistry Department and Chairman of the Chemical Physics program. He is the recipient of the Pure Chemistry Prize of the American Chemical Society, the Linus Pauling Medal, the Michael Polanyi Medal, the Irving Langmuir Prize of the American Physical Society, the National Medal of Science and the Jaroslav Heyrovsky Medal.

**STEVEN H. LAMM, M.D., D.T.P.H.** is a medical doctor; he also holds a diploma in tropical public health. He is board certified in pediatrics, in occupational medicine and preventive medicine. He is a charter fellow of the American College of Epidemiology, and a winner of the Annual Prize of the Society for Epidemiologic Research. Dr. Lamm also holds a Master of Science degree in biophysics. Dr. Lamm is President of Consultants in Epidemiology & Occupational Health, LLC., Associate in the Department of Health Policy and Management at the Johns Hopkins University-Bloomberg School of Public Health and Hygiene and formerly Adjunct Professor, Preventive Medicine and Biometrics, Uniformed Services University of the Health Sciences, and Clinical Assistant Professor of Pediatrics at the Georgetown University Medical School, Washington, DC. Dr. Lamm was Senior Epidemiologist in the Epidemiology Branch of the National Institute of Child Health and Human Development of the National Institutes of Health; Epidemic Intelligence Service Officer at the Centers for Disease Control. He has served as a consultant to the Food Advisory Committee of the U.S. Food and Drug Administration, a consultant on Vaccine

Complications to the Health Resources and Services Administration, U.S.P.H.S., consultant to government of Inner Mongolia on the Health Effects of Arsenic Contaminated Drinking Water, consultant to TERIS (Teratology Information Service-University of Washington), consultant to the United States Department of Justice on Mustard Gas, consultant to the U. S. Justice Department on Epidemiology and Toxic Tort Litigation, consultant for the Halogenated Organics Subcommittee of the Environmental Health Committee of the Science Advisory Board of the Environmental Protection Agency, consultant on Drug Effect Epidemiology (Teratology), U.S. District Court, Cincinnati, OH, consultant in Epidemiology, Office of Civil Rights, U.S. Department of Justice, and consultant in Birth Defect Epidemiology, National Center for Health Statistics.

**ARTHUR M. LANGER, Ph.D.**, is a Professor in the Ph.D. Program in Earth and Environmental Sciences at the Graduate School and University Center of the City University of New York, Director of the Center for Applied Studies of the Environment, Applied Sciences Coordinating Institute, City University of New York, and Research Associate in the Department of Earth and Planetary Sciences of the American Museum of Natural History, New York. He previously was Professor and Director of the Environmental Sciences Laboratory of the Institute of Applied Sciences, Brooklyn College of the City University of New York; Associate Professor at the Center for Polypeptide and Membrane Research, Mount Sinai School of Medicine, New York; Associate Professor of Mineralogy, Department of Community Medicine, Mount Sinai School of Medicine, New York; Science Administrator, Environmental Sciences Laboratory, Mount Sinai School of Medicine;

Associate Director of the Environmental Sciences Laboratory, an NIEHS Center, Center for the Study of Biological Effects of Environmental Agents, Mount Sinai School of Medicine; Director of Laboratories, Environmental Sciences Laboratory, Mount Sinai School of Medicine; and Head of the Physical Sciences Section, Environmental Sciences Laboratory, Mount Sinai School of Medicine. He received his doctorate in Geology (Mineralogy) from Columbia University. Professor Langer has advised, contributed to, and co-authored, asbestos documents for international organizations (including the World Health Organization's International Agency for Research on Cancer and International Program on Chemical Safety), the United States Government, foreign governments (including those of Canada, Italy, Norway, Peru and South Africa), and international labor organizations. He has studied the biological activity of mineral dusts in humans for over 40 years and has published numerous articles on the subject in peer reviewed scientific journals.

**A. ALAN MOGHISSI, Ph.D.** is President of the Institute for Regulatory Science (RSI), a non-profit organization whose major activity is conducting scientific peer reviews for government agencies, and dedicated to the idea that societal decisions must be based on the best available scientific information. The activities of RSI include research, scientific assessment, and science education at all levels – particularly the education of minorities. Dr. Moghissi held positions at the U.S. Public Health Service and the U.S. Environmental Protection Agency (EPA). After his retirement from EPA as Principal Science Advisor for Radiation and Hazardous Materials, Dr. Moghissi joined the University of Maryland at Baltimore as Assistant Vice President for Environmental Health and Safety; subsequently he

was Associate Vice President for Environmental Health and Safety at Temple University in Philadelphia, Pennsylvania. He has been a visiting professor at Georgia Tech and at the University of Virginia. Dr. Moghissi's research has dealt with diverse subjects ranging from measurement of pollutants to the biological effects of environmental agents. A major part of his research has been on the analysis of scientific information upon which laws, regulations, and judicial decisions are based, notably risk assessment. Dr. Moghissi's research has included biological and environmental kinetics, but increasingly has focused on the development and implementation of the concept of "Best Available Science" (BAS) in societal and regulatory decisions. He has published over 400 papers and several books, including *Best Available Science: Fundamental Metrics for Evaluation of Scientific Claims*. He was the editor-in-chief of *Environment International* and *Waste Management* and editor-in-chief of *Technology*, which traces its roots to the *Journal of the Franklin Institute*, one of America's oldest continuously published journals of science and technology. Dr. Moghissi is also a member of the editorial board of several other scientific journals. He served on the U.S. National Commission for UNESCO, a Federal Advisory Committee to the Department of State that provides expert advice on issues of education, science, communications and culture. Dr. Moghissi received his education at the University of Zurich, Switzerland, and Technical University of Karlsruhe, Germany (now the Karlsruhe Institute of Technology), from which he received a doctorate in physical chemistry.

**ROBERT P. NOLAN, Ph.D.** received a doctorate in chemistry from The City University of New York in 1986. He was been awarded fellowships from the Stony-Herbert

Wald Foundation, National Research Council, Fulbright and the International Union for Pure and Applied Chemistry. He is the Deputy Director of the Center for Applied Studies of the Environment and a member of the doctoral faculty in Chemistry and Earth and Environmental Sciences at The Graduate School and University Center of The City University of New York. Professor Nolan is the author of more than fifty scientific papers and is internationally recognized as an expert in the characterization and health hazard evaluation of asbestos and other minerals.

**GORDON L. NORD, JR., Ph.D.** was a research mineralogist with 21 years of service with the U.S. Geological Survey. He received the B.S. degree in geology from the University of Wisconsin at Madison, the M.S. degree in geology from the University of Idaho, and the Ph.D. degree in geology from the University of California at Berkeley. He also held a Royal Society Guest Research Fellowship in the Earth Sciences Department, Cambridge University (England), and a Visiting Fellowship, Clare Hall, Cambridge University. He was elected a Life Fellow of Clare Hall, a College for Advanced Study in the University of Cambridge. Dr. Nord has published over 60 papers in peer-reviewed journals. His main scientific interests at the U.S.G.S. were the broad characterization of both natural and synthetic minerals, phase separation and ordering rates and mechanisms in silicates and oxides, the relationship between magnetic properties and microstructure in iron-titanium oxides and the stability and characterization of nanocrystalline bacterially precipitated iron hydroxides and sulfates in contaminated coal mines drainage. Before he joined the U.S.G.S. Dr. Nord was a Research Associate on a NASA-funded project investigating shock



deformation of lunar samples in the Department of Geology and Division of Metallurgy and Materials Science at Case Western Reserve University and the U.S. Steel Research Laboratory; for all of these studies the tool of choice was the transmission electron microscope. While working at Case Western and U.S. Steel Dr. Nord began to research the accurate identification of asbestos minerals by electron diffraction. After retiring from the U.S.G.S. Dr. Nord continued his work on asbestos characterization by electron diffraction as a Senior Scientist with the International Environmental Research Foundation. In 1995 he founded Nord Consultants, which is concerned with computing in science and education.

**MALCOLM ROSS, Ph.D.** was a research mineralogist with 41 years of service with the U.S. Geological Survey. He received the B.S. degree in zoology from Utah State University, the M.S. degree in physical chemistry from the University of Maryland, and the Ph.D. degree in geology from Harvard University. Dr. Ross's main scientific interests were: the crystal structure of micas, pyroxenes, and amphiboles; the petrology and mineralogy of igneous and metamorphic rocks; studies of lunar rocks, the effects of acid rain on building stone; and the health effects of mineral dusts, particularly of the asbestos minerals. After retiring from the U.S. Geological Survey in 1995, Dr. Ross became a Senior Scientist with the Environmental Sciences Laboratory, Institute of Applied Sciences, The City University of New York. His research at CUNY is directed towards analyzing various mine dusts, evaluating their possible effects on human health, and advising on possible mitigation procedures to reduce health risks to miners in the United States and abroad. In 1986 Dr. Ross received the U.S. Department of Interior's highest honor, the Distinguished Service Award,

for his contributions to a better understanding of the health effects of the several asbestos minerals. He is Past President of the Mineralogical Society of America and in 1990 he received that Society's first Public Service Award for his work on the health effects of minerals. He has published 109 papers and 67 abstracts in peer reviewed journals. Dr. Ross is a co-author of *Asbestos and Other Fibrous Minerals* and is cited in *Who's Who in America*, and in *Who's Who in Medicine and Healthcare*. At present he is particularly concerned with the proper application of scientific information to public policy.

**EMANUEL RUBIN, M.D.** is the Gonzalo Aponte Distinguished Professor of Pathology, Anatomy and Cell Biology at the Jefferson Medical College of Thomas Jefferson University in Philadelphia and Chairman *Emeritus* of the department. He has also served as Chairman of the Department of Pathology at the Mount Sinai School of Medicine and Drexel University Medical School. He held the position of Adjunct Professor of Biochemistry and Biophysics at the University of Pennsylvania School of Medicine for 10 years. Dr. Rubin is the author of some 300 papers in the medical and scientific literature and has been continuously funded by NIH for over 45 years, during which time he has served as Principal Investigator on more than \$100,000,000 in research grants. As editor-in-chief he founded one of the major textbooks in the field of pathology, *Rubin's Pathology: Clinicopathologic Foundations of Medicine*, the sixth edition of which was published in 2011. Dr. Rubin is a highly cited expert in Environmental Pathology, and has authored numerous book chapters in that field and in Pulmonary Pathology. He is recognized as an authority on the effects of asbestos on the human body.

**JAMES D. WATSON, Ph.D.** is a Nobel Laureate in Medicine (1962) (with F.H.C. Crick and M.H.F. Wilkins), and co-discoverer of the structure of DNA. Dr. Watson has also been awarded the John Collins Warren Prize of the Massachusetts General Hospital, the Albert Lasker Prize of the Public Health Association, the John J. Carty Gold Medal of the National Academy of Sciences, and the Presidential Medal of Freedom. He was director and president of the Cold Spring Harbor Laboratory of the National Institutes of Health, and is currently Chancellor *emeritus* of the Cold Spring Harbor Laboratory. He earned his Ph.D. in Zoology, and has been awarded numerous honorary degrees.

None of the *amici* is employed by, have received funding from, or have testified as experts for, any of the parties in this case.

*Amici curiae* respectfully submit this brief pursuant to Pa.R.App.P. 531(a).

## SCOPE AND STANDARD OF REVIEW

The scope and standard of review of a trial court's order granting summary judgment is plenary, *see Commonwealth v. Delbridge*, 859 A.2d 1254, 1257 (2004) and the court shall “consider the order in the context of the entire record,” *Fort Cherry Sch. Dist. v. Gedman*, 894 A. 2d 135, 139 (Pa. Super. 2006); *see also Basile v. H & R Block, Inc.*, 563 Pa. 359, 365, 761 A.2d 1115, 1118 (2000). The trial court's order will be reversed only when the court committed an error of law or clearly abused its discretion. *Basile*, 761 A.2d at 1118; *Murphy v. Duquesne Univ. of the Holy Ghost*, 565 Pa. 571, 590, 777 A.2d 418, 429 (2001); *Grieff v. Reisinger*, 548 Pa. 13, 693 A.2d 195, 196-97 (1997). To the extent the issues in a summary judgment motion involve questions of law, the appellate court’s standard of review is *de novo*. *Chanceford Aviation Prop., L.L.P. v. Chanceford Twp. Bd. of Supervisors*, 592 Pa. 100, 107, 923 A.2d 1099, 1103 (2007); *see also Gregg v. V-J Auto Parts Co.*, 596 Pa. 274, 284, 943 A.2d 216, 221 (2007).

The standard of review applicable to the trial court's underlying evidentiary ruling is more deferential. This Court set forth the proper standard in *Grady v. Frito-Lay, Inc.*, 576 Pa. 546, 839 A.2d 1038 (2003):

[T]he admission of expert scientific testimony is an evidentiary matter for the trial court's discretion and should not be disturbed on appeal unless the trial court abuses its discretion. An abuse of discretion may not be found merely because an appellate court might have reached a different conclusion, but requires a result of manifest unreasonableness, or partiality, prejudice, bias, or such lack of support so as to be clearly erroneous.

*Id.*, 576 Pa. at 559, 839 A.2d at 1046 (internal citation omitted); *see also Betz v. Pneumo Abex, LLC*, 44 A.3d 27, 52 (2012).

## QUESTIONS PRESENTED FOR REVIEW

1. Does the Superior Court's holding, which permits a plaintiff who fails to produce sufficient evidence of regularity, frequency and proximity of exposure to a defendant's specific asbestos containing product to defeat summary judgment by submitting generic, non-case-specific expert affidavits, conflict with this Court's holding in *Gregg v. V-J Auto Parts*, 596 Pa. 274, 943 A.2d 216 (2007)?
2. Does the Superior Court's holding that a plaintiff need not produce evidence that a defendant's asbestos-containing product produced dust conflict with this Court's holding in *Gregg v. V-J Auto Parts*, 596 Pa. 274, 943 A.2d 216 (2007)?

*See* Orders of the Supreme Court of Pennsylvania granting the Petition for Allowance of Appeal (October 11, 2012).

## STATEMENT OF THE CASE

*Amici* adopt the statement of the case set forth in Appellant Monsey Products Company's brief. *Amici*, however, will here highlight certain salient, critical and undisputed, facts in the record.

John Ravert was diagnosed with mesothelioma in November, 2006. (R.R. 000098a-000099a, 000123a-000124a) Prior to his death, Ravert commenced this lawsuit, naming over 80 defendants<sup>1</sup> and alleging that he was exposed, occupationally and otherwise, to asbestos contained in products manufactured and/or supplied by each of the defendants from 1962 through 2000. (R.R. 000077a-000084a)

Ravert claimed to have worked with numerous asbestos-containing products over the years including, but not limited to, gaskets, brake shoes, brake linings, boilers, valves, sheet packing, rope packing, pipe insulation, furnace cement, gypsum board, joint compounds and sealants, radiator products, roofing cement and other roofing products, ceiling tiles and panels, and perhaps many other products. (R.R. 000086a-000099a, 000111a-000125a)

Ravert testified on deposition that he applied Monsey's "oilish black" "thick liquid roofing cement and a semi-liquid roofing coating (R.R. 000337a) on a limited number of occasions while working as a maintenance man from 1969 through 1970, and again from 1979 through 1981.

---

<sup>1</sup> Monsey was not originally named in this case, but was added as a defendant in an Amended Complaint.

Ravert also testified that he used Monsey roofing cement on a limited number of occasions while making roof repairs for his mother or his friends. (*see* R.R. 000338a-000339a) Ravert's exposure to the Monsey roofing products in question was sporadic and limited.

Ravert used different brands of roofing cement beside Monsey's and he did not know how many times he used Monsey's roofing cement for the repairs as opposed to other cement products which he also used. (R.R. 000334a). Ravert never worked with the Monsey roofing product after he applied it on the roof; in other words, he did not "disturb" dried Monsey roof cement or roof coating; in fact, because Mr. Ravert repaired his employers' roofs after a rain, he had to sweep the roof to get rid of leaves, then dry the roof with rags, before applying the roof cement or coating. (R.R. 00038a). There was no dust from Monsey's products because they were liquid. *Id.*

The Monsey roofing products at issue are thick liquid asphalt, petroleum distillate and encapsulated asbestos compounds which contained only a small percentage of encapsulated asbestos and were "non-friable" (which means that they "contain minimal amounts of encapsulated asbestos which do not emit airborne fibers if left intact." *See* Occupational Safety and Health Administration, 29 C.F.R. §1915.1001, App. H (2000)). OSHA has exempted the types of asbestos products such as Monsey's roofing cement from the its asbestos regulations because there is no evidence that such products are "friable" or hazardous to the user. *See* 29 C.F.R. § 1915.1001(a)(8)(2000).<sup>2</sup> Ravert testified that the

---

<sup>2</sup> The United States Court of Appeals for the Fifth Circuit in *Asbestos Info.*  
(continued...)

Monsey roofing products were semi-liquids, and that no dust was created when he applied the product on the roof. (R.R. 00038)

In opposition to Monsey's motion for summary judgment, plaintiffs submitted short "expert" affidavits of James E. Girard, Ph.D. (R.R. 000698a-000699a and R.R. 000701a-000702a) and Arthur L. Frank, M.D., Ph.D. (R.R. 000794a-000707a).

Dr. Girard is a chemist. Two affidavits of Dr. Girard are in the record. They are substantially similar. Each is two pages long. One is dated November 14, 2000 (many years before this case was commenced), and the other is dated November 16, 2006 (shortly after this action was brought). Dr. Girard's 2000 affidavit discusses mainly asbestos gaskets, brakes and packing; his 2006 affidavit contains only a glancing reference to "cement products," but neither Girard affidavit mentions roofing cement or sealant. Dr. Girard's 2006 specifically asserts that "It is generally accepted. . . that all asbestos products, including gaskets, brake linings, packing, welding rods and cement, when abraded, handled or installed release respirable asbestos fibers." Girard Affidavit, November 16, 2006, ¶ 4 <sup>®</sup>. R. 000698a) (emphasis added).

Dr. Frank is a medical doctor with experience in asbestos-related diseases. Dr. Frank's short (slightly more than three pages long) affidavit discusses exposure to asbestos from gaskets, packing, automotive brakes, and welding rods. Dr. Frank stated in his affidavit that "it is my opinion, to a reasonable degree of medical certainty, that exposure to asbestos

---

<sup>2</sup>(...continued)

*Ass'n/North America v. Reich*, 117 F.3d 891, 893 (5<sup>th</sup> Cir. 1997) found that "there is no evidence in the record that asbestos fibers can ever escape from roofing sealants and become airborne; in fact, the evidence in the record indicates that they cannot."



from gaskets and/or packing materials, or welding rod [sic] or brake linings or cement can substantially contribute to cause the development of asbestos-related disease. . . .” (Frank Affidavit, ¶ 21, R.R. 000706a)

It is noteworthy that the Girard and Frank affidavits do not address roofing products such as those made by Monsey and used by Mr. Ravert, and thus *amici* believe they are inapplicable to Monsey’s products.<sup>3</sup>

---

<sup>3</sup> Neither Girard nor Frank cite any scientific studies or testing of the unspecified “cement.” In contrast, Dr. Frank discusses studies or testing with regard to brake products and gaskets. Notwithstanding the lack of empirical data, in the opinion paragraph of his affidavit (para. 21), Dr. Frank, seemingly off-handedly, includes “cement” as one of the accused products. In his 2006 affidavit of Dr. Girard refers to “cement,” but does not identify the type of cement to which he refers, nor does he mention any testing, studies, or scientific reports regarding “cement.” The only references to “cement” that appear in these affidavits do not provide any description of the type of “cement” being referred to. In common usage “cement” refers to a paving or construction material that is a component of concrete, and is quite different from “roofing cement.” When cement and aggregate are mixed and harden it is called concrete; the cement is the “glue” that holds the aggregate together. For example, cement sidewalks are actually concrete.

## SUMMARY OF ARGUMENT

In *Gregg v. V-J Auto Parts, Co.*, 596 Pa. 274, 292, 943 A.2d 216, 226-27 (2007), this Court explained that a plaintiff in an asbestos action must present “reasonably developed scientific reasoning that would support the conclusion that the product sold by the defendant was a substantial factor in causing the harm.” The Court noted further that the “fiction that each and every exposure to asbestos, no matter how minimal in relation to other exposures, implicates a fact issue concerning substantial-factor causation” is not “reasonably developed scientific reasoning.” *Id.* Here, the trial court correctly rejected precisely the type of expert testimony labeled as a “fiction” in *Gregg*. See *Betz*, 998 A.2nd at 30, 40, 53, 56 (characterizing plaintiff Betz's expert’s testimony as “each and every exposure to asbestos – no matter how small – contributes substantially to the development of asbestos-related diseases.”

Moreover, the expert affidavits proffered by plaintiffs in this case are bereft of any empirical evidence concerning specific products or Mr. Ravert’s actual exposure to respirable asbestos fibers from roofing cement or coatings generally or Monsey’s products specifically. In addition those expert affidavits do not explain how the authors link any clinical data to their conclusions. They are, in other words, the mere “*ipse dixit*” of the affiants, and thus not competent evidence.

## ARGUMENT

### I. PLAINTIFFS' EXPERT AFFIDAVITS ARE INCOMPETENT TO DEFEAT MONSEY'S MOTION FOR SUMMARY JUDGMENT AND THE TRIAL CORRECTLY GRANTED SUMMARY JUDGMENT.

American courts have reached a broad consensus on what a plaintiff must show to prove causation in a toxic tort case. First, a plaintiff must show that the substance in question is capable of causing the injury in question. This is known as "general causation." Second, a plaintiff must show that this substance caused *his* injury. This is known as "specific causation." Because proof of general causation cannot satisfy a plaintiff's burden without proof of specific causation, and proof of specific causation implicitly requires proof of general causation, the focus of inquiry in toxic tort cases typically is on the existence of specific causation.

#### A. General and Specific Causation.

General causation concerns the question of whether a chemical can cause an adverse effect. The ability to cause such an effect is referred to as its toxicity. Hazard is the likelihood of such effect occurring. Some highly toxic chemicals present little hazard because of careful handling; whereas some chemicals with little toxicity present a significant hazard because of poor handling, perhaps due to lack of concern. General causation considers the issue of whether an agent increases the incidence of disease in a group and not whether the agent caused any given individual's disease. A toxic agent generally will not cause disease in every exposed individual because of individual varied physiological and biochemical characteristics and because of differing degrees of exposure. Michael D. Green, D. Michal

Freedman & Leon Gordis, *Reference Guide on Epidemiology*, in REFERENCE MANUAL ON SCIENTIFIC EVIDENCE at 623 (3d ed. 2010).

Specific causation is a necessary legal element in a toxic substance case. The plaintiff must establish not only that an agent is capable of causing disease, but also that it did cause the plaintiff's disease. Specific causation considers whether a specific exposure to an agent was responsible for a given individual's disease. Specific causation asks the question whether a chemical did cause an adverse effect, under a specific set of exposure and personal circumstances. Specific causation is based upon prior proof of general causation; it is not possible to establish, within the same event both general and specific causation, unless the effect is quite rare and dose response relationships are established for the exposure.<sup>4</sup> Specific causation requires a number of steps, including determination that general causation exists. The plaintiff must also show that the level of the toxin he was exposed to can cause the illness he contracted.

Beyond general and specific causation, an additional causation issue arises when multiple defendants are held responsible for exposing the plaintiff to a harmful substance.<sup>5</sup>

---

<sup>4</sup> If Mr. Ravert's exposure to asbestos from Monsey's products was to chrysotile asbestos, general causation is not clear. Chrysotile asbestos may cause increased risk of mesothelioma, but the exposures must be very high. *See infra*, n. 10. Low cumulative exposures to chrysotile are unlikely to be important for the specific causation argument. Cumulative exposure to any type of asbestos from Monsey's products in this case is not known, but it is likely to have been very low because that asbestos was contained in a viscous medium and thus not respirable, making any argument about specific causation very weak. *See infra*, pp. 36-38.

<sup>5</sup> Other steps involve exposure and health assessments, and consideration of alternative causes.

The most common example is a plaintiff who contracts an asbestos-related disease, such as mesothelioma, lung cancer or asbestosis, and, as here, was exposed to asbestos from multiple sources.

### **B. Proximate Causation in Asbestos Cases Generally.**

Assuming the plaintiff is able to show that his disease was more probably than not caused by asbestos exposure, he still has to prove that a particular defendant's asbestos-containing product was a "proximate cause" of that injury to recover damages from that defendant. Courts, building on the *Restatement (Second) of Torts*, have concluded that for example, plaintiffs must provide sufficient evidence for a jury to conclude that exposure to the defendant's asbestos or asbestos-containing product was a "substantial factor" in promoting the disease. As the comments to the *Restatement (Second)* note, if other actors' conduct is the predominant factor in bringing the harm at issue, then a defendant's action is not a "substantial factor" in causing the harm, and thus it is not the legal cause of the harm. *Restatement (Second) of Torts*, §§ 431, 433 (1965).

Asbestos plaintiffs have faced the problem that in most cases they were exposed to asbestos many years before being diagnosed with lung disease and are unable to prove with any precision how much exposure they received from any particular defendant's products. Given that this inability could prove an insuperable barrier to many deserving plaintiffs, courts have generally held that proximate causation in the asbestos context should be considered in light of the "frequency, regularity, proximity test" articulated by the Fourth

Circuit Court of Appeals in *Lohrmann v. Pittsburgh Corning Corp.*, 782 F.2d 1156, 1162-63 (4th Cir. 1986).

The *Lohrmann* court held that when a plaintiff alleges multiple sources of exposure to asbestos, the plaintiff must present evidence: (1) of exposure to a “specific product” attributable to the defendant, (2) “on a regular basis over some extended period of time,” (3) “in proximity to where the plaintiff actually worked,” [or where he otherwise claims to have been exposed to asbestos], (4) such that it is probable that the exposure to the defendant’s product caused plaintiff’s injuries. *Lohrmann*, 782 F.2d at 1162-63. The court found it insufficient to raise an inference of causation that the plaintiff claimed exposure to a specific asbestos-containing product ten to fifteen times for a duration of one to eight hours over a thirty-nine year period. *Id.* at 1163.

The “frequency, regularity, proximity” test attempts to reduce the evidentiary burden on plaintiffs while absolving defendants who were not responsible for plaintiffs’ injuries. The “frequency, regularity, and proximity” test has been determined to provide a rational method for eliminating inconsequential exposure cases involving infrequent or *de minimis* exposures.

### **C. The Burden Of Proof In Asbestos Cases In Pennsylvania.**

In *Eckenrod v. GAF Corp.*, 544 A.2d 50 (Pa. Super. 1988), the initial case in Pennsylvania setting forth a plaintiff’s burden of proof in an asbestos case, the Superior Court discussed the plaintiff’s burden of proof in an asbestos case:

In order for liability to attach in a products liability action, plaintiff must establish that the injuries were caused by a product of the particular

manufacturer or supplier. Additionally, in order for a plaintiff to defeat a motion for summary judgment, a plaintiff must present evidence to show that he inhaled asbestos fibers shed by the specific manufacturer's product. Therefore, a plaintiff must establish more than the presence of asbestos in the workplace; he must prove that he worked in the vicinity of the product's use. Summary judgment is proper when the plaintiff has failed to establish that the defendant's products were the cause of plaintiff's injury.

\* \* \* \*

Whether a plaintiff could successfully get to the jury or defeat a motion for summary judgment by showing circumstantial evidence depends upon the frequency of the use of the product and the regularity of plaintiff's employment in proximity thereto.

*Eckenrod*, 544 A.2d at 52-53 (citations omitted)(emphasis added).

The burden of proof standard for asbestos cases established by the Superior Court in

*Eckenrod* was adopted by this Court in *Gregg*, 943 A.2d 216 (2007). This Court added:

In summary, we believe that it is appropriate for courts, at the summary judgment stage, to make a reasoned assessment concerning whether, in light of the evidence concerning frequency, regularity, and proximity of a plaintiff's/decendent's asserted exposure, a jury would be entitled to make the necessary inference of a sufficient causal connection between the defendant's product and the asserted injury.

*Gregg*, 943 A.2d at 227.

This Court said in *Gregg*:

We appreciate the difficulties facing plaintiffs in this and similar settings, where they have unquestionably suffered harm on account of a disease having a long latency period and must bear a burden of proving specific causation under prevailing Pennsylvania law which may be insurmountable. Other jurisdictions have considered alternate theories of liability to alleviate the burden. *See, e.g., Menne v. Celotex Corp.*, 861 F.2d 1453, 1464-70 (10th Cir.1988). *See generally* Comment, *The Threshold Level of Proof of Asbestos Causation: The "Frequency, Regularity and Proximity Test" and a Modified Summers v. Tice Theory of Burden-Shifting*, 24 CAP. U.L.REV. 735 (1995).[fn]. Such theories are not at issue in this case, however,

and we do not believe that it is a viable solution to indulge in a fiction that each and every exposure to asbestos, no matter how minimal in relation to other exposures, implicates a fact issue concerning substantial-factor causation in every "direct-evidence" case. The result, in our view, is to subject defendants to full joint-and-several liability for injuries and fatalities in the absence of any reasonably developed scientific reasoning that would support the conclusion that the product sold by the defendant was a substantial factor in causing the harm.

*Gregg* 943 A.2d at 226-27 (2007).

At bottom a plaintiff must offer competent evidence to defeat a well-supported motion for summary judgment. *Amici* believe the trial court was correct in granting the motions for summary judgment at issue on this appeal because the Girard and Frank affidavits do not provide competent evidence of causation.

#### **D. The Inadequacies of Plaintiffs' Expert Evidence.**

In this case, plaintiffs claim, in defiance of both science and common sense, that trivial exposure to asbestos in Monsey's roof cement and roof coating products was the proximate cause of Mr. Ravert's injuries. Drs. Girard and Frank completely failed to investigate the dose to which Mr. Ravert was exposed, either cumulatively, by asbestos type, or from each defendant's products, so they argue, at least implicitly, that any amount of exposure, no matter how minimal, was a "cause" of the plaintiff's injury. Plaintiff's experts did not, in fact, establish that *any* asbestos exposure occurred from Monsey's products. Plaintiffs' experts did not use a scientifically accepted method to assess causation in this case.

In *Betz*, this Court was critical of expert opinions which find no individual differences in the potency of the fiber, the concentration or intensity of the fibers, or the duration of



exposure to a particular product. 44 A.3d at 36-37. As Dr. Irving Selikoff (whose seminal epidemiological studies on shipyard and insulation workers, are credited as raising awareness of the hazards of occupational exposure to asbestos) observed, “different occupations vary widely in important respects; in intimacy, intensity and duration of exposure, in variety and grade of asbestos used, in working conditions, in concomitant exposure to other dusts or inhalants.” I. J. Selikoff, *et al.*, The Occurrence of Asbestosis Among Insulation Workers in the United States, 132 *Ann. N.Y. Acad. Sci.* 139 (1965).

The affidavits of Messrs. Girard and Frank are inadequate to create an issue of fact with respect to allegations that the roofing products manufactured by Monsey and used by Ravert caused Ravert’s mesothelioma for several reasons.

First, Drs. Girard and Frank did not consider the dose or level of exposure of Mr. Ravert. Determining the minimum threshold of fiber levels critical to any consideration of medical causation. Plaintiffs’ experts in this case ignore one of the “central tenets” of toxicology – “the dose makes the poison.” *See* Bernard D. Goldstein & Mary Sue Henifin, *Reference Guide on Toxicology*, in REFERENCE MANUAL ON SCIENTIFIC EVIDENCE 651 (3d ed. 2010) (“There are three central tenets of toxicology. First, ‘the dose makes the poison’. . . .”); *see also* David L. Eaton, Scientific Judgment and Toxic Torts-A Primer in Toxicology for Judges and Lawyers, 12 *J.L. & Pol’y* 5, 10, 11 (2003) (in toxicology “[d]ose is the single most important factor to consider in evaluating whether an alleged exposure caused a specific adverse effect”); David L. Faigman, The Limits of Science in the Courtroom, in E. Borgida & S. T. Fiske, eds., *Beyond Common Sense* 303, 309 (2008) (“The

first principle of toxicology is that the dose is the poison . . . .”) (citation and internal quotation marks omitted). While general causation for generic “asbestos” is generally accepted, general causation is not so clear for chrysotile and anthophyllite asbestos.

Second, Drs. Girard and Frank did not consider the physical, chemical and toxicological differences among various types of asbestos, and they did not even mention what type of asbestos was found in each of the products from each of the defendants Mr. Ravert used. Mr. Ravert claimed to have worked with numerous asbestos-containing products over the years including, but not limited to, gaskets, brake shoes, brake linings, boilers, valves, sheet packing, rope packing, pipe insulation, furnace cement, gypsum board, joint compounds and sealants, radiator products, roofing cement and other roofing products, and ceiling tiles and panels and perhaps many other products.

Of these exposures, the most important would be pipe insulation, boilers and furnace cement. These products can contain amphibole asbestos and known to be dusty and associated with an increase risk of asbestos-related diseases. *See* World Health Organization, International Programme on Chemical Safety, *Asbestos and Other Natural Minerals*, Environmental Health at 12 (1986); A. M. Langer & R. P. Nolan, Asbestos in the Lungs of Persons Exposed in the USA, in 53:2 *Monaldi Archive for Chest Disease* 168 (1998).

The concentration of airborne asbestos reported by Mowat, *et al.* from applying roofing cement and coating corresponds to what the World Health Organization, *supra* at 12, reports as the low-end of the background concentration of asbestos in urban air worldwide. *See* F. Mowat, R. Weidling & P. Sheehan, Simulation Tests to Assess Occupational Exposure

to Airborne Asbestos from Asphalt-Based Roofing Products, 51 Ann. Occup. Hyg. 451-462 (2007).

Contrary to correct practice, Drs. Girard and Frank use broad, conclusory language, implicating products unrelated to this case, regardless of the type of product, its properties, or its use, or the type and degree of Mr. Ravert’s exposure to each product.

Asbestos containing roofing products similar to those made by Monsey and others have not been shown to release airborne asbestos when applied. Mowat, *et al.* collected air samples while applying roof cement (15% chrysotile) and coating (3% chrysotile) and detected no airborne asbestos fibers in 12 air samples collected while applying these product analyzing the air samples using analytical transmission electron microscopy.<sup>6</sup> This

---

<sup>6</sup> F. Mowat, R. Weidling & P. Sheehan, Simulation Tests to Assess Occupational Exposure to Airborne Asbestos from Asphalt-Based Roofing Products, 51 Ann. Occup. Hyg. 451-462 (2007). We combine Mowat, *et al.* Tables 4 and 5, which show the following:

**Concentration of Airborne Asbestos from Application of Roof Cement and Roof Coating by Analytical Electron Microscopy**

<b>Application</b>	<b>Composition</b>	<b>Asbestos</b>	<b>No. of Samples</b>	<b>Asbestos Fibers Airborne</b>
Plastic Roof Cement	Asphalt, petroleum distillate and encapsulated asbestos	15% Chrysotile	6	None Detected
Fibered Roof Coating	Asphalt, petroleum distillate and encapsulated asbestos	3% Chrysotile	6	None Detected
Background			6	None Detected

methodology is most sensitive way to detect airborne asbestos and mandated by International Standard for detecting asbestos in the ambient air (International Organization for Standardization, ISO 10312, International Standard Ambient Air – Determination of Asbestos Fibers – Direct Transfer: Transmission Electron Microscopy Method, (1995)).

It is significant that the Monsey products came pre-mixed in a viscous liquid. (*See* R.R. 000347a-000363a). Once the cement or coating was applied to the roof it hardened and became water resistant. Further, these products were used in open air, on the roofs of buildings, not in confined spaces, as is typical of asbestos-containing products in typical occupational exposure situations.<sup>7</sup> Thus, airborne concentration of asbestos from these products was very low, if any was released at all. These exposures are orders of magnitude lower than from pipe insulation, boilers and furnace cement to which Mr. Ravert was exposed.

Second, Messrs. Girard and Frank did not consider the physical, chemical and toxicological differences among various types of asbestos, and they did not even mention what type of asbestos was found in each of the products Mr. Ravert used. Mr. Ravert claimed to have worked with numerous asbestos-containing products over the years

---

<sup>7</sup> In order for liability to attach in an asbestos exposure case, plaintiffs must establish that Ravert's disease was caused by Ravert's inhalation of asbestos fibers from a Monsey product. *See Eckenrod*, 544 A.2d at 52-53. Plaintiffs assert that Ravert inhaled asbestos fibers when working with the Monsey products. (R.R. 000421a-000422a, 000438a-000441a, 000483a-000484a). While the Girard and Frank affidavits speak about the possibility that a worker might be exposed to non-visible asbestos dust, plaintiffs' assertions are merely extrapolations from Girard's and Frank's generic, non-specific observations, which do not speak to roofing cement and coatings generally, nor to Monsey products in particular, nor to Mr. Ravert's use of Monsey products. Under *Gregg* and *Betz*, plaintiffs' assertions are factually and legally insufficient, and do not raise genuine issues of fact.

including, but not limited to, gaskets, brake shoes, brake linings, boilers, valves, sheet packing, rope packing, pipe insulation, furnace cement, gypsum board, joint compounds and sealants, radiator products, roofing cement and other roofing products, and ceiling tiles and panels and perhaps many other products.

Of these exposures the most important would be pipe insulation, boilers and furnace cement. These products can contain amphibole asbestos and known to be dusty. In contrast, roofing cement is an asphalt based product and sealant.

Contrary to correct practice, Drs. Girard and Frank use broad, conclusory language, implicating products unrelated to this case, regardless of the type of product, its properties, or its use, or the type and degree of Mr. Ravert's exposure to each product.

The asbestos containing roofing products made by Monsey and others have not been shown to release airborne asbestos under normal conditions of use. It is significant that the Monsey products came pre-mixed in a viscous liquid. (*See* R.R. 000347a-000363a). Once the cement or sealant were applied to the roof it hardened and became water resistant. Further, these products were used in open air, on the roofs of buildings, not in confined spaces, as is typical of asbestos-containing products in typical occupational exposure situations.<sup>8</sup> Thus, airborne concentration of asbestos from these products was very low if any

---

<sup>8</sup> In order for liability to attach in an asbestos exposure case, plaintiffs must establish that Ravert's disease was caused by Ravert's inhalation of asbestos fibers from a Monsey product. *See Eckenrod*, 544 A.2d at 52-53. Plaintiffs assert that Ravert inhaled asbestos fibers when working with the Monsey products. (R.R. 000421a-000422a, 000438a-000441a, 000483a-000484a). While the Girard and Frank affidavits speak about the possibility that a worker might be exposed to non-visible asbestos dust, plaintiffs' assertions are merely extrapolations from Girard's and Frank's generic, non-specific observations, which do not  
(continued...)

was released at all. These exposures are orders of magnitude lower than from pipe insulation, boilers and furnace cement to which Mr. Ravert was exposed.

Significantly, the Occupational Safety and Health Administration, an agency often thought to err on the side of excessive caution, exempts roofing cement and sealants as asbestos containing because of the matrix in which the asbestos is found. OSHA regulations exempt roofing cement and sealants from the requirement that products be labeled as containing “asbestos.” *See* U. S. Department of Labor, Occupational Safety and Health Administration, Occupational Exposure to Asbestos, 63 Fed. Reg. 35137, *et seq.* (revising regulations on “Construction and Shipyard Standards,” 29 C.F.R. Parts 1915 and 1926) and especially at 63 Fed. Reg. 35138 (amending 29 C.F.R. § 1926.1101(a)(8) to read “This section does not apply to asbestos-containing asphalt roof coatings, cements and mastics.”<sup>9</sup> *See* 29 C.F.R. § 1915.1001(a)(8)(2000); *see also Asbestos Information Ass’n of N. Am. v. Reich*, 117 F.3d 891 (5th Cir. 1997) (“The potential for fiber release from sealants is not analogous to the potential for fiber release from asphalt coated asbestos felting or similar built-up roofing products. It is clear that built up roofing poses real risks of exposure that are not present in roofing sealants.”).

---

<sup>8</sup>(...continued)

speak to roofing cement and coatings generally, nor to Monsey products in particular, nor to Mr. Ravert’s use of Monsey products specifically. Under *Gregg* and *Betz*, plaintiffs’ assertions are factually and legally insufficient, and do not raise genuine issues of fact.

<sup>9</sup> The Monsey roofing products at issue are thick-liquid asphaltic-based compounds which contained only a minimal percentage of encapsulated asbestos and “contain minimal amounts of encapsulated asbestos which do not emit airborne fibers if left intact.” *See* 29 C.F.R. §1915.1001, App. H (2000). There is no evidence in this case that Monsey’s cement and coating products were disturbed by Mr. Ravert after he applied them.

*Eckenrod, Gregg* and *Betz* have established the burden of proof standard for causation that a plaintiff must meet before an asbestos case can be submitted to a jury in Pennsylvania. While the evidence necessary to meet this standard may vary depending on the circumstances of each case, it is clear that simply showing that a plaintiff had used an asbestos-containing product manufactured by a particular defendant is not, by itself, sufficient to meet this standard. To the contrary, a plaintiff must first provide evidence that he or she was exposed to an asbestos-containing product of a particular defendant, that the product emitted asbestos fibers, and that he or she inhaled those asbestos-containing fibers; and second, a plaintiff must also provide evidence that this exposure to airborne asbestos was on a frequent and regular basis in proximity to the source of the asbestos fibers, so that cumulative exposures occurred, sufficient to support an inference that the exposure was a substantial contributing factor in causing the disease. It is the trial court's proper function to act as gatekeeper to assure that speculation masquerading as science does not get to a jury, and to avoid confusion and prejudice. The Girard and Frank affidavits provide no such evidence, and Mr. Ravert's testimony refutes the claim that he was exposed to asbestos through his use of Monsey's products.

The Superior Court panel ignored this Court's holding in *Gregg* and said that the generic Girard and Frank affidavits were sufficient to defeat summary judgment. The Superior Court's ruling conflicts with *Gregg*, and with long-standing law in this Commonwealth regarding evidentiary evaluation of expert opinions. "[A]n expert cannot base his opinion upon facts which are not warranted by the record," *Collins v. Hand*, 431 Pa.

378, 390, 246 A.2d 398, 404 (1968); *see also Kenner v. Kappa Alpha Psi Fraternity, Inc.*, 808 A.2d 178, 183 (Pa. Super. 2002) (summary judgment was proper where expert's opinion in report failed to point to specific facts, testimony, or empirical data to support it).

Indeed, in this case, as in *Betz*, plaintiffs' experts, Dr. Girard and Dr. Frank, had no direct knowledge of plaintiff's asbestos exposure from any product, and especially any Monsey product. Nor were they familiar with the type(s) of asbestos involved, the differences in potency of fibers<sup>10</sup>, the concentration or intensity of the airborne asbestos fibers, if any,

---

<sup>10</sup> The approach taken by plaintiffs' experts also ignores the fact that the carcinogenic potential of different types and quantities of asbestos contained in such products can be significantly different for many reasons, including, *inter alia*, the length of the fibers released and carcinogenic risk associated therewith. Recent research has focused mainly on two questions: (1) whether long asbestos fibers, generally greater than 5 micrometers, are principally responsible for asbestos disease, and (2) whether chrysotile asbestos (which breaks down easily into short sections) is less potent than other forms. Hodgson and Darnton estimate the mesothelioma causing potency of chrysotile, amosite, and crocidolite as 1:100:500, meaning amosite and crocidolite are, respectively, 100 and 500 times more potent in causing mesothelioma than chrysotile. J.T. Hodgson and A. Darnton, The Quantitative Risks of Mesothelioma and Lung Cancer in Relation to Asbestos Exposure, 44 *Ann. Occup. Hyg.* 565-601 (2000). In a later paper, Hodgson, *et al.* show that the amphibole asbestos types (amosite and crocidolite) explain mesothelioma distribution and that chrysotile has zero weight, indicating that chrysotile is unlikely to be responsible for any of the mesothelioma cases recently diagnosed in Great Britain. J.T. Hodgson, D.M. McElvenny, A.J. Darnton, M.J. Price and J. Peto, The Expected Burden of Mesothelioma Mortality in Great Britain from 2002 to 2050, 92 *Brit. J. Cancer* 587-593 at 590, Fig. 5A (2005).

The United States Environmental Protection Agency commissioned a study, D. W. Berman, K. S. Crump, Update of Potency Factors for Asbestos-Related Lung Cancer and Mesothelioma, 38 *Crit. Rev. Tox.* (supp. 1) 1-47 (2008) and D. W. Berman and K. S. Crump, A Meta-Analysis of Asbestos-Related Cancer Risk That Addresses Fiber Size and Mineral Type, 38 *Crit. Rev. Tox.* (supp. 1) 49-73 (2008), which reached a similar conclusion. An EPA panel, after reviewing the extensive literature, concluded, by consensus, that chrysotile asbestos fibers are far less likely to cause disease than amphiboles, by a factor of at least two orders of magnitude. U.S. EPA, *Report on the Peer Consultation Workshop to Discuss a Proposed Protocol to Assess Asbestos-Related Risk*, viii (May 30, 2003), available at [http://www.epa.gov/oswer/riskassessment/asbestos/pdfs/asbestos\\_report.pdf](http://www.epa.gov/oswer/riskassessment/asbestos/pdfs/asbestos_report.pdf) (last accessed (continued...))



released from the individual products, the comparative release of release respirable fibers by each product, or the characteristics of the workplace in which Mr. Ravert worked with each product.<sup>11</sup> *See Betz*, 44 A.3d at 58.

Dr. Frank indicates no knowledge of Mr. Ravert's exposure to any particular product of the many that are alleged to have contributed to Mr. Ravert's mesothelioma. But exposure or dose is generally accepted as being critical to an assessment of an attributed cause for mesothelioma. This generally accepted and essential distinction is completely missing from Dr. Frank's analysis. Instead, he relies on a "any exposure" approach, assuming all asbestos products release fibers, contrary to the experimental results of Mowat, *et al.*, *supra*. This is indistinguishable from the "every exposure" theory rejected by this Court in *Gregg*: "[W]e do not believe that it is a viable solution to indulge in a fiction that each and every exposure to asbestos, no matter how minimal in relation to other exposures, implicates a fact issue

---

<sup>10</sup>(...continued)

Dec. 11, 2012). "For *mesothelioma*, the panelists supported the use of different relative carcinogenic potencies for different fiber types. The panelists unanimously agreed that the available epidemiology studies provide compelling evidence that the carcinogenic potency of amphibole fibers is two orders of magnitude greater than that for chrysotile fibers." (*Id.* at viii). Similarly, a panel of the Agency for Toxic Substances Disease Research ("ATSDR"), part of the Centers for Disease Control, concluded by consensus that "there is a strong weight of evidence that asbestos [fibers] shorter than 5  $\mu\text{m}$  are unlikely to cause cancer in humans." ATSDR, *Report on the Expert Panel on Health Effects of Asbestos and Synthetic Vitreous Fibers: The Influence of Fiber Length*, vi (Mar. 17, 2003), available at <http://www.atsdr.cdc.gov/HAC/asbestospanel/asbestostoc.html> (last accessed Dec. 11, 2012).

<sup>11</sup> The fact that Mr. Ravert used Monsey's roofing products outdoors, on rooftops, rather than in a confined space such as an asbestos mine, or an asbestos-containing product factory, or a garage where automotive friction products (such as brakes and clutches) are installed or repaired surely had an effect on whether he would have inhaled asbestos even had any been liberated from the medium in which it was contained. Drs. Girard and Frank make no mention of this.

concerning substantial-factor causation in every ‘direct-evidence’ case.” *Gregg*, 943 A.2d at 226-227.

Contrary to correct scientific methodology and contrary to the mandate in *Betz*, Drs. Girard and Frank make no effort to discuss the comparative weight of differing exposures and do not discuss dose as it relates to Mr. Ravert’s disease. *See Betz* at 58. In this case, as in *Betz*, there is “a complete discounting of the substantiality exposure” which is “fundamentally inconsistent with Pennsylvania law.” *Id.*

Dr. Frank’s implication that every exposure to any type of asbestos contributes similarly to cumulative exposure and similarly to the cumulative risk of causation for each of the asbestos-related diseases is not generally accepted in the relevant scientific disciplines.<sup>12</sup>

This Court has rejected testimony by a “hired expert” that, like Dr. Frank’s affidavit, asserts explicitly or implicitly that “[e]ach and every exposure to asbestos has been a *substantial* contributing factor to the abnormalities noted.” *Gregg*, 943 A.2d 216, 223 (quoting *Summers v. Certaineed Corp.*, 886 A.2d 240, 244 (Pa. Super. 2005)). In *Betz v. Pneumo Abex*, 44 A.3d 27 (2012) this Court also made plain that the “any exposure” theory as used by plaintiff’s expert was an attempt to use general causation evidence to end run a plaintiff’s burden to prove actual harm in a particular case (specific causation). Indeed, like the trial court here, it noted that plaintiff’s expert did not trouble himself to learn anything about the plaintiff’s exposure history or other possible sources of injury.

---

<sup>12</sup> There are distinct patterns with respect to asbestosis, lung cancer and mesothelioma, and a scientist must consider the specific disease before attributing causation.

The expert opinions proffered by plaintiffs are totally devoid of any description of the expert's methodology and cite no support in the scientific literature and thus do not satisfy this Commonwealth's standards. As this Court stated in *Gregg*, 943 A.2d at 226 "opinions that are not fairly grounded in a reasonable belief concerning the underlying facts and/or opinions that are not couched within accepted scientific methodology" are not helpful and it was proper for the trial court, at the summary judgment stage, "to make a reasoned assessment concerning whether, in light of the evidence concerning frequency, regularity, and proximity of a plaintiff's/decendent's asserted exposure, a jury would be entitled to make the necessary inference of a sufficient casual connection between the defendant's product and the asserted injury." *Id.* at 943 A.2d at 227. "An expert's opinion must be supported by references to facts, testimony or empirical data and must delineate how the opinion, based on the record, gives rise to a genuine issue of material fact. Without such support, there can be no prima facie case. . . sufficient to overcome a summary judgment motion." *Downey v. Crozer-Chester Med. Ctr.*, 817 A.2d 517, 528-29 (Pa. Super. 2003); *see also Collins v. Hand*, 431 Pa. 378, 390, 246 A.2d 398, 404 (1968) ("[A]n expert cannot base his opinion upon facts which are not warranted by the record"). The affidavits of Drs. Girard and Frank do not come close to meeting this standard.

The affidavits of Drs. Girard and Frank contain nothing more than generic conclusions without any supporting documentation or analysis.<sup>13</sup> They suffer from the fatal defect

---

<sup>13</sup> The opinions of Drs. Girard and Frank in this case are, in the words of Chief Justice Rehnquist in *General Electric Co. v. Joiner*, 522 U.S. 136, 146 (1997) nothing more than the "ipse dixit of the expert."

described by Judge Klein in *Summers v. Certaineed Corp.*, *supra* at 244,<sup>14</sup> cited with approval by this Court in *Gregg v. V-J Auto Parts*, 596 Pa. 274, 943 A.2d 216, 226 (2007):

[O]ne of the difficulties courts face in the mass tort cases arises on account of a willingness on the part of some experts to offer opinions that are not fairly grounded in a reasonable belief concerning the underlying facts and/or opinions that are not couched within accepted scientific methodology.

Plaintiffs' "expert" affidavits the affidavits do not mention roofing cements or coatings in general, do not specifically mention Monsey products and they do not describe any inspection, testing, scientific studies, or any empirical data with regard to roofing cement products generally; they contain no citations to scientific literature and no references to any scientific methodology or protocol which underpin the experts' analysis or conclusions specific to this case.

In sum, neither the methods nor the conclusions asserted by Drs. Girard and Frank, and especially the opinion as to medical causation by Dr. Frank, satisfy either scientific or legal criteria for "general acceptance."

Plaintiffs have failed to establish the frequency, regularity, and proximity requirements of *Eckenrod*, *Gregg* and *Betz* with respect to Monsey. Indeed, plaintiffs have failed to establish that Mr. Ravert was exposed to any respirable asbestos fibers in roofing products manufactured by Monsey, and thus summary judgment was proper.

---

<sup>14</sup> For a general discussion of the misuse of expert testimony in asbestos litigation, see David E. Bernstein, Keeping Junk Science Out of the Asbestos Litigation, 31 *Pepp. L. Rev.* 11 (2003)

## CONCLUSION

*Amici* believe that the trial court correctly exercised its discretionary responsibilities to assess the merits of Monsey's motion for summary judgment and the admissibility and weight of Plaintiffs' expert affidavits based upon the evidence of record.

The Superior Court's decision in this case ignores or seriously misconstrues this Court's holdings in *Gregg* and *Betz* because it permits a plaintiff in an asbestos exposure case to dispense with the frequency, regularity, and proximity requirements and to defeat summary judgment by use of generic and scientifically inadequate "expert" affidavits.

For the foregoing reasons, the Court should reverse the decision of the Superior Court.

December 17, 2012

Respectfully submitted,

---

Martin S. Kaufman  
Atlantic Legal Foundation  
2309 Palmer Avenue (Suite 104)  
Larchmont, NY 10538  
(914) 834-3322

---

s/ Patrick J. Hughes  
Patrick J. Hughes (Pa. I.D. #41403)  
Connell Foley LLP  
1500 Market Street  
12th floor, East Tower  
Philadelphia, PA 19101  
(215) 246-3403

Attorneys for *Amici Curiae*  
Richard Wilson, *et al.*

**CERTIFICATE OF SERVICE**

Martin S. Kaufman, Counsel for *Amici Curiae* Richard Wilson, *et al.*, hereby certifies that two copies of the Brief *Amici Curiae* in Support of Defendant-Appellant Monsey Products Corp. were served by first class mail on December 17, 2012 on counsel listed below:

Robert E. Paul  
Paul, Reich & Myers  
1608 Walnut Street, Suite 500  
Philadelphia, PA 19107  
Attorneys for Plaintiffs-Respondents

Catherine Jasons, Esq.  
Kelley, Jasons, McGowan, Spinell  
& Hanna  
Suite 1900 Two Liberty Place  
Philadelphia, P A 19102  
Attorneys for Union Carbide Corp.

John J. Bateman, Esq.  
Lavin, O'Neil, Ricci, Cedrone & DeSipio  
190 North Independence Mall West  
Philadelphia, P A 19106  
Attorneys for Ace Hardware Corp.

Carl D. Buchholz III, Esq.  
Rawle & Henderson  
The Widener Building  
Philadelphia, P A 19107  
Attorneys for Monsey Products Corp.

M. Douglas Eisler, Esq.  
Wilson, Elser, Moskowitz, Edelman  
& Dicker  
Suite 1130 The Curis Center  
Philadelphia, P A 19106  
Attorneys for A.W. Chesterton Co.

Kevin J. O'Brien, Esq.  
Marks, O'Neill, O'Brien & Courtney, P.C.  
1880 JFK Blvd., Suite 1200  
Philadelphia, PA 19103  
Attorneys for Pecora Corp.

---

Martin S. Kaufman, Esquire  
ATLANTIC LEGAL FOUNDATION  
2309 Palmer Avenue (Suite 104)  
Larchmont, NY 10538  
(914) 834-3322  
Attorneys for *Amici Curiae*